Information Seeking Behaviour of Fisherwomen Community in Coastal Area of South 24 Parganas District: An analytical study

Thesis Submitted for the Degree of
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By
Jayita Naskar

Under the Supervision of
Prof. (Dr.) Subarna Kumar Das

Department of Library and Information Science
Jadavpur University
Kolkata-700032
West Bengal, India

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Certified that the Thesis entitled

Information Seeking Behaviour of Fisherwomen Community in the Coastal Area of South 24 Parganas: An analytical study

Submitted by me for the award of the Degree of Doctor of Philosophy in Arts at Jadavpur University is based upon my work carried out under the Supervision of **Prof. (Dr.) Subarna Kumar Das**

And that neither this thesis nor any part of it has been submitted before for any degree or diploma anywhere / elsewhere.

Countersigned by the
Supervisor : Subarna Das
Dated : 20.3.2023

DR. SUBARNA KUMAR DAS
PROFESSOR
DEPARTMENT OF LIBRARY & INFORMATION SCIENCE
JADAVPUR UNIVERSITY

Candidate : Jayita Nayk
Dated : 20.03.2023

Dedicated to my family

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(Jayita Naskar)

Date :

Contents

Preface

This thesis entitled "Information Seeking Behaviour of Fisherwomen Community in the Coastal Area of South 24 Parganas: An analytical study" has been carried out in fulfilment of Doctor of Philosophy in Library and Information Science, under the supervision of Prof. Subarna Kumar Das.

According to Shera, J. H. (1972) the information is a "fact and stimulus which we perceive through our senses. The information may be single factor bunch of facts but it is a unit of thoughts". Information is the products of human brain which will be abstract or concrete (Drucker P. F., 1969).

While fact or data about some individual or some object are altered or converted into some understandable form, this is known as information. It is a combination of data that has been produced for the use of human being. Information is also an elementary resource for the development of any individual, society as well as nation. Every person needs information at the right time for the

betterment of their personal life, business as well as their profession. Information explosion takes place for the rapid increased of amount of published information or data in all the subject field like art, science and commerce. Information is also used to change or to add the already known matter. Information about something make people to know about the unknown matter. Information also carry some message which interchanged through message or signal.

According to Websters dictionary "The attribute inherent in and communicated by one of two or more alternative sequences or arrangements of something that produced specific effects" that is called information. English oxford dictionary describe the information as the imparting of knowledge in general" or as "Facts provided or learned about something or someone.

Information seeking is a process by which one can search for information. By information seeking one can find the answers for the question in their mind, as well as satisfying their own information need. Now a day for the tremendous explosion of information on internet, it is very easy to access information for the people though the right information at the right time for the right user is also difficult. Also the search engine like Google, Yahoo etc play an important role for the information explosion in the internet as the searching of information has become a common fact by all individual around the world. There are various causes for information seeking as educational purpose, professional purpose, social purpose, personal purpose etc. Now a day, information becomes very important to everybody and also the quality of their life is depends on the quality of information use by them. Therefore, information seeking or information needs of the various professions become a research topic around the world.

Since the earliest phase of human evolution, fishing becomes the parts of human life. Fishes also includes shrimps, mollusks, crabs, lobster from marine and fresh water. Fishes have also provided coral, shells, bone, spines etc.

Not only West Bengal but through the world the involvement of women in fishing is less. Their participation on a day for actual fishing throughout the year is very low. Basically they engage themselves in supplementary activities related to fishing such as net- making, preservation of fishes, fish processing, a labor at landing centre etc. Some women in West Bengal involves themselves for catching shrimp crabs with handmade nets. It is perceived that the main barriers of women for involvement in fishing is low rate of literacy and lack of training facilities. It is very difficult to define the information need properly for its multidimensional concept. For the present study, the purpose of information need stands for awareness of information related for the profession of fisherwomen in the coastal area of South 24 Pgs. Parganas District.

As a fundamental human process, Information Seeking is closely related to problem solving and learning. But, now a day, with the emergence of information technologies, there is a dynamic change in the field of information seeking behaviour studies. In this way, the sources of information have dramatically changed. It has also influence the reading habit of the user.

The present study has highlighted about the particular information need, information sources, purposes in acquiring the information and information seeking behaviour pattern of the fisherwomen community. All the findings are very essential for development and implementation of these community.

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List of Symbols & Abbreviations

BC	Before Christ
CIBER	Center for International Business Education Research
E.g.	exempli gratia (= for example**)**
Etc	Et cetera (= add so on)
GDP	Gross Domestic Product
GPS	Global Positioning System
ICT	Information Technology
i.e.	id est (= that is)
ILSA	Indian Library Science Abstract
Km	Kilometer
LISA	Library and Information Science Abstract
mm	Millimeter
OhioLINK	Ohio Library and Information Network
OPAC	Online Public Access Catalog
PFCS	Primary Fishermen Co-Operative Society
Pgs	Parganas
QR Code	Quick Response Code
Rs	Rupee
SEADEC	South East Asian Development Center
Sq	Square
UEM	University of Engineering and Management
USA	United States of America
WTO	World Trade Organisation

Abstract

In most of the developed and developing countries, fishing is an important sector from the viewpoint of income and employment. Fishing industry also supports some income generator professions such as processing of fishing boats, refrigeration and ice making, gear and equipment manufacturers and transport services. It also provides protein-rich food, several items for sell like fish meal, fish oil, fish scales, fish manure etc. There are two types of fisheries such as marine fisheries and inland fisheries which can be categorized as capture and culture fisheries. In spite of the development of the fisheries sectors, the fishermen community lives in a low status in society. Various elements like low economic status, poor social conditions, illiteracy, use of traditional fishing equipment and methods of fishing low production rate and income affect the socio-economic conditions of fishermen. Therefore, socio-economic progress of fishermen is important for proper development of the fishing industry in India

Purposes

This thesis attempts to evaluate the information practices of fisherwomen community in coastal area of South 24 pgs District. The main purpose of this study is to identify the basic information needs of the fisherwomen and find out the appropriate sources of information.

Methodology

In this study, the survey method is adopted. The survey is done in the coastal area of South 24 Parganas district. It involves asking questions to the respondents face to face in depth interview with the help of questionnaire, conducted by the researcher. As, the survey of whole population under any study is often impossible, then sampling is a technique used. Among 29 blocks in this district, only 14 blocks (Basanti, Canning 1, Canning 2, Mathurapur 2, Diamond Harbour 1, Diamond Harbour 2, Falta, Gosaba, Kakdwip, Kulpi, Kultali, Namkhana, PatharPratima and Sagar) have coastal area. Only these 14 blocks are selected for this study. The respondents from each are proportionally selected according to their total population. With the help of Microsoft Office Excel 2007 software, the data collected through the questionnaire is arranged. This data is also analyzed by various conventional statistical tools like figures, tables, percentages and chi-square test.

Findings

The findings of this study reveal about the sex, age group, religion, marital status, type of family, level of education and monthly income of the fishermen community in this region. It also focuses on that the educational status of fisherwomen is very low. The respondents' age group and their marital status also indicate that child marriage is a more common incident among the fisherwomen community. It also shows that monthly income of the fisherwomen community is very low. For that, they often borrow money from various sources. This study also investigates the various types of information needs such as technical, climatic, environmental, economic and so on. Also the different type of information sources used by the fishermen also describe here.

Keywords

Information needs, Information practices, Fishermen, Fisherwomen, Fishing, South 24 Pgs, Coastal area.

Chapter 1
Introduction

Chapter -1

Introduction

Information is the spine of any country as well as a nation. It seems that the country is rich in information becomes rich in every field, whereas the country with poor information becomes poor in every sphere. There is a clear division in the world accordingly to the information rich and information poor. Therefore, information can be considered an economic factor which is essential for growth and development of a country as well as community.

(Simpson & Weiner, 1989) also describe information as the imparting of knowledge in general" or as "Facts provided or learned about something or someone. (**Wersig & Neveling, 1975)** also explain the concept of information more

comprehensively by his six different approaches those are i) structural approach ii) knowledge approach iii) message approach iv) meaning approach v) Effect approach and the vi) process approach. According to (**Brookes, 1980**), the famous British Bibliometrician and information scientist, knowledge is a summation of many bits of information arranged into some coherent entity. The relationship is revealed in a simple equation which he calls the fundamental equation of information science.

Besides, the term information seeking is well-defined by various experts. According to **(Kingrey, 2002),** "Information seeking is a process that involves searching, retrieval, recognition, and application of meaningful content. This search may be explicit or implicit; the retrieval may result from specific strategies, the resulting information may be embraced or rejected, and the entire experience may be carried through to a logical conclusion." (**Spink & Wilson, 2002)** also explain the information seeking as a broader context for a more specific process of searching, which involves construction in which the users actively pursue understanding and seek meaning from the information. Further, **(Saravic & et al., 1988)** describe information seeking as a process dealing with searching and retrieving information.

According to **(Poongodi & Sarthi, 2017),** "Information seeking behaviour is a purposeful attempt to seek information and to satisfy the needs that arise out of a necessity to achieve an objective. In this process, the user consults books or journals or newspapers or any other manual resources or the internet". **(Michael and et al., 2014)** also defined information seeking behaviour as an individual's way and manner of gathering and sourcing information for personal use, knowledge updating and development. Besides, **(Shakeel Ahmed & Vinayagamourthy, 2013)** described information-seeking behaviour as a different way and manner of gathering and

information for personal use, knowledge updating and development. **(Ali Amour EI-Maamiry, 2017)** considers information behaviour as human behaviour to search for information in purpose complete way to find the gap.

User studies also focus on users' wants, motivation, needs, expectations etc. It also investigates the particular information sources used by a particular community and points out their barriers. There are three types of information sources: primary, secondary and tertiary.

Since the earliest phase of human evolution, fishing has become a part of human life. Fishes also include shrimps, mollusks, crabs and lobsters from marine and fresh water. Fishes have also provided coral, shells, bones, spines etc. In most of developed and developing countries, fishing is an essential sector from the viewpoint of income and employment. The extension of the fishing sector stimulates the development and employment of associated industries which contribute notably to the total economic growth of a country. Fishing industry also supports some income generator professions such as processing fishing boats, refrigeration and ice making, gear and equipment manufactures and transport services. It also plays an essential role in the food supply which becomes the cause of raising the nutritional level of the citizens. Besides, it also provides protein-rich food and several items for sale like fish meal, fish leather, fish oil, fish scales, fish manure etc. There are two types of fisheries such as marine fisheries and inland fisheries which can be categorized as capture and culture fisheries. There are two types of water namely the fresh water and the salty, in inland fishery resources. The freshwater includes canal, reservoirs, tanks, ponds and the brackish water has lakes, the vast areas of mangrove containing tidal water. Sea fishing refers to fishing activities

with vessels beyond 2 miles in offshore water. Sea fishing also plays an important role in human food and nutrition as well as income.

At present, China is the leading producing country in the world. China has 1/3 of worlds total fish production. The entire global fish production is 178.8 million tones and out of these, China has 58.8 million tones, followed by India (9.46 million tons), Indonesia (6.10) million tones, Peru (5.85 million tons), U.S.A (5.36 million tons) and so on.

The Fishing sector has been recognized as one of the vital components of the Indian economy as well as the world economy. This sector also contributes 1.4 percent of G.D.P. In India, near about 6 million people are engaged in the fishing profession. The total length of the coastline of the mainland of India, including Lakshadeep Island and Andaman Nichobar Island is 7516.6 km. Out of the total coastline area, Gujarat has 1214 km., Andhra Pradesh has 973.70 km., Tamil Nadu has 906.70 km., Maharastra has 652.60 km., Kerala has 569.70 km., Odisa has 476.70 km., Karnataka has 280 km., Goa has 101 km., Andaman Nichobar Island has 1912 km. and West Bangal has 158 km. Despite these, West Bengal possesses the 2nd position (17.82 lakh tones) in fish production in India.

India is the 2nd largest fish producing country in the world. During the year 2019-20, the total fish production in India was 141 lakh tones (marine 37.27 lakh tones and inland 104.37 lakh tones), whereas in the year 2017-18, the fish production was 127 lakh tones (marine 37.56 lakhs tones and inland 89.48 lakhs tones) and in the year 2018-19 the production was 135.73 lakhs tones (marine 38.53 lakh tones and inland 97.2 lakh tones).

During the year 2019-20, Andhra Pradesh is the largest (41.74 lakh tones) fish producing country in India followed by West Bengal (17.82 lakh tones) and Gujarat (8.59 lakh tones). According to the state wise fish seed production in India in 2019-20, West Bengal possess the first position (124550 lakhs fry) followed by Jharkhand (105692.4 lakh fry) and Assam (95190 lakhs fry).

The fishing industry possesses a dominant and unique place in the West Bengal's economy. The whole coast line in West Bengal is 158 km in the Bay of Bengal. Though it is very short in length, it is also full of various species of fish with high market value. West Bengal occupies the 2nd position (16.19 lakh tones/year) for fish production in India. This state also occupies the first position for fish seed production (124550 lakhs fry) in India.

The creek, canals and rivers of Sundarbans in the Bay of Bengal are the primary productive areas for fishing. At an early age, the fishermen used old crafts and gear for fishing. Therefore, the production of fishing is deficient at this time. Gradually with the increased demand for marine fish, the fishermen also began to use new techniques (i.e., mechanized fishing vessels, modernized fishing gear etc.) for fishing.

It is hazardous for the fishermen to catch fishes in the sea area of the Bay of Bengal in the stormy periods. For better production, the protection of the fish farmer is necessary. There are many information services such as weather reports broadcasted by All India Radio and Television, weather reports in daily newspapers and so on. There are two fishing harbors in West Bengal. One is Shankarpur in the Purba Midnapore district, and the other is Fraserganj in South Parganas District. The Fraserganj fishing harbor has the facility to accommodate of 200 vessels and 500 motorized boats. West

Bengal has 53 fish landing centres in the coastal areas of East Midnapore, North 24 Parganas and South 24 Parganas**.**

Generally, the connection areas between land and sea, including large inland lakes, are defined as the coastal area. Though there are no exact natural boundaries about the coastal areas. The coastal region is full of many economic activities such as forestry, agriculture, industry, shipping, tourism, fishing and aquaculture. So since prehistoric times, coastal region has been an important place for human settlement. According to **(Sardar, 2020)** Coastal region of West Bengal built with a length of 158 km of two districts – East Midnapore and South 24 Parganas**.** South 24 Parganas district is one of the dominating districts (marine fish production of 124637 metric tons) in West Bengal for fish production. The entire coastline in this district is 92 km in the Bay of Bengal. There are total numbers of 197781 fishermen living in this district.

Despite the development of the fisheries sectors, the fishermen community lives in a low status in society. Various elements like low economic status, poor social conditions, illiteracy, use of traditional fishing equipment and methods of fishing, low production rate and income affect the socio-economic conditions of fishermen. Therefore, socioeconomic progress of fishermen is essential for the proper development of the fishing industry in India. Fishing and fish farming differ in many points. Fish farming is a type of cultivation of fish where fish, like sheep or cattle, have to be cared for and fishing is a type of hunting activity. The present study concentrates on the information need and information seeking behaviours of fisherwomen only. Not only in West Bengal but throughout the world, the involvement of women in fishing is less. Their participation on a day for actual fisheries throughout the year is meager. Basically, they engage themselves in supplementary activities related to fishing, such as net-making, preservation of fish, fish processing, labor at the landing centres etc. Some

women in West Bengal involve themselves in catching shrimp crabs with handmade nets. It is perceived that the main barriers to women for involvement in fishing are low rates of literacy and lack of training facilities.

Existing literary output, available in Library and Information Science Abstracts (LISA), Indian Library Science Abstract (ILSA), Information Science Abstracts (ISA), Web of Science, Scopus, Library, Information Science & Technology Abstracts (LISTA), ProQuest Dissertations & Theses Global show little evidence of research on the area. Therefore, a notable knowledge gap in this regard has been marked. The situation, hence, calls for a comprehensive investigation of the area.

1.2 Objectives of this study

This study aims to comprehend the information-seeking behaviour of fisherwoman community of coastal areas in South 24 Parganas. For achieve this goal, this study precisely attempts to realize the following targets:

1. To analyse the characteristic of the fisherwomen as well as their social conditions, social status, religion, education, health and housing, family planning and the standard of living of fisherwomen in coastal area of South 24 pgs. district in West Bengal;
2. To identify the particular information need of the fisherwomen community and the information sources used by them;
3. To identify the purposes in acquiring the information and suggestion as perceived by the fisherwomen; and
4. To study the information-seeking behavior pattern of fisherwomen;
5. To identify their technical knowledge regarding fishing and to suggest appropriate policies for the upliftment of their socio-economic conditions.

1.3 Scope and limitation of this study

From the title of the present research, it is evident that the study is confined to the coastal area of the South 24 pgs. District in the state of West Bengal in India. There are 29 blocks in this particular district. Only 14 blocks (Basanti, Canning 1, Canning 2, Mathurapur 2, Diamond Harbour 1, Diamond Harbour 2, Falta, Gosaba, Kakdwip, Kulpi, Kultali, Namkhana, Pathar Pratima and Sagar) have coastal area. This study's survey is confined to these particular 14 blocks of this district. The scope of the study is limited to the fisherwomen of this specific district. This study deals with the information-seeking behaviour of fisherwomen. Total emphasis is given to the fisherwomen rather than the others.

1.4 Significance of this study

The studies on the fisherwomen community's information-seeking behavior add general knowledge to the field of information-seeking behavior. This study may also influence the information centres of that region to upgrade its information resources. This study will also assist in arranging information literacy programs for the respondents. It also focuses on information choice and recognizes the resources used by a particular community and the policy of searching information by this community.

1.5 Hypothesis

The following hypotheses are presented for the present study:

- The socio-economic condition of fisherwomen as well as their level of education and monthly income are miserable
- The fisherwomen often borrow money from various sources and rarely use fishing boats and gears to uplift their profession.

- The fisherwomen scarcely visit the information centres for their information needs.
- There is no significant association between respondents from different age group and their frequency of visits, time spent in the centres, preferred time of visiting, motivated person, satisfaction with the information sources and satisfaction with the information centres.

1.6 Research Methodology

To investigate the problem of the proposed research and to achieve the objectives of the study stated earlier, it has been intended to adopt a survey method for data collection. As to the population of this study, all the fisherwomen of South 24 Parganas District, distributed under a large number of categories and strata, should come under consideration. But it is not convenient and possible to cover such a large heterogeneous population for the study. Hence, it has been intended to conduct the survey of a representative sample drawn based on stratified random sampling. Necessary data has been collected from the selected sample using a combination of both structured questionnaires, to be framed for the purpose and interview. Finally, the data collected through the above manner will tabulate, analyze and interpret, keeping in view the objectives of the study. Apart from the above, necessary data will also collect from various documentary, institutional and human sources.

1.7 Outline of the thesis

The present study consists of the following six chapters to investigate the proposed research's problems.

Chapter – 1: *Introduction*

I. Introduction

This chapter deals with the title of research study, objectives of this study, scope and limitation of this study, the significance of this study, hypothesis research methodology and the chapter arrangement.

II. Review of literature

The second chapter of this study gives out a review of the literature. Studies related to the present study are presented under different subheadings such as Information seeking behavior of fishermen, Information seeking behavior, Fishermen in South 24 pgs, Fishermen and fishery. Previous research also helps the present study with its evaluation, clarification and also the nature of the study. For the literature review, various types of documents like books, journals, research papers, reference books, seminar papers, dissertations and research reports also be considered.

III. Profile of study area

Chapter 3 consists of a detailed profile of the study area, such as the history of the study area, division of the study area and significance of the study area. Also, the outline of fishing villages about its location, population, status of education, religion, fishing season, fishing crafts and gear, fishing training centres and fishing harbor has been discussed in this chapter. A precise map of the study area is also provided to outline it.

IV. Research Design and Methodology

Chapter 4 consists of a detailed analysis of the research design and methodology, such as the population of this study, sample of this study; tools used for

this study, data collection, data analysis and data presentation have also been discussed in this chapter.

V. Analysis and Interpretation Data

This chapter deals with the analysis and interpretation of collected data about the information-seeking behavior of the fisherwomen community in the coastal areas of South 24 Parganas District. Collected data by the researcher about the information needs, information sources and information-seeking behaviour of the fisherwomen in the coastal area of this District is analyzed and interpreted. Data is also represented in a table format and has been analyzed with the help of percentages for clear perception.

VI. Findings and Suggestion

This chapter deals with the findings regarding the information-seeking behavior of the fisherwomen community in the coastal area of South 24 Parganas District. Based on these findings, it also proposed some fruitful suggestions concerning the utilization of information sources by the fisherwomen community in the South 24 pgs district.

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Chapter 2
Review of Literature

Chapter- 2

Review of Literature

In a research study, reviewing related literature is one of the essential parts of knowing about the literature already published in the related field. It also helps the researcher to know about the various objectives, procedures, methodology and findings of the related research. Knowledge about the previous research topic also supports the researcher in avoiding duplication of research. It also differentiates the data and interpretation of the results.

For the literature review, various types of information sources like books, journals, seminars and conference proceeding such as Library and Information Science Abstract(LISA), Indian Library Science Abstract(ILSA), Google Scholar and digital repositories like Shodhganga, Shodhsindhu. Total 88 articles from the year 1991 to 2021 were review related on this topic.

In the present study, due to lack of time, the researcher could not review all the literature related to this study. Though, an effort has been made to search for literature to provide a theoretical aspect of this study. However, the literature directly related to the topic of the information-seeking behavior of fisherwomen in the coastal area of South 24 pgs district could not be found. So the related literature about this topic is considered under the following sub-heading such as

a) Studies based on Information seeking behavior of fishermen
b) Studies based on Information seeking behavior
c) Studies based on Fishermen in South 24 Parganas District
d) Studies based on Fishermen and fishery

2.2 Purpose of review of literature

The literature review focuses on the methodology acquired by the previous research study. This also provides an idea for solving the research questions. By doing a literature review, a particular method regarding the proposed research can be selected. Besides, it also helps to acknowledge the research problem. Knowing what is known in a particular study area is also essential. Some specific purpose of the review of literature are-

i. To know the research output about the present topic
ii. To point out the research gaps in the present topic
iii. To identify the famous authors in this field
iv. To know the method of the related study of the present study

2.3 Steps of review of literature

The Literature review of this study is processed based on the following steps. These are

i. The topic for the literature review is chosen for this study.

ii. Appropriate articles related to this study are searched and selected.

iii. Selected literature is analyzed and synthesized.

iv. Analyzed literature is organized to write the review.

2.4 Studies based on Information seeking behavior of fishermen

McDowell & Taylor (1993) discuss the essential sources of information for fisheries officers in the South Pacific. This study also shows the problems of providing information, work and components of the pacific Island Marine Resources Information System and so on.

Ikoja-Odongo & Ocholla (2003) examine the information needs, information-seeking behavior and the impact of information use on artisan fisher folk and extension agents at three significant lakes in Uganda. The findings reveal that fisher folk requires information to carry out fishing activities effectively. The study recommends what could be done to provide information to this group.

