WOMEN EMPOWERMENT THROUGH WOMEN DAIRY CO-OPERATIVES IN WESTERN MAHARASHTRA

T H E S I S

Submitted

In partial fulfillment of requirements for the Degree of

MASTER OF VETERINARY SCIENCE

In

VETERINARY AND ANIMAL HUSBANDRY EXTENSION

By

KARDILE SUPRIYA RAJENDRA

Enrolment No: V/15/116

Krantisinh Nana Patil College of Veterinary Science,

Shirwal, Dist. Satara - 412801

MAHARASHTRA ANIMAL AND FISHERY SCIENCES UNIVERSITY,

NAGPUR- 440 001

(INDIA)

2023

DECLARATION OF STUDENT

I hereby declare that the experimental research work and interpretation of the thesis entitled **"WOMEN EMPOWERMENT THROUGH WOMEN DAIRY CO-OPERATIVES IN WESTERN MAHARASHTRA"** or part thereof has not been submitted for any other degree or diploma of any University, nor the data have been derived from any thesis/publication of any University or scientific organization. The sources of materials used and all assistance received during the course of investigation have been duly acknowledged.

Date: **Signature**

Place: Shirwal (**KARDILE SUPRIYA RAJENDRA)**
Enrolment No: V/15/116

Counter signed by Chairman,

Advisory Committee with date

DECLARATION OF ADVISORY COMMITTEE

Ms. KARDILE SUPRIYA RAJENDRA has satisfactorily prosecuted her course of research for a period of not less than one semester and that the thesis entitled, **"WOMEN EMPOWERMENT THROUGH WOMEN DAIRY CO-OPERATIVES IN WESTERN MAHARASHTRA"** submitted by her is the result of research work is sufficient to warrant its presentation to the examination in the subject of **VETERINARY AND ANIMAL HUSBANDRY EXTENSION** for the award of **MASTER OF VETERINARY SCIENCE** degree by the Maharashtra Animal and Fishery Sciences University, Nagpur.

We also certify that the thesis or part thereof has not been previously submitted by her for a degree of any other University.

Place: Shirwal (**Dr. S. R. KOLHE**)
Advisor/Guide
Date: Assistant Professor

ADVISORY COMMITTEE

Name and Designation **Signature**

1. Dr. Smita R. Kolhe,
   Assistant Professor & Sectional Head,
   Department of Veterinary and A.H Extension Education
2. Dr. A. V. Khanvilkar,
   Professor & Sectional Head,
   Department of Livestock Production Management
3. Dr. S. M. Bhalerao,
   Assistant Professor & Sectional Head,
   Department of Animal Nutrition
4. Dr. T. C. Shende,
   Assistant Professor & Sectional Head,
   Department of Animal Genetics and Breeding
5. Dr. A. K. Bhalerao, ARS, Scientist,
   Training & Education Centre (TEC), IVRI, Pune

CERTIFICATE

This is to certify that the thesis entitled, **"WOMEN EMPOWERMENT THROUGH WOMEN DAIRY CO-OPERATIVES IN WESTERN MAHARASHTRA"** submitted by **Ms. KARDILE SUPRIYA RAJENDRA** to the Maharashtra Animal and Fishery Sciences University in partial fulfillment of the requirement for the degree of **MASTER OF VETERINARY SCIENCE** has been approved by the Student's Advisory Committee after examination in collaboration with the External Examiner.

Name & Signature of External Examiner	Signature with Seal Head of Department	Name & Signature Advisor/Guide

Advisory Committee

Name and Designation	**Signature**
1. Dr. Smita R. Kolhe, Assistant Professor & Sectional Head, Department of Veterinary and A.H Extension Education	
2. Dr. A. V. Khanvilkar, Professor & Sectional Head, Department of Livestock Production Management	
3. Dr. S. M. Bhalerao, Assistant Professor & Sectional Head, Department of Animal Nutrition	
4. Dr. T. C. Shende, Assistant Professor & Sectional Head, Department of Animal Genetics and Breeding	
5. Dr. A. K. Bhalerao, ARS, Scientist, Training & Education Centre (TEC), IVRI, Pune	

Signature with Seal
Dean/Associate Dean

Dedicated to
My Family….

Acknowledgement

ACKNOWLEDGEMENT

I would like to express my sincere thanks to my well-wishers, friends, and family, and those who have contributed in many ways to making this an unremarkable experience.

First up all it gives me immense pleasure to express my deep and sincere gratitude to my research guide, ***Dr. Smita R. Kolhe***, Assistant Professor and Sectional Head, Department of Veterinary and Animal Husbandry Extension Education, K.N.P College of Veterinary Science, Shirwal, Satara, Maharashtra, who made this work possible. I am very much thankful for her constant and invaluable guidance, constructive criticism and suggestions, and most importantly, her active participation during my work. Her sincerity, vision and motivation deeply inspired me.

I cannot express enough thanks to my committee members for their timely advice, constant encouragement, valuable guidance, and indispensable help in the completion of my work: ***Dr. T. C. Shende***, Assistant Professor and Sectional Head, Department of Veterinary Animal Genetics and Breeding, ***Dr. A.V. Khanvilkar***, Professor and Sectional Head, Department of Livestock Production and Management, ***Dr. S. M. Bhalerao***, Assistant Professor and Sectional Head, Department of Animal Nutrition and ***Dr. A. K. Bhalerao***, ARS, Scientist, Training and Education Centre (TEC), IVRI, Pune.

I am deeply grateful to respected ***Dr V. D. Aher***, Associate Dean, K.N.P College of Veterinary Science, Shirwal, Dist Satara for providing all the support for the timely submission of this thesis.

I am very grateful to all the women members of dairy co-operatives, who took part in my research work for their kind cooperation. I would like to express my heartfelt gratitude to Madhuri Dhamale Madam and Nita Kamat Madam for their timely help and support during my survey work.

I am fortunate and extremely grateful to my friends: Dr. Rushikesh Pokale, Dr. Vishal Gaikwad, Dr. Sanket Waigaonkar, Dr.Tanmay

Gaware, Dr. Pooja Pawar, Dr. Sayee Sathe, Dr. Balaji Telange, Dr. Akash Gomkale, Dr. Mahesh Gosavi, for their kind help and support.

I would like to thank Dr.Mahesh Dhangar, Dr. Hrushikesh Owhal and Dr.Vishal Gaikwad, for their support. I would like to express my thanks to the juniors: Dr.Chatrapati Achane, Dr.Jayesh Lokare, Dr. Nitin Dhore, Dr. Bhagyashree Belsare, who helped me throughout my work. My special thanks to my roommates, Dr. Pooja Pawar and Dr. Sayee Sathaye, and also thanks to my younger brother, Chetan Pawar.

My sincere thanks to Shri. Nitin Kadam, Artist cum Photograper and Sou. Sushila Kale mami, Department of Veterinary and A. H. Extension Education for their co-operation.

I am extremely thankful to my parents – my father ***Mr. Rajendra B. Kardile*** and my mother ***Mrs. Anjali R. Kardile*** for their constant encouragement and for reminding me to take care of myself. I am indebted to my parents for inculcating in me the dedication and discipline to do whatever I undertake well. I also thank my brother ***Mr. Abhijeet R. Kardile***, and ***Mr. Saurabh D. Kardile***, for their constant support and motivation throughout my journey.

I am really grateful to everyone who helped me with the process thank you all for facilitating my work. Thank you!

Place: Shirwal

Date:

Kardile Supriya Rajendra

Enrolment No. V/15/116

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES / PHOTOGRAPHS

4.18	Distribution of women members of WDCs according to their overall empowerment	O
4.19	Level of empowerment under different dimensions of women members of WDCs	P

LIST OF SYMBOLS / ABBREVIATIONS

et.al	And others
etc.	And the rest
A.H	Animal husbandry
@	At the rate of
DWEI	Dairy women empowerment index
^{0}	Degree
$^{\circ}C$	Degree Celsius
$^{\circ}F$	Degree Fahrenheit
DCS	Dairy Co-operative Societies
Fig.	Figure
F	Frequency
GOI.	Government of India
<	Less than
lit.	Litres
LDO	Livestock Development Officer
LSS	Livestock supervisors/supervise team of para-veterinary staff
M	Mean
-	Minus
>	More than
N	No of respondents
NGOs	Non-governmental organizations
NDDB	National Dairy Development Board
%	Percentage
+	Plus
±	Plus, and Minus
Rs.	Rupees
SHGs	Self-help groups
SD	Standard Deviation
viz.	Videlicet or namely
WDC	Women dairy co-operative
WDCLP	Women's Dairy Cooperative Leadership Programme

Introduction

CHAPTER I

INTRODUCTION

Due to the huge livestock population, India is the largest milk producer contributing 23% of global milk production and dairy is the single largest agricultural commodity contributing 5 percent of the national economy. This sector is employing more than 8 crore farmers directly. Indian milk production has grown at a compound annual growth rate of about 6.2% to reach 209.96 million tonnes in 2020-21 (DAHD, 2022). India is an agrarian country and livestock is integral to agriculture farming. Approximately 500 million Indians depend on livestock rearing and around 80 million households engaged in dairy farming as their main source of income. The majority of them are small-scale, marginal farmers with 95% percent of India's milk producers only having herd sizes of one-to-five animals (USDA FAS, 2022). The role of dairy cooperatives in providing a dependable marketing system to dairy farmers is pivotal in the success of the Indian dairy industry. The milk cooperative revolution was initiated in 1946 in Anand, Gujrat and as a part of the operation flood program, several milk producer's cooperatives have been formed in India. However, the coverage of dairy cooperatives has not been uniform across the country. A recent study that determined the factors affecting the cooperatives' coverage for various states of India revealed that dairy cooperatives have increased over time in all the states of India (Mahida *et al.,* 2022).

Women play a significant role in agriculture, dairying, animal husbandry, and dairy farming is a major occupation of women (Rathod *et al*., 2011). Dairying in India is a female-dominated enterprise. However, the roles played by men and women in the dairy value chain are influenced by the gender division of labor. Under the traditional production system, women contribute most of the labor in dairy production and contributed even more under intensified small-scale operations (Katothya, 2017).

Women empowerment has gained momentum in India in various sectors including the dairy sector. The government of India through the national policy

on the empowerment of women making efforts for strengthening women's position. The cooperative is the only organization, which educate women, help them to increase their participation in economic activities, and also develop leadership qualities and confidence level. In 1995, the Dairy Board initiated the Women's Dairy Cooperative Leadership Programme (WDCLP) on a pilot basis in Valsad, Kolhapur, Wynad and Goa in Western India. The success of this program has led to its replication in other unions throughout the country. Sapovadia and Achuthan, (2006) highlighted the role of women leaders in the Cooperative Dairy Movement and the empowerment of women with the association and alliance with NDDB. It was suggested that constraints to participation in cooperatives e.g. social, cultural, economic, and political restrictions on women, heavy workload, education, and selection criteria for members should be taken care of.

The concept of 'power' in 'empowerment' has not only changed over time but has also continued to be understood multifariously. Empowerment of rural women is critical in enabling them to reach self-determination and in ascribing them more autonomy to make choices, decisions, and have financial control (Bayissa *et al.,* 2018; Ogolla *et al.,* 2022). The government of India has initiated the empowerment of women through dairy farming by establishing exclusive women's dairy cooperatives, however up to what extent these are being succeeded in achieving the goal is a question. Thus, studies on women's empowerment through dairy cooperatives shall be undertaken (Niketha *et al.,* 2017). A village-level study from Bihar on collective dairy farming, women empowerment, and social inclusion mentioned that dairy cooperative societies (DCS) activities under National Dairy Plan 1 (NDP I) have promoted women's empowerment and social inclusion in rural societies. Social inclusion has been a regular practice at the DCS level, promoting a diversified social relationship among rural women (Nath, 2022). A gender and caste analysis on empowering women in dairy cooperatives in Bihar and Telangana revealed gender and caste norms restricting women's inclusion and limiting their control over income. It was suggested that dairy cooperatives can be empowering for women when they emerge from women's activism (Ravichandran *et al.,* 2021).

Recent studies on dairy cooperatives in India indicated that these organizations are essential to the growth of the rural majority's income as well as the dairy sector. Dairy cooperatives have the ability to promote socioeconomic development and are crucial in helping women in dairy cooperatives overcome the poverty elevation those who endure. A quiet rural shift is being brought about by women's dairy cooperative associations. Dairy cooperatives are currently viewed as being the most significant step towards improving the milk marketing system in rural areas, increasing the farmers' share of consumer rupees, and empowering the rural masses, particularly women. Women-focused approaches were promoted as a component of the strategy, which called for the formation of a sufficient number of women's dairy cooperative societies at the village level. The idea was that these Women Dairy Cooperatives (WDCs) would serve as a source of additional income and a formalized forum for addressing a variety of grievances, including social, personal, and other issues. The WDCs place a strong focus on the fact that the project will assist rural women in many ways, including capacity building and the ability to learn by inference thanks to their ownership and management of milch animals. Yet, in order to alter and enhance the women's dairy cooperatives for more empowerment, it is important to investigate the extent to which these cooperatives were successful in fulfilling the goal of women's empowerment. In order to assess the level of women's empowerment through WDCs the current study, "Assessment of Women Empowerment through Women Dairy Co-operatives," was undertaken in western Maharashtra.

Objectives:

1. To study the socio-economic profile of members of women dairy co-operatives.
2. To study the level of empowerment of members through women dairy co-operatives.
3. To study the constraints faced by members of women dairy co-operatives.

Review of Literature

CHAPTER II

REVIEW OF LITERATURE

An extensive review of the literature has incredibly important in any research study. It helps to acquire a general background, to find out available information related to the objectives of the proposed study, support the outline of problem areas and provide a basis for the theoretical framework and the interpretation of findings. Very limited research studies have been conducted on the empowerment of women through women's dairy co-operatives. However, studies having direct or indirect links with the present investigation have been reviewed and presented under the following major heads,

1. Socio-economic profile of members of women dairy co-operatives.
2. Level of empowerment of members through women dairy co-operatives.
3. Constraints faced by members of women dairy co-operatives.

2.1 Socioeconomic profile of dairy farmers

2.1.1 Age

Halakatti *et al.* (2007) conducted a study on the empowerment of women members through dairy training in Karnataka and revealed that the majority of the trained (70.67%) and untrained (79.80%) dairy farm women were in the middle-age group.

Kochar and Kaur (2015) studied the impact of women dairy co-operative societies on the empowerment of women members of WDCs in Ludhiana, Punjab and noted that the majority of the WDC members belonged to the age group of above 45 years (62%) followed by age group of 36-45 years (31.33%), above 25-36 years (5.33%), and age group of 18-25 years (1.33%).

Theresa (2017) studied the impact of cooperative society on the empowerment of rural women of Nimo Town, Anambra State Nigeria, and observed that the majority of respondents belonged to the age group of 56 and above (30%), followed by 46-55 years (28%), 36-45 years (22%), 26-35 years (14.5%), and 18-25 years (5.5%) of age group.

Gadad and Kunnal (2018) conducted a study on the socioeconomic profile and constraints faced by the members of milk producer's cooperative societies in the production and marketing of milk in the Dharwad district of Karnataka and reported that the majority of the farmers were in the middle age group (49.17%) followed by old age group (40%) and young age group (10.83%).

Ravinder and Umadevi (2020) conducted a study on the socioeconomic empowerment of women through entrepreneurship in Telangana State and stated that a larger percentage of the respondent (42%) comes under the age group of 26-40 years followed by 41-50 years of age group (31%), 18-25 years of age group (18%), and above 55 years of age group (9%).

Thaker *et al.* (2020) studied women empowerment through milk producers' co-operative societies in the Saurashtra region of Gujrat state and noted that the age of women members in dairy co-operatives ranged from 35 to above 50 years. The overall maximum proportion (50%) of the respondent comes under the middle age group, i.e. 36 to 50 years, followed by the young age group, up to 35 years, (35%) and the old age group, more than 50 years (14%).

2.1.2 Education

Kochar and Kaur (2015) studied the impact of women dairy co-operative societies on the empowerment of women members of WDCs in Ludhiana, Punjab wherein they observed that a larger number of WDC members were having educational qualifications up to matric (47.33%) followed by illiterate members but can sign (34%), up to the primary level (12.67%), and graduate level (1.67%).

Gadad and Kunnal (2018) conducted a study on the socio-economic profile and constraints faced by the members of milk producer's cooperative societies in the production and marketing of milk in the Dharwad district of Karnataka and stated that the majority of the participants had completed primary school (31.67%) followed by middle school (19.17%), illiterate (16.67%), PUC (13.33%), high school (12.50%), and graduate and above (6.67%) level of education.

Dash *et al.* (2020) conducted a study on the role of dairy cooperative society in empowering women in rural Odisha and noted that the maximum number of women has a middle-class education level (29.4%) followed by SSC level (20%) and higher secondary level of education (4%).

Ravinder and Umadevi (2020) conducted a study on the socioeconomic empowerment of women through entrepreneurship in Telangana and revealed that the majority of the respondents were illiterate (41%) followed by SSC (29%), inter and above (22%) and up to 7^{th} class (8%) level of education.

Thaker *et al.* (2020) studied women empowerment through milk producer's cooperative societies in the Saurashtra region of Gujarat and revealed that the literacy level in the selected region was up to the primary (42%), followed by illiterate (32%), secondary (18%), higher secondary (7%), and graduate (1%) level of education.

2.1.3 Family Size

Kaur *et al*. (2017) studied women empowerment through self-help groups and observed that (74.29%) of members had a family size of 4–6 members while (25.71%) had a family size of 6–8 members.

Gadad and Kunnal (2018) conducted a study on the socioeconomic profile and constraints faced by the members of milk producer's cooperative societies in the production and marketing of milk in the Dharwad district of Karnataka and noted that a maximum number of respondents belonged to medium-family size upto 5-8 members (45.83%) followed by small family size up to 4 members (27.17%), and large family size more than 8 members (25%).

Dash *et al.* (2020) conducted a study on the role of dairy cooperative society in empowering women in rural Odisha and reported that the maximum number of members (72.4 %) has joint families and only 18.6 % had nuclear families.

Thaker *et al.* (2020) studied women empowerment through milk producer's co-operative societies in the Saurashtra region of Gujarat, and stated that the average family size of the respondent had 1 to 4 members (60%),

followed by a family size of 5 to 8 members (36%), and family size more than 9 members (4%).

2.1.4 Land holdings

Halakatti *et al.* (2007) conducted a study on the empowerment of women members through dairy training in Karnataka and revealed that land holding of trained women members of dairy co-operatives had small and medium land holdings (39.90%), trained dairy farm women had big land holdings (13%), whereas the majority of untrained dairy farm women had landless or medium land holding category (39.90%), and nobody has big-sized land holdings.

Kochar and Kaur (2015) studied the impact of women dairy co-operative societies on the empowerment of women members of WDCs in Ludhiana, Punjab, and stated that a large number of families had small land holding with 2.5-5 acres (41.33%), followed by medium land holdings with 5-15 acres (32.66%), marginal land holding less than 2.5 acres (24.66%), and more than 15 acres (1.33%).

Gadad and Kunnal (2018) conducted a study on the socio-economic profile and constraints faced by the members of milk producer's cooperative societies in the production and marketing of milk in the Dharwad district of Karnataka and observed that the majority of the dairy farmers possessed semi-medium with 5 to 10 acres and small land holding with 2.50 to 5 acres (24.17%), followed by medium land holding with 10 to 25 acres (20.83%), big land holding with more than 25 acres (15.83%), marginal land holding up to 2.50 acres (10.83%), and remaining farmers were landless (4.17%).

2.1.5 Herd Size

Halakatti *et al.* (2007) conducted a study on the empowerment of women members through dairy training in Karnataka and noted that the majority percentage of trained dairy women members possessed crossbred cows (83.79%), followed by untrained dairy women members possessed (26.66%) crossbred cows.

Niketha *et al.* (2017) studied the empowerment of women through dairy co-operatives in Karnataka and stated that herd size was positively and highly

significantly correlated with the empowerment of dairy women which plays a core role in empowering women economically and socially.

Thaker *et al.* (2020) studied women empowerment through milk producers' cooperative societies in the Saurashtra region of Gujarat, and observed that most of the respondents had buffalos (78%) and followed by cows as milch animals (22%).

2.1.6 Total milk production

Niketha *et al.* (2017) conducted a study on the empowerment of women through dairy co-operatives in Karnataka and revealed that most of the respondents were in the medium level of milk production *i.e*., 17.01 to 24.00 l/day/household (37.08%), followed by low (33.75%) and high level of milk production (29.17%).

Halakatti *et al.* (2007) conducted a study on the empowerment of women members through dairy training in Karnataka and noted that the milk production of the majority of the trained DWFs fell under the medium category (50.54%) whereas the majority of the untrained DWFs belonged to low milk production category.

2.1.7 Total Annual Income

Niketha *et al.* (2017) conducted a study on the empowerment of women through dairy co-operatives in Karnataka and revealed that the total annual income was significantly and positively correlated with the empowerment of women. Food, education, social security, etc. depends on the earnings of the person which directly affects empowerment positively.

Upretil and Bhardwaj (2018) studied the empowerment of women through women's dairy co-operative society in Uttarakhand and reported that the majority of the respondents had a high level of financial decision-making right at the household level (55%), followed by a medium level of financial decision making (33.34%), and low level of financial decision-making (11.67%).