Njoku (2004) investigated the information needs and information-seeking behaviour of fishermen in Lagos State, Nigeria. The study examines information needs, sources and information-seeking behaviour as well as problems encountered by the fishermen in a bid to obtain information. Results show that the information needs of fishermen in Lagos state are mostly occupation directed. Their chief sources of information include colleagues, friends, neighbours and relatives. Lack of awareness about where to obtain information on modern fishing technology is the most common problem for fishermen in their attempt to seek information.

Brandt & Bergfjord (2008) analyses how information-seeking behaviour is influenced by political risk. This paper shows that political uncertainty affects information-seeking.

Akinbile & Alabi (2008) discussed the information-seeking behavior among fish farmers in Oyo state. Using simple random sampling, one hundred and twenty respondents were interviewed and data was collected. With the help of the chi-square test, the relationship between personal characteristics such as age, educational attainment and marital status is also being discussed.

Kumaran and et. al (2008) taken this study to understand the information needs, information-seeking process and sharing behaviour among shrimp farmers in the coastal area in Andhra Pradesh and Tamil Nadu. The prime function of State fisheries departments is to enforce fishery extension services.

Otolo (2009) also shows women's involvement in fish farming in the Isoko riverine areas of Delta State, Nigeria. The study covered 54 fisher folk's women selected through a purposive sampling technique. Analysed data showed that women involved in fish farming need a wide range of information in fish processing, storage and preservation, loan and credit facilities and modern fishing equipment. The finding also revealed the lack of visitation of extension officers.

According to **Chauvin, Morel & Tirilly's (2010)** study, the advent of information and communication technologies (ICTs) has profoundly altered relations between vessels and the shore. This article describes the use of ICTs aboard offshore fishing vessels. It points to the prevalence of vessel-to-vessel interchange and the frequent use of ICTs to seek out and locate fish. It defines how fishermen are organized in cognition-sharing networks.

Sharma, Sharma & Saxena (2012) describe how the role of women in the different states of India varies based on a literary level, local conditions, type of fish resources infrastructure, economic situation and various types of technology. Generally, women involved themselves in management of aquaculture basically in small water like ponds but not in large water bodies like lakes and reservoirs. This study also assesses the acceptability of information sources by fisherwomen of Lohaghat in Uttarakhand for fish production.

Kumaran & et al. (2012) discuss how the fishery extension personnel seek information to perform their role as facilities for the betterment of advisory services, farm input and market to the farming community. The study has been done among the fishery extension personnel of the department of fisheries in Tamil Nadu and Andhra Pradesh. This study shows that 50% of them were information seekers and their frequency of information seeking was totally insufficient (<50%). Low awareness level <50%) about better management practices leads to low information-seeking behaviour. This study suggests integrating fisheries research with extension functions. For the mutual exchange of information among the fishery researchers, the betterment of rapid communication channel is also needed. The finding of this study shows that the significant information sources used by the fisherwomen are radio, television, neighbours and mobile phone.

Pandiselvi & Lakshmi (2013) investigate women's information-seeking behaviour with a preference for the male child. Son was considered a means of social security and women were driven by the male command. Year after year, they suffer due to their subordinate position. They became the victim of several immoral activities such as child marriage, raped, purdah system, polygamy, forced pregnancy etc. These also

affected the sex ratio in India. The study's findings reflect that 69.39% of the total population were married, 4.91% women were widowed, 3.82% were divorced and the rest of the women, 4.91% were unmarried. Most of the women 88% were highly satisfied with the sources of information, whereas a few women, 9% were partially satisfied with their information needs.

Uzezi (2015) investigated the information needs and seeking behavior of migrant fishermen in the Isoko Riverine community of Delta State, Nigeria. The population of the study comprises 160 migrant fishermen from six (6) Riverine villages in Isoko, constituting the sample of the study. With the help of the questionnaire method, data were collected. The findings of this study revealed that migrant fishermen need information related to credit loan facilities, the better way of fishing, how to use the storage facilities, modern methods of fish harvesting etc. Migrant fishermen also seek information from their personal experiences, neighbours /friends etc. The problems encountered during information-seeking included the lack of good roads to riverine communities, lack of visit by extension officers etc. A recommendation is made to construct good roads to Riverine villages for the easy movement of migrant fishermen.

Vanaja (2015) intends to assess the information-seeking behaviour of fishermen in the fishing community in the Kanyakumari and Thoothukudi districts and to evaluate their information access patterns. The survey of information needs and information-seeking behaviour of fisher folk in general and the fishermen, in particular, are necessitated due to social and economic implications on their social life. Fisher community needs information to meet their day-to-day information, such as health information, climatic information, type of vessels, type of fish net, fishing, education needs of their children, marketing information and so on.

Elizabeth (2016) evaluates information dissemination and information need of artisanal fishermen among selected communities in Benue State. It focuses on the demographic characteristics of the fishermen like their information needs, method of information dissemination, challenges to achieve agricultural information, the role of public libraries etc. Among the total population of 391, data is collected from 198 fishermen. With the help of the questionnaire method, data is collected through interview and group discussions. Some statistical methods like frequency, percentages and mean were used to analyse the data.

Ramadas & Saravanan (2016) attempted to analyse the information need and information-seeking process of fishermen in Tamilnadu. The respondents for the study consist of artisanal fishermen from three southern districts of Tamilnadu, namely Kanyakumari, Tirunelveli and Thoothukudi district. The primary data are collected from the respondents using a survey and secondary data are collected from the Fisheries Department. The study reveals that most fishermen need information related to their day-to-day activities and modern technology and gadgets are used to seek information.

Ifejika (2016) assessed a study of fisher folk's information-seeking behaviour using mobile phones around kainji Lake basin, Nijeria. Primary data were collected from 165 respondents and analysed with the help of factor analysis and descriptive methods. For the result of the study, it also is shown that the mobile phone also plays an important role in improving the information-seeking behavior of fishermen community. Mobile phone is more effective for collecting information from fellow fisher folk (64.2%), family members (64.8%) and community members (55.8%) rather than fisheries institute (4.8%) and extension agents (0.6%), fisher folk use voice call as a more fruitful medium for information seeking rather than SMS, voice message video

and picture. The result also shows the problems of getting information from mobile phones such as poor network service, inadequate knowledge and skill poor financial condition and lack of energy to recharge mobile phone batteries. Extension providers should provide proper reports for the betterment of getting the information property. The mobile operator should improve the services for the benefit of fishing community.

Shuva (2017) evaluates about information practices of fishermen in the Bay of Bengal. Data were collected from no 102 fishermen using face to face survey. The findings show that most fishermen needs for information about weather, fish buying and selling price and entertainment. Fishermen fulfill their information needs from informal sources like family and friends. Various challenges faced by the fishermen are also discussed here. This study highlights that government information agencies and public libraries should provide appropriate, need-based information services to the fishermen.

Superio & et al. (2018) describes library patrons's information-seeking behavior, including Filipino acquculture scientists, researcher and research staff at the Aquaculture Department of the Southeast Asian Development centre (SEAFDEC/AQD). Research result shows that the users also need information and also need the assistance of the librarian. Also, remote library services especially email and phone services were highly preferred for searching the data from a search engine rather than using the public access catalog (OPAC).

Kondala & Surendra (2018) aim to identify the information urgency of fishermen in the coastal districts of Andhra Pradesh. No of 350 questionnaires were distributed to the small-scale fishermen community. Among those, 222 questionnaires

are considered. Most of the fishermen get information through mobile phone, radio, relatives, friends, television channel etc.

Obilo and Vundi (2018) investigated the preferred channel of information for the empowerment of women fish traders. Women fish farmers in the fisheries sector have faced isolation in acquiring knowledge. Women also faced difficulties in acknowledging relevant information and technology as well as fishing craft. For that, there is a new trend for the promotion of women's empowerment. Women's empowerment is essential for the development of the economic growth of a country. The findings of this study also shows that women mostly engaged in informal, unpaid and indirect fishing activities.

Prakasha & Veerabasavaiah (2018) search the information-seeking pattern of postgraduate and undergraduate students at the University of Fisheries and Ocean Studies. For data collection, number of 100 questionnaires were distributed among these 80 questionnaires were selected for this study. Findings of this study emphasize on male-female distribution, frequency of library visits, the purpose of their library visit, satisfaction level of library services, reference services and so on.

Veerabhadran & Neethiselvan (2018) searched the utilization of ICT tools by the fishermen and their information management behaviour in four coastal districts of Tamil Nadu. Based on the higher fisherfolk population, eight villages were selected for this study. Data were collected by questionnaire through personal interviews with 400 respondents. The findings of this study point out respondents' educational status, fishing experience, ICT knowledge of fishermen, use of ICT tools, information-seeking process and storage behaviour of the respondents and so on.

Oli & et al. (2019) illustrates the different dimensions of the information management behaviour of fishermen in Tamil Nadu. Data were collected from 400 respondents with simple random sampling from four coastal districts of Tamil Nadu. The findings of this study show that almost half of the fishermen belong to a low level, whereas the majority of fishermen belong to a high rank in the ICT impact area.

Rachman (2019) points out the information needs of fishermen in Kaliadem, Indonesia and Muara Angke. A number of 63 questionnaires were distributed among the traditional fishermen community for data collection. The finding shows that most of the fishermen collect information from their fellow fishermen. They need information about fish prices, fishing equipment, weather etc.

Mandalia & Joshi (2020) search for fishermen's behavior and observe the needs of information of the fishermen living in the coastal area of Ghogha in the Western part of India. With the help of thequestionnairemethod, the data is collected from the fishermen by survey method. The main objective of this research is to search for the current ways of information-seeking behavior of fishermen. This study shows that the fishermen use information with the help of mobile technology and information technology. Also, the role of the internet and library for searching information is searched.

Alagappan & Kumaran (2020) attempt to identify aqua farmers' information-seeking behaviour in Tamilnadu and Andhra Pradesh. This study also informed about their socio-personal character, various channels of information used, utilization pattern of information and influence of social nature on information-seeking behaviour. With the structured questionnaire, the data were collected. This study revealed that the

aquaculture consulted, fellow farmers and the technicians of the feed were the most important information sources.

Emenogu, Omehia & Okwu (2021) evaluate the African Regional Aquaculture Centre researcher's information needs and seeking behaviour. The total population of this study is 34. With the help of a structured questionnaire, data were collected. Then the data was organised with frequency, percentage and mean. This study shows a positive relationship between the information needed for hatching and the information required for fish feed formulation. Information-seeking behaviours of the African Regional Aquaculture Centre are stimulated by fish processing and product marketing.

2.5 Studies based on Information seeking behavior

Obioha (2005) investigates ICT's role in information-seeking behavior among research officers in Nigeria. One hundred and seventy respondents are surveyed for data collection using questionnaires by interviews and observation methods. ICT plays a vital role in information processing, generation, sourcing, dissemination, storage and retrieval by research officers. The Federal Government of Nigeria should provide the respondents with available infrastructure and appropriate technology. ICT tools are used optimally and maximally.

Ajiboye (2007) also examines the information-seeking behaviour of undergraduate students at the University of Botswana. Specifically, this study interprets the sources of information consulted by the students and the pattern of information-gathering system by them. To achieve the goal, a descriptive survey method is used. The no of 2000 respondents from six faculties were randomly selected from the University of Botswana and data were collected using a questionnaire. The study's

finding shows that the data required by the respondents are mainly collected from the Internet. This study also contributes the different information-seeking patterns of the students. The sample was collected from two departments of each faculty.

Sudharsanam & Rotti (2007) completed this study in a fishing village, Veerampattinam in Puducherry, about the health-seeking behaviour to the sick children in that village. Children between 2 to 59 months were included in this study. The whole population was considered without any sample survey. Mainly the children suffered from fever, respiratory infection, diarrhea etc. With the help of an interview schedule, information is collected regarding this study. Detail information about sex, age, father's occupation, monthly income of the family etc.,was briefly discussed in this study.

David (2009) provides some evidence about students' information-seeking behaviour in a digital scholarly environment. The student information-seeking behaviour is also compared with the information-seeking behaviour of other academic communities. Data were collected from CIBER's ongoing Virtual Scholar program. Two digital journal libraries, Blackwell Synergy and OhioLINK are used for data collection. The findings show that the utilization of data by students in the term of session and pages viewed were more than the other academic community. They also spent more extended time on the online session. Scholarly databases are used most by undergraduate and postgraduate students.

Karunarathne (2010) presents that different factors like the user' educational background, psychological environments, subject disciplines and personal relation to the library influence the information-seeking patterns of a user. The findings reveal that library services are not quantitatively and qualitatively adequate. Document delivery and IT related facilities should be developed to provide better services.

Lwoga, Ngulube & Stilwell (2010) imply a review of information needs and information-seeking patterns of the rural farmers of Tanzania. Findings show that the farmer's information-seeking behaviours are gender specific. Interpersonal and face-to-face communications are used more than explicit sources of information by them. It also focuses on the barriers, the farmer faces in searching for information. According to this study, Government should provide extension services, equipment and adequate information resources. To fulfill farmers' needs, the educator and researchers should conduct regular studies about information sources, maps etc.

Saleh & Lasisi (2011) also illustrates the information needs and seeking behaviour of rural women in Borno State, Nigeria. Woman plays a vital role as part of labour force among the total population in Nigeria. For data collection, the method of questionnaire and oral Interviews are used. This study's findings reveal the information needs, sources, channels and barriers to searching for information. There are many problems searching for information, such as literacy, healthcare, early marriages, lack of education and poverty.

According to **Bakar (2011)**, rural women need information in a village of district Gombak in the state of Selangor. This study also determined the information-seeking behaviour of women and identified the barriers to searching the information sources. Among the nine districts of Selangor, the district Gombak is located close to the state of Pahang. This study shows that almost 70 percent of Nigeria's total population suffers from poverty in Nigeria. So they are suffered from a lack of information at the right time.

According to **Hossain (2012),** everyone can create, access, share and utilize information in the information society to acquire their information need. The Main

purpose of the information society is to empower all to access information, but sometimes women's information needs differ from other.

Raghavendra (2012) investigated the information use behaviour of mental health and neuroscience professionals in Karnataka state. This study deals with various "4'concept, such as an idea about health information, the significance of health, the development of mental health and neuroscience services, the role of health information, the type of information requirement of the mental health profession and the significance of this study.

Shariful Islam & Ahmed (2012) discussed the information need and information-seeking behavior of rural dwellers in developed and developing countries. The result of this study shows that the information needs of both countries are very similar among the rural communities. However, one region rural dwellers' information seeking varies from the other region based on socio-economic conditions. These needs are mostly related to their daily life.

Oyadeyi (2014) searches the information-seeking behaviour of the students of Ondo State University. Data is collected as a sample from 89 students from the four existing departments. The questionnaire method was used for the data collection. Besides, frequency and percentages were used for data analysis. So many aspects like examinations, course work, seminars and workshops also influence students' information-seeking behaviour. Information sources like Textbooks, Lecture Notes, and the Internet are also used for information sources. Dynamic information technology for the enhancement of information-seeking behaviour of the user is also recommended.

Sarma & Sarma (2014) focus on the information-seeking behaviour and the utilization of information resources by students of the Life Science Dept. of Rajiv

Gandhi University. For information seeking, an individual may need to interact with manual information sources or some computer-based information system. This study attempted to search for the information e-resources used by the students. This study plays an important role in the domain of students' information-seeking behaviour.

Zoontjes (2015) investigates the information-seeking behaviour of professionals. It shows information needs and searches for the motivation of selecting information sources and channels. The result indicates that a professional's information-seeking process begins with a subjective task that leads to the information need. This information leads to select of some channels or sources. There are many motivational factors, such as situational factors, organizational factors, personal factors, subjective tasks and so on. An information-seeking behaviour model is developed with different elements and motivations for information-seeking.

Singh, Kumar & Khanchandani (2015) investigate the international students' information needs and information-seeking behaviour. The data were collected using a structured questionnaire of 120 foreign students with 88 return. The research is done with the postgraduate, M. Phil and Ph. D. students of the University of Delhi. The study also shows that research scholars seek information for writing research articles, whereas post-graduate students seek information for their study. They also seek information through the internet. They use electronic resources like databases, e-journals, e- theses and dissertations. Books also are used for information seeking. This study helps design new systems and services for the students so that their information needs can be fulfilled quickly.

Patrick & Ferdinand (2016) focused on rural woman's information-seeking behaviour. Data were collected with the help of structured interviews and

questionnaires from 294 respondents. The study also shows that most women have completed their secondary school education. Besides, most of the respondents fulfill their information needs from friends and family.

Garg (2016) stated a brief outline of the information-seeking behaviour model. It focuses on various models of the information-seeking behaviour of Wilson, Krikelas, Dervin, Ellis and Kuhlthau. Therefore, to get information on the model of information, this paper may be helpful to students and researchers of information science.

Ali Amour El-Maamiry (2017) considered information-seeking behaviour as behavior searching for information to satisfy the information gap. This study is done to know the use of electronic resources by the College of Information technology (CIT) and the college for Business Administration (CBA) students. It also examined their search process for information and the use of information to satisfy their needs. So the study focused on information-seeking behaviour and the barriers to using online resources. Poor information skills are the main barrier to search information effectively.

Kundu (2017) explores the qualitative analysis of the information-seeking behaviour model. Different information-seeking behaviour models are selected randomly and a systematic review is done for qualitative research method. This study shows how various factors influence the information need of users. It also analyses the other viewer's opinions about a different model.

Yadav (2017) discussed the information needs and seeking behaviour of female workers. He says that information plays an important role for the rural people and those who belong to the profession related to the tea. They are one of the exploited and backward communities though the tea labours are considered as a remarkable labour force in Assam. Providing proper information to the tea worker will help to improve so

many problems related to health. For the present study, a survey method is used and data is collected with the help of a questionnaire and interview schedule.Then the data were tabulated and analysed using Ms-Excel. The study's findings show a demographical profile of female workers and their information seeking behaviour.

George (2018) examined the information-seeking behaviour of rural women in family planning in Epe, Lagos State. Research is done by using the survey method. A sample survey is done based ona hundred and twenty respondents. Using questionnaires and personal interview data were collected from the respondents. Then the data is analysed, processed, and interpreted for the study's findings using percentages and correlation.

Shukla (2018) also interprets the information-seeking behaviour of postgraduate students of Mizoram University. For this study, 60 research data were collected from students, tabulated and analysed using MS Excel to know students' use of information and determine the acceptability of library resources and services. This study's findings also show that the remote location of libraries also reduces the library users and their frequency of visits.

Bindhu & Balasubramanian (2019) intend to explore the information-seeking behaviour of women library users in the southern district of Tamil Nadu, especially in Alagappa, Madurai, Kamaraj and MS universities. The data has been collected as a sample from 1200 women research scholars and women staff. The study's main objectives are to specify the usage of traditional information sources, frequency of library visits and use of e-resources by women. This study shows that 45% to 67% of respondents visit the library daily. Most of them visit the library for information for

their career development, whereas research scholars and PG students search for current information about their subjects.

Ahmadul Islam Howlader & Anarul Islam (2019) investigate the information-seeking behaviour of undergraduate students at Dhaka University. Data were collected by questionnaire method over 60 days. Out of 450 questionnaires, only 339 questionnaires were returned and analysed. This study shows that most undergraduates needed job-related and academic information. They also often went to the library to prepare themselves for competitive exams. They depended on class lectures for their academic work though they were delighted with the library services. The information skill of undergraduate was poor, and they were not adequately aware of the library resources.

Afful-Arthur & Filson (2019) show how information-seeking behaviour affects work. Questionnaires and interview methods are used for the collection of data. Among 53 questionnaires, only 48 questionnaires are completed. Quantitative data from the questionnaire were analysed and interpreted. The study's findings show that most students are unaware of library services. Many respondents use Android mobile phones though they do not know how to get relevant information. They prefer to consult with their master to solve problems. They also recommend organising workshops and seminars to enable them to access the information.

Mussa & António (2020) focus on the information-seeking behaviour of postgraduate students from Eduardo Mondlane University, Medicine Faculty. This study also shows the use of electronic resources by the medical practitioner available through the UEM library and the problems faced in information seeking. An online survey and semi-structured interview are used for data collection. For various reasons,

students search for information such as solving the tasks of their master, preparing and publishing Ph.D. Students are also aware of the medical database HINARI and they collect electronic resources available at the university. Still, they prefer to gather the information available on the internet, such as Google Scholar and PubMed though they do not have the necessary skill for information-seeking. They faced some challenges during information-seeking, such as language barrier, internet connection, computing and use of databases.

Das and Roy (2020) show the information-seeking behavior of panchayat members in the information explosion era to get the right information at the right time is really difficult. Information-seeking behavior is influenced by different types of factors. This study also focuses on the different information sources and how those sources are used by the gram panchayat members of various gram panchayat under the Burdwan- I development block. Data has been collected with the help of a structured questionnaire method from 162-gram panchayat members of the Burdwan Sadar (North) subdivision. Only 117 questionnaires were filled out by the panchayat member and analyzed. According to most of the respondents, there were no libraries and community information centres available in the village and they also wanted to establish such kind of information sources in their village area. The respondents fulfill their information needs from print and non-print media. Most panchayat members use social media such as Facebook and WhatsApp to get their information.

2.6 Studies based on Fishing and Fishermen in West Bengal

Sengupta (1992) tries to explore the factors, psychological, social and environmental, associated with success in inland fish farming,which, in its turn, assesses the success in decision-making of the respective lessee.

Pramanik (1993) stated the socio-economic life of the fishermen community of West Bengal. In addition to a lucid and wide-ranging discussion of their family life, relationship with kin and other networks, life-cycle ceremonies, rites and rituals, technology, the economy of fishing etc., it reveals how the interrelations of the fishermen. Some specific questions concerning the social life of the community have been examined. The penetrating analysis and the relatively intimate account of the richness and complexities of the community's life have made the study one of the best specimens.

According to **Saha's (2006)** study, marine fishing is undoubtedly an essential sector for the socio-economic development of the Sundarbans area of West Bengal. This area is not sufficiently explored, especially to have an insight into the scope of marine fishing and the problems faced by the fishermen.

Ramsundra (2011) investigated the educational impact of fish farming. The water crisis is a major crisis not only in India but also in the world. So the proper water utilization through pisciculture is one of the important things. This study has been done for the proper policy of using water resources. The finding of this study shows that basic education is needed for the fishermen to use scientific methods in pisciculture and to raise fishery development.

Omar & Chhachhar (2012) point out the role of ICT in the development of fishermen and how ICT is attached to their daily life. ICT tools like mobile phones, radio, television, GPS, solar and internet also affect their socio-economic condition. The finding reveals that ICT has potential significance for fishermen's development. ICT has provided up-to-date information about weather and market that feel safe in the sea and expanded their markets

Rahaman, Bera & Ananth (2013) identified three major marketing channels. The findings of the study show that the highest range of fish in channel III spread up to Rs. 24.07 per kg, followed by Rs. 10.14 in channel II, whereas the price of channel I is Rs. 4.05 per kg when the fishermen sell fish directly to the consumer. Lack of government support financially and technically, there are many problems arising in the fisheries sector, such as labour crisis, the crisis of quality fish seeds, quarrels among the owner of the pond, less availability of fish seed in the new environment, lack of storage facility etc.