Makarabbi *et al*. (2021) studied the impact of dairy co-operatives membership on the income and employment of dairy farmers in Karnataka state

and observed that the annual average net income for the dairy co-operative member household (Rs. 17,590.85) was comparatively higher than non-member of dairy co-operatives (Rs. 10,227.74).

2.1.8 Social participation

Gangwar *et al.* (2004) studied that the empowerment status of rural women from dairy co-operatives in Uttaranchal had revealed that formal social participation score of the respondents were then categorized as low (0-2.33), medium (2.34-5.67) and high (5.68-9) whereas, in informal social participation they were categorized as low (0-1), medium (2-3) and high (4-5).

Halakatti *et al.* (2007) conducted a study on the empowerment of women members through dairy training in Karnataka and noted that the majority of the trained women participated regularly in the activities of the dairy co-operatives (59.85%), followed by occasional participation (19.95%), whereas the majority of the untrained women members did not regularly participate in the activities of the dairy co-operatives (76%).

Kochar and Kaur (2015) studied the impact of women dairy co-operative societies on the empowerment of women members of WDCs in Ludhiana, Punjab, and reported that their participation in social activities such as participation in welfare activities was (50.67%) followed by participation in development work of village (46.67%) and organizing social/cultural functions in the village (42%).

Kaur *et al.* (2017) studied women's empowerment through self-help groups in the Jalandhar District of Punjab and revealed that the majority of respondents had a low level (91.43%) of participation followed by a medium level (5.71%) of social participation.

Niketha *et al.* (2017) conducted a study on the empowerment of women through dairy co-operatives in Karnataka and noted that social participation had a positive and highly significant correlation with the empowerment of women. Being members of WDCs helped them to be active socially in different social organizations which increased the mobility of the members constantly heading towards empowering them.

Upretil and Bhardwaj (2018) conducted a study on the empowerment of women through women dairy co-operative society in Uttarakhand and reported that social recognition of the majority of women members was found to be at a medium level (68.34%), followed by women members with a high level of social recognition (31.67%), and none of the women members had a low level of social recognition.

Thaker *et al.* (2020) studied women empowerment through milk producer's co-operative societies in the Saurashtra region of Gujarat, and observed that 51 percent of respondents participated in SHG, 32 percent in dairy co-operatives, 14 percent in gram panchayat, and only 3 percent have participated in SHGs and gram panchayat. They noted that there was a medium level of social participation in the study area.

2.1.9 Training received

Niketha *et al.* (2017) studied the empowerment of women through dairy co-operatives in Karnataka and revealed that most of the members received 7 to 8 training (59.17%) followed by 6 training (22.92%) and 8 training (17.91%).

Thaker *et al.* (2020) studied women empowerment through milk producer's co-operative societies in Junagadh, and revealed that overall (100%) of women respondents had received training provided by dairy cooperatives.

2.1.10 Information-seeking behaviour

Niketha *et al.* (2017) conducted the empowerment of women through dairy co-operatives in Karnataka and observed that information-seeking behavior had a highly significant positive relation with the empowerment of women.

Asha *et al*. (2020) studied the entrepreneurial behavior of women dairy farmers in the Ramanagara District of Karnataka and indicated that a majority of women dairy farmers had medium information-seeking behavior (64.44%) followed by high (24.44%) and low (11.11%) levels in Magadi taluka. In Ramanagara taluka vast majority (87.78%) had medium information-seeking behavior, whereas negligible (8.89% and 3.33%) respondents had high and low levels of information-seeking behavior respectively.

2.2 Level of empowerment of members through women dairy co-operatives

It was operationally defined as the process that facilitates women to realize their identity, capacity, strengths, decision-making, and power through Women Dairy Cooperatives.

Garai *et al*. (2012) analysed the empowerment of women through self-help groups through empirical evidence from West Bengal, and noted that members of SHG were more empowered than the non-members of SHG. As far as the aggregate women empowerment index was concerned, the mean score of the members of SHG and non-members of SHG was (68.07%) and (26.94%) respectively.

Singh and Kaur (2012) opined that (80%) of respondents achieved a 'high' level of empowerment followed by (16%) who achieved a 'low' level of empowerment and only (4%) were showing a 'medium' level of empowerment. They stated that women after being a member of SHGs empowered themselves in respect of decision-making roles regarding the general welfare of the family, education, and marriage of the children. They were also empowered in their technical and communicable skills which enhanced their participation in social activities.

Meera and Gowda (2013) studied the case study of rural women in dairy cooperatives in Karnataka and assessed women's economic empowerment of different WDCs in terms of increase in income, access to cash, access to credit, knowledge of husband's income, confidence in financial transactions, and aspiration for economic autonomy. Using a before-after approach, they noted that the annual dairy income has almost tripled after joining the WDCs, and 55 percent of the interviewed women have access to cash because of WDCs membership. They stated that the dairy co-operatives were playing a vital role by creating employment opportunities for women, access to income and access to credit and supporting towards economic empowerment of women.

Kochar and Kaur (2015) studied the impact of women dairy co-operative societies on the empowerment of women members of WDCs in Ludhiana, Punjab, and revealed that 76.77 percent of members of dairy co-

operative societies achieved a high level of empowerment followed by 16.77 percent achieved low level and only 6.77 percent members were empowered up to medium level. They also stated that women after becoming members of a dairy co-operative society and taking up the enterprise improved their financial conditions, communication skills; decision-making roles and they gained the confidence to share their views and feelings.

Kumari and Malhotra (2016) analyzed the impact of dairy co-operatives societies on the income and employment of women in the Begusarai district of Bihar and stated that women dairy co-operatives are instrumental in enhancing the income and employment of women dairy farmers.

Niketha *et al.* (2017) conducted the empowerment of women through dairy co-operatives in Karnataka and concluded that psychological empowerment (self-confidence, belief in self-abilities) was the first and foremost basic need for women to be empowered. They revealed that most of the empowerment dimensions were under medium level viz., social empowerment (37.50%), cultural empowerment (35.83%), psychological empowerment (42.50%), economic empowerment (44.16%), and technological empowerment (55%). However, other dimensions i.e. legal (45.42%) and political (42.50%) empowerment were in a low category. They also noted that rank-wise psychological empowerment was in the first rank followed by social, economic legal, cultural, technological and political empowerment. They also concluded that social participation, training received and information-seeking behaviour were playing a major role in empowering the women. WDCs not only play a core role in empowering rural women but also form a hub of the platform for the weaker sections of them to put forth their genuine problems. More emphasis has to be given to economic empowerment by training them on other income-generating activities like value addition for sustaining the WDCs. For a greater acceleration rate of empowerment, the future strategy must focus more and more on training and capacity building of members besides ensuring adequate linkage support.

Theresa (2017) studied the impact of cooperative society on the empowerment of rural women in Nigeria and revealed that cooperative societies impact significantly the living standard of its beneficiaries in any of their empowerment programs and these cooperative societies help in community development and the alleviation of poverty in rural communities.

Upretil and Bhardwaj (2018) conducted women empowerment through the women's dairy co-operative society in Uttarakhand and stated that members of women's dairy co-operative societies were more empowered in comparison to non-members. Most of the respondents (78.34%) from the member's group had a medium level of empowerment, 21.67 percent with high empowerment extent and none of the members were found a lower empowerment status. In the case of non-members, 88.34 percent of the respondents had a medium level of empowerment followed by 6.67 percent with a low level of empowerment and only five percent of the non-members were found at a high level of empowerment.

Dash *et al.* (2020) analysed the role of the dairy cooperative society in empowering women in rural Odisha and reported that there was a significant change in the economic condition of the women after joining the WDCs. The government incentives like training and awareness program, easy marketing of milk through WDCS, regular income, and employment has motivated many women wage earners in the area to take up dairy farming. There was an improved sense of economic independence felt by the cooperative members after joining the milk Union. The self-confidence of these women to face situations like food shortage, and drought situation has increased. They can provide better education to their children with dairy income. Women dairy co-operatives are being instrumental in providing employment and income for member dairy farmers resulting in the empowerment of rural women.

Thaker *et al.* (2020) revealed that women's empowerment through milk producer's co-operative societies in Junagadh, and dairy co-operative influenced women members which resulted in increased women empowerment personally by increasing their self-confidence, belief in self-abilities, courage to deal with

social aspects and different institutions. It implies that women members of WDCs are working in the right direction as more members are feeling educationally empowered. The dairy cooperative has made a positive impact on women members by increasing milk production, income, family assets, and opening a personalized bank account, and control on expenditures and savings of households, and boosting their confidence to express their power and rights.

Makarabbi *et al*. (2021) studied the impact of dairy co-operatives membership on the income and employment of dairy farmers in Karnataka state and stated that overall the dairy co-operative societies had a positive influence on income and employment for dairy farmers in all the regions of Karnataka. Hence, dairy farmers should be made aware of the benefits of DCS and should be encouraged to become a member of these DCS.

2.3 Constraints faced by members of women dairy co-operatives

Halakatti *et al.* (2007) conducted a study on the empowerment of women members through dairy training in Karnataka and noted that most of the respondents faced constraints concerning the non-availability of artificial insemination facilities (74%) followed by a lack of loan facilities (52%), lack of knowledge in identifying diseases in animals (50%), non-availability of veterinary aid in time (27%) and high cost of commercial cattle feed (24%).

Meena *et al.* (2013) analysed the constraints of women dairy co-operative societies in the adoption of animal husbandry practices and revealed that the member and non-member respondents perceived major constraints in terms of infrastructural and technical matters in the adoption of improved animal husbandry practices. The economic constraints were perceived least in the adoption of improved animal husbandry practices by both members and non-members respondents. There was a similarity between the rank assigned by member and non-members adopters in different aspects of infrastructural, technical and economic constraints. A correlation existed between overall constraints faced by members and non-members adopters of animal husbandry practices.

Srilatha (2013) studied the constraints in the management of dairy micro enterprises faced by women entrepreneurs of Andhra Pradesh and observed that the majority of the women entrepreneurs (80.00%) expressed bad marketing facilities as a major problem followed by a lack of consultancy and counseling services (67.50%), and competition with other microenterprises for limited local markets (66.66%).

Bhoj *et al.* (2014) noted the mean scores of the main constraints (Rank-I) faced by the members in scaling up dairy production are high cost of feed (1.6), nonavailability of indigenous bulls of high genetic merit (1.4), non-availability of emergency veterinary services (0.95), less knowledge about marketing strategies (1.02), lack of pecuniary assistance for starting new enterprise (1.13) and untimely availability of credit (0.37), but the intensities were lower than non-members concerning breeding, marketing and financial components.

Fatima (2014) conducted a study on women dairy farmers in the Madurai district and observed that women dairy farmers faced major constraints in the study area were a shortage of feed for cattle followed by veterinary services, late payment by purchasers, sickness of dairy animals, and lack of proper management.

Dash and Sarangi (2017) conducted a study on the economic empowerment of rural women through dairy farming: A case study of sidheswari women's milk producers union in Odisha and observed major constraints faced by the women farmers were sickness of dairy animals, irregular dividend payments, lack of improved breed cows, lack of full-time employment opportunity in dairy and less profitability due to high price of cattle feed. Most of the women farmers are not satisfied with the extension advisory services as well as training programs.

Niketha *et al.* (2018) conducted a study on the constraints faced by the members of women through dairy co-operatives in Karnataka and revealed that the majority of the women perceived that illiteracy was their foremost personal constraint, family members do not render help in household work, lack of support from family to participate in cultural and community activities, multipurpose

workload, high cost of veterinary medicines, lack of interest in political activities, lack of technical inability in handling mobile, computers or internet, duration of meeting was too long and inadequate space for the office of WDC. The area of study was lacking infrastructural facilities, members were overloaded with multi-faceted responsibilities, high cost of veterinary medicines, etc., and therefore, if these facilities could be provided to WDC members then their dairy farming might become more productive as well as profitable. To have smooth functioning of WDCSs, the impediment needs to be removed.

Materials & Methods

CHAPTER III

MATERIALS AND METHODS

The contents of this chapter are divided into the following sections,

3.1 Research design

3.2 Locale of the study

3.3 Sampling procedure

3.4 Theoretical orientation

3.5 Variables and their measurement

3.6 Data collection and analysis

3.7 Statistical tools used for data analysis

3.1 Research design

The present study utilized an ex-post facto research design because the phenomena had already occurred. Ex-post facto research is well-defined as a systematic exploratory study in which the researcher has no direct control over independent variables because either their materialization has already happened or they are not inherently manipulated. This influences relations among variables, which were made without direct intervention from a concurrent variation of independent variables. Hence, the research design is of an ex-post facto type. The purposive sampling technique was used for the selection of state and district while the random sample technique was used for the selection of respondents.

3.2 Locale of the study

The study was carried out in the Pune and Kolhapur districts of western Maharashtra. According to the 20^{th} livestock census, the entire bovine population in the Pune division is 47,37,358 people, making it the state's biggest bovine population. Similarly, the Pune division has the highest density of milk production. Women's dairy co-operatives are one of the major businesses in the western region of Maharashtra. Maharashtra is India's seventh-largest milk producer, with numerous cooperatives' headquarters.

Maharashtra state was located in the western part of peninsular India. It is situated in the central western region of the country. Maharashtra, which has a magnificent Arabian Sea coast on the western side of the state, is made up of the high Deccan plateau that lies between the Konkan and Ghats regions. The state is located between 18°58"N 72°49"E (18.96°N 72.82°E) and 18°58"N 72°49"E (18.96°N 72.82°E). Maharashtra is the third biggest state in the country, with a geographic area of 3,07,713 square kilometers, accounting for 9.4% of the country's total size. Maharashtra has a net irrigated area of 33,500 square kilometers. Wheat, rice, jowar, bajra, and lentils are the primary farmed food crops. Mangoes, grapes, bananas, and oranges are examples of fruit crops. Groundnut, cotton, sugarcane, turmeric, and tobacco are examples of cash crops. In January, the average temperature is over 25°C, and in April, it is above 32.5°C.

Every year, this region receives 500-700 mm of rain. According to the 2011 census, the state's population is 11,23,74,33 (9.29 %), which is second in the country after Uttar Pradesh. The population density is 365 persons per square kilometer. Rural regions account for 54.77 percent of the population, while urban areas account for 45.23 percent. Maharashtra is divided into five geographical areas; Vidharbha, Marathwada, Khandesh and Northern Maharashtra, Western Maharashtra, and Konkan. The entire bovine population of the Pune division is 4737358, according to the 20th Livestock Census. The districts of Pune and Kolhapur in Maharashtra were purposefully chosen for this study since both divisions have the highest bovine population in the state (https://maharashtraonline.in).

3.3 Sampling procedure

The proposed study was conducted in two districts of Western Maharashtra. Maharashtra state comprises 36 districts out of these, seven districts namely Pune, Satara, Sangli, Solapur, Kolhapur, Ahmednagar, and Nashik come under the western part of Maharashtra. Among these, two districts namely Pune and Kolhapur were selected purposively as these districts have more women dairy co-operatives and dairy farming is one of the major occupations. An ex-post facto research design was utilized for the present study. From each district, one taluka which was having the highest number of members of WDCs was selected

Figure 3.1 Map of India showing Maharashtra state

A

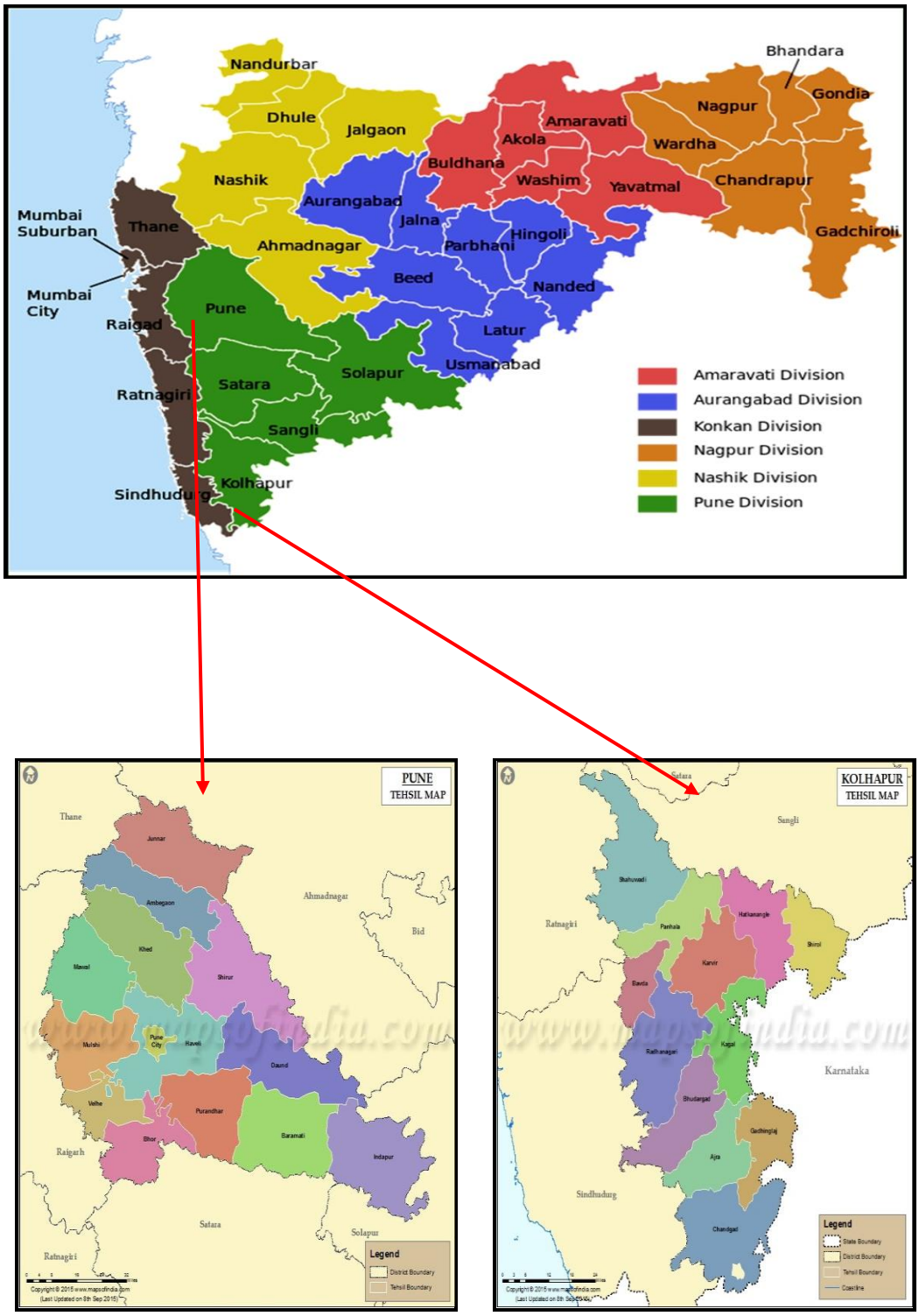


Figure 3.2 Map of Maharashtra with region and districts

B

Figure 3.3 Map of Pune District

Figure 3.4 Map of Kolhapur District

C

purposively. From these purposively selected women dairy co-operatives, 30 women members were randomly selected, thus total sample size was 240. A structured interview schedule by personal interview method was used for data collection. Selection of independent and dependent objective-oriented variables was selected and scored through scales and a structured schedule. Empowerment determinants *viz.* Social, economic, cultural, psychological, technological, legal, and political was finalized by a discussion with the experts and with the help of available literature. Statements were selected by the available literature, judge's score, and scored on the basis of the Likert scale. The level of women empowerment was calculated for each dimension using Dairy Women Empowerment Index (DWEI) developed by Niketha *et al.* (2017) with slight modifications. Collected data were analyzed using appropriate statistical tools.

3.3.1 Background information about the Pune district

Pune district has a geographical area of 15.642 sq. km. Pune district is bordered by Ahmadnagar district on the north-east, Solapur district on the south-east, Satara district on the south, Raigad district on the west, and Thane district on the north-west. It is the second-largest district in the state. Pune district is divided into Maval, Desh, and Ghatmatha. Sahyadri Mountain was located on the west side and the Deccan Plateau at the east side of the district. A total of nine tehsils in the Pune district are drought-prone. The irrigated area in Pune is about 1.16 lakh hectares. Pune has a tropical wet and dry (type Aw) climate, with the characteristics of a hot semiarid climate (type BSh) climate with average temperatures ranging between 20 and 28 °C (68 and 82 °F) Pune experiences three seasons: summer, monsoon, and winter. Typical summer months are from mid-March to mid-June, with maximum temperatures sometimes reaching 42 °C (108 °F). The warmest month in Pune is May. The city often has heavy dusty winds in May, with humidity remaining high. Even during the hottest months, the nights are usually cool due to Pune's high altitude. The highest temperature recorded was 43.3 °C (109.9 °F) on 30 April 1897. The monsoon lasts from June to October, with moderate rainfall and temperatures ranging from 22 to 28 °C (72 to 82 °F). Most of the 722 mm (28.43 in) of annual rainfall in the city falls between June and September, and July is the wettest month of the year. Hailstorms are not unheard of. For most of December

and January the daytime temperature hovers around 26 °C (79 °F) while night temperatures are below 9 °C (48 °F), often dropping to 5 to 6 °C (41 to 43 °F). The lowest temperature recorded was 1.7 °C (35 °F) on 17 January 1935. The main crops of the district are Bajra, Jowar, Wheat, Rice, Gram, Sugarcane, Groundnut, Sunflower, Pulses, and Grapes. The rainfall is unpredictable in tune with the Indian monsoon. According to the 2011 census, the population of the district is 94,26,959. According to the 20th Livestock Census, the total bovine population of the Pune district is 11,44,893. (https://ahd.maharashtra.gov.in)

3.3.2 Background information about Kolhapur district

Kolhapur District is a district of Maharashtra state in western India, surrounded by Sahyadri mountains, with an area of 7,692 square kilometers. This district comes under Pune Division. The district of Kolhapur is surrounded by the Sangli district on the east as well as the north side, the north-west is surrounded by the Ratnagiri district, the south-west is surrounded by the Sindhudurg district, and the south direction is surrounded by the Belgaum district of Karnataka state. All around the year, the city has a pleasant climate due to the Sahyadri mountain ranges surrounding the city. Kolhapur city is situated on the banks of the Panchganga River. The altitude of this area is situated at 1900 meters. It is a city known for its historical forts, temples, and royal places of former royals. Kolhapur is a modern and industrialized city.

According to geological and geomorphological structure, the soil of the district is classified into three types i.e., black soil, laterite soil, and brownish well-drained soil. Kolhapur's climate is a blend of coastal and inland elements common to Maharashtra. The temperature has ranged between 10 to 35°C. Summer in Kolhapur is comparatively cooler but much more humid than in neighboring inland cities. The city receives abundant rainfall from June to September due to its proximity to the Western ghats. The heavy rains often lead to severe flooding during this month. The main crops of the district are rice, jowar, sugarcane, cotton, groundnut, and soybean. According to the 2011 census, the total population of Kolhapur district was 38,76,001 with 1,980,658 males and

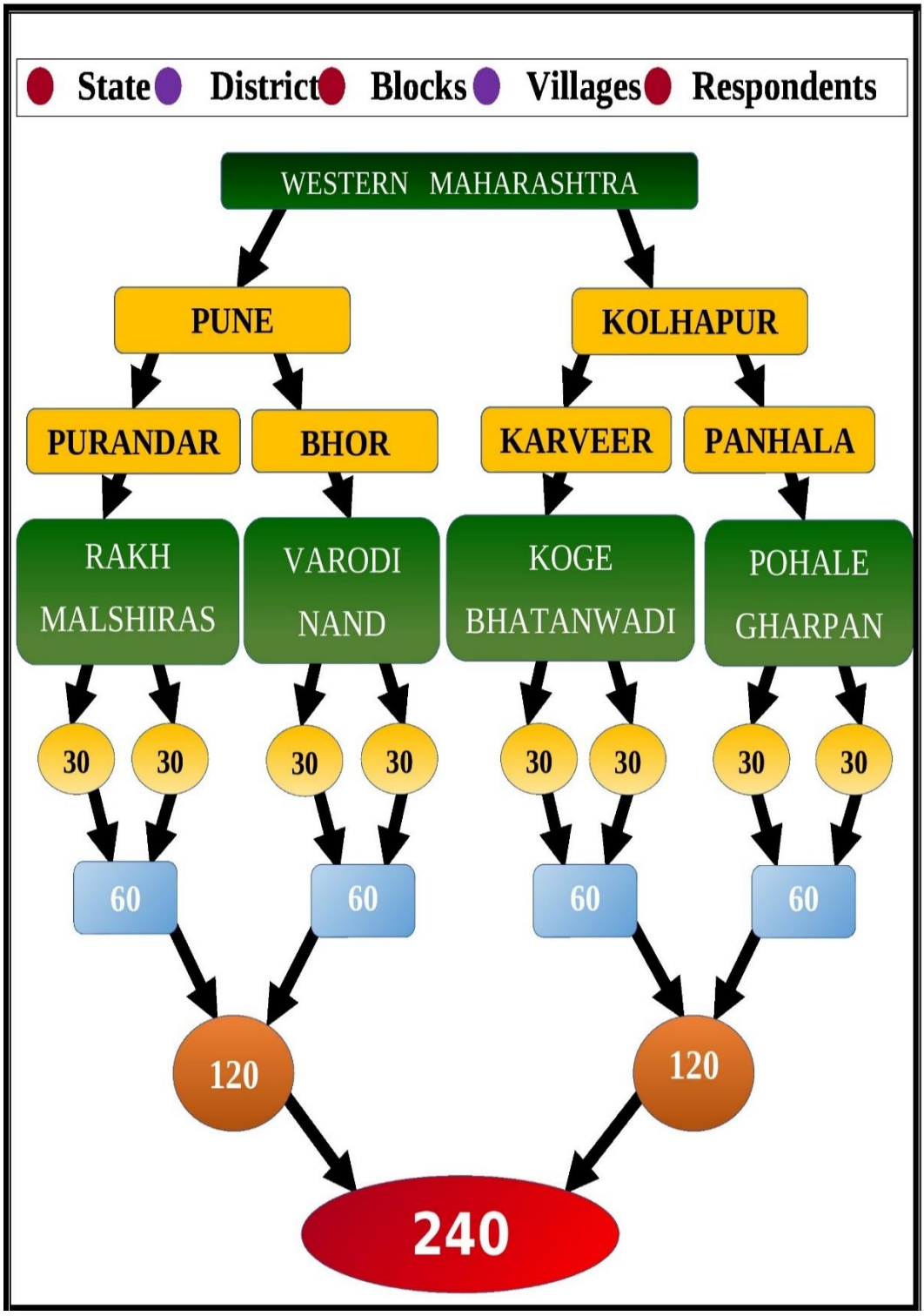


Figure 3.5 Sampling procedure of the study

D

Fig. 3.6 Photographs of data collection

E

Fig. 3.7 Photographs of data collection

F

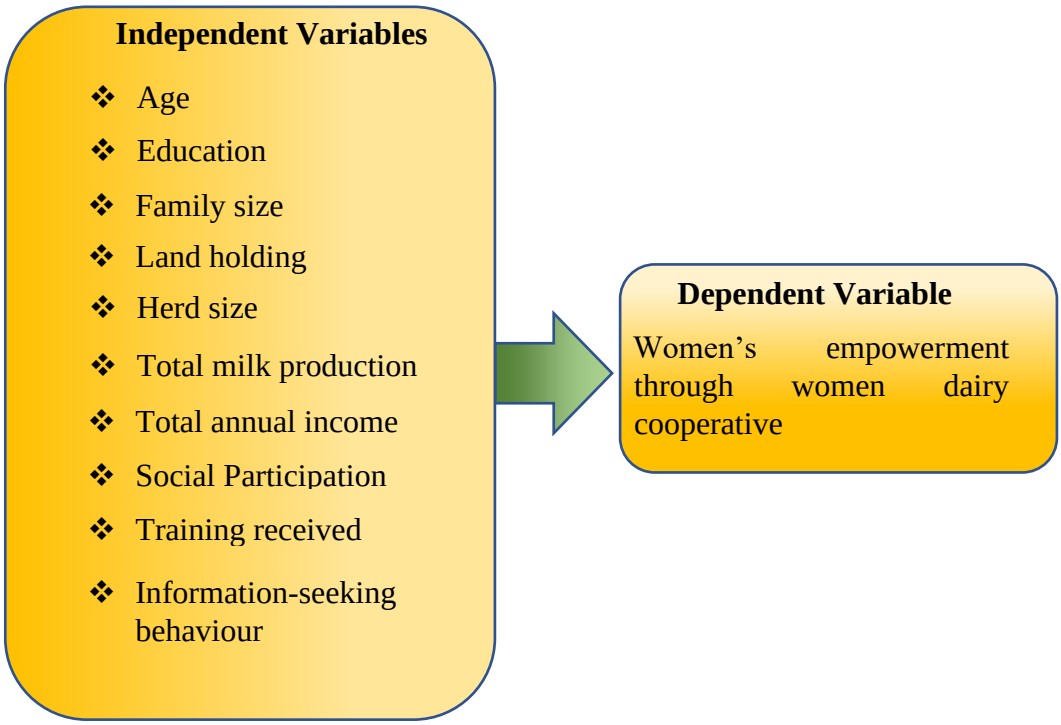
Fig. 3.8 Photographs of data collection

F

1,895,343 females. According to the 20th Livestock Census, the total bovine population of Kolhapur district is 7,15345. (https://maharashtra.gov.in)

3.4 Theoretical orientation

The major objective of theoretical orientation is to describe the concepts and variables used in the study for empirical investigation. In the present investigation, women empowerment through women's dairy co-operatives was studied.



3.5 Variables and their measurement

The variables in this study were chosen after a detailed search of the literature and consultation with the experts. The dependent and independent variables selected for the study have been depicted in the following conceptual framework.

Variables selected for the present study and their measurements are presented in Table 3.1

Table 3.1 Variables and their measurements

Sr. No.	Variables	Measurements
1	Age	Direct questioning
2	Education	Direct questioning
3	Family size	Direct questioning
4	Land Holding	Classification reported by GOI, 2001
5	Herd size	Direct questioning
6	Total Milk production	Direct questioning
7	Total Annual Income	Schedule was developed
8	Social participation	Schedule was developed
9	Training Received	Direct questioning
10	Information seeking behaviour	Schedule was developed
11	Empowerment of women through women dairy co-operatives	DWEI Index was developed by Nikita *et al.*, (2017) with slight modifications

3.5.1 Operational definitions of variables and terminology used in the present study

3.5.1.1 Age

It refers to the chronological age of the respondent at the time of the investigation. The respondents were classified into the following three categories based on mean and standard deviation i) Young age group (<Mean - SD), ii) Middle age group (Mean ± SD), and iii) Old age group (> Mean + SD). The results were expressed in terms of frequency and percentage.

Table 3.2 Age of women members of WDCs

N = 240

Sr. No.	Categories	Age in years
1	Young age group (<Mean - SD)	Up to 34
2	Middle age group (Mean ± SD)	34 to 51
3	Old age group (> Mean + SD)	Above 51

Mean: 42.35 SD: 8.81

3.5.1.2 Education

It denotes the formal education acquired by the respondent through schooling at the time of the interview. The direct questioning method was followed to know the education level of the respondents. The education was categorized into five categories viz. Illiterate, Primary, Secondary, Higher Secondary, and Graduation. The respondent's education has been measured in terms of frequency and percentage.

Table 3.3 Education level of women members of WDCs

N = 240

Sr. No.	Categories
1	Illiterate
2	Primary (Up to 4th std.)
3	Secondary (5th to 10th std.)
4	Higher Secondary (11th and 12th)
5	Graduation

3.5.1.3 Family size

The family has taken as a group of closely related persons living together in a single household with a common kitchen. The respondents were grouped into small, medium, and large family size categories based on mean and standard deviation. The responses were expressed in terms of frequency and percentage.

Table 3.4 Family size of women members of WDCs

N=240

Sr. No.	Categories	Number of Members
1	Small family size (< Mean - SD)	Up to 4
2	Medium family size (Mean ± SD)	4 to 7
3	Large family size (> Mean + SD)	More than 7

Mean: 5.51 SD: 1.84

3.5.1.4 Landholding

It was defined as the total number of hectares of land possessed by the respondents. The respondents were classified according to the classification reported by GOI, 2001. The direct questioning method was followed to work out the total land holding of the respondents. The results were expressed in terms of frequency and percentage.

Table 3.5 Landholding of women members of WDC

N=240

Sr. No.	Categories	Size
1	Landless	0 hector
2	Marginal	Less than 1 hector
3	Small	1-2 hectors
4	Semi-medium	2-4 hectors
5	Medium	4-10 hectors
6	Large	More than 10 hectors

3.5.1.5 Herd size

It was defined as the total number of cattle or buffaloes possessed by the respondents at the time of the investigation. The respondents were grouped into small, medium, and large based on mean and standard deviation. The responses were expressed in terms of frequency and percentage.

Table 3.6 Herd size of women members of WDCs

N = 240

Sr. No.	Categories	Size
1	Low (< Mean - SD)	Up to 4
2	Medium (Mean ± SD)	4 to 9
3	High (> Mean + SD)	More than 9

Mean: 6.19 SD: 2.52

3.5.1.6 Total Milk production

Milk production is defined as the total quantity of milk production in a household by all the milch animals, one day before investigation. The respondents were grouped into low, medium, and high categories on the basis of mean and standard deviation. The results were expressed in terms of frequency and percentage.

Table 3.7 Milk production by women members of WDCs

N = 240

Sr. No.	Categories	Milk production (liters/day)
1	Low (< Mean - SD)	Up to 20
2	Medium (Mean ± SD)	20 to 50
3	High (> Mean + SD)	More than 50

Mean: 35.15 SD: 15.31

3.5.1.7 Total Annual Income

Annual income was obtained by the respondents' total income within a year from all resources like dairy farming, animal husbandry, agriculture, business, service, and other resources. The required information were collected through the structured interview schedule. The respondents were grouped into low, medium, and high categories on the basis of mean and standard deviation. The results were expressed in terms of frequency and percentage.

Table 3.8 Total annual income of women members of WDCs

N=240

Sr. No.	Categories	Income (Rs.)
1	Low (< Mean - SD)	Up to 83,241
2	Medium (Mean ± SD)	83,241 to 2,09,113
3	High (> Mean + SD)	More than 2,09,113

Mean: 1,46,177.08 SD: 62,936.10

3.5.1.8 Social participation

Social participation indicates the respondent's enrolment in social organizations. The schedule was developed and results were presented on the basis of frequency and percentage. The responses elicited from respondents were quantified by assigning the scores as 2, 1, and 0 for Member, Office bearer, and Non-member responses. To obtain the total score for each of the respondents, all the scores were summed up and classified as low, medium, and high levels of social participation on the basis of mean and standard deviation.

Table 3.9 Social participation of women members of WDCs

N = 240

Sr. No.	Categories	Social participation
1	Low (< Mean - SD)	Up to 2
2	Medium (Mean ± SD)	2 to 3
3	High (> Mean + SD)	More than 3

Mean: 2.77 SD: 0.63

3.5.1.9 Training received

It is operationally defined as the training of training received by the respondents. The direct questioning method was followed to get the information on training received by the respondents. The results were recorded in terms of frequency and percentage.

3.5.1.10 Information-seeking behaviour

Information-seeking behaviour refers to obtaining information in various contexts through different information sources. The schedule was developed and results were presented on the basis of frequency and percentage. The women of dairy co-operatives get the information either by their seeking or from various sources of information. In the present study, information-seeking behaviour was measured by scores given to the different information sources as never, seldom, often, and frequently with scores of 0, 1, 2 and 3, respectively. The total score was calculated for each respondent by summing up scores for all information collected by the respondent. Based on the scores, respondents were classified into low, medium, and high categories of information-seeking behaviour.

Table 3.10 Information-seeking behaviour of women members of WDCs

N = 240

Sr. No.	Categories	Sources of information
1	Low (< Mean - SD)	Up to 13
2	Medium (Mean ± SD)	14 to 18
3	High (> Mean + SD)	More than 18

Mean: 15.98 SD: 2.45

3.5.1.11 Level of empowerment of members through women members of WDCs

It was operationally defined as the process through which women members of women dairy co-operatives facilitate to realize their identity, capacity, strengths, power, and decision-making. A Dairy Women Empowerment Index (DWEI) developed by Nikita *et al*., (2017) with slight modifications was used to measure the empowerment of women members of WDCs.

Selection of Dimensions: Empowerment has multidimensional aspects. For the identification of women empowerment dimensions, the researcher had a relevant discussion and reviewed the different literature related to the empowerment of women, through dairy co-operatives. Broadly, these dimensions were grouped into seven categories *viz.*, social empowerment, Economic empowerment, psychological empowerment, cultural empowerment, political empowerment, legal empowerment and technological empowerment. The identified dimensions of dairy women empowerment were operationalized as follows:

Social empowerment: It was operationally defined as the social status of dairy women members with respect to decision-making in the family as well as community, freedom of mobility and involvement in various social activities. Based on the scores, respondents were classified into low, medium, and high categories of social empowerment.

Table 3.11 Social empowerment of women members of WDCs

N = 240

Sr. No.	Categories	Social empowerment
1	Low (< Mean - SD)	Up to 23
2	Medium (Mean ± SD)	23 to 29
3	High (> Mean + SD)	More than 29

Mean: 25.88 SD: 3.13

Cultural empathy empowerment: It was operationally defined as respondent's involvement in different cultural activities carried out by WDCs. Based on the scores, respondents were classified into low, medium, and high categories of cultural empowerment.

Table 3.12 Cultural empowerment of women members of WDCs

N = 240

Sr. No.	Categories	Cultural empowerment
1	Low (< Mean - SD)	Up to 35
2	Medium (Mean ± SD)	35 to 40
3	High (> Mean + SD)	More than 40

Mean: 37.56 SD: 2.83

Psychological empowerment: It was operationally defined as the mental stability of respondents with respect to self-confidence, self-reliance, courage, and self-image in the social system. Based on the scores, respondents were classified into low, medium, and high categories of psychological empowerment.

Table 3.13 Psychological empowerment of women members of WDCs

N = 240

Sr. No.	Categories	Psychological empowerment
1	Low (< Mean - SD)	Up to 37
2	Medium (Mean ± SD)	37 to 39
3	High (> Mean + SD)	More than 39

Mean: 38.07 SD: 1.40

Economic empowerment: It was operationally defined as the control over resources, access to financial sources, and accumulation of financial capital. Based on the scores, respondents were classified into low, medium, and high categories of economic empowerment.

Table 3.14 Economic empowerment of women members of WDCs

N = 240

Sr. No.	Categories	Economic empowerment
1	Low (< Mean - SD)	Up to 37
2	Medium (Mean ± SD)	37 to 44
3	High (> Mean + SD)	More than 44

Mean: 40.71 SD: 3.73

Political empowerment: It was operationally defined as awareness about the political institutions, accessing the political power, freedom, and her own decision in voting and contesting for the election**.** Based on the scores, respondents were classified into low, medium, and high categories of political empowerment.

Table 3.15 Political empowerment of women members of WDCs

N = 240

Sr. No.	Categories	Political empowerment
1	Low (< Mean - SD)	Up to 20
2	Medium (Mean ± SD)	20 to 24
3	High (> Mean + SD)	More than 24

Mean: 21.59 SD: 2.05

Legal empowerment: It was operationally defined as the awareness and knowledge about the legislation related to women, children, and society**.** Based on the scores, respondents were classified into low, medium, and high categories of legal empowerment.

Table 3.16 Legal empowerment of women members of WDCs

N = 240

Sr. No.	Categories	Legal empowerment
1	Low (< Mean - SD)	Up to 30
2	Medium (Mean ± SD)	30 to 40
3	High (> Mean + SD)	More than 40

Mean: 34.82 SD: 4.98

Technological empowerment: It was operationally defined as the awareness, accessibility, and application of scientific knowledge and technology in the field

of the dairy enterprise. Based on the scores, respondents were classified into low, medium, and high categories of technological empowerment.

Table 3.17 Technological empowerment of women members of WDCs

N = 240

Sr. No.	Categories	Technological empowerment
1	Low (< Mean - SD)	Up to 44
2	Medium (Mean ± SD)	44 to 58
3	High (> Mean + SD)	More than 58

Mean: 51.05 SD: 6.62

Overall empowerment: It was operationally defined as the women having power and control over their own lives and self- empowerment through individual action, overall empowerment that is interpersonal, and social empowerment in the outcomes of social action. Based on the scores, respondents were classified into low, medium and high categories of overall empowerment.

Table 3.18 Overall empowerment of women members of WDCs

N = 240

Sr. No.	Categories	Overall empowerment
1	Low (< Mean - SD)	Up to 0.21
2	Medium (Mean ± SD)	0.21 to 0.25
3	High (> Mean + SD)	More than 0.25

Mean: 0.23 SD: 0.02

3.5.1.12 Level of empowerment under different dimensions

To know the level of empowerment, an index value of women empowerment was calculated for each dimension through the Dairy Women Empowerment Index (DWEI) which consists of a number of statements hence, their range of total scores was different. Therefore, the total score of each dimension was converted into the unit score by using simple range and variance as given below:

$$Uij = \frac{Yij - Min\ Yij}{Max\ Yj - Min\ Yj}$$

were,

U_{ij} = Unit score of the i^{th} respondents on the j^{th} dimension

Y_{ij} = Value of the i^{th} respondent on the j^{th} dimension

Max Y_j = Maximum score on the j^{th} dimension

Min Y_j = Minimum score on the j^{th} dimension

Thus, the score of each dimension ranges from 0 to 1 *i.e.,* when Yij is minimum, the score is 0 and when Yij is maximum the score is 1. Then the unit scores of each respondent were multiplied by the respective scale value of each dimension and summed up. Thus, the obtained score was divided by the sum of scale values in order to get the DWEI for each respondent.

$$DWEIi = \frac{\sum Uij * Sj}{\text{Sum of scale values}}$$

Were,

$DWEI_i$ = Dairy Women Empowerment Index

of i^{th} respondent

U_{ij} = Unit score of the ith respondent on jth component

Sj = Scale value of the jth component

$\sum$ = Sum

The status of respondents' empowerment was calculated based on the total index score of all the indicators.

3.5.1.13 Constraints faced by women members of WDCs

Constraints specify the problems or difficulties faced by women members of WDCs for different aspects. Constraints were measured through a schedule prepared for the purpose and responses for various constraints were obtained as more serious, serious, and not serious categories with respective scores of 3, 2, and 1. The score for each constraint was summed up. Higher the score the more severe the constraints as perceived by the respondents. Based on the responses, frequency and percentage were calculated and accordingly ranking was given.