Barman (2014) stated the problems stimulating the present investigation arose from the personal experience of the researcher, who is a fisherman himself and has intimate knowledge of the industry. It was further crystallized and nurtured after an extensive literature survey and discussion with Fishery Dept. officials, Fishery scientists, academicians and, of course, the leading fishermen.

Manimekalai (2014) implies fisheries technology's impact on women's empowerment. Women play an important role in fisheries activities, mainly in fish processing and marketing. Four villages in Thoothukudi district have been selected for the study. Data were collected through interview schedules from 120 women from selected villages and analysed with statistical tools. Findings discuss the level of education, age group, experiences and annual income of the women. Problems also faced by the respondents due to lack of electricity, inadequate infrastructure facilities, insufficient ice to preserve the fish, lack of marketing facilities and so on. Appropriate training is needed on the use of medicine for fishes

Nandy (2014) investigated fisherwomen's socio-economic condition and political statusin West Bengal's two important coastal districts. This study focuses on

two important study areas as fish landing centre and the Khoti (Community-based organization), and the role of fisherwomen associated with this study area. For the data collection four important markets named a) Kathi, b) Pichaboni c) Ramnagar and d) Digha Mohana in Purba Medipore are surveyed in which the fisherwomen play an important role as a vendor.

Parasuraman (2014) focussed on the health-seeking behaviour among the fishermen community in Thiruvallur district, North Chennai. With the help of the cluster sampling method, structured questionnaire is used to collect data. Total 70 respondents were selected based on their illness they suffered for last 6 months. Working day are highly effected by their illness and it also influence the living standard of the fisherman also.

Samajdar & Saikia (2014) describe that Santal dominate the six tribes in Birbhum district in West Bengal. They are basically involving in fishing with their indigenous gears and fishing crafts. This study provides detailed information about the fishing gear and crafts and its uses. A total no of 23 pieces fishing gear were surveyed of which total no of 9 pieces gears are bamboo made, 2 hooks with metal made, 6 gears made with bamboo and nylon and 3 were made of nylon as well as a mosquito net.

Cahaya (2015) investigates the fishing community. Fishing is the primary income generated profession in the seashore and marine places. The findings of this study reveal that mutual help and cooperation among the families also for them to survive. The government should provide attention to the development of fishermen's community.

Paul & Basak (2015) stated the present scenario, problems and prospects of inland fishing in West Bengal. South 24 pgs is the most fruitful area in inland fishing

and marine fish production among the other districts. Though fisheries sectors in West Bengal suffer from various types of problems, it also exports fish to Japan, Vietnam and China. Fisheries are one of the economic sector in west Bengal.

Paul & Chakraborty (2016) stated the role of inland fishing on developing countries' socio-economic development. Fishing is necessary not only for economic development, but also it provides nutrients to our bodies. Again fishing makes a scope for rural women to engage themselves and reduce poverty through employment generation. In the present study, the above aspects are analysed in the Nadia district of West Bengal in India. This study attempts to realize how the socio-economic empowerment of this district is done.

Paul (2016) highlights the unlimited potentiality of empowerment of the aquaculture sector in West Bengal. Fishery has opportunities for the contribution of food, employment generation, security for nutrition etc. Besides the primary data, secondary data is also used for the study. Some attractive incentives are also providing for developing of fisheries sectors in West Bengal. Though for the overall development for the fisheries economy, a planned vision is necessary.

Mahanayak, Chakraborty & Panigrah (2017) point out that from the fisheries resources, West Bengal is a very vibrant fish producing state among the other. West Bengal stands in 4th rank as per the number of Primary Fishermen Co-Operative Societies in India. Among the other district, Murshidabad occupied the highest number of PFCS in West Bengal. Primary data is collected on the present PFCS in this district. The study's finding shows a brief picture of the co-operative functions and performance. Some suggestions are provided regarding the improvement measures of PFCS in Murshidabad district in this paper.

Ghosh, Mohapatra & Roy (2017) speaks of West Bengal fishery resources. West Bengal aquaculture includes river, canal, khal, Beal etc. rivers possessing 58% of the total area, followed by the canal (27%) and Beal (15%). Among the total population (9.13 crores) of West Bengal, 3.3% have become fishermen. West Bengal is rich in inland fisheries as well as sea fishing. Fish is one of the essential sources of protein. The gap between demand and supply of fish production becomes 5.2 lakh tons in West Bengal. So an attempt is made to analyse the fishery resources and production.

Bhattacharjee & et al. (2017) discuss the fish production, productivity and profitability of fisheries around Burdwan based on the primary survey among selected fishermen of Kalna, Samudragarh and Dhatrigram. There are various processes in fish culture, like harvesting, removing rotten fish, preparing ponds and looking after the desirable species scientifically. Maximization of productivity and minimization of cost also helps to increase profit. Data were collected through a questionnaire from 240 selected fishermen from 12 villages. However, analysis has been made according to the method adopted by Dandapat and Islam, 2009; No of 40 questionnaires have been rejected due to incomplete responses.

According to Madhu, Sarkar & Acharya's (2021) study, the current socio-economic situation of the Sundarbans region is shallow to their family income. The purpose of this study is to the method used by fishermen in traditional fishing techniques in the Sundarbans area. So many natural disasters like storms, floods, cyclones and the water's salinity are the major problems in this area. Most of the population in this area depends on fishing activity for their livelihood. Fishermen can learn about the various crafts and equipment during study time. Fishermen also used primitive fishing gear and techniques in Sundarbans to capture fish. During the survey,

five kinds of craft and twelve kinds of gear were found. The finding of this study reveals that gears like nets, traps, lines and hooks are used for catching fish.

2.7 Studies based on Fisherwomen and fishery

Beegum (2006) shows the Socio-economic condition of Inland fishermen of Kerala state is considered. The coastal sea is one of the most productive areas as far as fishing is concerned. There are 113 fishing villages in the inland sector, where fishing and related activities provide a livelihood for a vast majority of the population.

Menendez & Paillet (2008) show the generic image learning system, CogniSight, is used to inspect fish before filleting offshore. More than 30 systems have been deployed on seven fishing vessels in Norway and Iceland over the past three years. Fishers can reinforce the learning anytime when needed.

World Bank. (2010*)* provides policies about the fisheries sector's current problems and future chances. So many things, such as employment, coastal economy, livelihood and generating income, are associated with marine fisheries. Besides the marine sub-sector, this study also focused on the coastal water that faces major problems for sustainable development.

Antony (2011) deals with ICT technologies in providing multiple benefits to the marine fisher folk who belong to the marginalized section of society, which has been quite phenomenal. Their lives, working habits, and economic advantage due to increased production and socio-political relationship, thus their whole lifestyle has been beneficially affected for their good and their community.

Basavakumar, Devendrappa & Srenivas (2011) focus on the socioeconomic status of the fishermen community in the Dharwad district. Total 57 families are considered for data collection by a sample survey. The interview schedule is used for information collection from the fishermen's community. The findings show the ratio of males and females, literacy rate, age etc. It also indicates the betterment of socio-economic status that government initiatives could improve.

Jakati Dadapir Moulasab (2011) confined investigation deals with the geographical perspective of the Development of Marketing of Fishery Resources of Goa. Fish assumes scientific significance to the people of Goa, as it forms one of the essential daily food items for more than 90 percent of Goa's population. About 60 percent of the total active fishermen are engaged in marine fishing, while the remaining 40 percent are in inland fishing activities.

Sreekumar (2011) studies that go beyond the ICT4D (Information and Communication Technologies for Development) Framework emphasize mobile phones' social and cultural dimensions. The present article explores how the fisher community in Kerala, India, uses mobile phones in culturally enhancing and ecologically oriented ways that improve their working and living conditions.

Dash & Patra (2014) stated that the fisheries sectors are important for the economic development of the nation, sub-nation and the coastal area of India. This paper focuses on the development of the fisheries sector in the coastal area of Odisha state. The results show that productivity growth has been lower from the pre-WTO period to the post-WTO period. This study also suggests the improvement of primary, secondary and tertiary infrastructure by the government.

Mohamed Rabeek Raja (2016) describes the conditions of marine fishing workers in some selected villages of Thiruvadanai Taluk, Ramanathapuram District were analysed. The study is confined to the socio-economic status of fishing workers. It is based on their role estimated using the data collected during 2012-2013 and 2013-2014. This research also attempts to estimate fishing workers' income, expenditure and saving.

Das & et al. (2017) discuss that the Indian coastal fisheries suffer from various challenges like conservation of resources, sustainability, management etc. marine fisheries play an important role in the economic development of the nations

Mohammad Abdulla Al Noman & et al. (2020) describe the various type of fishing related hazards. The study focuses on the health-care seeking behavior and occupational hazards in Bangladesh. A cross-sectional study is done with the 300 fishermen in the Patuakhali and Vhola districts. With the basis of the questionnaire method, data is collected from the fishermen about their occupational detail, types of hazards, socio-demographic, and a health-seeking behavior. The result shows that the respondents mainly suffered from skin diseases (31.7%), musculoskeletal pain (29.7%) and fever (24.3%). Only 7.3% of fishermen went to get health care facilities 31% of fishermen took medicine by their idea.

Mani & et al. (2020) show concern about women's health in their theses. Women need quality healthcare services for the betterment of their social condition. This study seeks to know the women's health-seeking behavior amongrural women in Telangana. A cross-sectional study was done with the help of 200 semi-structural questionnaires in the three villages attached to the medical college. Women aged 20 and

above are part of this study. With the use of the chi-square test, the report has been presented.

2.8 Observation from Review of Literature

From the literature review, the following observation are follows:

- It is clear that various types of research have been conducted with different aspects related to this topic, including the fisherwoman community's information-seeking behavior.
- Most of the existing literature explains multiple kinds of information used by the fishermen, information sources, women's involvement in fishing, storage, preservation etc.
- It shows that the fishermen's community has the necessity of information though they are unaware of the information sources and how they can get it.
- Therefore, to provide better information services, it will be necessary to search for exact information needs and the usage of information by the fisherwomen community.

2.9 Statement of the problem

From above observation, it is understood that there is a gap in the field of information seeking behavior of fisherwomen in the coastal region of South 24 Parganas District and to provide better information services, it will be necessary to search for exact information needs and the usage of information by the fisherwomen community.

The problem of the proposed research may be stated as:

"**Information Seeking Behaviour of Fisherwoman Community of Coastal Areas in South 24 Parganas: An analytical study**".

2.10 Summery

It is found from the above observation, that the women involved in fishing need a wide range of information related to storage, preservation, loan and credit facilities and modern fishing equipment. Most of the study use survey method to know about the information need of the fishermen community. These studies focus that fishermen use traditional fishing crafts and equipment. Again, ICT tools have potential significance to fisherwomen development. But they are less aware about the proper information sources.

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Chapter 3
Area Profile Of Study

Chapter 3

Area Profile of Study

This chapter deals with a detailed profile such as history, divisions, significance, location, population, the status of education and religion of the study area, help us to understand the background of this research topic. For the current study, 14 blocks that have coastal area were selected. South 24 Parganas is, indeed, a complex district, stretching from the metropolitan Kolkata to the remote riverine villages up to the mouth of the Bay of Bengal. Apart from its staggering size and population, the district administration has to contend with problems typical of metropolitan living in the urban area such as high population density and overload. It is the largest district of West Bengal by area and second-largest by population. It is the sixth most populous district in India. On one side of the district is Kolkata's urban fringe and the remote

riverine villages on the other. This district is rich in fishery resources and human resources. The total fishermen population in this district is 148539, whose primary occupation is fishing. [Area of study has been shown in appendix B]

3.2 History of the study Area

In the year 1757, after the fall of Nawab Siraj Ud Daulah, the new Nawab Mir Jafar signed a treaty with the East India Company and handed over Zamindary right of 24 mahals named 1) Akbarpur 2) Amirpur 3) Azimaad 4) Balia5) Baridhati 6) Basandhair 7) Calcutta 8) Dokhin Sagar 9) Garh 10) Hatiagarh 11) Ikhtiarpur 12) Kharijuri 13) Khaspur 14) Maidanmal 15) Magura 16) Manpur 17) Mayda 18) Munragacha 19) Daikan 20) Pechakuli 21) Satal 22) Shahnagar 23) Shanpur 24) Uttar Pargana to the East India Company. Those 24 parts or 24 mahals is called 24 Parganas. In 1793, the Sundarbans was included with the 24 Parganas administration at the time of permanent settlement. Finally, in 1986 to reduce the administrative burden, the 24 Parganas district was divided into two parts; the southern part is known as South 24 Parganas.

In the first century B.C., the Greek writer points out that the people of that region were called Gangaride, Gangaridi, Gangaridai etc. According to famous geographer Ptolemy, the Gangaridai people differed from those of Tamrolipta. These Gangaridai people were noted for their business of pearl, betel, maslin, spikenard etc. At that time, gold coins were used as a medium of exchange.

In the 16^{th} century, several Janapads emerged on the side of Vagirathi. A retrogressive process has been started for the uncontrolled activities of Portuguese

freebooters. For this, the old Vagirathi channel, presently known as Adiganga, was abandoned. Due to this reason, the residents were affected by various diseases from the stagnant water. From 1538, the political geography of Bengal was dominated by Baro Bhuniyas. Gradually the Portuguese freebooters became the master of that region and became the friend of the independent Bhuniyas against the Mughal empires. Portuguese pirates started robbing at sea in this area. Consequently, the region's colonized area became depopulated, and the forest Sundarbans increased.

One of the most potent Bhuniyas of Bengal, Pratapaditya, who reigned from 1590 to 1612, was defeated by Mughal in 1612. Then the Mughals got their attention to the problems associated with Portuguese. At this time, Portuguese freebooters were controlled by the Mughal emperor. Also, Magh and Arakan pirates influenced the river area in that region. They suddenly came to the market beside the river and looted all the merchandise. The people in this area daily suffered from lawlessness, insecurity and uncertainties in the eighteenth century. After the treaty in 1757, the East India Company gave the rights of Zamindary of South 24 pgs to the Nawab of Bengal, which continued until India's independence in 1947.

This district has a strong cultural heritage from the British period and attached some religious and social reform movements. In the medieval period, there were several Sanskrit learning centres. Some places like Majilpur, Harinavi and Rajpur were famous for Sanskrit learning. In the nineteenth century, modern western culture emerged in this region for the interaction between the old and new cultures. Some populous villages at this time are Gobindapur, Baruipur, Rajpur, Boral, Baharu, Joynagar etc. This district is also famous for being either the birthplace or the workplace of some renowned persons.

Rajnarayan Basu from Boral was the leading person in the Brahmo movement. Sibnath Sastri from Majilpur was one of the social reformers who also established Sadharan Brahmo Samaj. The village Kodalia (now Subhasgram) is famous for residents of the ancestral of two great personalities of Sarat Chandra Basu and Subhas Chandra Basu. In 1870, the first Hindu mela was held in Baruipur. The study area is also associated with the revolutionary movement and was a strong base of the Jugantar Party. In 1946 Tebhaga Andolon was launched by Bangia Pradeshik Kishan Sabha to secure the share cropping. [2]

3.3 Division of study area

Presently there are five subdivisions, namely Alipore, Baruipur, Canning, Diamond Harbour and Kakdwip, in the South 24 Parganas District; there are also 29 blocks and 7 Municipalities also. In India, a subdivision of a district that is responsible for the administration and revenue collection of a particular area within the district. It is an important part of the local governance structure, and plays a crucial role in the development and administration of its local community. [9]

3.3.1 Alipore

Alipore subdivision is a subdivision of South 24 parganas District. According to 2011 census, the total population of these subdivisions is 1490342. It consists of four municipalities (Budge Budge, Pujali and Mahestala) and five blocks (Bishnupur 1, Bishnupur 2, Budge Budge 1, Budge Budge 2 and Thakurpukur Maheshtala). There are 10 towns and 45 gram panchayat in this subdivisions. The literacy rate of Alipore subdivision is 81.14%. The headquarters of this subdivision is Alipore. There are many

industries like printing, book binding, oilseed milling, cement manufacture and engineering works in this subdivision. National library of India is also situated at Alipore.

3.3.2 Baruipur

Baruipur sub-division is a subdivision of the South 24 Parganas district in the state of West Bengal, India. The total population of these subdivisions is 2396646. It consists of three municipalities (Baruipur, Rajpur Sonarpur and Jaynagar Mazilpur) and seven community development blocks: Baruipur, Bhangar–I, Bhangar–II, Jaynagar–I, Jaynagar–II, Kultali and Sonarpur. The seven blocks contain two census towns and 80 Gram Panchayats. The literacy rate of Baruipur subdivision is 77.45%. The subdivision has its headquarters at Baruipur. One of the economic activity of this subdivisions is cultivation of various types fresh fruit. This region is famous for 'Guava' cultivation. Another fresh fruits of this subdivision are Mango, Lichi, Achras Japata, Aish fruit, Locked fruit, Gulap Jamoon etc.

In this subdivision, Gajan utsob is famous There are some festivals in different months of the year e.g. Rash Mela is observed in October- November, Charak Mela in March April, Rath Mela in July. Dolmanch of this region is 200 years old. Cottage industry like manufacturing of incensed stick where a large number of women were involved. Another traditional art in this area is Terracotta works.

3.3.3 Diamond harbour

Diamond Harbour is earlier known as Hajipur and this name was changed by British. This subdivision is situated at the Eastern bank of Hooghly River. Diamond

harbour subdivision consist of one municipality and nine community development blocks (Diamond Harbour- I, Diamond harbour-II, Falta, Kulpi, Magrahat –I, Magrahat –II, Mandirbazar, Mathurapur I, and Mathurapur-II). These nine blocks contain one town and 99 gram panchayets. The headquater of this subdivision is Diamond Harbour. It is an agricultural trade centre. Chief industry of that region become rice milling.

3.3.4 Kakdwip

Kakdwip became the main centre in the time of Tebhaga movement in 1946. It is a subdivision situated at the eastern bank of Hooghly River consist of four community development blocks (Kakdwip, Namkhana, Pathar Pratima and Sagar). The headquarter of this subdivision is Kakdwip. There are 42 gram panchayets under this subdivision. Some area of that region such as Gangasagar, Fraserganj, Mousuni Island, Bakkhali etc. attracts large number of tourists.

3.3.5 Canning

Canning is called the gateway of the Sundarbans. It is situated on the bank of Matla. As an alternative port to Kolkata, Lord Canning had built this port. There are 6 police stations (Canning, Jibantala, Basanti, Jharkhali Coastal, Gosaba, Sundarbans), 4 blocks (Canning 1, Canning 2, Basanti, Gosaba) and 46 gram panchayats. According to 2011 cencus, the literacy rate of canning subdivision is 70.98 %. The headquarters of this subdivision is Canning.

Table 3.1: Division of study area

Sl. No	Sub-division	Block	Municipality
1	Alipore	Bishnapur-I	Budge Budge
2		Bishnapur –II	Pujali
3		Budge Budge –I	Maheshtala
4		Budge Budge –II	
5		Maheshtala	
6	Baruipur	Baruipur	Baruipur
7		Bhagore- I	RajpurSonarpur
8		Bhagore- II	JoynagarMajilpur
9		Joynagar- I	
10		Joynagar – II	
11		Kultali	
12		Sonarpur	
13	Diamond Harbour	Diamond Harbour – I	Diamond Harbour
14		Diamond Harbour- II	
15		Falta	
16		Kulpi	
17		Mograhat- I	
18		Mograhat-II	
19		Mandirbazar	
20		Mathurapur –I	
21		Mathurapur-II	
22	Kakdwip	Kakdwip,	
23		Namkhana	
24		Pathar Pratima	
25		Sagar	
26	Canning	Basanti	
27		Canning-I	
28		Canning –II	
29		Gosaba	

[5]

3.4 Significance of study area

South 24 pgs is the largest district of West Bengal according to its area which is 8165.05 sq. km. It is an adjoining district of Kolkata extending to the remote villages up to the Bay of Bengal. This district has high population density and lacks of transport and communication facilities in the rural area.

Among this district's population, 84% live in rural areas whereas only 16% live under the development of Kolkata Municipalities Corporation and seven Municipalities. The average rainfall in this area is near about 1750 mm to 1770 mm, whereas the maximum temperature is 36.3^0 C and the minimum temperature is 13.6^0 C. The Sundarbans, the largest mangrove forest on earth, is situated in this district. For the geographic location of this district, the coastal areas are tremendously affected by cyclonic storms, which cause the destruction of crops, lose of life and property.

3.5 Location

South 24 Parganas, a district of West Bengal, came into existence on March 1, 1986, divided from 24 Parganas district. Bangladesh surrounds this district to the East, North 24 Parganas to the North, Howrah to the North-East, Purba Medinipur to the West and Bay of Bengal to the South. It is the southernmost district between 883'45" East and 894'50" East longitudes and 2129'0" North and 2233'44" North latitudes. It is one of the state's backward districts despite being an adjoining district of Kolkata.

3.6 Population

The population is one of the vital parts of any study area. As per the 2011 census report, the total population of South 24 Parganas district was 8161961, of which the male and the female folks were 4173778 and 3988183, respectively. The population

growth in the 2011 census was 18.17%, whereas it was 20.85% according to the 2001 census. The density of South 24 Parganas District is 819/km. The details population chart is given in the following table. [8]

Table 3.2: Population of the study area

Sl. No.	**Population**	**Number of population**
1	Total population	8,161,961
2	Male population	4,173,778
3	Female population	3,988,183
4	Population density	819/km
5	Sex ratio	956
6	Child population	1,025,679
7	Child sex ratio	963

[5]

3.7 Literacy Rate

Education plays an essential role in the socio-economic development of any study area. The literacy rate of the South 24 pgs District is 78.57% according to the 2011 census compared to 69.45% in the 2001 census. The literacy rate was increased by 9.12% in the 2011 census.

According to the 2011 census, male and female literacy were 83.35% and 71.40%, respectively. The literacy rate of women is shallow, and they are mostly involved in fishing-related activities such as peeling, drying, cleaning and selling fish. The detail literacy rate according to this particular district's 2001 and 2011 census is provided in the following table. [1]

Table 3.3: Literacy Rate in this study area

Sl. No.	**Literacy rate**	**2001(%)**	**2011(%)**
1	Person	69.45	78.57
2	Male	79.19	83.35
3	Female	59.01	71.40

[5]

3.8 Religion

West Bengal state with unity in diversity, South 24 Parganas is a district with various religions such as Hindu, Muslim, Christian, Buddhist and Jain amongst which Hindu is predominant. The following table represents the religious proportion of this district. The majority of fisherman in this district belongs to Hindu religion, whereas some of the fishermen are Muslim and few are from the Christian religion. As per the 2011 census, Hinduism constitutes 63.17%, followed by Muslim 35.57%, Christian 0.81%, Sikh 0.03%, Buddhist 0.03% and Jain 0.01%. Religion status of South 24 Parganas district is provided below.