3.6 Data collection and analysis

A structured interview schedule was developed by keeping in view the objectives of the study. After the selection of the study area and the nature of objectives prior to the preparation of information-collecting devices, a pilot study was conducted to gain first-hand knowledge of the study area. The schedule was rearranged, corrected, and finalized in light of experiences gained

out of such a pilot study for the actual collection of data. Data collection tools were prepared by consideration of various variables, objectives, and respondents. Based on the understanding of facts and related reviews, a semi-structured interview schedule was developed for the collection of data. Based on pretesting, the necessary modifications and changes were made to the interview schedule. Data were collected through personal interviews, observation, interaction dialogue, and detailed discussion with the members of women dairy co-operatives, along with their family members.

3.7 Statistical tools used for the analysis of data

The collected data were scored, compiled, tabulated, and subjected to various appropriate statistical tools to draw meaningful results and logical conclusions. Different statistical tools were used particularly relevant to the specific objectives of the present study. The analytical techniques used in this study included average, frequency, percentage, standard deviation, and coefficient of correlation. The statistical analysis was done with the help of computer software, namely MS Excel spreadsheet and SPSS 26 version.

Results & Discussion

CHAPTER IV

RESULTS AND DISCUSSION

The present study was undertaken to assess women's empowerment through women's dairy co-operatives in western Maharashtra. Accordingly, observations were made after the collection, tabulation and analysis of the data. The results of the present study were presented and discussed under the following subheads,

4.1 Socio-economic profile of members of women dairy co-operatives.

4.2 Level of empowerment of members through women dairy co-operatives.

4.3 Constraints faced by members of women dairy co-operatives.

4.1 Socio-economic profile of women members of WDC

4.1.1 Age

The distribution of respondents according to age is presented in Table 4.1 and Fig 4.1. It was categorized into young, middle and old age groups. Present findings revealed that, the majority of the respondents (69.16%) were from the middle age group followed by the young age group (14.58%) and old age group (16.25%) respectively.

Table 4.1 Distribution of women members of WDC according to their age

N=240

Sr. No	Category	Frequency	Percentage
1	Young age (<34 years)	35	14.58
2	Middle age (34-51 years)	166	69.16
3	Old age (>51 years).	39	16.25

It was observed that, the middle age group is commonly engaged in women's dairy co-operative activities as they shouldered the family responsibilities very efficiently. Similar findings were also recorded by Gadad and Kunnal, (2018) wherein, they reported that the majority of the farmers were in the middle age group (49.17%) followed by the old age group (40%) and young age group (10.83%) respectively. These observations were also in

harmony with the findings of Nikita *et al.* (2018), Ravinder and Umadevi, (2020), Kochar and Kaur (2015), and Kadam *et al*. (2014)

4.1.2 Education

The educational status of women members is expressed in Table 4.2 and Fig 4.2 which revealed that most of the women members in dairy co-operatives attended schooling secondary (40.83%) followed by higher secondary (25.41%), primary (17.08%), graduation (9.16%) and illiterate (7.5%) respectively.

Table 4.2 Distribution of women members of WDC according to their education

N = 240

Sr. No.	Category	Frequency	Percentage
1	Illiterate	18	07.50
2	Primary	41	17.08
3	Secondary	98	40.83
4	Higher Secondary	61	25.41
5	Graduation	22	09.16

This level of literacy could be due to the good educational environment in the study areas, positive attitude toward education and easy approachability to educational institutes. These observations are in agreement with the findings of Dash *et al.* (2020) wherein, they noted that the maximum number of women have a middle-class education level (29.4%) followed by an SSC level (20%) and higher secondary level of education (4%). Similar results were noted by Kochar and Kaur (2015) who reported that, most of the respondents had a certificate of competence (43.5%), completed a professional degree (29.9%) and completed higher agricultural education (26.6%) respectively.

4.1.3 Family size

The distribution of the respondents according to family size is presented in Table 4.3 and Fig 4.3.

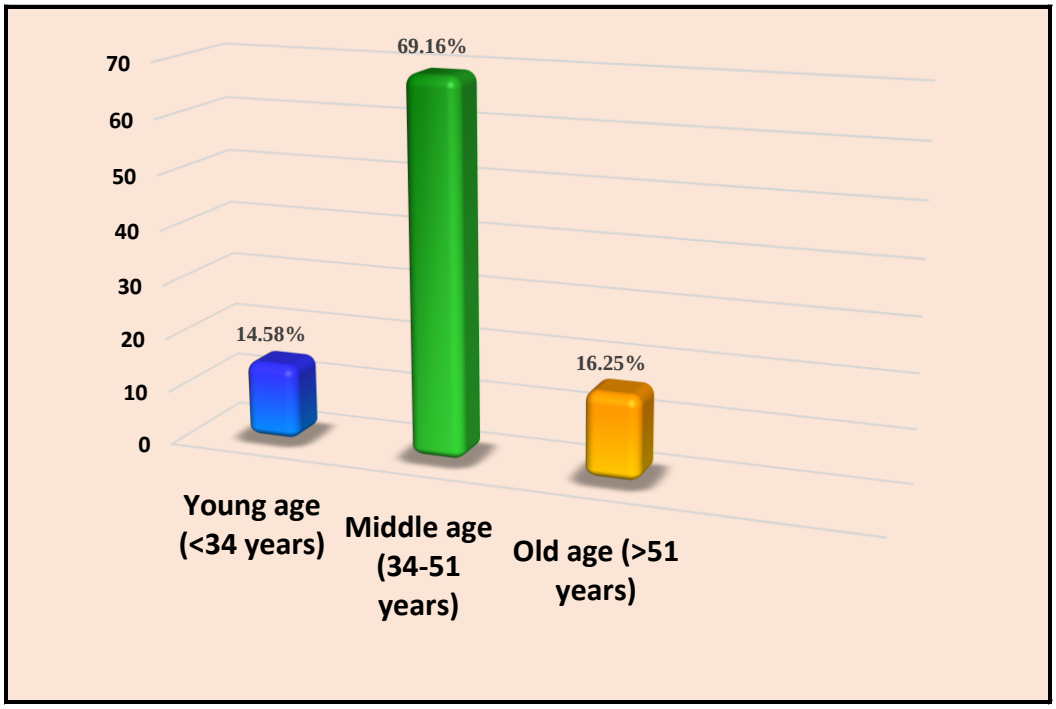


Figure 4.1 Distribution of women members of WDCs according to their age

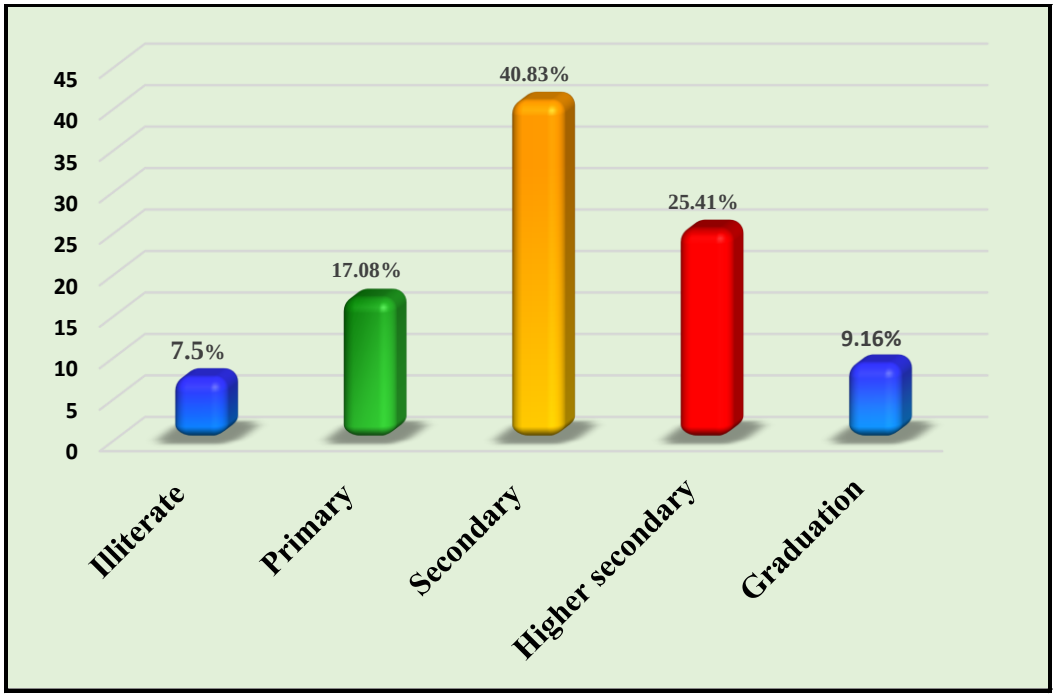


Figure 4.2 Distribution of women members of WDCs according to their education

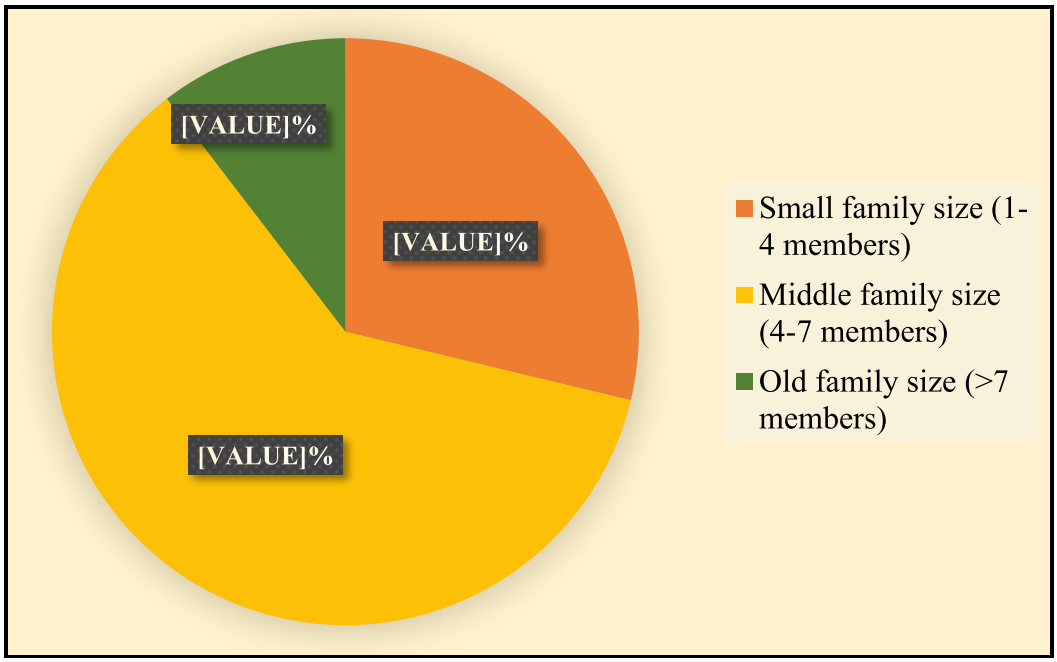


Figure 4.3 Distribution of women members of WDCs according to their family size

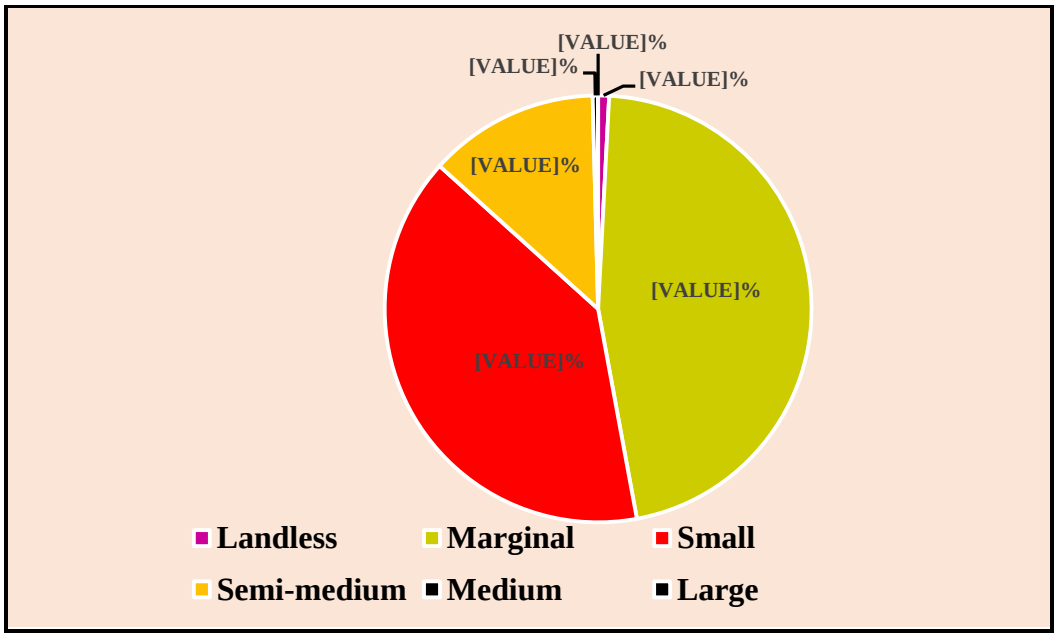


Figure 4.4 Distribution of women members of WDCs according to their land holding

Table 4.3 Distribution of women members of WDC according to their family size

N = 240

Sr. No.	Category	Frequency	Percentage
1	Small family size (1-4 members)	69	28.75
2	Medium family size (4-7 members)	146	60.83
3	Large family size (>7 members)	25	10.41

Results revealed that most of the women members of WDC (60.83%) had a medium family size followed by a small family size (28.75%) and a large family size (10.41%). The majority of women members of WDC belong to medium family size in the study area which might be due to most of the respondents living along with their close relatives. Medium family size was supportive for them in dairy enterprises. Kaur *et al*. (2017) reported similar findings that the majority (74.29%) of respondents belongs to medium family-size comprising 4 to 6 members followed by low family size category (28%). Parallel results were noted by Gadad and Kunnal, (2018) wherein, they observed that a maximum number of respondents belonged to medium family sizes up to 5-8 members (45.83%) followed by small family sizes up to 4 members (27.17%) and large family size more than 8 members (25%) respectively.

4.1.4 Land holding

The distribution of the respondents according to land size is presented in Table 4.4 and Fig 4.4.

Table 4.4 Distribution of women members of WDC according to their land size

N = 240

Sr. No.	Categories	Frequency	Percentage
1	Landless	02	00.83
2	Marginal	111	46.25
3	Small	95	39.58
4	Semi-medium	31	12.91
5	Medium	01	00.41
6	Large	00	00.00

Results showed that, most of the respondents were having marginal land size (46.25%) followed by small land size (39.58%), semi-medium land size (12.91%), landless (0.83%), medium land size (0.41%) respectively and nobody was in the large category of land holdings. The size of landholding might be decreasing due to the division of land over the generations and changes in family patterns as well as also due to land used for the industrial and private sectors for setting up big projects. Similar results were noted by Halakatti *et al.* (2007) wherein they noted that land holding of trained women members of dairy co-operatives had small and medium land holdings (39.90%), trained dairy farm women had big land holdings (13%), whereas the majority of untrained dairy farm women had landless or medium land holding category (39.90%) respectively and nobody has big-sized land holdings.

4.1.5 Herd size

The distribution of herd size of dairy animals is presented in Table 4.1.5 and Fig 4.5.

Table 4.5 Distribution of women members of WDC according to their herd size

N = 240

Sr. No.	Category	Frequency	Percentage
1	Small (up to 4 animals)	72	30.00
2	Medium (4-9 animals)	143	59.58
3	Large (above 9 animals)	25	10.41

From Table 4.5 and Fig 4.5, it was observed that most of the respondents (59.58%) had medium herd size followed by small herd size (30%) and large herd size (10.41%). It was noted that, most of the respondents possessed mostly 4-9 dairy animals as they were undertaking dairy farming along with agriculture. Halakatti *et al.* (2007) made similar observations and reported that, the majority of skilled dairy women members had crossbred cows (83.79%).

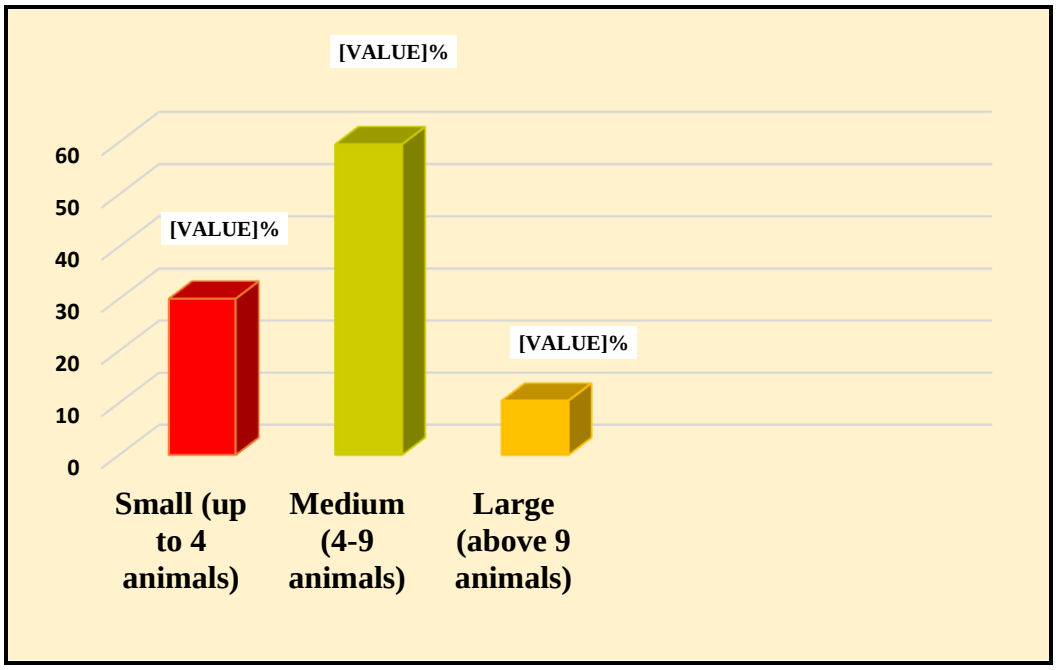


Figure 4.5 Distribution of women members of WDCs according to their herd size

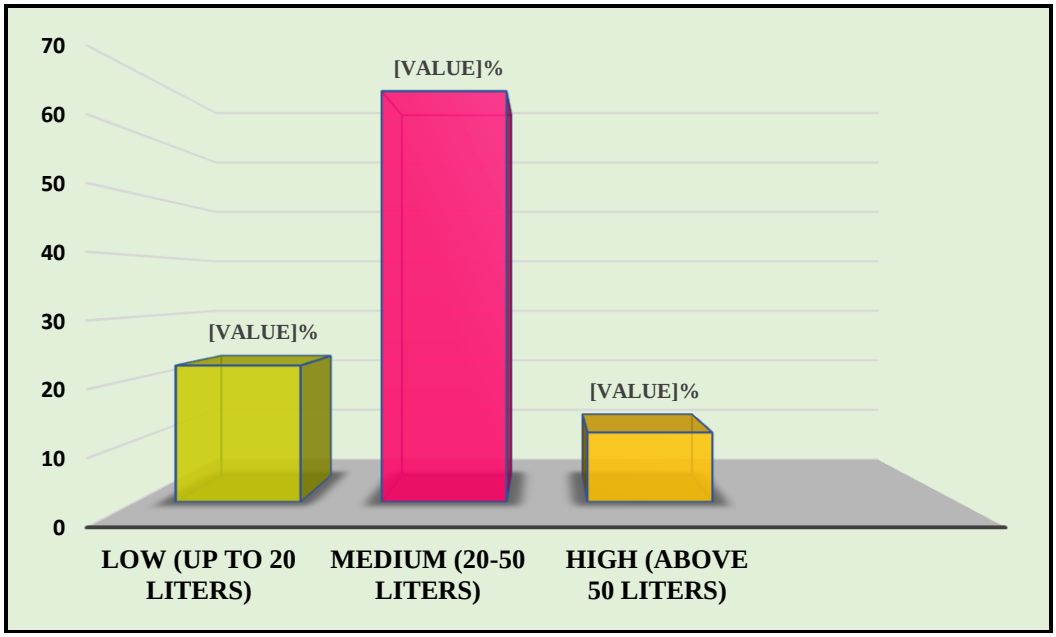


Figure 4.6 Distribution of women members of WDCs according to their milk production