Table 3.4: Religion of this study area

Sl. No.	**Religion**	**2001**	**2011**
1	Hindu	65.86	63..17
2	Muslim	33.24	35.57
3	Christian	0.76	0.81
4	Sikh	0.02	0.03
5	Buddist	0.03	0.03
6	Jain	0.01	0.01
7	Others	0.07	0.07

[5]

3.9 Climate

Almost throughout the year, the climate of this district becomes hot in summer and has high humidity; in the monsoon season, there is well-distributed rainfall. The winter season prevails from the middle of November to the end of February. The summer season is from March to May. This district has a monsoon from the beginning of June to the end of September. [7]

3.9.1 Rainfall

When the condensed water vapour becomes heavy and falls under gravity in a droplet, liquid water is known as rain. It is the primary source of fresh water on the earth. According to this district's annual rainfall report, July is the rainiest month. About 76% of yearly rainfall constituted from June to September. Again the report of fifty years from 1951 to 2000 focuses on the lowest annual rainfall, which was 39%, occurred in the year 1979, and the highest rainfall, which was 162%, occurred in the year 1953. On average, there are 71 rainy days (days with a rain of 2.5 mm) throughout the year. The detailed rainfall in this district is given in table 3.5.

Table 3.5: Rainfall in this area

Month	Year				
	2018	**2017**	**2016**	**2015**	**2014**
Jan	0.00	0.00	7.20	10.90	0.00
Feb	0.40	0.10	63.30	5.70	49.80
Mar	0.40	69.80	1.60	15.50	20.20
Apr	44.20	42.90	7.60	69.10	0.00
May	95.90	42.90	100.40	35.90	190.30
Jun	424.60	149.20	181.90	264.30	214.20
Jul	460.60	540.40	472.40	754.60	323.60
Aug	257.90	276.50	534.50	351.50	352.60
Sep	181.30	207.50	221.60	196.40	317.90
Oct	127.50	310.30	93.90	23.50	109.70
Nov	4.40	26.70	54.00	2.80	0.50
Dec	9.50	24.80	0.00	7.60	1.00

[9]

3.9.2 Temperature

Temperature measures any region's coldness and hotness, calculated by different scales such as Fahrenheit and Celsius. The cold or winter season starts in this region in the middle of November when the temperature begins to reduce. The coldest month in this district is January. In this month, the average maximum temperature stays at 28.2^0C, and the average minimum temperature stays at 10.7^0C. In winter, due to the Western wind, sometimes the temperature in this district may fall about 1 to 3^0C. At the end of February, the temperature begins to rise. The average temperature reached in

maximum level (38^0C) in May. In summer, a sudden relief occurs temporally with the thunderstorms. With the emergence of South West wind, the monsoon starts the first week of June when the day temperature begins to fall and the night temperature begins to rise. The temperature begins to drop in the middle of November, and the winter season starts.

3.9.3 Humidity

It represents the quantity of water vapour in the atmosphere or gas. Generally, throughout the year, the humidity rate is very high, which is 65% to 75% in the district. But in the winter, from the middle of November to February, air humidity is comparably less than 30% to 40%.

3.9.4 Cloudiness

When the sky is overcast, that is known as cloudiest. The South 24 pgs district is comparatively clouded in May. Also, in monsoon season, the skies are mostly heavily covered. The cloudiness decreases from October, and for the next six months, the skies are lightly clouded and clear.

3.9.5 Winds

In South 24 Parganas district, the wind flows are generally light throughout the region where the South-West wind blows at the beginning of the monsoon. In the rest of the year, the wind blows from various directions.

3.9.6 Special Weather Phenomena

In the time of post-monsoon, that district's residents suffered from storm formed in the Bay of Bengal. In the summer season, thunderstorms are common in the evening time. Sometimes, it becomes violent with heavy rain. These thunderstorms generally

come from North-West and are locally known as Kalbaisakhi. After the thunderstorms, there is a sharp fall in temperature. Sometimes, fogs occur during the winter season.

3.10 Soil

Mainly, saline soil with mud is found in this district's coastal area and the Sundarbans regions. The soil is grey in colour. Due to the excessive presence of organic substances, the soil has a very loose fragment and is highly acidic. It is not suitable enough for cultivation enough for the absence of essential nutrients. However, some crops such as coconut, betel nut and watermelon are appropriate for plantation in the region. Throughout the year, this soil remains saline and wet.

3.11 Rivers

The river is a body of water that flows downhill for gravity. The river in a region also provides drinking water and food and plays an important role in the development of human civilization. This particular district has a number of rivers. Among them, the major rivers are as follows**. [Map of significant rivers has been provided in appendix B]**

- Matla River
- Raimangal River
- Saptmukhi River
- Hooghly River
- Bidydhari River
- Thakuran River
- Piyali River

3.11.1 Matla River

Matla is one of the important rivers in the Sundarbans region in South 24 Parganas district. Near Parandar, the mainstream of this river is divided into two sides. One stream goes through Goran Bose-Kultali and then across the Sundarbans. The other stream goes through Basanti, Sajinatala, Pathankhali and Mazidbari and then near Godkhali, meets with the Bidyadhari River. On Makarsankranti day, near about 10 lakhs devotee take a bath at the stream of the Adiganga and Matla river.

Matla river becomes so unstable that it becomes impossible to ferry people by boat during the monsoon season. Besides, at the dry season, Matla has become so slim that the boats cannot come near the jetties. Lakhs of families are dependent for their livelihood on the Matla river. The only mangroves forest in the world, Sundarbans also is effected by this river.

3.11.2 Raimangal River

Raimangal River passes as a divider of the Sundarbans regions of South 24 Parganas district and Satkhira district of Bangladesh. The Ichamati River is divided into several streams, mainly Raimangal, Jhilla, Bidya, Kalindi and Jamuna. This river creates the international border between India and Bangladesh.

3.11.3 Saptmukhi River

It is one of the vital rivers in the Sundarbans region in the South 24 Parganas district in West Bengal state. Originating near Sultanpur, the Saptamukhi River passes between Mathurapur and Kulpi blocks. Through Muriganga, it is connected to Hooghly river. After traveling 80 km, it falls into the Bay of Bengal with a wide estuary. There are two islands and 6 mouzas at the Western bank of Saptamukhi river. The accretion of the area like Fedric island, Dakshin Chandanpiri, Debnibas happens for low wave

energy and thick mangrove cover. Erosion happens in those mouzas which are not cover by mangrove.

3.11.4 Hooghly River

The Hoogly River or Bhagirathi-Hoogly River called the Ganga or the Kati-Ganga rises close to Giria. At Dhulian in Murshidabad district, it splits from the Ganges by Farakka Barrage. Bhagirathi comes from the word 'Bhagirotha', the Sagar Dynasty prince who brought the Ganges from the heaven to the earth in order to release his sixty thousand grand uncle from the curse of Saint Kapila. Therefore, the water of Bhagirathi-Hooghly is considered holy.

This river passes through Murshidabad, Nadia, Hooghly, Purba Bardhaman, Howrah, North 24 Parganas, Kolkata and South 24 Parganas. The upper zone of the river is called Bhagirathi while the lower zone is familiar as Hooghly river. There are so many branch rivers in this river such as Mayurakshi, Jalangi, Damodar, Rupnarayan and Haldi etc. Some remarkable town like Chandannagar, Bandel, Barrachpur, Srirampur, Uttarpara, Rishra, Kamarhati, Titagagh, Baranagar, Agarpara and Kolkata are located at the banks of this river.

Economically, this river is an essential lifeline to the people of West Bengal. The water of this river is used for irrigation and industry consumption in West Bengal. This region is one of the biggest industrial areas of India. There are number of small cities which form the greater Kolkata, the former capital and the second largest Indian city. For the long period, Calcutta becomes the biggest port in India.

3.11.5 Bidydhari River

Bidyadhari River is also called Bidya. It is an important river in West Bengal State in India. Originating near Haringhata in Nadia district, it passes through Habra,

Deganga and Barat in North 24 Parganas district and then meets with the Raimangal River in the Sundarbans. A wide estuary is formed in the Sundarbans area in the South 24 Parganas district by the Matla River and Bidyadhari river. There are many drainage systems in North 24 Parganas and Kolkata of this river. A large amount of agricultural runoff and discharges from various industries of Kolkata metropolitan and adjacent areas are fallen in Bidyadhari river through sewage canals. Therefore, the water crosses the limit of Hg consumption.

3.11.6 Thakuran River

Thakuran River (also called Jamira) creates a wide estuarine in the Sundarbans region of South 24 Parganas district flows between Matla and Saptamukhi through the buffer region. The entire area is flooded with brackish water during the high tide. It originated near Jaynagar and forms boundary between Mathurapur 1 and Jaynagar 1 blocks. Near the sea, this river is very wide.

There are so many branches of Thakuran river. These are the Damdama Khal, the Pukchara, the Kadrakhali Khal, the Moni River, the Shibua Gang, the Raidighi, the Ross Creek etc. Again there are many loop of this river such as the Hura Khal, Chulkati gang, Bainchapri Khal which are interconnected among themselves. The forest area around the Thakuran river are protected. There are so many natural mangrove habitats in this area. The core area of Sundarbans Tiger Reserve falls under the East side of Thakuran river where the access of general tourist is not allowed.

3.11.7 Piyali River

Piyali begins near Jaynagagar and creates a boundary between Jaynagar and Mathurapur block. It is a tidal river in the Sundarbans region in the South 24 Parganas district. Fourteen kilometres below Bamanghata, this river leaves the Bidyadhari River

and flows South until it joins with the Matla River. Piyali River also passes through the Dongajora, Pachua Khali, Mahish Mari, Gabindapur, Tilpi, Dhosa etc. most of the land beside the Piyali has been converted with the cultivated land.

Piyali is considered as the gateway of Sundarbans. It is situated to near Sajinakhali and Netidhopani. The river side of Piyali river is the ideal location for the nature lover. It is also a relaxation place for the visitor of Sundarbans. Many country boat and pleasure boat are seen in this river. The tourist can see the rich flora and fauna in the time of visiting the river.

Table 3.6: Major Rivers in this area

Sl. No.	**Name of the river**	**Total length in the district (k.m.)**	**Place of origin**
1.	Hooghly	42.58	Giria, West Bengal
2.	Thakuran	25.02	Jaynagar, West Bengal
3.	Bidyadhari	60.58	Haringhata, West Bengal
4.	Matla	85.82	Daharani, West Bengal
5.	Piyali	13.71	Dhosa, West Bengal
6.	Saptamukhi River	80	Sutanpur, West Bengal

[9]

3.12 Profile of coastal blocks

Among 29 block of South 24 pgs distrct, only 14 blocks have the coastal area. These 14 blocks are Basanti, Canning 1, Canning 2, Mathurapur 2, Diamond Harbour 1, Diamond Harbour 2, Falta, Gosaba, Kakdwip, Kulpi, Kultali, Namkhana, Pathar Pratima and Sagar. **[Map of Coastal Blocks is provided in Appendix B]**

3.12.1 Basanti

Total population of this block is 336,717 as per the Census 2011. Out of which 171,279 are males while 165,438 are females. In 2011, there were a total 70,818 families residing in Basanti Block. The Sex Ratio of Basanti Block is 966. As per Census 2011, only 2% people live in Urban areas while rest of the people live in the Rural areas. The total literacy rate of Basanti Block is 68.32% while in urban areas is 80.2% and 68.1% is in rural areas. The population of Children of age 0-6 years in Basanti Block is 50770 which is 15% of the total population.

3.12.2 Canning I

Total population of this block is 304,724 as per the Census 2011. Out of which 155,126 are males while 149,598 are females. In 2011, there were a total 64,041 families residing in Canning I Block. The Sex Ratio of Canning I Block is 964. As per Census 2011, only 40.4% people live in Urban areas while rest of the people live in the Rural areas. The total literacy rate of Canning I Block is 70.76% while in urban areas is 77.8% and 65.7% is in rural areas. The population of Children of age 0-6 years in Canning I Block is 44344.

3.12.3 Canning II

Total population of this block is 252,523 as per the Census 2011. Out of which 128,438 are males while 124,085 are females. In 2011, there were a total 49,711 families residing in Canning II Block. The Sex Ratio of Canning II Block is 966. As per Census 2011, only 4.4% people live in Urban areas while 95.6% people live in the Rural areas. The total literacy rate of Canning II Block is 66.51% while in urban areas

is 60.3% and 66.8% is in rural areas. The population of Children of age 0-6 years in Canning II Block is 43455 which is 17% of the total population.

3.12.4 Diamond Harbour I

Diamond Harbour I is a community development block that forms an administrative division in Diamond Harbour I subdivision of South 24 Parganas district in the Indian state of West Bengal. Diamond Harbour I CD Block is bounded by Falta CD Block in the North, Magrahat I CD Block in the East, Kulpi CD Block and Sutahata CD Block in Purva Medinipur district and across the Hooghly in the South, and Diamond Harbour II CD Block in the West. It is located 43 km from Alipore, the district headquarters. Total population of this block is 156,166 as per the Census 2011. Out of which 79,816 are males while 64,410 are females. The Sex Ratio of Diamond Harbour I Block is 962. The total literacy rate of Diamond Harbour Block is 75.72%. The population of Children of age 0-6 years in Diamond Harbour I Block is 21,578. [6]

3.12.5 Diamond Harbour II

Total population of this block is 190,801 as per the Census 2011. Out of which 97,686 are males while 93,115 are females. In 2011, there were a total 42,522 families residing in Diamond Harbour II Block. The Sex Ratio of Diamond Harbour II is 953. As per Census 2011, only 2.6% people live in Urban areas while 97.4% people live in the Rural areas. The total literacy rate of Diamond Harbour II is 76.91% while in urban areas is 64.5% and 77.2% is in rural areas. The population of Children of age 0-6 years in Diamond Harbour II is 23395 which are 12% of the total population.

3.12.6 Falta

Total population of this block is 249,561 as per the Census 2011. Out of which 127,665 are males while 121,896 are females. In 2011, there were a total 57,153 families residing in Falta Block. The Sex Ratio of Falta live in the Rural areas. The total literacy rate of Falta Block is 77.17% while in urban areas is 83.8% and 76.8% is in rural areas. The population of Children of age 0-6 years in Falta Block is 28715which is 12% of the total population.

3.12.7 Gosaba

Total population of this block is 2,46,598 as per the Census 2011. According to census 2011 information the sub-district code of Gosaba Block (CD) is 02435. Total area of Gosaba block is 2,662 km². Gosaba block has a population density of 92.65 inhabitants per square kilometre. There are about 58,197 houses in the sub-district. Total 70.07% population of Gosaba subdivision is literate, out of which 76.75% males and 63.09% females are literate.

3.12.8 Kakdwip

In 1946, the pleasant movement named Tebhaga movement affected several areas of South 24 Parganas. Namkhana and Kakdwip were the focal point of that movement. Kakdwip block is surrounded by Patharpratima block in the East, Kulpi block in the North, Namkhana and Sagar block in the South and Nandigram I block in the West.

According to census 2011 information the code of Kakdwip Block (CD) is 02437. Total area of Kakdwip block is 253 km². There are about 39 villages in Kakdwip block. Total population of this block is 281,963 as per the Census 2011. The sex ratio of

Kakdwip block is 956. The total literacy rate of Kakdwip Block is 77.93% while male literacy rate is 74.05% and the female literacy rate is 62.37%. The population of Children of age 0-6 years in Kakdwip Block is 34715 which is 12% of the total population. In Kakdwip block, 34.91% people live in below poverty line. Most of the people of that region depend on agriculture for their livelihood. For the saline soil, some places are unfit for cultivation, but the unsalted lands of that region are very fertile. Rice and jute is the main crop for cultivation in that region.

3.12.9 Kulpi

Kulpi is a Community development block in the Diamond Harbour subdivision of South 24 Parganas District. In this block Harinarayanpur is an archeological site. Kulpi block is surrounded by Mathurapur and Patharpratima blocks in the East, Diamond Harbour I and Magrahat I block in the North, Kakdwip block in the South and Haldia block in the West.

Total population of this block is 283,197 as per the Census 2011. Out of which 144,773 are males while 138,424 are females. In 2011, there were a total 59,078 families residing in Kulpi Block. The Sex Ratio of Kulpi Block is 956. As per Census 2011, only 5.8% people live in Urban areas while 94.2% people live in the Rural areas. The total literacy rate urban and rural areas are 73.6% and 75.6%. The population of Children of age 0-6 years in Kulpi Block is 39378 which is 14% of the total population. In Kulpi block, 52.64% people live in below poverty line.

3.12.10 Kultali

This block is surrounded by Canning block in the East, Jaynagar II block in the West, Jaynagar I and Jaynagar II block in the North and Sundarban forest and Bay of

Bengal in the South. Kultali is a community development block of South 24 Parganas district in the Indian state of West Bengal. According to census 2011, the code of Kultali Block (CD) is 02433. There are about 46 villages in Kultali Block. Total area of Kultali block is 870 km². There are about 45,099 houses in this block. Total population of this block is 2,29,053 as per the Census 2011 with population density of 263.3. The total literacy rate of Kultali Block is 58.55% while male literacy rate is 66.86% and the female literacy rate is 49.78%. Main livelihood in this block cottage industry, cultivation and fishery. Chiquri and Nolgara are the main two forest under Kultali block. From 20 to 29 December, there is a Sanskriti and Krishhti mela in this block.

3.12.11 Mathurapur

Total population of this block is 220,839 as per the Census 2011. Out of which 113,831 are males while 107,008 are females. In 2011, there were a total 45,888 families residing in Mathurapur -II Block. The Sex Ratio of Mathurapur II is 940. As per Census 2011, only 2.7% people live in Urban areas while 97.3% people live in the Rural areas. The total literacy rate of Mathurapur II is 77.77% while in urban areas is 77.8%. The population of Children of age 0-6 years in Mathurapur II is 26447 which are 12% of the total population.

3.12.12 Namkhana

Namkhana is a community development block of South 24 Parganas district in the Indian state of West Bengal. According to census 2011, the code of Namkhana Block (CD) is 02449. There are about 39 villages in Namkhana Block. Total area of this block is 326 km². There are about 41,433 houses in this block. Total population of this block is 1,82,830 as per the Census 2011 with population density of 560.1. The total

literacy rate of Namkhana Block is 75.54% while male literacy rate is 80.68% and the female literacy rate is 70.19%.

3.12.13 Pathar Pratima

Total population of this block is 331,823 as per the Census 2011. Out of which 169,422 are males while 162,401 are females. In 2011, there were a total 69,641 families residing in Patharpratima Block. The Sex Ratio of Patharpratima is 959. As per Census 2011, only 3.7% people live in Urban areas while 96.3% people live in the Rural areas. The total literacy rate of Patharpratima is 82.11% while in urban areas is 82.1%. The population of Children of age 0-6 years in Patharpratima is 42021 which are 13% of the total population.

3.12.14 Sagar

Total population of this block is 212,037 as per the Census 2011. Out of which 109,468 are males while 102,569 are females. In 2011, there were a total 43,716 families residing in Sagar Block. The Sex Ratio of Sagar Block is 937. As per Census 2011, only all the people live in Urban areas. The total literacy rate of Sagar Block is 84.21%. The population of Children of age 0-6 years in Sagar Block is 26212 which is 12% of the total population There are 13344 male children and 12868 female children between the age 0-6 years.

3.13 Profile of fishing villages

The name of fishing villages, fisherman population, fishing seasons, fishing crafts and gears, registration and license, a welfare program for the fishermen, biometric identity card, fishery training centre, fishery landing centre etc. under these particular 14 blocks are briefly discussed below.

3.13.1 Name of the fishing villages

The names of all fishing villages have been collected from the fishing department under every block**. [Map of fishing villages is provided in Appendix B]**

Table 3.7: Name of fishing villages of South 24 pgs

Sl. No.	Name of Fishing village	Block
1.	Jharkhali	Basanti
2.	Jatishpur	
3.	Nafargunge	
4.	Bharatgarh	
5.	Charabidhya	
6.	Masjidbari	
7.	Ramchandrakhali	
8.	Basanti	
9.	Itkhola	Canning I
10.	Nikarighata	
11.	Matla 1	
12.	Matla 2	
13.	Basra	
14.	Gopalpur	
15.	Daharani	Canning II
16.	Hediar Abad	
17.	Iswaripur	
18.	Kalicharanpur	Diamond Harbour I
19.	Krishnarampur	
20.	ChakDeulpotar	
21.	Bishra	Diamond Harbour II
22.	Uttar Simulberia	
23.	Akalmegh	
24.	Nainan	

25.	Gopalpur	
26.	Ramnagar	
27.	Noorpur	
28.	Raichak	
29.	Shyamsundarpur	Falta
30.	Falta	
31.	Abad Simulgunge	
32.	Bali 1	Gosaba
33.	Bali 2	
34.	Chotomollakhali	
35.	Gosaba	
36.	Pathankhali	
37.	Lahiripur	
38.	Kumirmari	
39.	Satjelia	
40.	NischintaPur	Kakdwip
41.	Akhyaynagar	
42.	Gobindarampur	
43.	Shibkalinagar	
44.	Hanra	Kulpi
45.	Bishnurampur	
46.	Uttar Mukundapur	
47.	Hari Narayanpur	
48.	Inchinberia	
49.	Masamari	
50.	Maipith	Kultali
51.	Bhubaneswari	
52.	Deulbari	
53.	Gopalgunge	
54.	Marigunge 2	
55.	Raydighi Abad	Mathurapur II
56.	Kankandighi	

57.	Damkal	
58.	JagannathChak	
59.	Nagendrapur	
60.	Mahabatnagar	
61.	Nandakumarpur	
62.	Namkhana	Namkhana
63.	Patibunia,	
64.	Mousuni	
65.	Dakshin Durgapur	
66.	Iswaripur	
67.	Haripur	
68.	Debnibas	
69.	Ramganga	PatharPratima
70.	DakshinSibgunge	
71.	Bhagabatpur	
72.	Kishori Nagar	
73.	DakshinGobindapur	
74.	Parbatipur	
75.	RadhaKrisnapur	Sagar
76.	Gangasagar	
77.	Chemaguri	
78.	Beguakhali	
79.	Naraharipur	

Source: Fishing department in different blocks

3.13.2 Fisherman population

The fishermen population under every block have been collected from the fishing department.

Table 3.8: Fishermen population in this study area

Sl. No	**Block**	**Population**		
		Male	**Female**	**Total**
1.	Basanti	8400	3600	**12000**
2.	Canning I	1725	575	**2300**
3.	Canning II	840	360	**1200**
4.	Diamond Harbour I	10500	3500	**14000**
5.	Diamond Harbour II	9750	3250	**13000**
6.	Falta	4875	1625	**6500**
7.	Gosaba	14000	6000	**20000**
8.	Kakdwip	12600	5400	**18000**
9.	Kulpi	10500	4500	**15000**
10.	Kultali	7000	2500	**9500**
11.	Mathurapur 2	1875	625	**2500**
12.	Namkhana	8050	3450	**11500**
13.	PatharPratima	10500	3500	**14000**
14.	Sagar	8400	3600	**12000**
	Total	**1,09,015**	**42,485**	**1,51,500**

Source: Data from fishing department

3.13.3 Fishing Seasons

In which time to catch fish is legal; this time is known as fishing time. It can reduce or increase by several parameters, such as bad weather, the roughness of the sea,

engine repair, social ceremonies, religious festivals and so on for individual fishermen. There are two times a year, known as a banned time for fishing that is 15th April to 14th June and 15th September to 24th October. It is the breeding season for most of the species in this region. At this time, fishing is strictly prohibited by all fishing departments. Except for the banned period, all the time in a year is the fishing time of South24 pgs district. Although more fish are available in the time of 'Amavasya' and 'Purnima' tithi. Near about 80-90 species of fish, 2-3 types of crab, and 5-6 types of prawn from marine waters are available in this region.