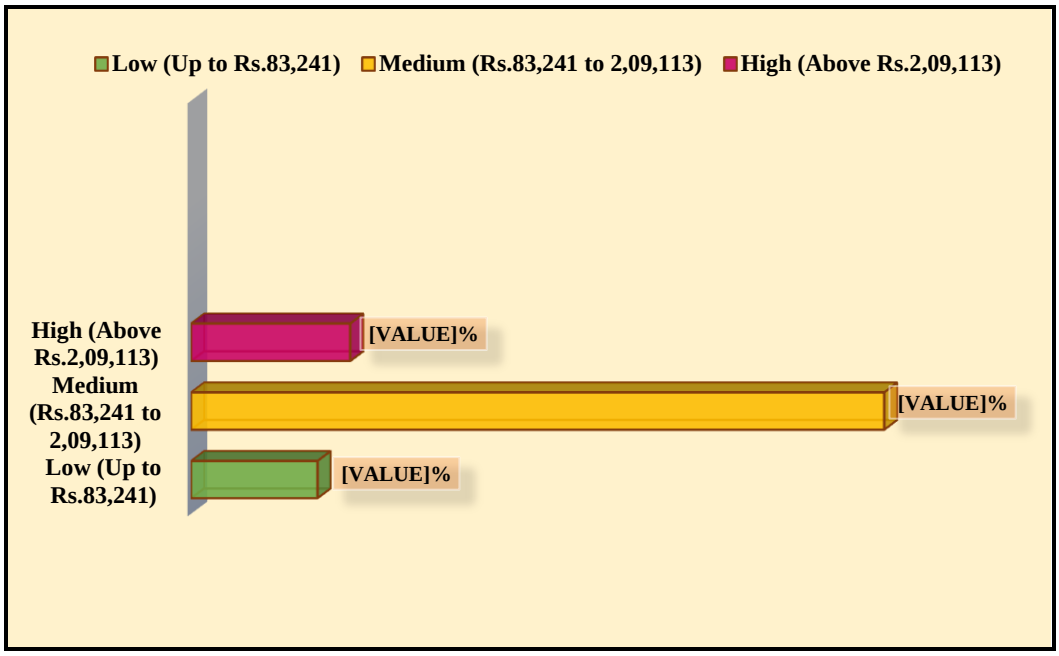


Figure 4.7 Distribution of women members of WDCs according to their annual income

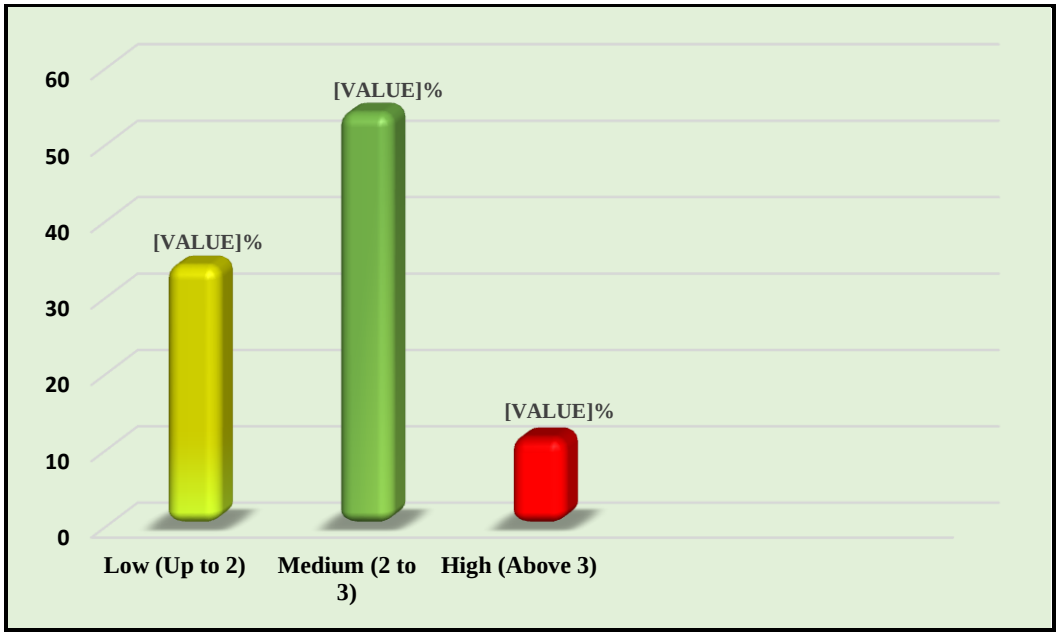


Figure 4.8 Distribution of women members of WDCs according to their social participation

4.1.6 Milk production

The distribution of the respondents according to milk production is presented in Table 4.6 and Fig 4.6.

Table 4.6 Distribution of women members of WDC according to their milk production

N = 240

Sr. No.	Category	Frequency	Percentage
1	Low (Up to 20 liters)	53	22.08
2	Medium (20-50 liters)	160	66.66
3	High (Above 50 liters)	27	11.25

The data on milk production of the dairy farmers presented in Table 4.6 and Fig 4.6 indicated that the maximum respondents belonged to the medium category of milk production (66.66%) followed by the low category (22.08%) and the high category (11.25%) of milk production. The above findings were coherent with the observations made by Niketha *et al.* (2017) wherein, they revealed that most of the respondents were in the medium level of milk production.

4.1.7 Annual income

The annual income of the dairy farmers is presented in Table 4.7 and Fig 4.7.

Table 4.7 Distribution of women members of WDC according to their annual income

N = 240

Sr. No.	Category	Frequency	Percentage
1	Low (Up to Rs.83,241)	31	12.91
2	Medium (Rs.83,241 to 2,09,113)	170	70.83
3	High (Above Rs.2,09,113)	39	16.25

esults revealed that, the majority of women members of women dairy co-operatives belonged to the medium-level annual income group 83,241 to 2,09,113 (70.83%), followed by a high-level annual income group (16.25%) and low-level annual income group (12.91%) respectively. Due to fertile soil, excellent irrigation systems and a financially sound subsidiary business, the study region is regarded as a well-developed location. Similar findings were

reported by Makarabbi *et al.* (2021) wherein, a majority of respondents come from the middle-income category.

4.1.8 Social participation

The social participation of WDCs members is presented in Table 4.8 and Fig 4.8. Present findings revealed that, the majority of respondents (54.16%) had a medium level of social participation followed by a low level (34.16%) and a high level (11.66%) of social participation. Similar results were supported by studies conducted by Thaker *et al.* (2020) and Upretil and Bhardwaj, (2018). It was observed that most of them were members of milk co-operative societies to fulfill the essentials of dairy farming including timely economic support.

Table 4.8 Distribution of women members of WDC according to their social participation

N = 240

Sr. No.	Categories	Frequency	Percentage
1	Low (Up to 2)	82	34.16
2	Medium (2 to 3)	130	54.16
3	High (Above 3)	28	11.66

4.1.9 Training Received

The distribution of the respondents according to training received is presented in Table 4.9 and Fig 4.9.

Table 4.9 Distribution of women members of WDC according to training received

N = 240

Sr. No.	Category	Frequency	Percentage
1	Yes	174	72.50
2	No	66	27.50

Results revealed that, the majority of the women members of WDC respondents had received training (72.50%) provided by dairy co-operatives. The importance of training is progressively realized and thus to upgrade the knowledge and skill of women members, dairy co-operatives organized various training programs. Similar findings were reported by Nikita *et al.* (2017).

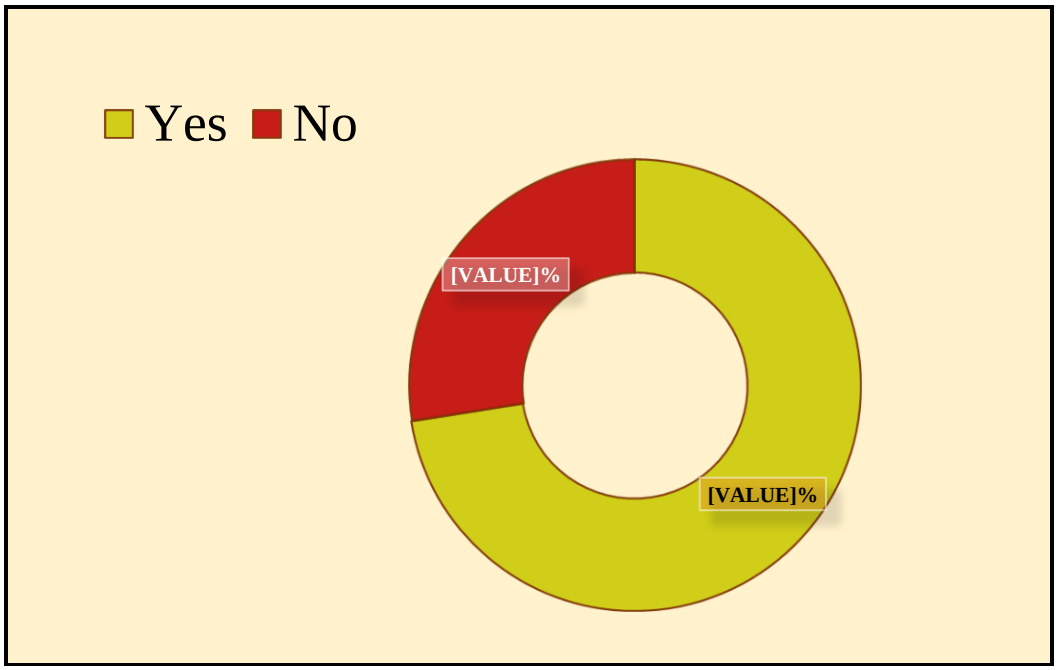


Figure 4.9 Distribution of women members of WDCs according to their training received

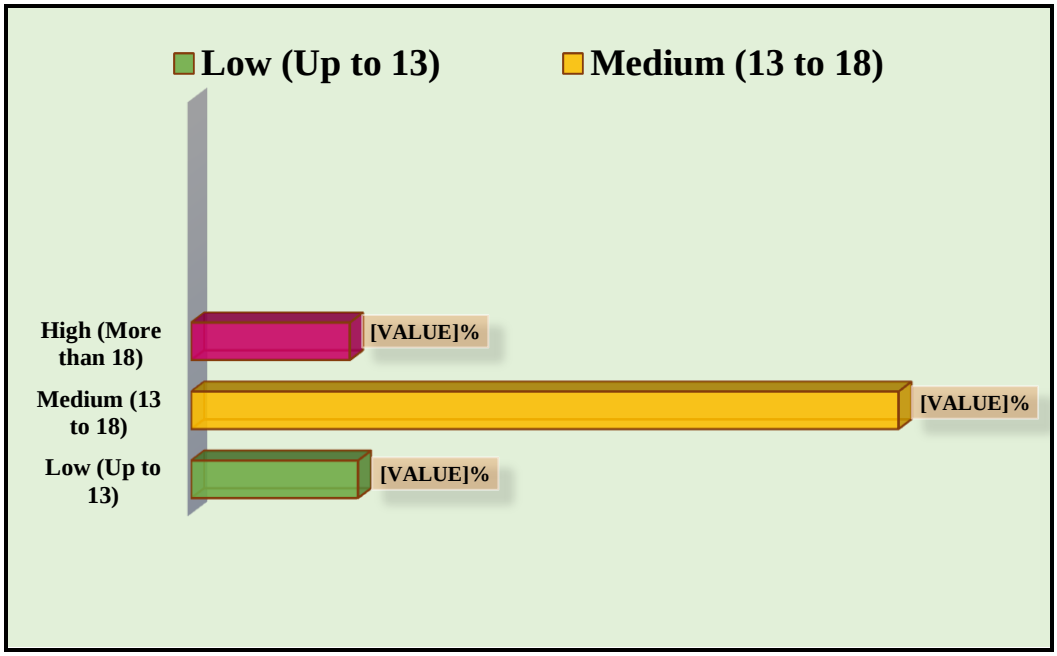


Figure 4.10 Distribution of women members of WDCs according to their information seeking behaviour

4.1.10 Information-seeking behaviour

Table 4.10 Distribution of women members of WDC according to them information seeking behaviour

N = 240

Sr. No.	Categories	Frequency	Percentage
1	Low (Up to 13)	41	17.08
2	Medium (13 to 18)	174	72.50
3	High (More than 18)	25	10.41

The information-seeking behaviour of WDCs members are presented in Table 4.10 and Fig 4.10. Present findings revealed that, the majority of respondents (72.50%) had a medium level of information-seeking behaviour followed by a low level (17.08%) and a high level (10.41%) of information-seeking behavior. It was observed that, most of the women members of WDCs received information from veterinary officers, village-level workers LSS, and neighbours/friends/relatives. Also, they obtained information from social media.

4.2 Level of empowerment of members through WDCs

Table 4.11 Distribution of the respondents according to different dimensions of empowerment

N = 240

Sr. No.	Sources of information	Frequency	Percentage
1	**Social Empowerment**		
	Low (up to 22)	47	19.58
	Medium (22 to 29)	139	57.91
	High (above 29)	54	22.50
2	**Cultural Empowerment**		
	Low (up to 35)	57	23.75
	Medium (35 to 40)	150	62.50
	High (above 40)	33	13.75
3	**Psychological Empowerment**		
	Low (up to 37)	82	34.16
	Medium (37 to 39)	119	49.58
	High (above 39)	39	16.25
4	**Economic Empowerment**		
	Low (up to 37)	51	21.25
	Medium (37 to 44)	111	46.25
	High (above 44)	78	32.50

5	**Political Empowerment**		
	Low (up to 19)	89	37.08
	Medium (19 to 24)	138	57.50
	High (above 24)	13	05.41
6	**Legal Empowerment**		
	Low (up to 30)	52	21.66
	Medium (30 to 40)	144	60.00
	High (above 40)	44	18.33
7	**Technological Empowerment**		
	Low (up to 30)	59	24.58
	Medium (30 to 40)	154	64.16
	High (above 40)	27	11.25
8	**Overall Empowerment**		
	Low (up to 0.21)	74	30.83
	Medium (0.21 to 0.25)	144	60.00
	High (above 0.25)	22	09.16

The results presented in Table 4.11 indicated that most of the women members of WDCs had a medium level of social empowerment (57.91%) followed by high (22.50%) and low (19.58%) levels of empowerment. It was revealed that most of the respondents were in the medium categories of social empowerment. It might be due to the concept of WDCs is not deeply rooted and it is at a premature stage of early development. WDCs seem to be a promising platform for making women self-sustainable. Rural women have been participating in economic ventures for which WDCs are acting as a platform. Women are providing milk to WDCs at a similar location, which led to a gathering, increased interaction and increased participation. Respondents stated that as a result, they got to know one another in the community, and unneeded disputes were settled. The women and other people worked together, creating a positive atmosphere that contributed to the health of the village as a whole. Women had interactions with government representatives as a result of the WDCs' activities, which helped them to overcome their hesitations. In addition to giving them more freedom of expression, movement, and participation, women's successful management of dairy cooperatives raised their status among villagers and villages. Singh and Kaur, (2012) found similar results stating that, women who participated in SHGs were empowered to make

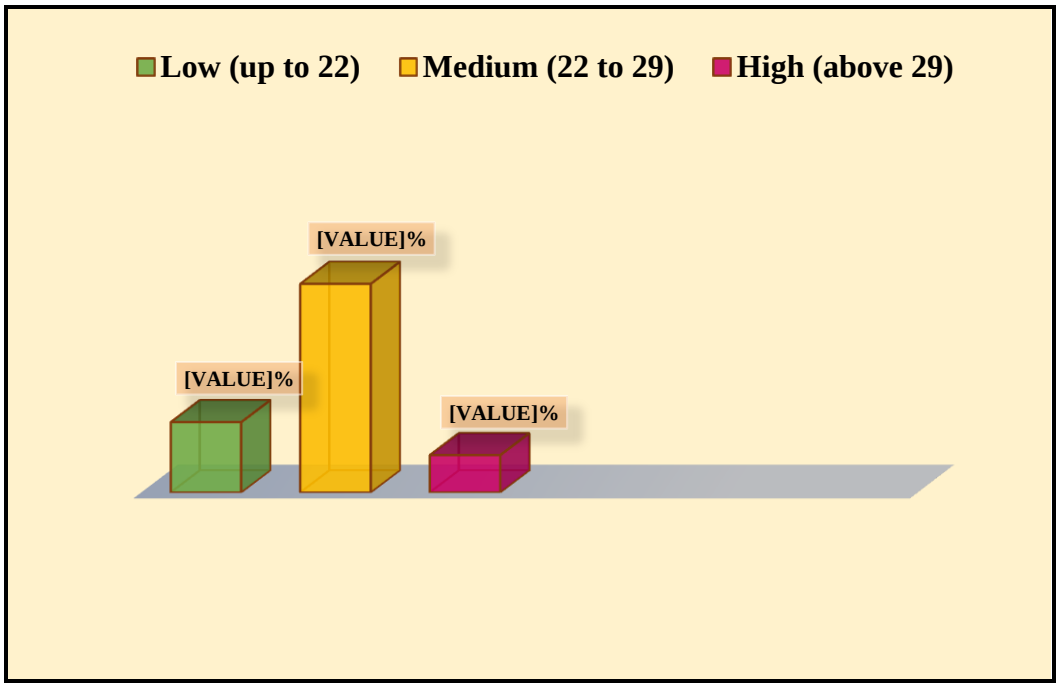


Figure 4.2.1 Distribution of women members of WDCs according to their social empowerment

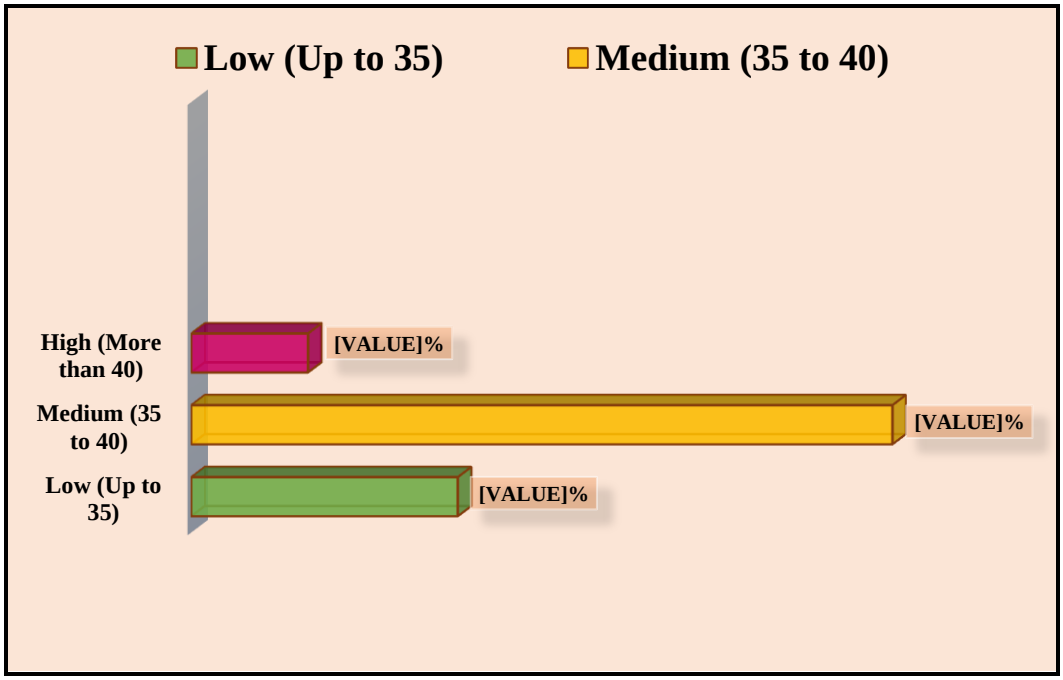


Figure 4.2.2 Distribution of women members of WDCs according to their cultural empowerment

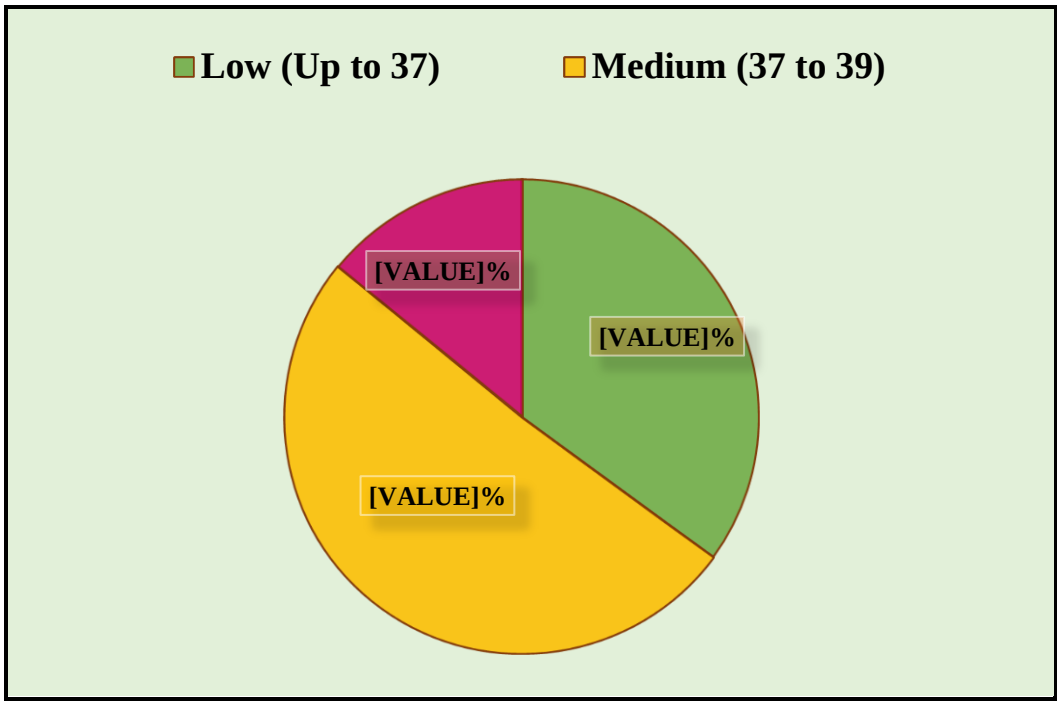


Figure 4.2.3 Distribution of women members of WDCs according to their psychological empowerment

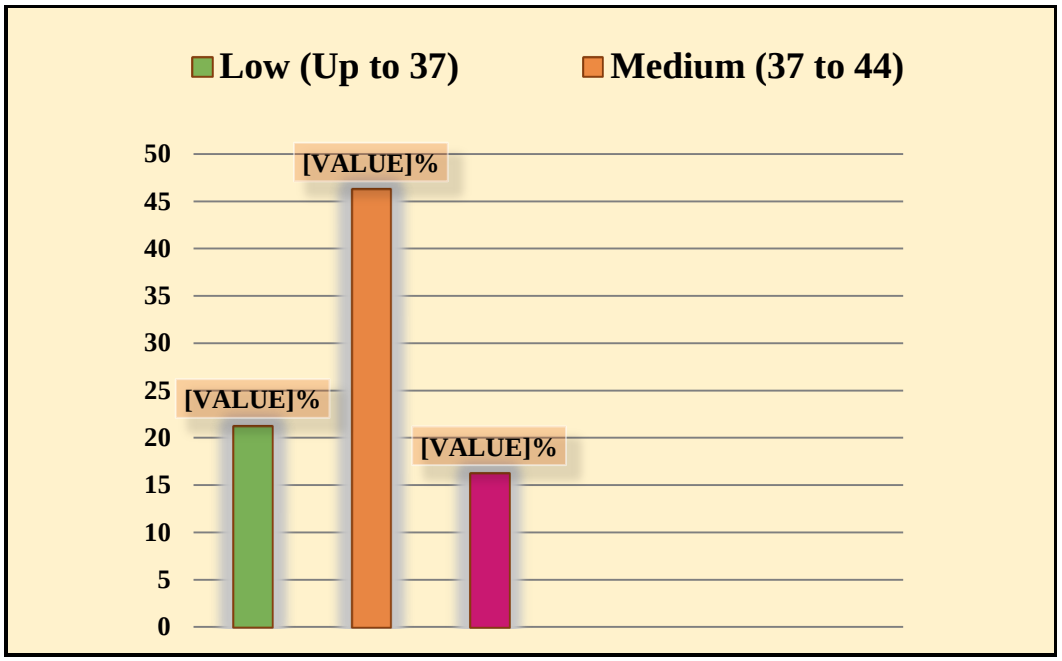


Figure 4.2.4 Distribution of women members of WDCs according to their economic empowerment

M

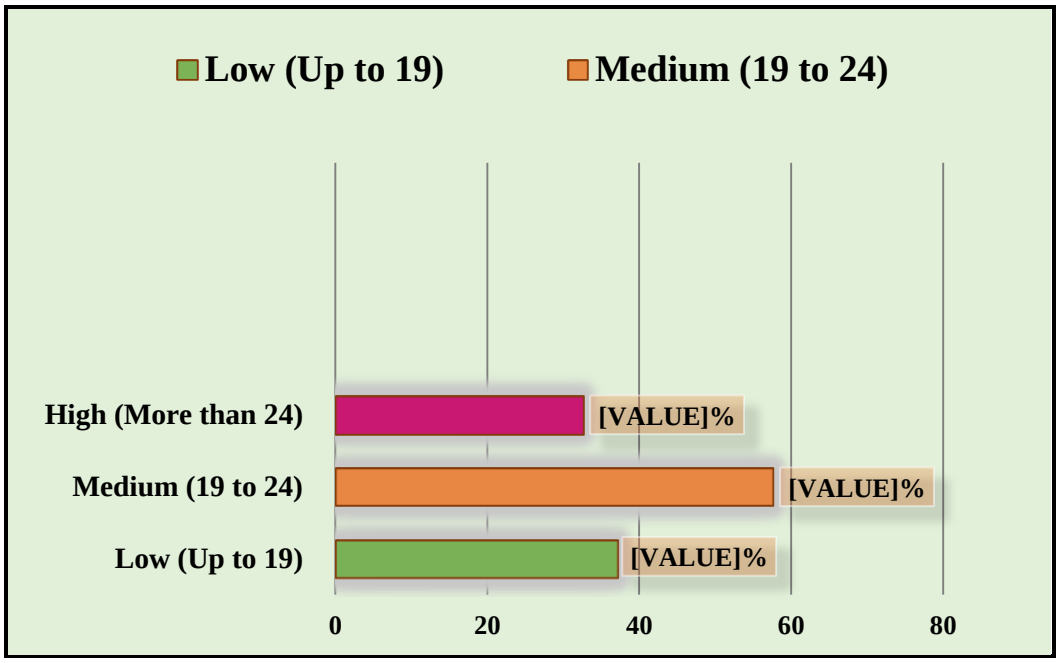


Figure 4.2.5 Distribution of women members of WDCs according to their political empowerment

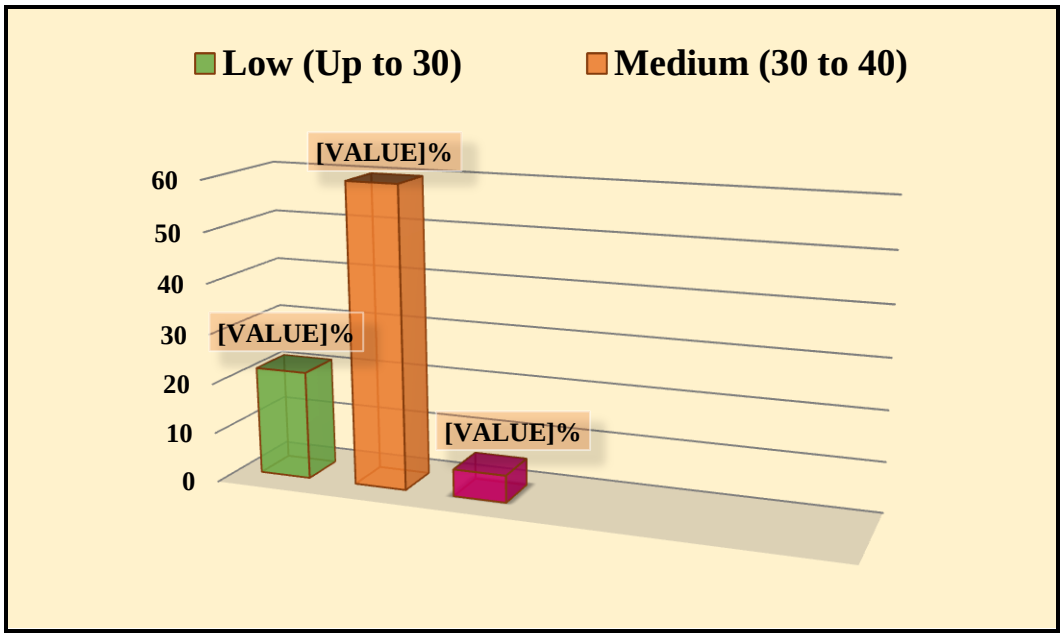


Figure 4.2.6 Distribution of women members of WDCs according to their legal empowerment

N

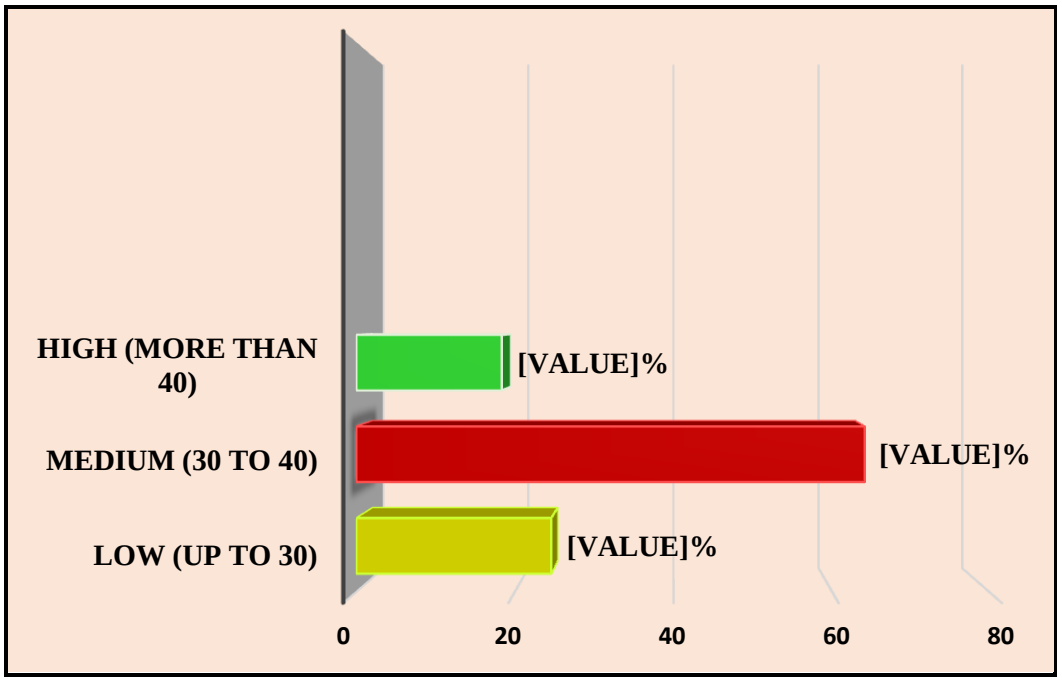


Figure 4.2.7 Distribution of women members of WDCs according to their technological empowerment

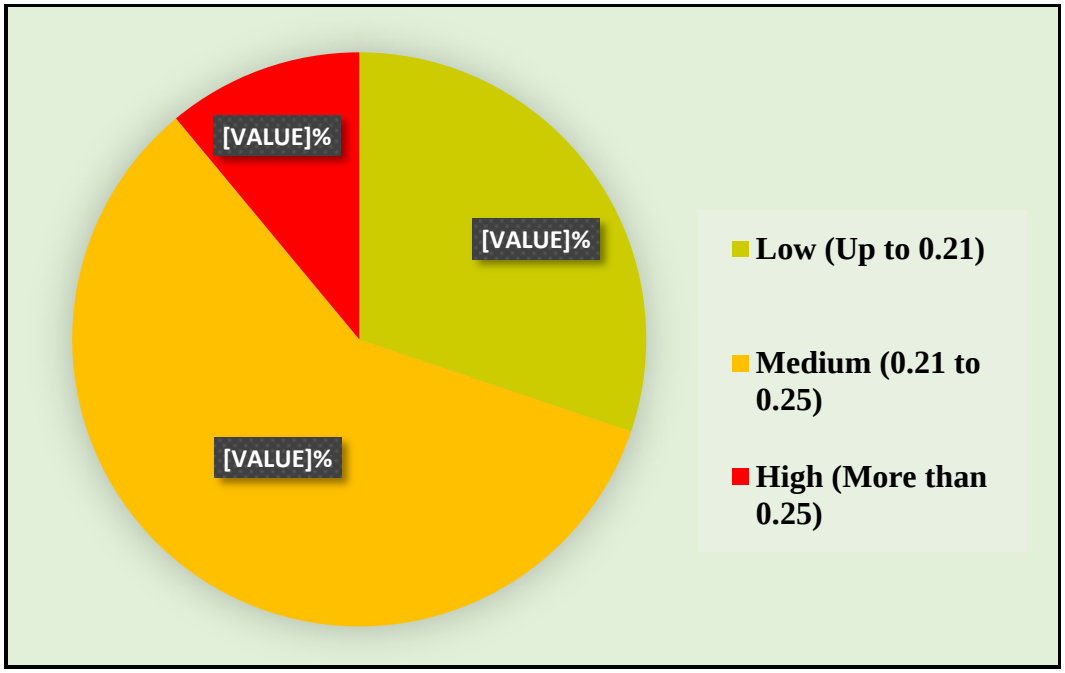


Figure 4.2.8 Distribution of women members of WDCs according to their overall empowerment

O

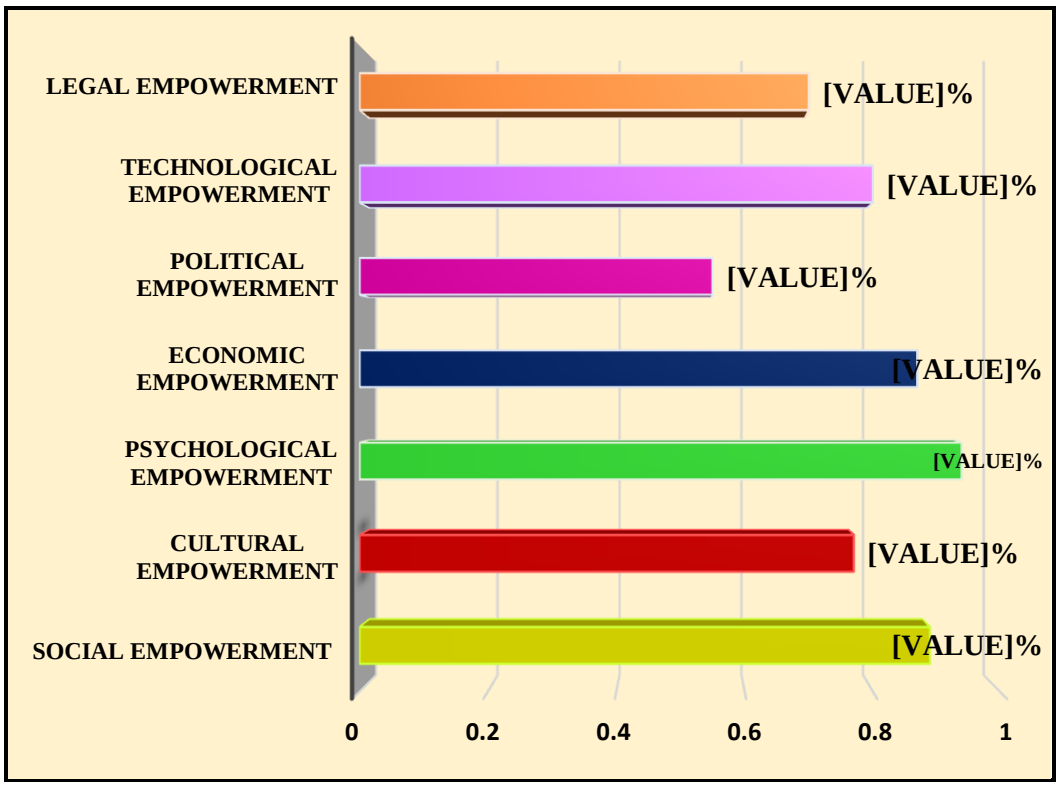


Figure 4.2.2 Level of empowerment under different dimensions of women members of WDCs

P

decisions about the general welfare of the family, education and marriage of their children. They were also given confidence in their technical and communicative abilities, which increased their participation in social activities.

Results indicated that, most of the women members of WDCs had a medium level of cultural empowerment (62.50%) followed by low (23.75%) and high levels of cultural empowerment (13.75%) respectively. It can be inferred that, very few respondents were able to experience low levels of cultural empowerment as a result of WDC activities, indicating that, WDCs are on the correct path because the majority of members experience cultural empowerment. Due to WDC activities, they were able to overcome social obstacles, take part in local and national celebrations, and contact people outside of their immediate family for charitable purposes.

Results revealed that, the responses for psychological empowerment were medium level (49.58%) followed by low (34.16%) and high (16.25%) levels of psychological empowerment. Women can overcome social, familial, and self-imposed limitations by participating in a variety of activities. WDCs influenced women's self-esteem, expressiveness and belief in their abilities, giving them the courage to confront social issues, interact with various institutions, and participate in community activities, all of which improved women's psychological empowerment.

In terms of economic empowerment, the majority of respondents (46.25%) had a medium level, followed by a high level (32.50%) and then a low level (21.25%) of economic empowerment. Economic empowerment of women is essential because it affects everything, including social and lifestyle standards. Economic resources are critical for the long-term and dignified well-being of all people, particularly women WDCs were successful in empowering women economically because they adopted a three-pronged strategy: members received a soft loan to buy a milking cow, members also received assurances of marketing opportunities close to the village and members received the technical training required for proper management of the dairy animals. In their attempts to redistribute rural income in their favour, WDCs have had a

favourable impact on rural communities in general and the well-being of the weaker segments in particular. They created a conducive climate for women to recognize their value as members of society through their activities, which increased milk production, income and family assets. They also made it necessary for them to register personal bank accounts and monitor household spending. Their confidence to assert their power and rights was also increased by economic empowerment.

Dash *et al.* (2020) reported similar findings, stating that there was a significant change in the economic condition of women after joining WDCs. After joining the Milk Union, the cooperative members felt a greater sense of economic independence. Gangwar *et al.* (2004) discovered similar results, revealing that membership in dairy cooperatives helped women become economically independent and self-confident with improved community prestige. Similar findings were observed by Meera and Gowda, (2013). They stated that, dairy co-operatives played an important role in creating employment opportunities for women, access to income and access to credit as well as being supportive of women's economic empowerment.

In regards to political empowerment, it can be observed that, the majority of respondents (57.50%) have a medium level of empowerment, while the rest have a low (37.08%) and then a high level (05.41%). Political empowerment was discovered to be on the low end; this could be due to the members' revulsion of politics. Women are also prohibited from participating in political activities because of their traditional roles. Connecting poor people with the government is critical to the political empowerment component of the white revolution. In India, women's freedom of movement is frequently restricted. In India, two-thirds of women are forbidden from entering public spaces such as markets, health care facilities, or other communities by their own culture. Members were aware of political institutions, but contesting elections was found to be a low-priority area, even though they had participated in the electoral process. Another reason could be that the majority of the members were marginal, small, and landless, which discouraged them

from participating in political activities because the most important thing to them was to be economically empowered.

Regarding legal empowerment, most of the respondents were having medium level (60.00%) of empowerment followed by low (21.66%) and high level (18.33%) of legal empowerment. It can be concluded that, the majority of respondents lacked legal empowerment. It can be attributed to restrictive social norms, the complexity of the legal process and women's strong attachment to their families, all of which limit their ability to use the legal system to settle family disputes. One of the main causes of this can be a lack of understanding of legal matters. Yet, WDCs are crucial in raising women members' awareness of legal facts.

In terms of technological empowerment, the results revealed that the majority of respondents (64.16%) had a medium level of empowerment, followed by a low level (24.58%) and then a high level (11.25%). Despite the challenges, dairy women were found to make rigorous efforts to maximize the resources available to them. Because of the role co-operatives played in organizing training, demonstrations and other activities that tended to promote technology acquisition behavior among women, the results indicated that women had a medium level of technical knowledge related to dairying. Members were marginally aware of digital technologies due to WDCs and the rise of campaign and digital media. This will support the empowerment of rural women through digital technology.

In terms of overall empowerment, the majority of respondents (60.00%) had a medium level, followed by a low level (30.83%) and a high level (9.16%) of empowerment. Kochar and Kaur, (2015) reported similar findings, stating that, women who joined a dairy cooperative society and started their businesses improved their financial situation, communication skills, and decision-making roles, and gained the confidence to express their thoughts and feelings. Niketha *et al.* (2017) observed comparable findings, inferring that psychological empowerment was the first and foremost basic need for women to be empowered. WDCs not only play an important role in empowering rural

women, but they also serve as a platform for the weaker sections of them to express their genuine concerns. Economic empowerment must be prioritized by training them in other income-generating activities such as value addition to sustaining WDCs. To increase the rate of empowerment, the future strategy must focus more on member training and capacity building, in addition to ensuring adequate linkage support.

Table 4.12 Level of empowerment under different dimensions of women members of WDC

N = 240

Sr. No.	Seven Dimensions of Dairy Women Empowerment Index	Index Value	Rank
1	Social Empowerment	0.89	II
2	Cultural Empowerment	0.77	V
3	Psychological Empowerment	0.94	I
4	Economic Empowerment	0.87	III
5	Political Empowerment	0.55	VII
6	Technological Empowerment	0.80	IV
7	Legal Empowerment	0.70	VI

Table 4.12 shows that the strongest component of psychological empowerment (Ranked I) was obtained by women members of WDCs, followed by social empowerment (Ranked II), economic empowerment (Ranked III), technological empowerment (Ranked IV), cultural empowerment (Ranked V), legal empowerment (Ranked VI), and political empowerment (Ranked VII). The empowerment indices were used to rank the seven dimensions of the dairy women empowerment index. These findings were similar to Nikhita *et al.* (2017) who found that, women members of WDCs had the highest index values for psychological and social empowerment.

The results showed that, empowering women psychologically is crucial (DWEI). Psychologically empowered women are more likely to have other types of empowerments as well. Other development initiatives should take this into account as well. By educating members on additional sources of revenue like value addition, more focus should be put on economic empowerment to sustain the WDCs. WDCs should be urged to maintain a sociable family

environment, but they should also work to become more politically and legally powerful through education efforts. Even though technical empowerment is placed fourth, we must emphasize technology usage because it has an impact on output, productivity and revenue. Through visits, educational tours, exhibitions, demonstrations, community radio and the use of social media, members can become more motivated about it. Also, it may be possible to create links with other relevant departments so that, members have access to their relevant capacity-building activities.