3.13.4 Fishing Crafts and Gears

Fishing gear means any equipment or instruments used for fishing, including fishing net, hook, rope, trap, harpoon etc. Fishing crafts are essential for catching large quantities of fish from the water. There are mainly two types of fishing crafts such as mechanized and non-mechanised boat are used in South 24pgs. In this region, fishing gear, such as box traps, bag nets, hand lift nets, cast nets, drag nets, gill nets and so on, are used for fishing. Among non-mechanical boats, vallam, dinghi are used more in South 24 pgs.

3.13.5 Registration and license

The fishermen acquire fishing gear, like fishing nets, rods, fishing lines reels, hooks, vessels etc. registered by Directorate of fisheries of the state before applying for a fishing license. Registration of fishing gear is a one-time process. Without registration of their fishing gear, one cannot apply for a fishing license.

A person registered with fishing gear can apply for a fishing license in the Directorate, Department of fisheries of the state. After fill up application form, the applicant must provide essential documents for validation. After validating the

document, the authority will provide a license or allow for fishing. A fishing license is not permitted for the breeding season, 15 April to 14 June and 15 September to 24 October. The license for fishing shall be valid for one year. After one year, the license should be renewed with the proper documents.

3.13.6 Welfare program for the fishermen

The government of West Bengal also engaged with some welfare programs for the fishermen community in marine, inland and brackish sectors in the year 1984-85; the personal insurance schemes for the fishermen community and their families were started. The government provides Rs. 35000 in case of death and Rs. 17,500 in case of disabilities against the premium of Rs. 12/- per year, which the government also provides. The total no of fishermen under this scheme is 1,52,380 till 2020. In 1998-99, another scheme was introduced named by saving cum relief scheme and several(5000) fishermen benefitted from this scheme. According to this scheme, the fishermen have to pay Rs. 45 per month through the eight months fishing period and to get a return of Rs. 270 per month during four month lean period.

3.13.7 Biometric Identity Card

Fishermen in the coastal area of South 24 pgs were provided the biometric identity cards to enhance security in the coastal belt. This plan was formulated after the terror attack in Mumbai on 26/11 of 2006, as the terrorist used the waterways to enter the city from Pakisthan. This project is funded by the central government.

It is a QR code-based biometric identity card for coastal fishermen that enable the authorities to ensure fishermen’s safety and security. This card also contains biographical data, photographs and fingerprints of fishermen controlling Bangladeshi

immigrants and illegal activities such as smuggling in the sea. **[Image of a Biometric Card is provided in Appendix C]**

3.13.8 Fishery training centre

Fishing training centres are the institution where fishermen are trained to improvise their fishing and fish farming skills. These training centres arrange so many training courses for fishermen. In South 24 Parganas district, various training centres such as Joygopalpur Gram Bikash Kendra, CIFE (Central Institute of Fisheries Education), Bharat Sevasham Shangha-Daria, Bengal Association, Notary Club arrange training programs for fishermen.

3.13.9 Fishing Landing Centre

A fishing landing centre is where the fisher can get the facility to leave their boats and fulfil their demand for fuel, food and ice. These centres are associated with small-scale marine and inland fishing. In the South 24 Parganas district region, many landing centres have developed with the collaboration of local communities.

The limitations or lack of infrastructure at the landing centre in artisanal fisheries sector indicates that individual productivity is very low and the wastage and spoilage rate is high. However, every government tries to support the artisanal fisheries sectors. But they are not interested in sufficient funding for better infrastructure in the landing centre. There are so many fishing landing centres in South 24 Parganas District. The list of the landing centre is provided below. [**Map of landing centres is provided in Appendix B]**

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Chapter 4
Research Design and Methodology

Chapter 4

Research Design and Methodology

In research, the methodology is a way to solve the problem, unfold the predictable answers and examine the hypothesis with appropriate analysis. Besides, the methodology also highlights the practice of data collection, the procedure of data analysis and statistical techniques used in a particular study. This chapter also focuses on the total population of the research and identifies the sampling techniques used in this study. In the present study, an attempt is made to find the information needs and information-seeking behaviour among the fisherwomen community in the coastal area of South 24 Parganas district.

4.2 Methodology

In this study, the survey method is adopted. The survey is done in coastal area of South 24 Parganas district. It involves asking questions to the respondents face to face in depth interview conducted by the researcher.

4.3 Population of the study

The present study intends to analyse the information-seeking behaviours of the fisherwomen community in the coastal area of South 24 pgs. So the population of this study becomes all fisherwomen who mainly catch fish and seafood such as lobster, crabs, crayfish, prawn and shrimp. The geographical area of this study is restricted to only the coastal area of South 24 Parganas district.

4.4 Sample of the study

Sampling is a technique used for selecting individuals from a population of a study in a systematic way that represents a larger population group. It is necessary because a survey of the whole population under any study is often impossible, and it may be very costly and difficult to handle data. This study randomly selected respondents from coastal fisherwomen communities of South 24 pgs. district using stratified random sampling technique. There are 29 blocks in this particular district. Among them, only 14 blocks (Basanti, Canning 1, Canning 2, Mathurapur 2, Diamond Harbour 1, Diamond Harbour 2, Falta, Gosaba, Kakdwip, Kulpi, Kultali, Namkhana, Pathar Pratima and Sagar) have coastal area. Only these 14 blocks are selected for this study.

For sample selection, respondents have been selected proportionally from each block. Total 350 fisherwomen were selected who were engaged in catching fishes,

crabs, crayfish, prawns, shrimp, lobster etc. According to the fishing department's report, the fisherwomen's population of each block is presented in the following. The detail of the sample selection is provided in table 4.1.

Table 4.1: Sampling Design

Sl. No	**Block**	**Total fisherwomen population**	**Number of respondents selected for sampling**
1.	Basanti	3600	30
2.	Canning I	575	5
3.	Canning II	360	3
4.	Diamond Harbour I	3500	29
5.	Diamond Harbour II	3250	27
6.	Falta	1625	13
7.	Gosaba	6000	49
8.	Kakdwip	5400	44
9.	Kulpi	4500	37
10.	Kultali	2500	21
11.	Mathurapur 2	625	5
12.	Namkhana	3450	28
13.	Pathar Pratima	3500	29
14.	Sagar	3600	30
	Total	**42,485**	**350**

4.5 Tools used for the study

Research tools become the instrument for gathering the required information from the respondents. There are various types of research tool and among them, a few

kinds of research tools such as questionnaire, interview, survey, and observation is used for this study.

The primary research tool for data collection from the fishermen is a questionnaire (Appendix A). Data were collected by questionnaire with the help of a personal interview conducted by the researcher. In the questionnaire, most of the questions are 'closed questions' fixed with a tick mark and yes and no answers for the realization of information needs, sources of information, information-seeking behaviour and problems acquiring information. Also, few 'open questions' are used to know about the personal information of the respondents.

Excluding few questions about respondents' personal information, most of the questions deal with specific details on the study'sobjectives. The questionnaire is prepared in the English language. The opinion of the subject expert regarding the questionnaire has also been taken for necessary correction. Also, the observation of the fisherwomen community is done for better realization of the respondents.

4.5.1 Questionnaire

The questionnaire has been formulated with six sections enumerated below to obtain the study's objectives. All questions were made straight forward to maintain their simplicity.

Section A - General Information consists of 12 questions

The first section of the questionnaire consists of 12 simple questions about the name, address, age, religion, marital status, types of family, education, work, monthly income etc., of the respondents.

Section B - Specific Information consists of 18 questions.

The second section of the questionnaire comprises 18 specific questions about the respondents' reason for becoming fishermen, fishing right, fishing vessel, ownership of vessel, month for fishing, the technology of fishing etc.

Section C - Information Needs comprising 8 questions.

The third section of the questionnaire consists of 8 questions about the information needs of the respondents. These questions pertained to various types of information needs such as technical information, climate, environment, economy, geography and health, as well as the information about ice plants, dry fish stock, packing of dry fish and manufacture of fish nets and vessels.

Section D - Sources of Information consists of 4 questions.

This section of questionnaire comprises four questions about the information sources such as conventional, non-conventional and indigenous sources of information. This also helps to know about which kind of information sources is used most by the respondents.

Section E - Information Seeking behavior consists of 7 questions

This section of the questionnaire comprises six questions about the respondents' information-seeking behaviour, like frequency of library visits, time spent in the library, time for visiting the library and satisfaction level with library facilities.

Section F - Problems in acquiring Information consists of 2 questions.

This section of the questionnaire comprises two questions about the problems faced by the respondents during information seeking. There are different issues, such as lack of time, unavailability of a library nearby, old library resources etc.

4.5.2 Survey

A survey method is a tool, technique or process by which data is collected from a predefined group of people. The survey method links the participator and the person or authority who conducted the research.

In this research, face to face survey method is conducted to collect data from fisherwomen. The researcher personally visits the respondents for data collection.

4.5.3 Interview

Interview is a research method used for data collection. In this method, two or more people are involved. There are several types of interview methods. These are structured interviews, unstructured interviews and semi-structured interviews.

In this research, a structured interview is conducted for data collection. Most of the questions interviewed by the researcher were close or multiple choice questions. In this study, the researcher's individual consultation is done with the respondent for data collection.

4.5.4 Observation

The researcher uses observation research to observe the participants in their natural setting. That enables the researcher to understand the actual situation of the study area.

4.6 Data collection

The data used for this study has been collected from primary and secondary sources of information. For the literature review, data are gathered mainly from secondary sources of information. Also, the data has been used from secondary sources of information to understand the study area better. Primary data used for this study has been collected through questionnaires was consisted of 6 parts relating to 6 different aspects of this present study, namely general information about the respondents, specific information about the respondents and information needs, sources of information, information seeking behavior, problems acquiring information by the respondents.

For primary data collection, the numbers of 350 questionnaires are used. The respondents were interviewed conducted by the researcher. Also, the fishery extension officers of every block under the study have been interviewed to learn about the so many aspects such as the total fishermen population, number of fishing villages in every block, fishing landing centres, fishing training centres, fishing season and breeding season, fishing crafts and gears, registration and license, biometric card etc.

4.6.1 Techniques of Data collection

There are different categories of data collection. These are

a) Conventional Methods
b) Non-conventional Methods
c) Indirect Methods

In this study, the conventional method of data collection, is used. Tools like questionnaires, observations, interviews, diary methods and case studies are also used for data collection. Data has been collected from both primary and secondary sources.

For primary data collection, a questionnaire-based survey is done by the researcher from the study area. The researcher conducted interviews with the fisherwomen communities for data collection. The data collection has been done by different phases.

4.6.2 Phases of data collection

Data from the fisherwomen communities have been collected in 5 different phases in the form of a questionnaire**.**

- **1st phase:** Diamond Harbour I, Diamond Harbour II and Falta blocks. Total numbers of 69 respondents are surveyed in this phase.
- **2nd phase:** Kakdwip, Kulpi and Sagar blocks. Total numbers of 111 respondents are surveyed in this phase.
- **3rd phase:** Basanti, Canning I, Canning II and Gosaba blocks. Total numbers of 87 respondents are surveyed in this phase.
- **4th phase:** Namkhana and Pathor Pratima blocks. Total numbers of 57 respondents are surveyed in this phase.
- **5th phase:** Mathurapur and Kutali blocks. Total numbers of 26 respondents are surveyed in this phase.

4.6.3 Data collection periods

Mainly the Bibliometric data for the literature review of the present study is collected from July 2020 to December 2020. The initial data about the fisherwomen communities from different online sources like the state statistic directory, statistical directory, handbook of fisheries statistics, the climate of West Bengal 2008, district survey report and South 24 Parganas human development report was collected from January 2021 to April 2021. With the help of a questionnaire, fisherwomen

communities' data were collected from June 2021 to October 2021. The data was also collected from fisheries extension officers from June 2021 to October 2021.

4.7 Data analysis

Data analysis is a process of achieving the connotation and explanation from raw data. Until the compilation, analysis and interpretation of raw data, it conveys little information about the study area. It is a systematic statistical technique for inspecting, describing, illustrating, modeling, summarizing and evaluating the data. It is essential for the accurate analysis and findings of the research study**.**

4.7.1 Techniques of data analysis

With the help of Microsoft Office Excel 2007 software, the data collected through the questionnaire is arranged. This data is also analyzed by various conventional statistical tools like figures, tables, percentages and chi-square test. To test the hypotheses, the chi-square test is used.

Chi-square test $$X^2 = \frac{\sum (O-E)^2}{E}$$

In the present study, the formulated hypotheses have been tested at a 5% level of significance.

4.8 Data presentation

The collected data should be presented precisely so that the data are easily comprehended. There are generally three types of presentation of data:

- Descriptive/textual presentation
- Tabular presentation
- Diagrammatic/graphical presentation

4.8.1 Tabulation

In this study, data are presented in rows and columns. This kind of presentation also helps for statistical treatment and further decision making.

4.8.2 Coding

To transform collected data and observation into a meaningful object, grouping and classifying of data within the same category are essential. It is also a process of representation of data in a systematic order.

4.8.3 Graphical representation

In this study, a graphical or diagrammatic representation of data is also presented for a clear perception of it. The visual presentation is more effective for a clear perception of data rather than a table format. In this study, so many graphical methods, such as bars, line graphs, pie charts etc., are also used to perceive data more effectively, constructively and clearly. Among bar diagrams, simple bar diagrams and component bar diagrams are also used for data presentation.

4.9 Reference used

References related to the present study, the information-seeking behavior of the fisherwomen community is formulated according to APA (American Psychological Association) 6^{th} edition and arranged in an alphabetical order.

4.10 Summery

The methodology is the crucial part of every research. Several types of research studies are taken to study the information-seeking behavior of various communities. In this particular research, the methodology which seems most suitable to achieve the study's objectives has been used. Hence, the present chapter also becomes more valuable for the research.

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Chapter 5
Analysis and Interpretation of Data

Chapter 5

Analysis and Interpretation of Data

This chapter deals with analysing and interpreting collected data about the information-seeking behavior of the fisherwomen community in the coastal areas of the South 24 pgs. district. Data was collected from the respondents by questionnaire with the help of personal interviews conducted by the researcher and then interpreted thoroughly. To achieve the study's aim, the researcher first collected raw data regarding the information needs, information sources and information-seeking behavior of the fisherwomen in the coastal area of this District.

In South 24 parganas district, no 14 blocks have coastal area are considered for this study. The fisherwomen from each block are randomly selected and interviewed through a questionnaire by the researcher. The collected data is divided into some parts

and interpreted with the necessary explanation. It is also represented in a table format and has been analysed with the help of percentages for clear perception.

5.2 Demographic description of respondents

From the demographic description, the information regarding the study's respondents must be known. Various demographic description types such as the category of work, age group, education, marital status, religion, type of family, monthly income, year of experience and sources of borrowed money by them are interpreted under this section.

5.2.1. Category of work of respondents

The respondents of this study are mainly engaged with the catches of fish as well as seafood like lobster, crabs, crayfish, prawn and shrimp. The category of work of the respondents is summarized in table 5.1.

Table 5.1: Category of work

Sl. No.	**Category of work**	**Respondents (n=350)**	
		No	**%**
1.	Fisherwomen	241	68.86
2.	Crabber	62	17.71
3.	Shrimp catcher	47	13.43
4.	**Total**	**350**	**100**

Source: Primary Data

Data of table 5.1 has been shown that there are mainly three categories of respondents in this study. Out of 350 respondents, 241 respondents are fisherwomen, 62 respondents are crabbers and 47 respondents are shrimp catchers.

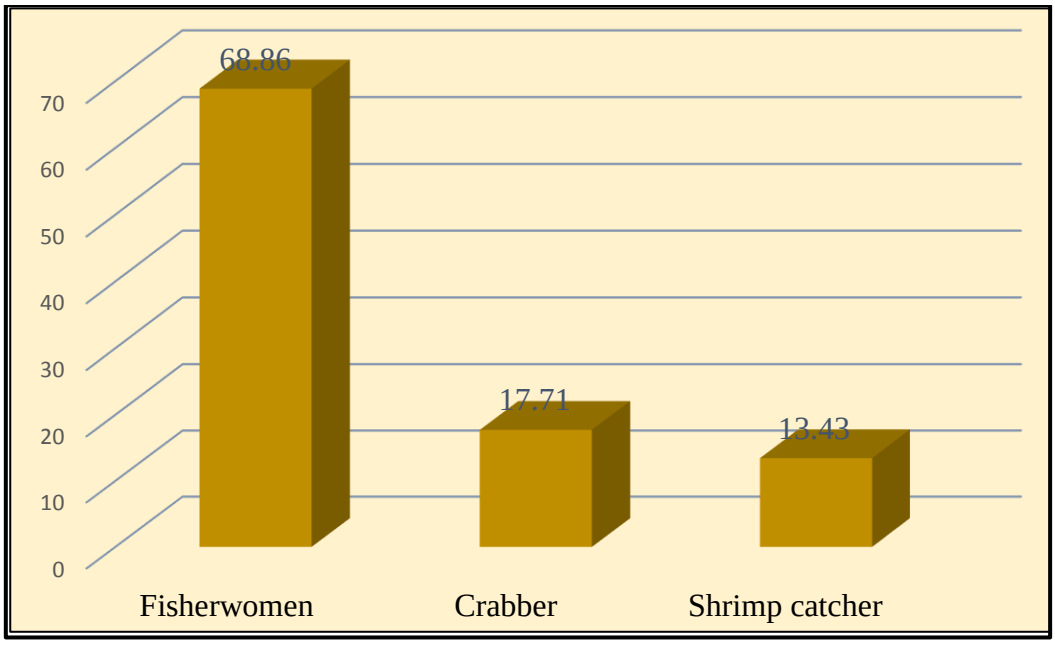

Figure 5.1: Category of work

From above figure 5.1, it also is clear that the percentage of fisherwomen is more than double of crabbers and shrimp catchers. The percentage of fisherwomen respondents is 68.86, the percentage of crabber is 17.71 and shrimp catcher is 13.43.

5.2.2. Age Group of respondents

Age is an important factor to know about the respondents and their involvement with their profession. Usually, adult people are more energetic, progressive and innovative than the aged. On the other hand, older people are more experienced in their work than younger people. The respondents for this study belong to different age groups, categorized into different groups based on age: under 20 years, 21 to 30 years, 31 to 40 years, 41 to 50 years and above 51 years. This age-wise distribution of the respondents is presented in table 5.2.

Table 5.2: Age Group of respondents

Sl. No.	Age Group	Respondents			Total (n=350)
		Fisherwomen	Crabber	Shrimp catcher	
1.	**Under 20 years**	29 (8.29)	7 (2)	5 (1.43)	**41 (11.71)**
2.	**21 to 30 years**	72 (20.57)	10 (2.86)	12 (3.43)	**94 (26.86)**
3.	**31 to 40 years**	48 (13.71)	18 (5.14)	20 (5.71)	**86 (24.57)**
4.	**41 to 50 years**	70 (20)	21 (6)	5 (1.43)	**96 (27.43)**
5.	**Above 51 years**	22 (6.29)	6 (1.71)	5 (1.43)	**33 (9.43)**
6.	**Total**	**241 (68.86)**	**62 (17.71)**	**47 (13.43)**	**350**

Source: Primary Data

Note: Figures in brackets are percentage to the total

From table 5.2, the age group of different categories of respondents is focussed. Total of 41 (11.71%) respondents belong to the age group under 20 years. Among them, 8.29 percent are fisherwomen, 2 percent are crabbers and 1.43 percent are shrimp catchers. A total of 94 (26.86%) respondents belong to the age group between 21 to 30 years. Among them, 20.57 percent are fisherwomen, 2.86 percent are crabbers and 3.43 percent are shrimp catchers. Again, among 86(24.57%) respondents from the age group 31 to 40 years, 13.71 percent are fisherwomen, 5.14 percent are crabbers and 5.71 percent are shrimp catchers. Also, there are total of 96 (27.43%) respondents from the age group 41 to 50 years. Among them, 20 percent are fisherwomen, 6 percent are crabbers and 1.43 percent are shrimp catchers. Total of 33 (9.43%) respondents are from the age group above 51 years and among them, 6.29 percent are fisherwomen, 1.71 percent are crabbers and 1.43 percent are shrimp catchers.

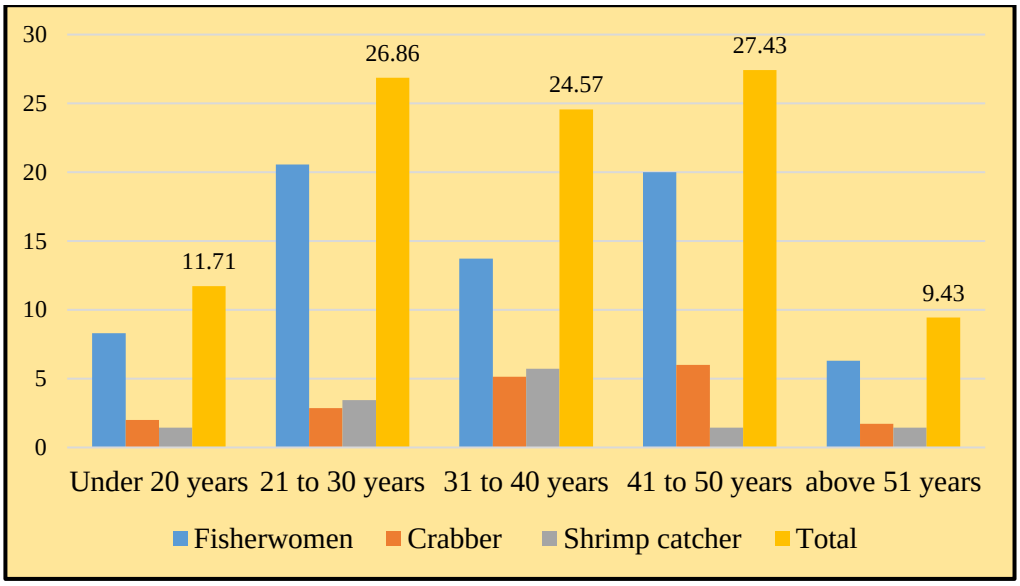

Figure 5.2: Age Group of respondents

Figure 5.2 reveals that most of the respondents are from the age group 21 to 30 years old (26.86%), 31 to 40 years old (24.57%) and 41 to 50 years old (27.43%). Very few respondents are from the age group under 20 years old (11.71%) and above 51 years old (9.43%).