Table 4.13 Correlation between profile variables and women empowerment of women members of WDC

Sr. No.	Profile Variables	Co-efficient of Correlation
1	Age	0.066
2	Education	-0.042
3	Family size	0.045
4	Landholding	-0.011
5	Total animals	0.057
6	Milk production	0.007
7	Total annual income	0.012
8	Social participation	0.020
9	Training received	-0.216**
10	Information seeking behaviour	0.091

(**Significant at p<0.01)

The coefficient of correlation was calculated to find out the relationship between the independent and dependent variables. Table 4.2.3 revealed that there was a positive and significant correlation between women empowerment and training received by women members. However, other variables age, education, family size, land holding, herd size, milk production, annual income, and information-seeking behaviour did not show any relationship with empowerment. These observations may be attributed to the fact that the training received played a vital role in the empowerment of women members.

Table 4.14 Distribution of constraints faced by the women members of WDC

Sr. No.	Constraints	YES		NO		Rank
		F	(%)	F	(%)	
A)	**Social Constraints**					
1	Lack of cooperation among WDC members	78	32.50	162	67.50	IX
2	Family members used to pressurize to take loan for household needs / unproductive purposes	80	33.33	160	66.66	VIII
3	Lack of support from family members to join WDC activities	175	72.91	65	27.08	I
4	Family members do not render help in household work	163	67.91	77	32.08	IV
5	Non-cooperative attitude of husband/in-laws	170	70.83	70	29.16	II
6	Dependence on family members for supplying milk	116	48.33	124	51.66	VII
7	Low social acceptability for participation in WDC	126	52.50	114	47.5	V
8	The women of the family are not free to spend their income independently	123	51.25	117	48.75	VI
9	Dependency of in-laws & small children on members/respondents	164	68.33	76	31.66	III
B)	**Personal Constraints**					
1	Increased work burden and responsibility	140	58.33	100	41.66	I
2	Hindrance due to ill Health	138	57.50	102	42.50	II
3	Illiteracy	19	07.91	221	92.08	III
C)	**Cultural Constraints**					
1	Women are often ignored or hesitate to take decisions for the betterment of society and family	137	57.08	103	42.91	III

2	Interference of family members to attend visits/trips organized by WDC or any pilgrim /religious places	184	76.66	56	23.33	I
3	Lack of support from family to participate in cultural and community activities	140	58.33	100	41.66	II
D)	**Psychological Constraints**					
1	Multipurpose workload	172	71.66	68	28.33	I
2	Poor involvement of members in decision-making activities in WDC	170	70.83	70	29.16	II
3	Lack of motivation among members	20	08.33	220	91.66	IV
4	Excessive stress and tension of dual responsibility	140	58.33	100	41.66	III
5	Lack of self-confidence	17	07.08	223	92.91	V
E)	**Economic Constraints**					
1	Improper utilization of WDC funds	8	03.33	232	96.66	IX
2	Inequality in issuing loans	11	04.58	229	95.41	VIII
3	Information about transactions and financial activities in WDC are not shared with members	39	16.25	201	83.75	VI
4	Low Income	31	12.91	209	87.08	VII
5	AI charges are high	63	26.25	177	73.75	V
6	High charges for emergency services	166	69.16	74	30.83	I
7	Lack of affordability to purchase feed additives & concentrates	147	61.25	93	38.75	II
8	High cost of veterinary medicines	127	52.91	113	47.08	IV
9	Male member dominancy on family income & expenditures	106	44.16	134	55.83	III

F)	**Political Constraints**					
1	Lack of interest in political activities	189	78.75	51	21.25	II
2	Lack of effort for creating political awareness among women	202	84.16	38	15.83	I
3	Lack of effective leadership in WDCs	136	56.66	104	43.33	IV
4	Political affiliation vitiates in the working environment of WDCs Societies	138	57.50	102	42.50	III
G)	**Legal Constraints**					
1	Lack of systematic effort for addressing social issues	104	43.33	136	56.66	III
2	Lack of knowledge about the women rights for their empowerment	163	67.91	77	32.08	I
3	Displeasure and non-cooperative attitude of families to a women member to consult or approach the law enforcement bodies	140	58.33	100	41.66	II
H)	**Constraints related to Technology**					
1	Lack of awareness about advantages and facilities provided by Govt. and milk unions for rearing animals	139	57.91	101	42.08	V
2	Lack of technical training for growing green fodder	176	73.33	64	26.66	II
3	Inadequate availability of fodder seeds	178	74.16	62	25.83	I
4	Technical inability in handling ICT tools	175	72.91	65	27.08	III
5	Lack of high yielding varieties (HYV) in fodder crops	174	72.50	66	27.50	IV
6	Poor skilled staff at AI centre’s	137	57.08	103	42.91	VI
I)	**Organisational Constraints**					
1	Inappropriate	140	58.33	100	41.66	I

	distribution of benefits					
2	Proper accounts are not maintained	132	55.00	108	45.00	II
3	Inadequate profit from WDC activities	22	09.16	218	90.83	V
4	Duration of the meeting is too long	29	12.08	211	87.91	IV
5	Lack of coordination among members with the management	123	51.25	117	48.75	III
J)	**Infrastructural Constraints**					
1	Inadequate space for the office of WDC	180	75.00	60	25.00	I
2	Distant location of the dairy cooperative office	127	52.91	113	47.08	II
3	Lack of physical facilities at the meeting place	126	52.50	114	47.50	III
4	AI centres are located in distant places	123	51.25	117	48.75	IV

The results presented in Table 4.3 indicated constraints faced by women members of WDCs. Results revealed that, in social constraints lack of support from family members to join WDC activities ranked I (72.91%) followed by the non-cooperative attitude of husband/in-laws ranked II (70.83%), dependency of in-laws and small children on members/respondents ranked III (68.33%), family members do not render help in household work ranked IV (67.91%), low social acceptability for participation in WDC ranked V (52.50%), the women of the family are not free to spend their income independently ranked VI (51.25%), dependence on family members for supplying milk ranked VII (48.33%), family members used to pressurize to take a loan for household needs/unproductive purposes ranked VIII (33.33%) and lack of cooperation among WDC members ranked IX (32.50%) respectively. Srilatha, (2013) had similar findings with social constraints. Considering the patriarchal nature of Indian society, which favours men, it was logical that women should handle all of the household chores. The families need them for survival as members of a marginalized community were a

further burden for them. Family members' lack of cooperation in joining WDCs may be a result of social values, attitudes, and customs that restrict women's free interaction with people other than their immediate family.

In terms of personal constraints, increased work burden and responsibility were ranked I (58.33%) followed by hindrance due to ill health ranked II (57.50%) and illiteracy ranked III (07.91%) respectively.

Among cultural constraints the interference of family members to attend visits/trips organized by WDC or any pilgrim /religious places was ranked I (76.66%) followed by lack of support from family to participate in cultural and community activities ranked II (58.33%) and women often ignored or hesitate to take decisions for the betterment of society and family were ranked III (57.08%) respectively. Women faced cultural constraints as a result of deeply rooted cultural values, beliefs, and norms that did not allow for the free movement of women in our society.

Regarding psychological constraints, multipurpose workload ranked I (71.66%) followed by poor involvement of members in decision-making activities in WDC ranked II (70.83%) excessive stress and tension of dual responsibility ranked III (58.33%), lack of motivation among members ranked IV (08.33%) and lack of self-confidence ranked V (07.08%) respectively. One of the causes of the psychological constraints perceived by respondents could be a lack of a positive environment, both at the household and WDC levels.

In terms of economic constraint high charges for emergency services were ranked I (69.16%), lack of affordability to purchase feed additives and concentrates ranked II (61.25%), male member dominancy on family income and expenditures ranked III (44.16%), high cost of veterinary medicines ranked IV (52.91%), AI charges are high was ranked V (26.25%) information about transactions and financial activities in WDC are not shared with members are ranked VI (16.25%), low Income ranked VII (12.91%), inequality in issuing loans ranked VIII (04.58%), and improper utilization of WDC funds were ranked IX (03.33%) respectively. Halakatti *et al.* (2007), Fatima, (2014), and Dash and Sarangi, (2017) had similar findings with economic constraints.

Political constraints were categorized as lack of effort for creating political awareness among women was ranked I (84.16%) followed by lack of interest in political activities was ranked II (78.75%) political affiliation vitiates in the working environment of WDCs societies ranked III (57.50%) and lack of effective leadership in WDCs was ranked IV (56.66%).

In legal constraints, lack of knowledge about women's rights for their empowerment ranked I (67.91%) followed by displeasure and non-cooperative attitude of families to a women member to consult or approach the law enforcement bodies was ranked II (58.33%) and lack of systematic effort for addressing social issues was ranked III (43.33%). Further constraints were related to technology, inadequate availability of fodder seeds ranked I (74.16%) followed by lack of technical training for growing green fodder was ranked II (73.33%) technical inability in handling ICT tools ranked III (72.91%) lack of high yielding varieties (HYV) in fodder crops ranked IV (72.50%) lack of awareness about advantages and facilities provided by Govt. and milk unions for rearing animals were ranked V (57.91%) and poorly skilled staff at AI centers ranked VI (57.08%) respectively. Organizational constraints were considered further, as inappropriate distribution of benefits ranked I (58.33%) followed by proper accounts are not maintained ranked II (55.00%) lack of coordination among members with the management ranked III (51.25%) duration of the meeting is too long were ranked IV (12.08%) and inadequate profit from WDC activities ranked V (09.16%) respectively. Infrastructural constraints were observed lastly, the availability of inadequate space for the office of WDC was ranked I (75.00%) followed by the distant location of the dairy cooperative office was ranked II (52.91%) lack of physical facilities at the meeting place ranked III (52.50%) and AI centers are located at distant places was ranked IV (51.25%) respectively. The parallel results were noted by Bhoj *et al.* (2014) and Nikhita *et al.* (2018).

Summary & Conclusions

CHAPTER V

SUMMARY AND CONCLUSIONS

Dairy co-operatives comprehend sustainable development goals by reducing poverty and identifying economic opportunities for members of the dairy co-operatives. Several women members were associated with dairy cooperative societies in India. For millions of poor and rural families in India, dairying has become an imperative source for providing income and employment opportunities, particularly for women of dairy co-operatives. It has been witnessed that dairy income is far stronger than agriculture income for women farmers. The dairy cooperative has positively impacted the economic and social life of the women members in the state. This smooth social revolution has been creating self-employment opportunities among women members of dairy co-operatives. Given this, the present study was conducted to assess the role of WDCs in the empowerment of women members. A total of 240 respondents were purposively selected, 120 each from two districts of western Maharashtra *viz.* Pune and Kolhapur. Observations were made based on responses given by the women members of WDC'S using a structured interview schedule. It was initially pre-tested to check for soundness and was slightly modified accordingly. An interview schedule was divided into different sections like the socioeconomic profile of the women members of WDC where information in terms of their age, education, family size, land holding, herd size, total milk production, total annual income, social participation, training received and information seeking behavior was studied. Another part of the interview schedule included dimensions of women empowerment and constraints faced by the women members of WDCs. Suitable statistical tools i.e., frequency, percentage, arithmetic mean, standard deviation, empowerment index, and correlation were used for the analysis of the data.

Out of 240 respondents, most of them fall under the middle-age category (69.16%). None of the respondents was illiterate and most of the respondents completed their secondary schooling (40.83%). In terms of, respondents' family

size, annual income, and land size were in the middle category. They possessed a medium level of herd size 4-9 (59.58%) and overall milk production per day at the farms was noted at a medium level ranging from 20-50 liters (66.66%). The majority of the women members were having medium social participation (54.16%) and information-seeking behaviour (72.50%). The training was given to the majority of women members of WDCs according to their positive responses (72.50%).

The level of women empowerment of the women members through WDCs was assessed through seven dimensions of empowerment. The responses elicited from respondents were quantified by assigning the scores. All the scores were summed up and classified according to mean and standard deviation as low, medium, and high levels of women empowerment groups. To quantify the women empowerment level of WDCs women empowerment index was calculated and ranked based on frequency and percentage. In terms of overall empowerment, it was noted that most of the respondents (60.00%) had a medium level of empowerment. About 30.83% of respondents were having a low level of empowerment and 9.16% were under high-level empowerment. Results revealed that the empowerment of women members was most pertinent to the effectiveness of their work on WDCs, their work has improved those who joined a dairy co-operative society, improved their financial situation, communication skills, decision-making roles, and gained the confidence to express their thoughts and feelings. It was revealed that most of the respondents were grouped in the medium categories of social (57.91%), psychological (49.58%), economic (46.25%), cultural (62.50%), political (57.50%), legal (60.00%), technological (64.16%) and overall (60.00%) empowerment. The seven dimensions of the dairy women empowerment index were ranked according to empowerment indices. Different dimensions of women members of WDC had ranked accordingly and had obtained the strongest component of psychological empowerment (Ranked I) followed by social empowerment (Ranked II), economic empowerment (Ranked III), technological empowerment (Ranked IV), cultural empowerment (Ranked V), legal empowerment (Ranked VI) and political empowerment (Ranked VII).

Constraints faced by women members of WDCs were studied and ranked according to frequency and percentage. Results revealed that in social constraints lack of support from family members to join WDC activities ranked I (72.91%), in terms of personal constraints, increased work burden and responsibility were ranked I (58.33%), among cultural constraints the interference of family members to attend visits/trips organized by WDC or any pilgrim /religious places was ranked I (76.66%), regarding psychological constraints multipurpose workload ranked I (71.66%), in terms of economic constraint high charges for emergency services, was ranked I (69.16%), in political constraints, lack of effort for creating political awareness among women was ranked I (84.16%), in legal constraints, lack of knowledge about the women rights for their empowerment ranked I (67.91%), in technological constraints inadequate availability of fodder seeds ranked I (74.16%), in organisational constraints inappropriate distribution of benefits ranked I (58.33%) and in infrastructural constraints the availability of inadequate space for office of WDC was ranked I (75.00%).

Considering the patriarchal nature of Indian society, it was coherent that women should handle all of the household chores. The family's need on them to survive as members of a marginalized community was a further burden for them. Family members' lack of cooperation in joining WDCs may be a result of social values, attitudes, and customs that restrict women's free interaction with people other than their immediate family. Women faced cultural constraints as a result of deeply rooted cultural values, beliefs, and norms that did not allow for the free movement of women in our society. One of the causes of the psychological constraints perceived by respondents could be a lack of a positive environment, both at the household and WDC levels. Economic constraints may also be caused by women's lack of control over economic resources.

The level of empowerment in the present study appears to be moderate even though WDCs not only play a significant role in empowering rural women but also provide a forum for them to voice their actual problems. Women's dairy co-operatives have greater potential and can play a bigger role in empowering women members provided societal challenges to women are effectively addressed. The income and employment of women dairy farmers are improved significantly by women dairy

cooperatives. On the overall basis, it can be concluded that women members get empowered up to a medium extent, however, further efforts are required to improve the empowerment as well as sustain the same for a longer period.

Present observations lead to the following conclusions,

1. All of the socioeconomic characteristics analyzed for women members of WDCs fall under the medium category. It is further observed that the involvement of women members in WDCs improved shared cooperation, social participation, and group cohesiveness.
2. The majority of the respondents had a moderate level of social, cultural, psychological, economic, political, legal, and technological empowerment, however, WDCs played a vital role in helping women to become economically independent and self-sufficient to shoulder responsibilities.
3. The seven dimensions of the dairy women empowerment index were assessed. The level of psychological empowerment was comparatively more than the social, economic, technological, cultural, legal, and political levels.
4. Overall empowerment was grouped under the medium category for most of the respondents. A significant correlation between training and empowerment was observed therefore, to raise the level of empowerment, the future strategy must focus on capacity building through training.
5. Several constraints were perceived by women members of WDCs, however, WDCs could play a significant role in transforming different dimensions of women's empowerment, provided the observed constraints are properly addressed.
6. Women's dairy cooperatives are instrumental in augmenting the income and employment of women dairy farmers. On the overall basis, it can be concluded that women members get empowered up to a certain extent, however, further efforts are required to improve the empowerment as well as sustain the same for a longer period.

Bibliography

BIBLIOGRAPHY

Asha, K., K.Narayanagowda, B. Krishnamurthy, G. Ananda Manegar, K. H. Nagaraj and K. G. Vijayalakshmi, (2020). Entrepreneurial Behaviour of Women Dairy Farmers In Ramanagara District of Karnataka. *International Journal of Current Microbiology and Applied Sciences, **11***, 450-463.

Banwari, L., J. P. S. Chauhan, S. Gopal, M. Bhakat and A. Singh, (2012). Role of common interest groups (CIG) in empowering dairy farmers. *Research Journal of Animal Husbandry and Dairy Science*, ***3***(2), 76-80.

Bayissa, F. W., J. Smits and R. Ruben, (2018). The multidimensional nature of women's empowerment: beyond the economic approach. *Journal of International Development*, ***30***(4), 661-690.

Bhoj, S., K. Avadhesh, D. Bardhan and Y. P. S. Dabas, (2014). Women dairy self-help groups in Uttarakhand-India: constraint identification in milk production and participation in microfinance module. *Animal Science Reporter*, ***8*** (2), 61-70.

Dash, S., & Sarangi, M. K. (2017). Economic Empowerment Of Rural Women Through Dairy Farming: A Case Study Of Sidheswari Women's Milk Producers Union in Odisha. *International Journal of Application or Innovation in Engineering & Management (IJAIEM)*, ***6***(10), 45-50.

Dash, S., M. K. Sarangi, M. Dash, D. S. Sahoo and K. Muduli, (2020). Role of dairy cooperative society in empowering women in rural Odisha. *Int J Adv Sci Technol*, ***29***(7), 461-7.

Dohmwirth, C. (2014). The impact of dairy cooperatives on the economic empowerment of rural women in Karnataka. *PhD Dissertatio. Berlin: Humboldt University Berlin*.

Department of Animal Husbandry and Dairying, Annual Report, (2022). https://dahd.nic.in .

Fatima, B. D., 2014. A study on women dairy farmers in Madurai district.EPRA International Journal of Economic and Business Review, ***2***(8):98-103.

Gadad, P. C. and L. B. Kunnal, (2018). Socio-economic profile and constraints faced by the members of milk producers co-operative societies in production and marketing of milk in Dharwad district of Karnataka-an analysis. *Agriculture Update*, ***13***(2), 123-127.

Gangasagare, P. T. and L. M. Karanjkar, (2009). Constraints in adapting animal husbandry practices by the dairy farmers in the Marathwada region of Maharashtra. *Veterinary World*, ***2***(9).

Gangwar, M., Kandekar, N., Mandai, M. K., & Kandekar, P. (2004). Empowerment status of rural women: Insights from dairy cooperatives. *Social change*, ***34***(1), 112-123.

Garai, S., G. Mazumder and S. Maiti, (2012). Empowerment of women through self help group approach: Empirical evidence from west Bengal, India. *African Journal of Agricultural Research*, ***7***(48), 6395-6400.

Halakatti, S. V., C. M. Sajjan, D. S. M. Gowda and , V. Kamaraddi, (2007). Empowerment of women through dairy training. *Karnataka Journal of Agricultural Sciences*, ***20***(1), 89.

Islam, M. R., S. L. Kabir and M. S. Islam, (2019). Women's empowerment through small-scale dairy farming in Bangladesh: a study on some selected areas of Mymensingh district. *Asian-Australasian Journal of Food Safety and Security*, ***3***(2), 85-95.

Kashinath, K., and D. Kale, (2015). Women Self Help Groups–A Case Study of Kannad Block, Aurangabad District. *International Journal of Management and Social Science Research Review*, ***1***(13).

Katothya, G. (2017). Gender assessment of dairy value chains: evidence from Kenya. *Gender assessment of dairy value chains: evidence from Kenya.*

Kaur, L., D. Sachan and A. Sulibhavimath, (2017). Women Empowerment through Self Help Groups: Case Study in Jalandhar District of Punjab. *International Journal of Bio-resource and Stress Management*, ***8***(2), 340-345.

Kavitha, V., R. S. Jiji and P. J. Rajkamal, (2011). Perception of effectiveness of group functioning by the members of women self-help groups in goat farming. *Veterinary World*, ***4***(11), 507.

Kochar G. and Sukjeet Kaur, 2015. Impact of women dairy co-operative societies on empowerment of women members. Volume ***2***: 84-89.

Kondal, K. (2014). Women empowerment through self help groups in Andhra Pradesh, India. *International Research Journal of Social Sciences*, ***3***(1), 13-16.

Mahida, D. P., B. Chandel and B. Kumari, (2022). Dairy cooperatives in India: Trends of its coverage and determinants. *Indian Journal of Animal Sciences*, ***92***(4), 497-503.

Makarabbi, G., Dixit, P.K., Sivaram, M. and Devi, M.C.A. (2021). Impact of dairy co-operatives membership on income and employment of dairy farmers in Karnataka state. *Haryana Vet.* ***60***(1): 111-114.

Meera, M., and K. Gowda, (2013). Towards economic empowerment: Study of rural women in dairy cooperatives of Heggada Devana Kote Taluk in Mysore District. *Journal of Media and Social Development*, ***1***(1), 13-26.

Nath, P. K. (2022). Collective Dairy Farming, Women Empowerment and Social Inclusion: A Village-Level Study from Bihar, India. *Global Business Review*, 09721509221121701.

Niketha L., Gopal Sankhala, Kamta Prasad, and Sanjeev Kumar, 2017.Development of an Index to Measure Women's Empowerment through Dairy Cooperatives. *International Journal of Current Microbiology and Applied Sciences*, ***6***(8): 3452-3464.

Niketha, L., G. Sankhala, K. Prasad and S. Kumar, (2017). Empowerment of women through dairy cooperatives in Karnataka, India. *International Journal Of Current Microbiology And Applied Sciences*, ***6***(7), 1292-1304.