5.2.3. Education of the respondents

Education always makes us aware about the environment and the benefits available in a particular area. It also plays an important role in knowing the area's technical and financial aspects. Education level stimulates people's psychological upliftment and extends their social realization. On the other hand, the respondents' information-seeking behaviour is affected directly by their educational level. So, the level of education is classified into five categories such as up to primary school, up to high school, up to higher secondary, up to graduate and illiterate. The educational status of the respondents is presented in table 5.3.

Table 5.3: Educational status of respondents

Sl. No.	Education	Respondents					Total (n=350)
		Under 20 years	**21 to 30 years**	**31 to 40 years**	**41 to 50 years**	**Above 51 years**	
1	Up to primary school	10 (2.86)	35 (10)	60 (17.14)	71 (20.29)	15 (4.29)	**191 (54.57)**
2	Up to High school	24 (6.86)	38 (10.86)	5 (1.43)	4 (1.14)	1 (0.29)	**72 (20.57)**
3	Up to Higher Secondary	7 (2)	9 (2.57)	8 (2.29)	6 (1.71)	0	**30 (8.57)**
4	Up to Graduate course	0	12 (3.43)	5 (1.43)	2 (0.57)	0	**19 (5.43)**
5	Illiterate	0	0	8 (2.29)	13 (3.71)	17 (4.86)	**38 (10.86)**
	Total	**41 (11.71)**	**94 (26.86)**	**86 (24.57)**	**96 (27.43)**	**33 (9.43)**	**350**

Source: Primary Data
Note: Figures in brackets are percentage to the total

It has been observed that out of 41 respondents from the age group under 20 years old, 2.86 percent of respondents have their education up to primary school, 6.86 percent up to high school and 2 percent up to higher secondary. No respondents are illiterate and have their education up to graduate course from this age group.

Again, it has been observed that among 94 respondents from the age group 21 to 30 years old, 10 percent respondents have their education up to primary school, 10.86 percent respondents up to high school, 2.57 percent respondents up to higher secondary and 3.43 percent respondents up to graduate course. There are no illiterate respondents from this age group.

It has been observed that among 86 respondents from the age group 31 to 40 years old, 17.14 percent respondents have their education up to primary school, 1.43 percent respondents up to high school, 2.29 percent respondents up to higher secondary,

1.43 percent respondents up to graduate course and 2.29 percent respondents are illiterate.

The above table revealed that among 96 respondents from the age group 41 to 50 years old, 20.29 percent respondents have their education up to primary school, 1.14 percent respondents up to high school, 1.71 percent respondents up to higher secondary and 3.71 percent respondents are illiterate. None of the respondents passed graduate course from this age group.

This table also revealed that among 33 respondents from above 51 years old, 4.29 percent respondents have their education up to primary school, 0.29 percent respondents have their education up to high school and 4.86 percent respondents are illiterate. None of the respondents passed higher secondary and graduate courses in this age group.

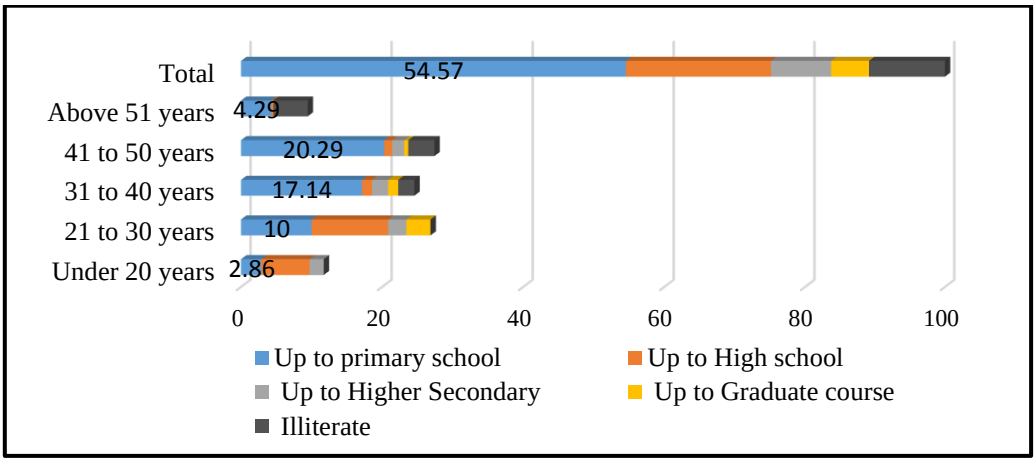

Figure 5.3: Educational status of respondents

The above figure 5.3 also reveals that 54.57 percent of respondents have their education only up to primary school and 20.57 percent up to high school. While 8.57 percent of respondents have their education up to higher secondary, 5.43 percent are up

to graduation and 10.86 percent are illiterate. The level of education in these three levels is low.

5.2.4. Marital Status of respondents

The marital status of the respondents is an important social variable. It creates the necessity to earn more as household expenses would increase. Again, the respondents' information-seeking behaviour is also affected by their marital status. The respondents are classified as married, unmarried and widowed. The detailed distribution of the respondents based on their marital status is given in table 5.4

Table 5.4: Marital Status of respondents

Sl. No.	**Marital Status**	**Respondents**					**Total (n=350)**
		Under 20 years	**21 to 30 years**	**31 to 40 years**	**41 to 50 years**	**Above 51 years**	
1.	Married	28 (8)	82 (23.43)	67 (19.14)	62 (17.71)	8 (2.28)	**247 (70.57)**
2.	Unmarried	13 (3.71)	9 (2.57)	0	0	0	**22 (6.29)**
3.	Widow	0	3 (0.86)	19 (5.43)	34 (9.71)	25 (7.14)	**81 (23.14)**
4.	**Total**	**41 (11.71)**	**94 (26.86)**	**86 (24.57)**	**96 (27.43)**	**33 (9.43)**	**350**

Source: Primary Data

Note: Figures in brackets are percentage to the total

Table 5.4 shows that most of the respondents are from the married category 247(70.57%), followed by widows 81(23.14%) and unmarried 22(6.29%). The table revealed that out of 247 married women, 8 percent women are from under 20 years old, 23.43 percent women are from 21 to 30 years old, 19.14 percent women are from 31 to 40 years old, 7.71 percent women are from 41 to 50 years old and 2.28 percent women

are from above 51 years old. Again, out of 22 unmarried women, 3.71 percent respondents are from under 20 years old, 2.57 percent are from 21 to 30 years old. None of the respondents from 31 to 50 years old are unmarried. Further, among 81 widow respondents, 0.86 percent women are from 21 to 30 years old, 5.43 percent women are from 31 to 40 years old, 9.71 percent women are from 41 to 50 years old and 7.14 percent women are from above 51 years old. None of the respondents under 20 years old are widows.

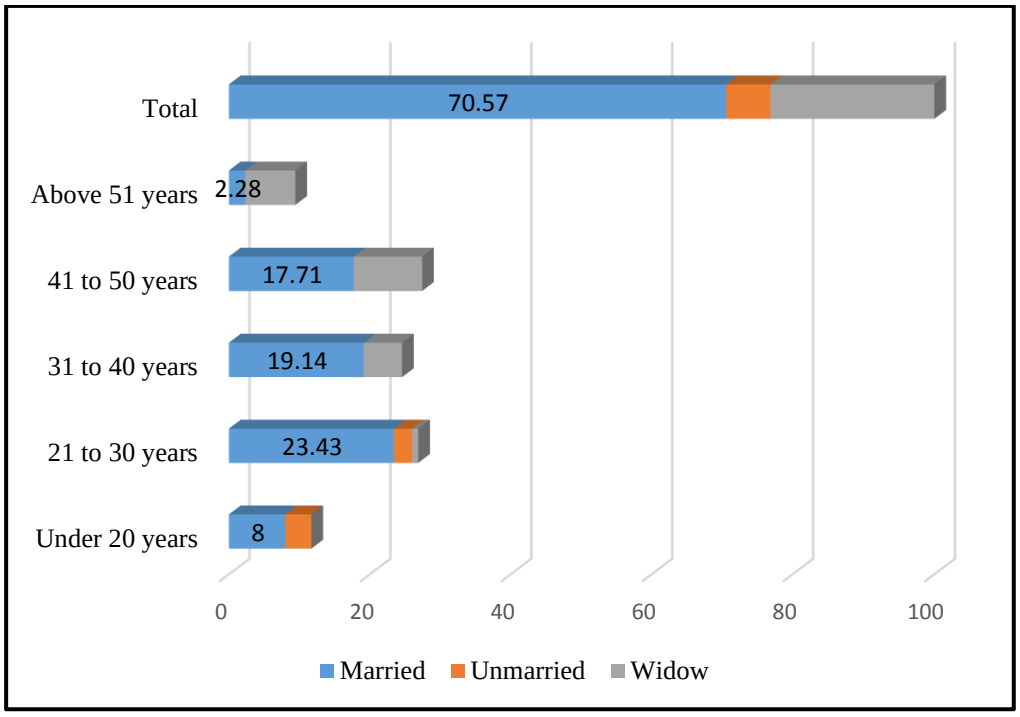

Figure 5.4: Marital Status of respondents

Figure 5.4 shows that out of 41 respondents under 20 years old, the numbers of 28 respondents are married. It denotes that child marriage is a more popular incident among the fisherwomen community. Again, 25 widows respondents out of 33 respondents from above 50 years, reveal the reality of their lives. Further, none of the respondents are unmarried from the age group between 31 to 40 years, 41 to 50 years and above 51 years old, which shows that they are economically dependent on others.

5.2.5. Religion of respondents

Religion background of the respondents has direct influence on their information-seeking behaviour. So the religion of the respondents is provided in the following table 5.5.

Table 5.5: Religion of respondents

Sl. No.	Religion	Respondents	
		No	**%**
1	Hindu	219	62.57
2	Muslim	125	35.71
3	Christian	6	1.72
4	Others	0	00
5	**Total**	**350**	**100**

Source: Primary Data

The data of table 5.5 discloses that most of the respondents, 219(62.57%) are Hindu followed by Muslim 125(35.71%) and Christians 6(1.72%).

5.2.6. Type of family of respondents

The family size indicates the total number of members living with the respondents. If there are more dependent populations in the family, then the extra earnings seem necessary. Sometimes, the family size increases the labour source. In the present study, the respondents' family types are divided into nuclear, joint and extended family. The distribution of the respondents based on their type of family is presented in table 5.6.

Table 5.6: Type of family of respondents

Sl. No.	**Type of family**	**Respondents**	
		No	**%**
1.	Nuclear family	184	52.57
2.	Extended family	148	42.29
3.	Joint family	18	5.14
4.	**Total**	**350**	**100**

Source: Primary Data

It is transparent from table 5.6 that 52.57 percent of respondents are from nuclear families whereas 42.29 percent of respondents are from extended families and 5.14 percent of respondents are from joint families.

5.2.7. Monthly income of respondents

Primary sources of income of the respondents are fishing. Hence, the monthly income is focussed on their economic status, which influences their information-seeking behaviour. The respondents' monthly income is classified into five groups (Under Rs. 5000, Rs. 5001 to 10000, Rs. 10001 to 15000, Rs. 15001 to 20000 and Above 20000) and has been shown in table 5.7.

Table 5.7:Monthly income of respondents

Sl. No.	Monthly income	Respondents					Total (n=350)
		Under 20 years	**21 to 30 years**	**31 to 40 years**	**41 to 50 years**	**Above 51 year**	
1.	**Under Rs. 5000**	21 (6)	56 (16)	32 (9.14)	22 (6.29)	12 (3.43)	**143 (40.86)**
2.	**Rs. 5001 to 10000**	18 (5.14)	26 (7.43)	18 (5.14)	27 (7.71)	7 (2)	**96 (27.43)**
3.	**Rs. 10001 to 15000**	2 (0.57)	5 (1.49)	25 (7.14)	29 (8.29)	9 (2.57)	**70 (20)**
4.	**Rs. 15001 to 20000**	0	5 (1.49)	10 (2.86)	15 (4.29)	4 (1.14)	**34 (9.71)**
5.	**Above 20000**	0	2 (0.57)	1 (0.29)	3 (0.86)	1 (0.29)	**7 (2)**
6.	**Total**	**41 (11.71)**	**94 (26.86)**	**86 (24.57)**	**96 (27.43)**	**33 (9.43)**	**350**

Source: Primary Data

Note: Figures in brackets are percentage to the total

The data of table 5.7 reveals that 40.86 percent of respondents earn monthly under Rs 5000. Among them 6 percent respondents are under 20 years old, 16 percent are between 21 to 30 years old, 9.14 percent are between 31 to 40 years old, 6.29 percent are between 41 to 50 years old and 3.43 percent are above 51 years old.

It is known from the above table that 27.43 percent of respondents earn monthly Rs. 5001 to 10000. Among them, 5.14 percent respondents are under 20 years old, 7.43 percent are between 21 to 30 years old, 5.14 percent are between 31 to 40 years old, 7.71 percent are between 41 to 50 years old and 2 percent are above 51 years old.

This table also reveals that 20 percent of respondents earn monthly Rs. 10001 to 15000. Among them, 0.57 percent respondents are under 20 years old, 1.49 percent are between 21 to 30 years old, 7.14 percent are between 31 to 40 years old, 8.29 percent are between 41 to 50 years old and 2.57 percent are above 51 years old.

It has also been observed that 9.71 percent of respondents earn monthly Rs. 15001 to 20000. Among them, 1.49 percent respondents are between 21 to 30 years old, 2.86 percent are between 31 to 40 years old, 4.29 percent are between 41 to 50 years old and 1.14 percent are above 51 years old. None of the respondents earn between Rs. 15001 to 20000 from the age group under 20 years old.

Again, it has also been observed that only 2 percent of respondents earn monthly above Rs 20000. Among them 0.57 percent respondents are between 21 to 30 years old, 0.29 percent are between 31 to 40 years old, 0.86 percent are between 41 to 50 years old and 0.29 percent are above 51 years old. None of the respondents earn between Rs. 15001 to 20000 from the age group under 20 years old.

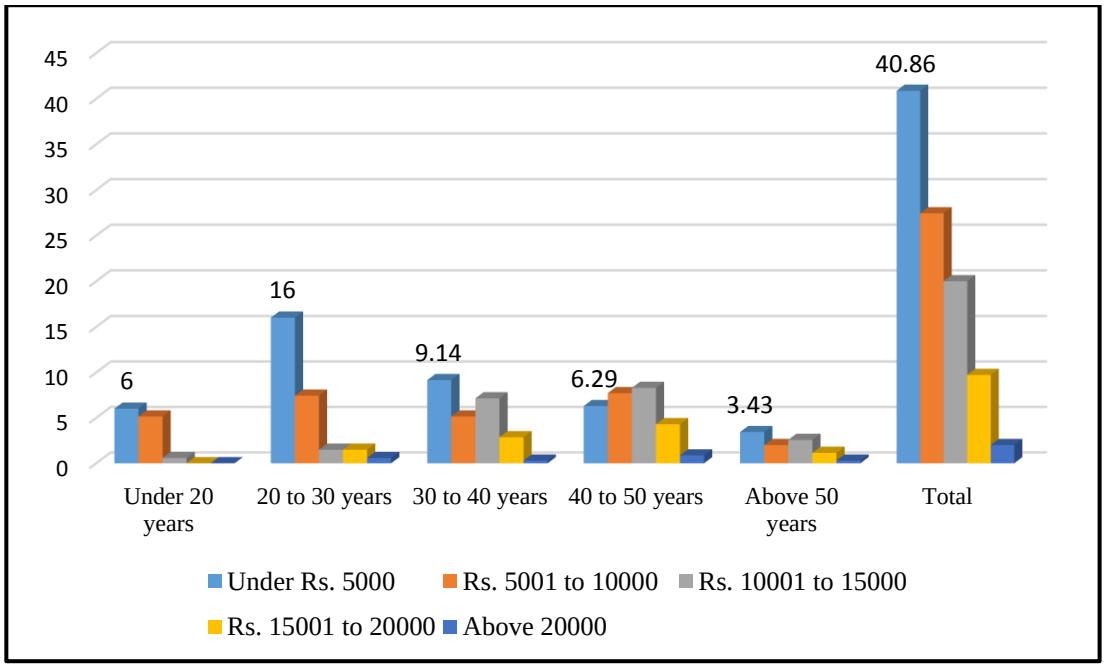

Figure 5.5: Monthly income of respondents

It is evident from the above figure 5.5 that the economic condition of the fisherwomen is not good enough. Only a few fisherwomen earn above Rs 20000, whereas more than half of the respondents earn up to Rs 10000. Hence, more information is essential for them to upgrade their profession and earn more.

5.2.8. Year of experience of respondents

Years of experience of the fisherwomen regarding their professional help to increase their indigenous knowledge. With the help of this knowledge, they also solve their problem regarding information-seeking behaviour. The data received from the respondents based on their years of experience is given in table 5.8.

Table 5.8: Year of experience of respondents

Sl. No.	Year of experience	Respondents (n=350)	
		No	**%**
1.	Below 5 years	44	12.57
2.	Between 5 to 10 years	121	34.57
3.	Between 10 to 15 years	93	26.57
4.	Between 15 to 20 years	64	18.29
5.	Above 20 years	28	8.00
	Total	**350**	**100**

Source: Primary Data

The analyzed data of table 5.8 shows that the experience fisherwomen in fishing for below 5 years is 44(12.57%); between 6 to 10 years, is 121(34.57%); between 11 to 15 years, is 93(26.27%); between 16 to 20 years, is 64(18.29%) and above 21 years is 28(8%).

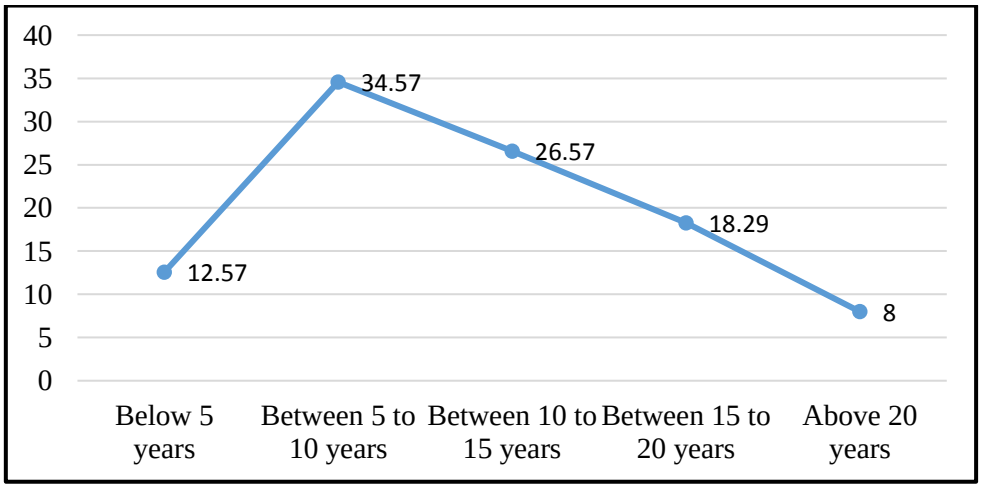

Figure 5.6: Year of experience of respondents

From above figure 5.6, it is obvious that the number of experienced fisherwomen between 5 to 10 years is the highest at 121(34.57%) whereas the number of experienced respondents above 20 years is the lowest at 28(8%).

5.2.9. Borrowed money from any sources by category of respondents

Borrowed money by respondents focuses on their economic status that influences their information-seeking behaviour. The data about borrowed money by the respondent is presented in table 5.9. The borrowed money by the category of respondents is also analysed in the following table. The chi-square test is used to find out the association between the borrowed money by the type of respondents in table 5.9.

Table 5.9: Borrowed money by category of respondents

Sl. No.	**Types of respondents**	**Borrowed money**		**Total**	**Chi-square value**
		Yes	**No**		
1	Fisherwomen	87 (24.86)	154 (44)	**241**	**11.04**
2	Crabber	31 (8.86)	31 (8.86)	**62**	**d.f =2**
3	Shrimp catcher	28 (8)	19 (5.43)	**47**	
	Total	**146 (41.71)**	**204 (58.29)**	**350**	

Source: Primary Data
Note: Figures in brackets are percentage to the total
(d.f= Decrease of freedom)

The data of table 5.9 shows that total 146(41.71%) respondents borrow money, whereas 204(58.29%) respondents do not borrow any money. The number of 87(24.86%) fisherwomen, 31(8.86%) crabbers and 28(8%) shrimp catcher borrowed money from different sources whereas no of 154(44%) fisherwomen, 31(8.86%) crabbers, 19(5.43%) shrimp catcher does not borrow any money from any sources**.**

Hypothesis: there is no significant association between the category of the respondents and their borrowed money from any sources.

The above table also discloses that the calculated chi-square value is 11.04, which is greater than the table value at 0.05 level and 2 degrees of freedom. This clearly shows that the null hypothesis that there is no significant association between the category of the respondents and their borrowed money from any sources is rejected at 5% level.

Hence it is inferred that there is a significant association between the respondents' category and their borrowed money from any sources.

5.2.10. Sources of money by respondents

Sources of borrowed money used by the respondents focus on their tendency to use information sources. The information related to their use of money sources is presented in table 5.10.

Table 5.10: Sources of money by respondents

Sl. No.	**Sources of money**	**Respondents**			**Total (n=146)**
		Fisherwomen	**Crabber**	**Shrimp catcher**	
1	Microfinance organisation	25 (17.12)	8 (5.48)	12 (8.22)	**45 (30.82)**
2	Local money lenders	37 (25.34)	14 (9.59)	10 (6.85)	**61 (41.78)**
3	Relatives and friends	16 (10.96)	9 (6.16)	6 (4.11)	**31 (21.23)**
4	Others	9 (6.16)	0	0	**9 (6.16)**
	Total	**87**	**31**	**28**	**146**

Source: Primary Data

Note: Figures in brackets are percentage to the total

From the data of table 5.10, it is clear that most of the respondents tend to borrow money from local money lenders 61(41.78%), followed by Microfinance organizations 45(30.82%), relative and friends 31(21.23%) and others 9(6.16%).

5.3 Specific data about respondents

This section intends to analyses the data about the specific information of the respondents. Various aspects like reasons for becoming fisherwomen, type of fishing right, use of the fishing boat, mode of ownership, types of boat/ vessel, fishing gear, fishing hours, sales of fish, membership of the respondents and the technology used by the fisher folk are interpreted in this section.

5.3.1 Reason for becoming fisherwoman

The major reasons for becoming fisherwomen are analyzed in table no 5.11

Table 5.11: Reason for becoming fisherwoman

Sl. No	**Reasons**	**No**	**%**
1	Unemployment	76	21.71
2	Traditional job	165	47.14
3	More income	109	31.14
4	**Total**	**350**	**100**

Source: Primary Data

Analyzed data of table 5.11 indicates that the numbers of 76(21.71%) respondents are engaged with their profession for reason of unemployment, 165(47.14%) respondents for their traditional job and 109(31.14%) respondents for more income.

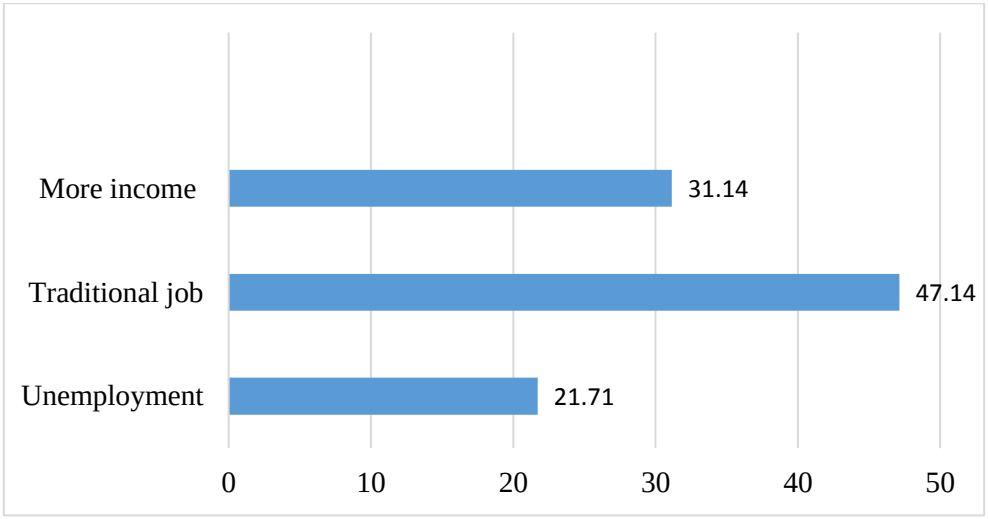

Figure 5.7: Reasons for becoming fisherwoman

The above figure shows that the respondents choose this profession for the reason of traditional job is highest, whereas the basis for unemployment is the lowest.

5.3.2. Fishing right of fisherwomen

Among various kinds of fishing right, the respondents can register their fishing gear and crafts from the Directorate of Fisheries. They also issue a license for fishing activity. The registration is a one-time process, whereas the license must be renewed after one year. The data about their fishing right is presented in the following table.

Table 5.12: Fishing right of fisherwomen

Sl. No.	**Fishing right**	**No.**	**%**
1.	Registration	33	9.43
2.	Share	17	4.86
3.	License	29	8.29
4.	Free access	271	77.43
5.	**Total**	**350**	**100**

Source: Primary Data

The data of table 5.12 indicates that most of the respondents are attached to fishing to free access 271(77.43%), followed by registration 33(9.43%), license 29(8.29%) and share 17(4.86%).

5.3.3. Changing status of income

The changing income status focuses on the respondents' economic conditions that affect their information-seeking behaviour. The data about the changing status of income is presented in table 5.13.

Table 5.13: Changing status of income

Sl. No	**Status of income**	**No**	**%**
1.	Increased	44	12.57
2.	Decreased	66	18.86
3.	Stayed the same/stable	57	16.29
4.	Not sure	193	55.14
5.	**Total**	**350**	**100**

Source: Primary Data

From the data of table 5.13, it is clear that most of the respondents, 193(55.14%), are not sure about the changing status of their income, whereas the status of income increased for 44(12.57%) respondents, decreased for 66(18.86%) respondents and stable for 57(16.29%) respondents. It also is clear from the above analysis that a few numbers respondent income increased among the total respondents of this study.

5.3.4. Membership of local committee

There is various type of fishing agency, such as CIFE (Central Institute of Fisheries Education), Notary club, Bengal association and Joygopal Gram Bikash Kendra, for the upliftment of the fishermen community. This agency also arranges some training programs for the fishermen. The data about their membership is presented in the following table**.**

5.14: Membership of local committee

Sl. No.	**Types of respondents**	**Membership**		**Total (n=350)**
		Yes	**No**	
1.	**Under 20 years**	3 (0.85)	38 (10.86)	**41 (11.71)**
2.	**21 to 30 years**	21 (6)	73 (20.86)	**94 (26.86)**
3.	**31 to 40 years**	38 (10.86)	48 (13.71)	**86 (24.57)**
4.	**41 to 50 years**	47 (13.42)	49 (14)	**96 (27.43)**
5.	**Above 51 years**	19 (5.43)	14 (4)	**33 (9.43)**
6.	**Total**	**128 (36.57)**	**222 (63.43)**	**350**

Source: Primary Data

Note: Figures in brackets are percentage to the total

The data of table 5.14 revealed that total 128(36.57%) respondents are member of the local committee. Among them, 0.85 percent of respondents are under 20 years old, 6 percent are between 21 to 30 years old, 10.86 percent are between 31 to 40 years old, 13.42 percent are between 41 to 50 years old, and 5.43 percent are above 51 years old.

This data also revealed that total 222(63.43%) respondents are not members of the local committee. Among them, 10.86 percent are under 20 years old, 20.86 percent

are between 21 to 30 years old, 13.71 percent are between 31 to 40 years old, 14 percent are between 41 to 50 years old, and 4 percent are above 51 years old.

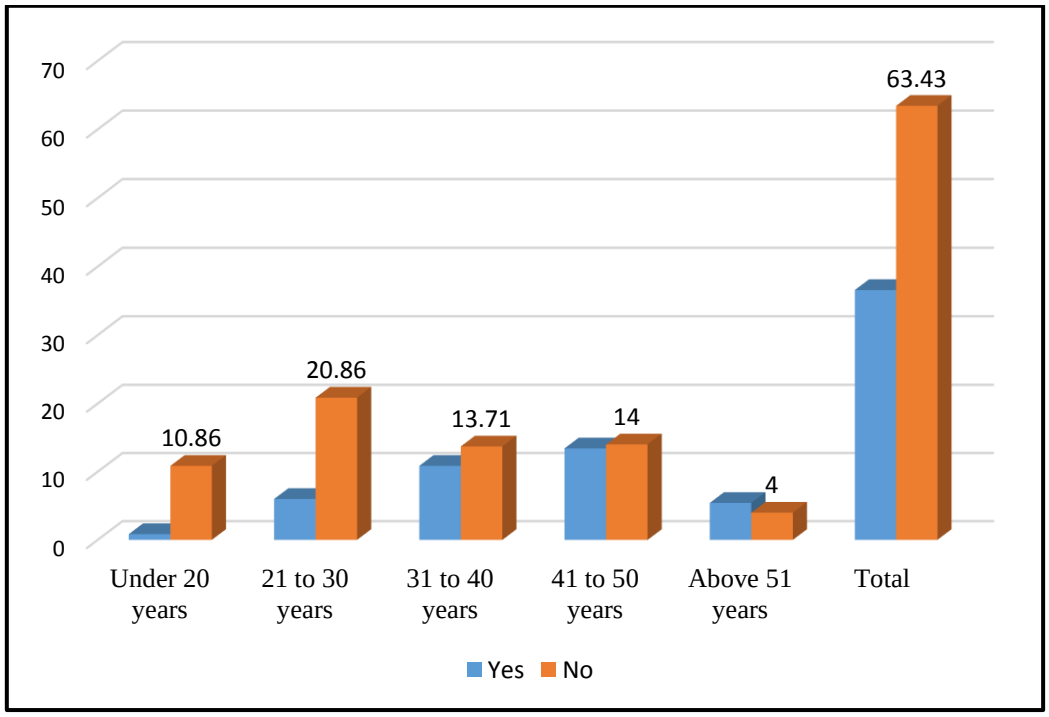

Figure 5.8: Membership of local committee

Figure 5.8 shows that almost more than half of the respondents are not members of any local committee. On the other hand, the respondents aged between 31 to 40 years, 41 to 50 years and above 50 years have more local committee membership than those aged under 20 years and between 21 to 30 years old.

5.3.5. Reasons for membership

Data regarding the reasons for membership of the respondents is presented in the following table 5.15.

Table 5.15: Reasons for membership

Sl. No	Reasons for membership	No	%
1.	Access to information	26	20.31
2.	Access to micro-credit	23	17.97
3.	Access to market	38	29.69
4.	Access to fishing right	34	26.56
5.	Other	7	5.47
6.	**Total**	**128**	**100**

Source: Primary Data

It is clear from table 5.15 that among 128 respondents, 26(20.31%) respondents become the member for access information, 23(17.97%) respondents for access micro-credit, 38(29.69%) respondents for access market, 34(26.56%) respondents for access fishing right and 7(5.47%) respondents for another purpose.

5.3.6. Use of fishing boats

The respondents used fishing boats for their fishing. Among 350 respondents, only 107 respondents have used the fishing vessel. The data in table 5.16 indicates the use of fishing boats by the respondents.

Table 5.16: Use of fishing boats

Sl. No	Use of fishing boats	Use of fishing boats		Total	Chi- square value
		Yes	No		
1.	Fisherwomen	68 (19.43)	173 (49.43)	241	3.38 d.f= 2
2.	Crabber	25 (7.14)	37 (10.57)	62	
3.	Shrimps catcher	14 (4)	33 (9.43)	47	
4.	**Total**	**107 (30.57)**	**243 (69.43)**	**350**	

Source: Primary Data

Note: Figures in brackets are percentage to the total

(d.f= Decrease of freedom)

The data of table 5.16 reveals that only 107(30.57) respondents use boats for fishing, and among them, 68(19.43%) are fisherwomen, 25(7.14%) are crabbers, 14(4%) are shrimp catchers. On the other hand, 243(69.43%) respondents do not use any boat for fishing. Among them, 173(49.43%) are fisherwomen, 37(10.57%) are crabbers and 33(9.43%) are shrimp catchers.

5.3.7. Types of fishing vessel/craft

Various kinds of fishing crafts or boats are used in West Bengal. Some popular types of boats are Mechanical boats, Batchari, Chat boats and Dinghy. The data about use of fishing boat is presented in table no 5.17.

5.17: Types of fishing vessel/craft

Sl. No	**Types of fishing vessel/craft**	**No (n= 107)**	**%**
1.	Mechanical boat	3	2.80
2.	Batchari	19	17.76
3.	Chat boat	32	29.91
4.	Dinghy	53	49.53
5.	**Total**	**107**	**100**

Source: Primary Data

Among 107 respondents, Mechanical boat is used by 3 respondents, Batchari is used by 19 respondents, chat boat is used by 32 respondents and 53 respondents use dinghy.

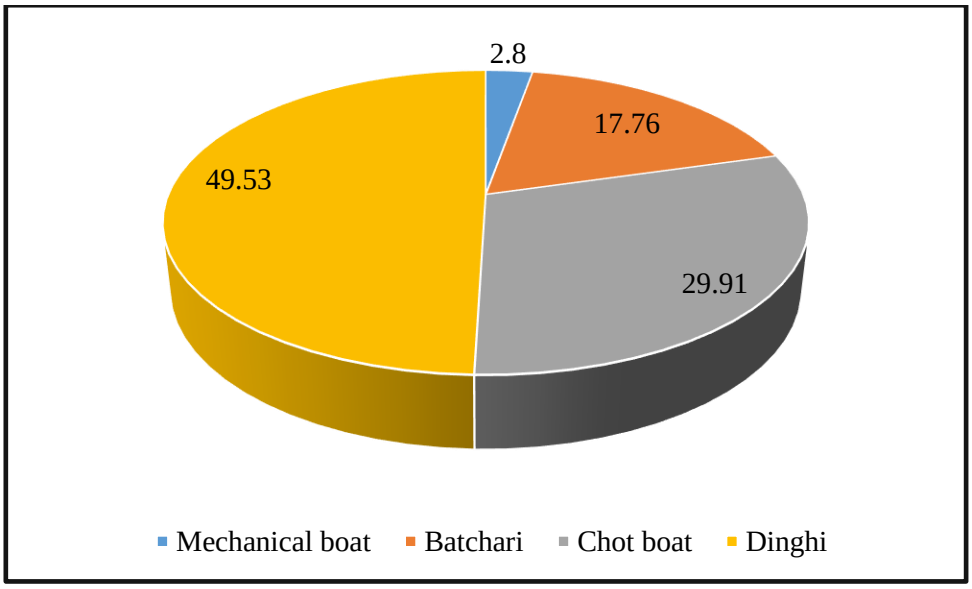

Figure 5.9: Types of fishing vessel/craft

From the above figure, it is also clear that most of the respondents in this area use Dinghy 53(49.53%) for their fishing activities, followed by chat boats 32(29.91%), Batchari 19(17.76%), Mechanical boats 3(2.80%).

5.3.8. Mode of ownership

The respondents used the fishing boats by various types of ownership such as own, rental lease etc. The data about the respondent's right to the boat is presented in table 5.18.

Table 5.18: Mode of ownership

Sl. No	Mode of ownership	No(n= 107)	%
1	Own	45	42.05
2	Rental	17	15.89
3	Lease	12	11.21
4	Others	33	30.84
5	**Total**	**107**	**100**

Source: Primary Data

It also is shown from the data of table 5.18, number of 45(42.05%) respondents have their own boats, whereas 17(15.89%) respondents use boats by rental, 12(11.21%) respondents use boats by lease, and 33(30.84%) boats are another kind of ownership.

5.3.9. Use of fishing gears

The respondents use different kinds of fishing gear for fishing. Among 350 respondents, only 218 respondents use fishing gear for their profession. The data about the use of the fishing gear is presented in the following table 5.19.

Table 5.19: Use of fishing gears

Sl. No	Use of fishing gears	Use of fishing gears		Total	Chi-square value
		Yes	No		
1.	Fisherwomen	135 (38.57)	106 (30.29)	**241**	**14.57**
2.	Crabber	44 (12.57)	18 (5.14)	**62**	**d.f= 2**
3.	Shrimps catcher	39 (11.14)	8 (2.29)	**47**	
4.	**Total**	**218 (62.28)**	**132 (37.71)**	**350**	

Source: Primary Data
Note: Figures in brackets are percentage to the total
(d.f= Decrease of freedom)

From the data of table 5.19, it is obvious that the number of 218(62.28%) respondents use fishing gear which 135(38.57%) are fisherwomen, 44(12.57%) are crabbers, and 39(11.14%) are shrimp catchers. Besides, the numbers of 132(37.71%) respondents do not use any fishing gear, of which 106(30.29%) are fisherwomen, 18(5.14%) are crabbers, and 8(2.29%) are shrimp catchers.

5.3.10. Types of gears

Different kinds of gear are used for fishing by the respondents in West Bengal, like hook and line, cast net, Bag net, Box net, crab net, shrimp net, etc. the data about the use of the fishing gear is provided in table 5.20.

Table 5.20: Types of gears

Sl. No	Types of gears	No (n=218)	%
1.	Hook and line	32	14.67
2.	Cast net	24	11
3.	Bag net	27	12.39
4.	Box net	35	16.05
5.	Crab net	44	20.18
6.	Shrimp net	39	17.89
7.	others	17	7.80
8.	**Total**	**218**	**100**

Source: Primary Data

Among 218 respondents, 32(14.67%) respondents use hook and line, 24(11%) respondents use cast net, 27(12.39%) respondents use bag net, 35(16.05%) respondents use box net, 44(20.18%) respondents use crab net, 39(17.89%) respondents use shrimp net and 17(7.80%) respondents use another kind of fishing gears.

5.3.11. Fishing hour in a day

When the fishes are most active naturally, that is the best time for fishing. Fishes are influenced by Sun, Moon, tides and weather also. Data related to the fishing hours of the respondents are given in table 5.21.

Table 5.21: Fishing hour in a day

Sl. No	Fishing hours	No	%
1.	1-4 hours	77	22
2.	4-8 hours	31	8.86
3.	8-10 hours	23	6.57
4.	Whole day	14	4
5.	Others	205	58.57
6.	**Total**	**350**	**100**

Source: Primary Data

Table 5.21 shows that 77(22%) respondents spent 1-4 hours for fishing, followed by 31(8.86%) respondents spent 4-8 hours, 23(6.57%) respondents spent 8-10 hours, 14 (4%) respondents spent the whole day and 205 (58.57%) respondents choose alternative time for fishing.

5.3.12. Days spends for fishing

The fishing time differs from one place to another. The days spent by the respondents for fishing are provided in table 5.22.

Table 5.22: Days spends in a month for fishing

Sl. No.	Days spend	No	%
1.	One week	84	24
2.	Two week	77	22
3.	Three week	72	20.57
4.	All day	117	33.43
5.	**Total**	**350**	**100**

Source: Primary Data

The analyzed data of table 5.22 revealed that 84(24%) respondents spent one week for fishing, 77(22%) respondents spent two weeks for fishing, 72(20.57%)

respondents spent three weeks for fishing and 117(33.43%) respondents spent all days for fishing. This table also reveals that the respondents do not fish daily but prefer to catch fish according to fishing time.

5.3.13. Sale of fishes

The respondents sell their harvested fish according to their preference. There are many options like selling fish on the sea shore, selling fish in local markets, selling fish in co-operatives and selling fish to intermediaries. Every place of purchase has some advantages and disadvantages. The data from the respondents about their sale of fish is presented in table 5.23.

Table 5.23: Sale of fishes

Sl. No	Sale of fishes	No	%
1	In sea shore	53	15.14
2	In local markets	82	23.42
3	In co- operative	96	27.43
4	To middle men	68	19.43
5	Others	51	14.57
6	**Total**	**350**	**100**

Source: Primary Data

Table 5.23 shows that 96(27.43%) respondents prefer to sell fish in co-operative followed by 82(23.42%) respondents in the local market, 68(19.43%) respondents to middlemen, 53(15.14%) respondents in sea shore and 51 respondents by another method. The data also reveals that the respondents have low knowledge of where to sell fish to make the most profit. Therefore, an effective information system is necessary for the respondents for the fruitful marketing of fish. The cooperative has to play a functional role in the marketing of fish.

5.4 Information Needs of fisherwomen and fishing community

There are different types of information needs among fisherwomen. These needs can be divided into various kinds, such as general information needs, specific information need and information need about fish production and the market. These kinds of information about the fisherwomen are interpreted in the following table.

5.4.1 General Information Needs

The fisherwomen community generally needs some information to improve their everyday activities. General information such as technical information, climatological information, environmental information, current information, economic information, socio-cultural information, geographical information and health information collected from respondents are summarized in table 5.24.

Table 5.24: General Information Needs

Sl. No.	General Information	Always		Sometimes		Never	
		No	%	No	%	No	%
1	Technical information	68	19.43	140	40	142	40.57
2	Climate	189	54	139	39.71	22	6.28
3	Environmental Information	29	8.29	154	44	167	47.71
4	Current Information	114	32.57	159	45.43	77	22
5	Economic Information	87	24.86	136	38.86	127	36.29
6	Socio-Cultural Information	104	29.71	142	40.57	104	29.71
7	Geographical Information	96	27.43	135	38.57	119	34
8	Health Information	196	56	89	25.43	65	18.57

Source: Primary Data

The data of table 5.24 shows that fisherwomen have the needs for general information.

Technical information also includes information related to various techniques of fishing, Radio Frequency Identification (RFID), drones, smart phones etc. This kind of information is always needed by 19.43 percent of respondents, whereas it is sometimes required by 40 percent of respondents, and 40.57 percent of respondents never need it.

Fishing is also influenced by climate. Data in table 5.24 shows that 54 percent of respondents always need information about climate, sometimes it is required by 39.71 percent, and never it is needed by 6.28 percent.

Environmental information includes various issues like the availability of fish, overfishing, the impact of industrial fishing on the ecological element etc. The data of table 5.24 shows that among all respondents, environmental information is always required by 8.29 percent of respondents, sometimes it is required by 44 percent of respondents, and never it is needed by 47.71 percent.

Information about the current existing in the sea is one of the most familiar to the fisherwomen. The data of the above table indicates that 32.57 percent of respondents always need current information, sometimes it is needed by 45.43 percent and never it is needed by 22 percent.

Economic information is always required by 24.86 percent of respondents, it is sometimes required by 38.86 percent of respondents, and never it is needed by 36.29 percent of respondents.

Socio and cultural factors also influence the fisherwomen and also their profession. The data of table 5.24 reveals that socio-cultural information is always

needed by 29.71 percent of respondents. It is sometimes required by 40.57 percent of respondents, and 29.71 percent of respondents never required it.

From the data in the above table, it is obvious that geographical information is always needed by 27.43 percent of respondents, it is sometimes required by 38.57 percent, and it is never needed by 34 percent.

Health information is also an important type of information to the fisherwomen. The data of table 5.24 also shows that 56 percent of respondents always need health information, whereas 25.43 percent of respondents sometimes need this information, and a few no of respondents 65(18.57%), never need this kind of information.

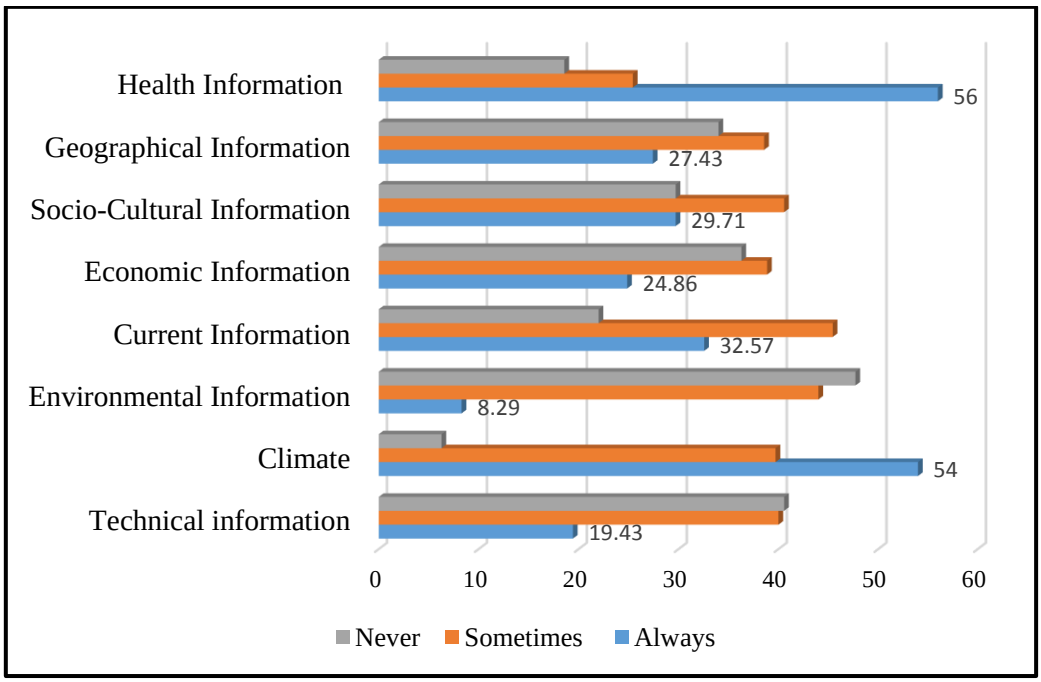

Figure 5.10: General Information Needs

Figure 5.10 shows that various kinds of information, like climate, current information, socio-cultural information and health information are required more frequently by the fisherwomen community. Though, some information regarding

fishing techniques and the environment are required by the fisherwomen community only at a minimum level.