Ogolla, K. O., J. K. Chemuliti, M. Ngutu, W. W. Kimani, D. N. Anyona, I. K. Nyamongo and S. A. Bukachi, (2022). Women's empowerment and intra-household gender dynamics and practices around sheep and goat production in South East Kenya. *Plos one*, ***17***(8), e0269243.

Panchbhai, G. J., M. F. Siddiqui, M. N. Sawant, A. P. Verma and J. Parmeswaranaik, (2017). Constraints faced by co-operative dairy farmers in adoption of recommended dairy management practices. *International Journal of Current Microbiology and Applied Sciences*, ***6***(3), 1962-1966.

Randhawa, V., and S. K. Mann, (2007). Structure and functioning of self help groups in Punjab. *Indian Journal of Agricultural Research*, ***41***(3), 157-163.

Rathod, P. K., T. R. Nikam, and S. Landge, (2011). Participation of rural women in dairy farming in Karnataka. *Labour*, ***34***, 28-33.

Ravichandran, T., C. R. Farnworth and A. Galie, (2021). Empowering women in dairy cooperatives in Bihar and Telangana, India: A gender and caste analysis. *AgriGender Journal of Gender, Agriculture and Food Security*.

Ravichandran, T., C. R. Farnworth and A. Galie, (2021). Empowering women in dairy cooperatives in Bihar and Telangana, India: A gender and caste analysis. *AgriGender Journal of Gender, Agriculture and Food Security*.

Ravinder, D., and D. Umadevi, . Socioeconomic Empowerment of Women through Entrepreneurship (2020). A Study on Women Cooperative Dairies in Telangana State, ***10*** (7), 2278-4632.

Sapovadia, V. K., and S. Achuthan, (2006). Role of a Woman Leader in Cooperative Dairy Movement: Story of NDDB-Woman Empowering Women. In *4th Research Conference of ICA at Colombo Srilanka*.

Sharma, P., and S. K. Varma, (2008). Women empowerment through entrepreneurial activities of Self Help Groups. *Indian Research Journal of extension education*, ***8***(1), 46-51.

Singh, S., and S. Kaur, (2012). Impact of Self-help Groups on Empowerment of Women. *Journal of Community Mobilization and Sustainable Development*, ***7***(2), 255-258.

Thaker, N. M., J. D. Bhatt, and S. M. Trivedi, (2020). Women Empowerment through Milk Producers Cooperative Societies. *Gujarat J. Exten. Edu*, ***31***(2), 84-91.

Ufoaroh Ebere Theresa, Saudi J. Bus. Manag, Stud., (2017). Impact of Cooperative Society in Empowerment of Rural Women: A Case of Indigenous Women of Nimo Town, Anambra State Nigeria. ***2***(5):488-499.

United States Department of Agriculture, Foreign Agricultural Service (USDA FAS) 2022. Dairy and Products Annual- 2022. October 26, 2022, Report Number: IN2022-0091, pp-1-14.

Upreti, N., and N. Bhardwaj, (2018). Women empowerment through women dairy cooperative society in Uttarakhand. *Indian Research Journal Extension Education*, **18**(4), 1-6.

Vani, C. Srilatha. (2013). Constraints in management of dairy micro enterprises faced by women entrepreneurs of Andhra Pradesh. *Indian Research Journal of Extension Education*, ***13***(3), 106-108.

Waghmare, V. V., and R. P. Kadam, (2011). Socio-economic change among beneficiary women of self-help group. *Agriculture Update*, ***6***(1), 17-20.

Appendix

APPENDIX

MAHARASHTARA ANIMAL & FISHERY SCIENCES UNIVERSITY, NAGPUR
KRANTISINH NANA PATIL COLLEGE OF VETERINARY SCIENCE, SHIRWAL DIST. SATARA
DEPARTMENT OF VETERINARY AND ANIMAL HUSBANDRY EXTENSION EDUCATION

INTERVIEW SCHEDULE **No.**

WOMEN EMPOWERMENT THROUGH WOMEN DAIRY COOPERATIVES IN WESTERN MAHARASHTRA
PART: A

1. Name:

2. Name of WDC:

3. Address:

Village: Taluka: District:

4. Mobile No.:

5. Age: ……. (In Years)

6. Family Size:……No

Small (Up to 5 members): Medium (5-8 members): Large (above 8):

Male: _____ Female: _____ Children: _____

7.Education:

Illiterate	
Primary School (1^{st} to 4^{th} Std)	
Secondary School (5^{th} to 10^{th} Std)	
Higher secondary School (11^{th} -12^{th} Std)	
Graduation	

8. Land holding (As per Govt. of India 2001): Hector

Categories	Size
Landless (0 hector)	
Marginal (Less than 1 hector)	
Small (1-2 hectors)	
Semi-medium (2-4 hectors)	
Medium (4-10 hectors)	
Large (More than 10 hectors)	

9. Herd Size: Total number of dairy animals:……

Sr. No.	Dairy animal	Heifer (> than 18 months)	Young (7-8 months)	Calves (Up to 6 months)	Milking	Dry	Total

10. Total Milk Production:

S. N.	Milch Animal	Cow	Buffalo	Total
1	Milk Production (lit./Day)			
2	Milk Consumption (lit./Day)			
3	Milk Sale (lit./Day)			

11. Annual income from dairying: Hector

Sale of milk: _____ Sale of milk by products: _____

Sale of animals: _____ Sale of FYM:_____ Others: _____

12. Total Annual income (Rs) :

a	Occupation:	Rupees/Annum
b	Farming:	
c	Dairying:	
d	Business:	
e	Labour:	
f	Service:	
g	Other:	
	Total:	

13. Social participation:

Sr. No.	Organization	Yes/No	Office Bearer	Member	Extent of participation		
					Always	Sometime	Never
1	Gram Panchayat						
2	Government Organization						
3	Private Organization						
4	Co-operative milk union						
5	NGOs						
6	SHGs						
7	WDC						
8	Others						

14. Training received: Yes/No

Sr. No.	Topic	Duration	Training Organization	Paid/Unpaid	Satisfied/Unsatisfied

15. Information seeking behaviour:

Sr. No.	Sources of information	Yes/No	Frequently (>6 times)	Often (4-6 times)	Seldom (1-3 times)	Never
1	Neighbour/Friends/Relatives					
2	Veterinary officers					
3	LSS					
4	Village level workers					
5	Radio/television					
6	Social Media 1.What-up 2. Facebook 3.Youtube 4. Others					
7	Newspaper					
8	Farm magazine					
9	Exhibitions					
10	Documentary films about dairy farming					

PART: B

16. Measures of Women Empowerment in Dairy Co-operatives:

Sr. No.	Statements	Y/ N	Strongly disagree	Disagree	Undecided	Agree	Strongly Agree
A)	**Social Empowerment**						
1.	Equivalent expression for freedom of speech						
2.	Involvement in community decision making						
3.	Freedom of mobility with respect to meeting/ gathering within the village, marketing or to meet relatives/ friends and also to visit hospital/ health care (Socio-economic cause)						
4.	Participation in decision making regarding children's welfare (Education, nutrition and health care)						
5.	Security feeling about oneself in the society and home						
6.	Social participation as a member or office bearers in socio-political institutions						
B)	**Cultural Empowerment**						
1.	Involvement in making decision regarding marriage of children						
2.	Liberty for attending cultural ceremonies						
3.	Freedom to interact with people outside						

	family for social cause						
4.	Involvement and participation in community as well as national festivals						
5.	Freedom for taking food together with family						
6.	Freedom to go to temple / my choice religious place						
7.	Freedom for wearing of dress suit to my culture						
8.	Freedom to visit the neighbour's house for cultural practices						
9.	Freedom to decide menu and dinning style						
C)	**Psychological Empowerment**						
1.	Increased faith in self-ability and capabilities after joining WDCs						
2.	Self-confidence in dealing with people and different institutions has enhanced after being the member in WDCs						
3.	Courage to deal with social aspects						
4.	Recognition by other community members due to participation in WDCs						
5.	Feeling more valued and respected in the society						
6.	Motivation and enthusiasm in community activities						
7.	Developed feeling of self-security in family						

8.	Developed career ambition						
D)	**Economic Empowerment**						
1.	Women's ownership for productive assets (land, animals, machinery)						
2.	Control over own earnings						
3.	Involvement in decision making for household economic activities						
4.	Control on expenditure and savings of households						
5.	After being a member of Women Dairy Cooperative Society, economic status has been improved						
6.	Increase in family assets due to participation in WDCs						
7.	Opportunity to capitalise dairy ventures						
8.	Operating personal accounts in bank						
9.	Decision making about taking loan for livelihood						
E)	**Political Empowerment**						
1.	Awareness about political institutions						
2.	Participation in election process						
3.	Contested in election of Gram Panchayat /other local bodies						
4.	Solving women's problem through political means						
5.	Access and freedom to participate in						

	political activities						
6.	Become aware of human rights						
F)	**Technological Empowerment**						
1.	Decision to choose and use the technology						
2.	Freedom to consult the experts						
3.	Awareness about scientific feeding for animals						
4.	Access to communication gadgets i.e., mobile, computers, internet, etc.						
5.	Awareness about clean milk production practices						
6.	Awareness about machine milking						
7.	Use of artificial insemination for animals						
8.	Timely vaccination and de-worming of animals						
9.	Awareness about symptom and prevention measures of diseases						
10.	Knowledge about SNF and fat estimation test						
11.	Skill acquisition in handling improved equipment's						
12.	Awareness about improved fodder production practices						
G)	**Legal Empowerment**						
1.	Knowledge about the structure of law and its importance						
2.	Free to consult the lawyers and the way to approach						

	them						
3.	Going to mahaila courts/ family courts in time of need						
4.	Approach to police station when they have a problem						
5.	Free to discuss with the law enforcement bodies						
6.	Awareness about protection of women under Domestic Violence Act						
7.	Awareness about Right to Information Act						
8.	Awareness about women helpline						
9.	Attending training programmes on legal laws regularly when arranged by co-operatives						

17. Constraints faced by the members of Women Dairy Cooperatives:

Sr. No.	Constraints	Y/N	More serious	Serious	Not serious
A)	**Social Constraint**				
1.	Lack of cooperation among WDC members				
2.	Family members used to pressurise to take loan for household needs / unproductive purposes				
3.	Lack of support from family members to join WDC activities				
4.	Family member do not render help in house hold work				
5.	Non-cooperative attitude of husband/in-laws				
6.	Dependence on family members for supplying milk				
7.	Low social acceptability for participation in WDC				
8.	The women of the family are not free to spend their income independently				
9.	Dependency of in-laws and small children on members / respondents				

B)	**Personal Constraint**				
1.	Increased work burden and responsibility				
2.	Hindrance due to ill health				
3.	Illiteracy				
C)	**Cultural Constraints**				
1.	Women are often ignored or hesitate to take decisions for the betterment of society and family				
2.	Interference of family members to attend visits/trips organised by WDC or any pilgrim/religious places				
3.	Lack of support from family to participate in cultural and community activities				
D)	**Psychological Constraints**				
1.	Multipurpose work load				
2.	Poor involvement of members in decision-making activities in WDC				
3.	Lack of motivations among members				
4.	Excessive stress and tension of dual responsibility				
5.	Lack of self-confidence				
E)	**Economic Constraints**				
1.	Improper utilization of WDC funds				
2.	Inequality in issuing loans				
3.	Information about transactions and financial activities in WDC are not shared with members				
4.	Low Income				
5.	AI charges are high				
6.	High charges for emergency services				
7.	Lack of affordability to purchase feed additives & concentrates				
8.	High cost of veterinary medicines				
9.	Male member dominancy on family income & expenditures				
F)	**Political Constraints**				
1.	Lack of interest in political activities				
2.	Lack of effort for creating political awareness among women				
3.	Lack of effective leadership in WDCs				
4.	Political affiliation vitiates in the working environment of WDCs societies				
G)	**Legal Constraints**				
1.	Lack of systematic effort for addressing social issues				
2.	Lack of knowledge about the women rights for their empowerment				
3.	Displeasure and non-cooperation attitude of families to a women member to consult or approach the law enforcement bodies				
H)	**Constraints related to Technology**				

1.	Lack of awareness about advantages and facilities provided by Govt. and milk unions for rearing animals				
2.	Lack of technical training for growing green fodder				
3.	Inadequate availability of fodder seeds				
4.	Technical inability in handling ICT tools				
5.	Lack of high yielding varieties (HYV) in fodder crops				
6.	Poor skilled staff at A. I. centre's				
I)	**Organisational Constraints**				
1.	Inappropriate distribution of benefits				
2.	Proper accounts are not maintained				
3.	Inadequate profit from WDC activities				
4.	Duration of meeting is too long				
5.	Lack of coordination among members with the management				
J)	**Infrastructural Constraints**				
1.	Inadequate space for office of WDC				
2.	Distant location of dairy cooperative office				
3.	Lack of physical facilities at meeting place				
4.	A. I. centres are located at distant places				
K)	**Other**				

Vita

VITA

The author, Dr. Supriya Rajendra Kardile, was born on 15th November 1996 in Aurangabad. She obtained her Secondary School Certificate (S.S.C) in 2013 and Higher Secondary Certificate (H.S.C) in 2015 from Holy Cross English High School, Aurangabad. She has been a colossal animal lover, and to complete her ambition of becoming a Vet, she went ahead to pursue her dream by getting admitted into Nagpur Veterinary College, Nagpur. She graduated in 2020, then she got admission to the Master's degree in the Department of Veterinary and Animal Husbandry Extension Education at KNP College of Veterinary Science, Shirwal, Dist. Satara.

Apart from academics, she has participated in National Cadet Corps-2015 and Avishkar 2017. The author participated and won the second prize in the intermediate drawing competition in 12th in 2014. She is a member of the Maharashtra State Veterinary Council and the Veterinary council of India. She has delivered online lectures to farmers in training and actively participated in all the seminars, animal health camps, workshops, training programs, and exhibitions held during her post-graduation.

Abstract

THESIS ABSTRACT

a)	Title of the thesis	:	WOMEN EMPOWERMENT THROUGH WOMEN DAIRY CO-OPERATIVES IN WESTERN MAHARASHTRA
b)	Full name of student	:	Miss. KARDILE SUPRIYA RAJENDRA
c)	Name and address of Major Advisor	:	Dr. S. R. KOLHE Assistant Professor and Sectional Head, Veterinary and Animal Husbandry Extension Education, KNP College of Veterinary Science, Shirwal.
d)	Degree to be awarded	:	M. V. Sc.
e)	Year of award of degree	:	2023
f)	Major subject	:	Veterinary and Animal Husbandry Extension
g)	Total number of pages in the thesis	:	54
h)	Number of words in the abstract	:	271
i)	Signature of Student	:	
j)	Signature, Name and address of forwarding authority (HOD/SH)	:	Dr. S. R. KOLHE Assistant Professor and Sectional Head, Veterinary and Animal Husbandry Extension Education, KNP College of Veterinary Science, Shirwal, Dist. Satara-412801.

ABSTRACT

The present study was conducted in two districts of Western Maharashtra to assess the socio-economic profile, empowerment level, and constraints faced by women members of WDCs. Almost all the variables studied under socioeconomic profile grouped under medium level. A total of 240 women

members of WDCs were selected through random sampling and data was collected through a structured interview schedule from WDCS of Pune and Kolhapur districts of Maharashtra. Collected data were analyzed through different statistical tools, calculated DWEI index value, and outcomes were interpreted. Overall empowerment of members of WDCs recorded in the category of middle level. It was revealed that most of the respondents were grouped in the medium categories of social, cultural, psychological, economic, political, legal, and technological dimensions of empowerment, however, WDCs played an energetic role in facilitating women to become economically independent and self-reliant to accept diverse tasks. The seven dimensions of the dairy women empowerment index were ranked accordingly psychological empowerment was the uppermost level followed by social, economic, technological, cultural, legal, and political empowerment. A number of constraints were perceived by women members of WDCs, however, WDCs could play a significant role in changing diverse dimensions of women's empowerment, provided the perceived precincts are suitably addressed. Among all the socioeconomic variables a significant correlation between training and empowerment was observed therefore, to raise the level of empowerment, the future strategy must focus on capacity building through training. It can be concluded that women members get empowered through WDCs up to a medium range, however, further efforts are required to magnify the empowerment as well as sustain the same for a longer period of time.

प्रबंध सारांश

अ)	प्रबंधाचे शीर्षक	:	पश्चिम महाराष्ट्रातील महिला सहकारी दुग्ध संस्थेच्या माध्यमातून महिलांचे सक्षमीकरण
ब)	विद्यार्थ्यांचे पूर्ण नाव	:	कर्डिले सुप्रिया राजेंद्र
क)	मार्गदर्शकाचे नाव व पत्ता	:	डॉ. एस .आर .कोल्हे सहाय्यक प्राध्यापक, क्रां.ना.पा.पशुवैद्यकीय महाविद्यालय, शिरवळ, जि. सातारा.
ड)	पदवीचे नाव	:	एम .व्ही. एस.सी .
इ)	पदवी प्रदान वर्ष	:	२०२३
फ)	मुख्य विषय	:	पशुवैद्यकीय व पशुसंवर्धन विस्तार
ग)	प्रबंध पृष्ठांची एकूण संख्या	:	५४
ह)	प्रबंध सारांशाचे एकूण शब्द	:	२५८
म)	विद्यार्थ्यांची स्वाक्षरी	:	
भ)	विभाग प्रमुखाचे नाव, हुद्दा व सही	:	डॉ.एस .आर .कोल्हे सहाय्यक प्राध्यापक, क्रां.ना.पा.पशुवैद्यकीय महाविद्यालय, शिरवळ, जि. सातारा.

सारांश

प्रस्तुत संशोधन हे पश्चिम महाराष्ट्रातील पुणे आणि कोल्हापूर या दोन जिल्ह्यांमधील महिला सहकारी दुग्ध संस्थेच्या माध्यमातून महिलांचे सामाजिक-आर्थिक

स्तर, सक्षमीकरण पातळी आणि महिला सदस्यांना भेडसावणाऱ्या अडचणींचे मूल्यांकन करण्यासाठी करण्यात आले आहे. सामाजिक-आर्थिक रूपरेखा अंतर्गत अभ्यास केलेले जवळजवळ सर्व चल मध्यम स्तराखाली गटबद्ध केले आहेत. महिला सहकारी दुग्ध संस्थेच्या एकूण २४० महिला सदस्यांची संरचित मुलाखतीच्या वेळापत्रकाद्वारे माहिती संकलित करण्यात आली. संकलित माहितीचे विविध सांख्यिकीय साधनांद्वारे विश्लेषण केले गेले, महिला सहकारी दुग्ध संस्थेच्या महिला सदस्यांचे सक्षमीकरण निर्देशांक मूल्यांची गणना केली गेली आणि परिणामांचा अर्थ लावला. सदरील अभ्यासाद्वारे असे आढळून आले आहे की, महिला सदस्यांचे एकंदर सक्षमीकरण हे मध्यम स्तराच्या श्रेणीमध्ये आढळून आले तसेच बहुतेक सदस्यांचे सामाजिक, सांस्कृतिक, मानसिक, आर्थिक, राजकीय, कायदेशीर आणि तांत्रिक सक्षमीकरण परिमाणे हि सुद्धा मध्यम श्रेणींमध्ये वर्गीकरण करण्यात आले तथापि, महिला सहकारी दुग्ध संस्था ह्या महिलांना विविध कार्ये स्वीकारण्यासाठी, आर्थिकदृष्ट्या स्वतंत्र आणि स्वयं-स्वतंत्र होण्यासाठी सुविधा देण्यात महत्वाची भूमिका बजावत आहे. महिला सक्षमीकरण निर्देशांकाच्या सात परिमाणेनुसार मानसशास्त्रीय सशक्तीकरण हे सर्वप्रथम तर तदनंतर सामाजिक, आर्थिक, तांत्रिक, सांस्कृतिक, कायदेशीर आणि राजकीय सशक्तीकरण हे सक्षमीकरणाचे स्तर आढळून आले. महिला सहकारी दुग्ध संस्थेच्या महिला सदस्यांद्वारे सक्षमीकरणामध्ये अनेक अडचणी नोंदवल्या गेल्या तथापि, जर या समजलेल्या सीमांना योग्यरित्या संबोधित केले गेले तर महिला सहकारी दुग्ध संस्था ह्या महिला सशक्तीकरणाचे विविध आयाम बदलण्यात महत्त्वपूर्ण भूमिका बजावतील. सर्व सामाजिक-आर्थिक परिवर्तनांमध्ये प्रशिक्षण आणि सशक्तीकरण यांच्यातील महत्त्वपूर्ण सहसंबंध दिसून आला. यामुळे जर आपण भविष्यात प्रशिक्षणाद्वारे क्षमता निर्माण करण्यावर लक्ष केंद्रित केले तर सक्षमीकरणाचा स्तर उंचावू शकतो. या अभ्यासाद्वारे असा निष्कर्ष काढला जाऊ शकतो की महिला सहकारी दुग्ध संस्थाद्वारे महिला सदस्यांना मध्यम श्रेणीपर्यंत सशक्त केले, तथापि, सक्षमीकरण वाढविण्यासाठी तसेच दीर्घ कालावधीसाठी ते टिकवून ठेवण्यासाठी आणखी प्रयत्न करणे आवश्यक आहे.