5.4.2 Specific Information needs

This section explains the extent need of fisherwomen related to their profession in South 24 Parganas district. This kind of information is known as specific information. Specific information needs also vary from one to another based on their category of work and their economic and educational circumstances. Fisherwomen's specific information requirement is mainly related to ice plants, dry fish stock, packing of dry fish, manufacture of fish nets, manufacture of fish vessels, Purnima and Amabasya, wind flow, hurricanes, sea storms etc. The frequency of the respondent about their specific information needs is divided into three points of scale as 'Always,' 'Sometimes' and 'never'. The collected data is also summarized in table 5.25.

Table 5.25: Specific Information needs

Sl. No.	**Specific Information**	**Always**		**Sometimes**		**Never**	
		No	**%**	**No**	**%**	**No**	**%**
1.	Ice plant	132	37.71	117	33.43	101	28.86
2.	Dry fish stock	66	18.86	98	28	186	53.14
3.	Packing dry fish	64	18.29	97	27.71	189	54
4.	Manufacture of fish nets	232	66.29	76	21.71	42	12
5.	Manufacture of fish vessels	94	26.86	90	25.71	166	47.43
6.	Purnima & Amabasya	231	66	79	22.57	40	11.43
7.	For wind flow	93	26.57	223	63.71	34	9.71
8.	Hurricanes & sea storms	201	57.43	94	26.86	55	15.71

Source: Primary Data

Analysis data of table 5.25 shows that 37.71 percent of respondents always required the information regarding ice plants, it is sometimes needed by 33.43 percent of respondents, and 28.86 percent of respondents never needed it.

The information related to dry fish stock is always needed by 18.86 percent of respondents, it is sometimes needed by 28 percent of respondents and 53.14 percent of respondents never required it.

On the other hand, the information concerning with packing of dry fish is always required by 18.29 percent respondents, it is sometimes required by 27.71 percent respondents and it is never required by 54 percent respondents.

Information regarding the manufacture of fish net is also essential information required by respondents. This kind of information is always needed by 66.29 percent of respondents, it is sometimes needed by 21.71 percent of respondents and it is never needed by 12 percent of respondents.

The information related to manufacture of fishing vessels is always required by 26.86 percent respondents, it is sometimes needed by 27.71 percent and it is never needed by 47.43 percent.

Besides, the information regarding Purnima and Amabasya is always required by 66 percent respondents, it is sometime required by 22.57 percent and it is never required by 11.43 percent.

The information regarding wind flow is always needed by 26.57 percent respondents; it is sometimes needed by 63.71 percent and never needed by 9.71 percent.

The respondents are also aware of Hurricanes & sea storms. This kind of information is always needed by 57.43 percent respondents; it is sometimes needed by 26.86 percent and never needed by 15.71 percent.

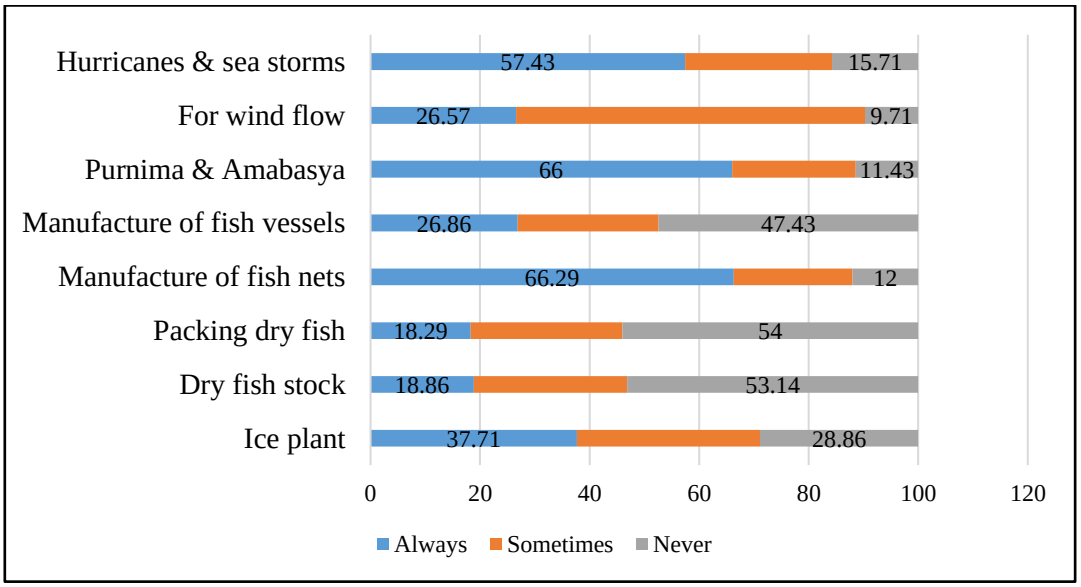

Figure 5.11: Specific Information needs

Figure 5.11 reveals that more than half of the respondents always need information about the manufacture of fish nets, Purnima, Amabasya and Hurricanes & sea storms. Besides, more than half of the respondents never need information regarding dry fish stock and packing dry fish. So it is summarised that the information regarding dry fish stock, packing of dry fish and the manufacture of fish vessels is less important to the respondents.

5.4.3 Information needed about fish production & market

The information needs of the fisherwomen community regarding fish production and market include the information related to daily price, market condition, market condition for dry fish and fish export opportunities. The frequency of respondents about

their information need of production and market is divided into three points of scale as 'always', 'sometimes' and 'never'. The collected data are summarised in table 5.26.

Table 5.26: Information needed about fish production & market

Sl. No	**Information**	**Always**		**Sometimes**		**Never**	
		No	**%**	**No**	**%**	**No**	**%**
1.	Daily price	222	63.43	107	30.57	21	**6**
2.	Market condition	163	46.57	138	39.43	49	**14**
3.	Market condition for dry fish	72	20.57	88	25.14	190	**54.29**
4.	Fish export opportunities	92	26.29	177	50.57	81	**23.14**

Source: Primary Data

The data of table 5.26 reveals that the information regarding daily price is always required by 63.43 percent of respondents; it is sometimes needed by 30.57 percent of respondents and never required by 6 percent of respondents. Again information related to market conditions is always needed by 46.57 percent of respondents; sometimes, it is required by 39.43 percent of respondents, and never is needed by 14 percent. The information about market conditions for dry fish is always demanded by 20.57 percent of respondents, it is sometimes required by 25.14 percent of respondents and it is never needed by 54.29 percent of respondents. The information regarding fish export opportunities is always needed by 26.29 percent of respondents, it is sometimes needed by 50.57 percent of respondents and it is never needed by 23.14 percent of respondents.

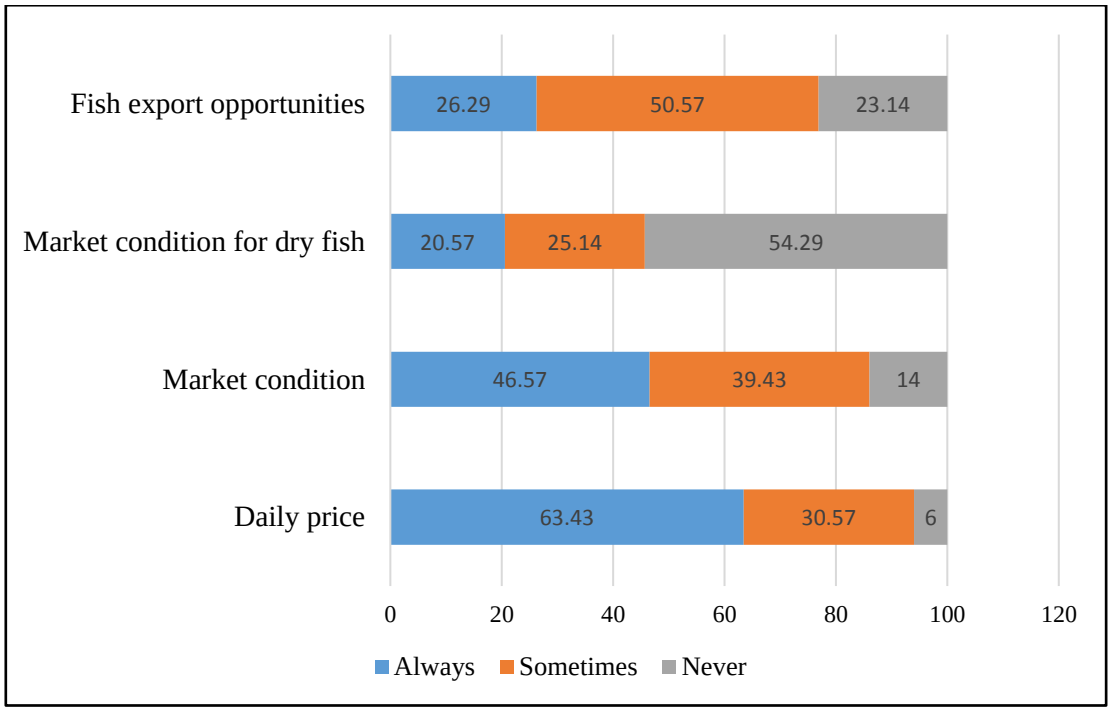

Figure 5.12: Information needed about fish production & market

It is clear from the above figure that more than half of the respondents always need information regarding the daily price of fish and sometimes need fish export opportunities. Besides, more than half of the respondents never need information on market conditions for dry fish. So it is summarized that the respondents are less interested in the information regarding the market condition of dry fish.

5.4.4 Purpose of seeking information

This section deals with the purposes of the fisherwomen community's information seeking**.** There are various purposes like knowing about climate change, the latest technology, potential fishing zone, updated knowledge, government subsidies and training, information about health etc. The goals of using radio, television and mobile phones are also analysed in this section. The purposes of seeking information by respondents are also presented in table 5.27.

Table 5.27: Purpose of seeking information

Sl. No.	Purposes	No N=350	%
1.	To know about climatic change	292	83.42
2.	To know latest technology and methods of fishing field	222	63.43
3.	To identify the potential fishing zone	247	70.57
4.	To update knowledge	265	75.71
5.	To know government subsidies and training	264	75.43
6.	To collect information about health	273	78

Source: Primary data

Table 5.27 exhibits the purpose of information-seeking behaviour by the fisherwomen community. According to this table, 83.42 percent respondents seek information about climatic change followed by 78 percent respondents about health, 75.71 percent respondents about updated knowledge, 75.43 percent respondents about government subsidies and training, 70.57 percent respondents about potential fishing zone and 63.43 percent respondents about latest technology and methods of fishing field.

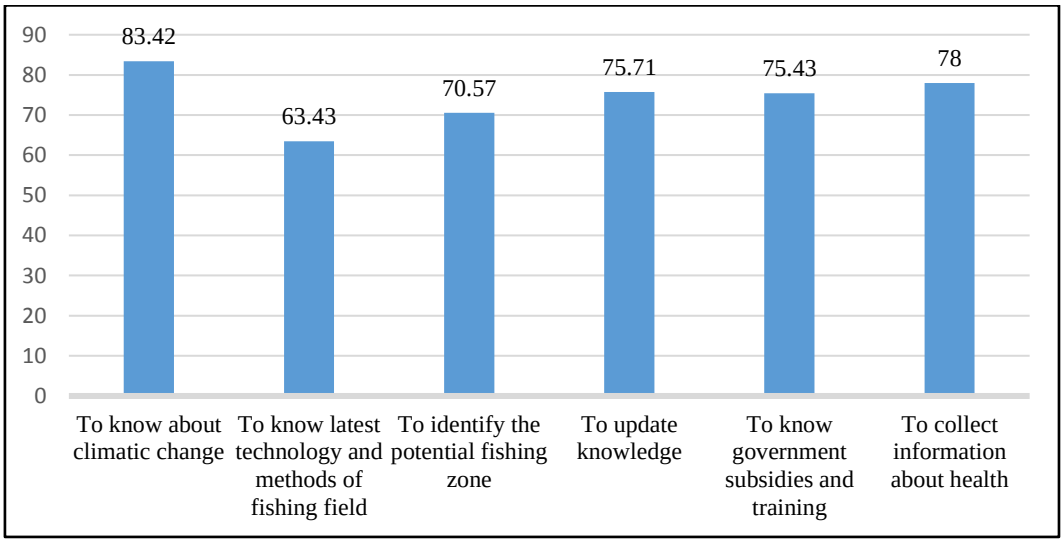

Figure 5.13: Purposes of seeking information

It is also clear from the above discussion that the fisherwomen community is more aware of the information on climatic change, health and government subsidies and training. In contrast, they are less aware of latest technology and potential fishing zone.

5.4.5 Electronic appliances

The fisherwomen community uses ICT devices like mobile phones, radio, and television to collect information and share it with others. Opinions of the respondents regarding using these ICT tools are collected and presented in table 5.28.

Table 5.28: Electronic appliances

Sl. No.	Age group	Electronic appliances					
		Radio		Television		Mobile phone	
		Yes	No	Yes	No	Yes	No
1.	**Under 20 years**	20 (5.71)	21 (6)	37 (10.57)	4 (1.14)	37 (10.57)	4 (1.14)
2.	**21 to 30 years**	58 (16.57)	36 (10.29)	79 (22.57)	15 (4.29)	87 (24.86)	7 (2)
3.	**31 to 40 years**	82 (23.43)	39 (11.14)	90 (25.71)	31 (8.86)	114 (32.57)	7 (2)
4.	**41 to 50 years**	36 (10.29)	25 (7.14)	56 (16)	5 (1.49)	57 (16.29)	4 (1.14)
5.	**Above 51 years**	12 (3.43)	21 (6)	26 (7.43)	7 (2)	31 (8.86)	2 (0.57)
6.	**Total**	**208**	**142**	**288**	**62**	**326**	**24**

Source: Primary Data

Note: Figures in brackets are percentage to the total

It has been observed that 208 (59.43%) respondents use the radio to fulfil their information needs. Among them, 5.71 percent of respondents are under 20 years old, 16.57 percent are between 21 to 30 years old, 23.43 percent are between 31 to 40 years old, 10.29 percent are between 41 to 50 years old, and 3.43 percent are above 51 years old. On the other hand, 142(40.57) respondents do not use the radio. Among them, 6

percent of respondents are under 20 years old, 10.29 percent are between 21 to 30 years old, 11.14 percent are between 31 to 40 years old, 7.14 percent are between 41 to 50 years old, and 6 percent are above 51 years old.

Again, this data also revealed that 288 (82.29%) respondents use television to fulfil their information needs. Among them, 10.57 percent respondents are under 20 years old, 22.57 percent are between 21 to 30 years old, 25.71 percent are between 31 to 40 years old, 16 percent are between 41 to 50 years old and 7.43 percent are above 51 years old. On the other hand, 62(17.71%) respondents do not use any television. Among them, 1.14 percent respondents are under 20 years old, 4.29 percent are between 21 to 30 years old, 8.86 percent are between 31 to 40 years old, 1.49 percent are between 41 to 50 years old and 2 percent are above 51 years old.

It has also been observed that a total of 326 (93.14%) respondents use mobile phones to fulfil their information needs. Among them, 10.57 percent respondents are under 20 years old, 24.86 percent are between 21 to 30 years old, 32.57 percent are between 31 to 40 years old, 16.29 percent are between 41 to 50 years old and 8.86 percent are above 51 years old. On the other hand, 24(6.86%) respondents do not use any mobile phone. Among them, 1.14 percent respondents are under 20 years old, 2 percent are between 21 to 30 years old, 2 percent are between 31 to 40 years old, 1.14 percent are between 41 to 50 years old and 0.57 percent are above 51 years old.

5.4.6 Purpose of using electronic appliances

The fisherwomen community uses Radio/television and mobile phone for various purposes. There are so many purposes that vary from one to another. The fisherwomen's opinion regarding their purposes of using is summarised in table 5.29.

Table 5.29: Purpose of using electronic appliances

Sl. No.	Purposes	Electronic appliances		
		Radio	**Television**	**Mobile phone**
1.	To know the climate change	196 (56)	267 (92.71)	274 (84.57)
2.	To know updated information	177 (50.57)	220 (76.39)	283 (87.35)
3.	To know about natural disaster	195 (55.71)	220 (76.39)	314 (96.91)
4.	To collect health information	169 (48.29)	243 (84.38)	281 (86.73)
5.	For entertainments	201 (57.43)	256 (88.89)	288 (88.89)

Source: Primary Data
Note: Figures in brackets are percentage to the total

Table 5.29 reveals that 56 percent respondents use radio, 92.71 percent respondents use television and 84.57 percent of the respondents use mobile phone to know about climatic change. Again 50.57 percent respondents use radio, 76.39 percent use television and 87.35 percent use mobile phones to know about updated information. Besides, to know about a natural disaster, 55.71 percent respondents use the radio, 76.39 percent use television and 96.91 percent use mobile phones. It also shows that 57.43 percent respondents benefit by radio, 84.38 percent by television and 86.73 percent by mobile phone to collect information about health.

5.5 Sources of Information

Generally, various types of information sources are used by the fisherwomen community. These information sources are mainly classified into conventional, non-conventional and indigenous sources. Mainly conventional documents include various types of writing, typing and printing materials such as books, periodicals, maps, atlases etc., where content is recorded in a natural language and liable to the user. Non-

conventional sources are such kinds of sources where information is recorded shaped in a non-conventional size, shape and material in the form of micro copy, audio, visual and audio-visual documents etc. Besides, indigenous sources of information may be non-textual. Opinions of the respondents regarding the use of information sources by the respondents abridge in the following tables.

5.5.1 Conventional sources of information

The opinion of the respondents regarding the use of conventional sources to satisfy their information needs about their profession is summarised in table 5.30.

Table 5.30: Use of Conventional sources of Information

Sl. No.	Conventional sources	Always		Sometimes		Never	
		No	%	No	%	No	%
1.	Library-Public library	21	6	51	14.57	278	79.43
2.	Books	17	4.86	34	9.71	299	85.43
3.	Community centres	68	19.43	84	24	198	56.57
4.	Fishes department	47	13.43	93	26.57	210	60
5.	Government Organization	35	10	87	24.86	228	65.14
6.	Newspaper & other news	26	7.43	67	19.14	257	73.43

Source: Primary Data

From table 5.30, it is obvious that as a conventional source, the public library is always used by 6 percent of respondents, it is sometimes used by 14.57 percent, and it is never used by 79.43 percent. Besides, the book is always used by 4.86 percent of respondents, it is sometimes used by 9.71 percent, and it is never used by 85.43 percent. Community centres are always used by 19.43 percent of respondents, it is sometimes

used by 24 percent, and it is never used by 56.57 percent. Whereas, the fishing departments are always used by 13.43 percent of respondents, sometimes used by 26.27 percent and never used by 60 percent. Government organizations always perform as a conventional source of information to 10 percent of respondents, sometimes to 24.86 percent and never to 65.14 percent. Besides, the newspaper is always used by 7.43 percent of respondents, it is sometimes used by 19.14 percent, and it is never used by 73.43 percent.

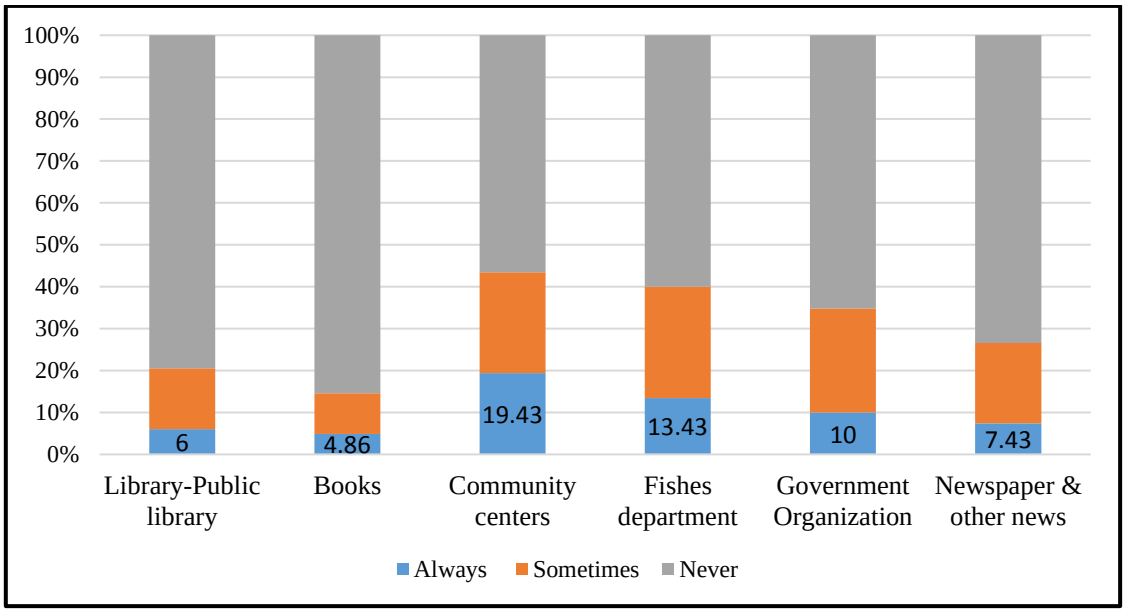

Figure 5.14: Use of Conventional Sources of Information

From the above figure, it is obvious that among various conventional sources, community centres and fishing departments are used more by the respondent to satisfy their information needs than other conventional sources. Therefore, more awareness program by the library is essential for the effective use of these kinds of source.

5.5.2 Non-conventional sources of Information

The respondents' opinion regarding using non-conventional sources to satisfy their information needs is abridged in table 5.31.

Table 5.31: Use of Non-conventional sources of information

Sl. No.	Non-conventional sources	Always		Sometimes		Never	
		No	**%**	**No**	**%**	**No**	**%**
1.	Information through internet	64	18.29	95	27.14	191	54.57
2.	Social media	85	24.29	104	29.71	161	46
3.	Radio	183	52.29	98	28	69	19.71
4.	Mobile phone	195	55.71	113	32.29	42	12
5.	Poster in this area	102	29.14	164	46.86	84	24
6.	Television	181	51.71	132	37.71	37	10.57
7.	Announcement	152	43.43	156	44.57	42	12

Source: Primary Data

From table 5.31, it is clear that as a non-conventional source the internet is always used by 18.29 percent of respondents, it is sometimes used by 27.14 percent, and it is never used by 54.57 percent. Besides, 24.29 percent of respondents always collect information, 29.71 percent sometimes collect information, and 46 percent never collect information through social media. It is also obvious that radio is always used by 52.29 percent of the respondents; it is sometimes used by 28 percent and is never used by 19.71 percent. Besides, mobile phone is always used by 55.71 percent of the respondents; it is sometimes used by 32.29 percent and is never used by 12 percent. It becomes clear from the above table that 29.14 percent of the respondents always collect information, 46.86 percent sometimes collect information, and 24 percent never collect information through posters. Television as a non-conventional source is always used by 51.71 percent of the respondents; it is sometimes used by 37.71 percent and is never used by 10.57 percent. Besides, it is clear that 43.43 percent of the respondents always collect information, 44.57 percent sometimes collect information and 12 percent never collect information through announcements.

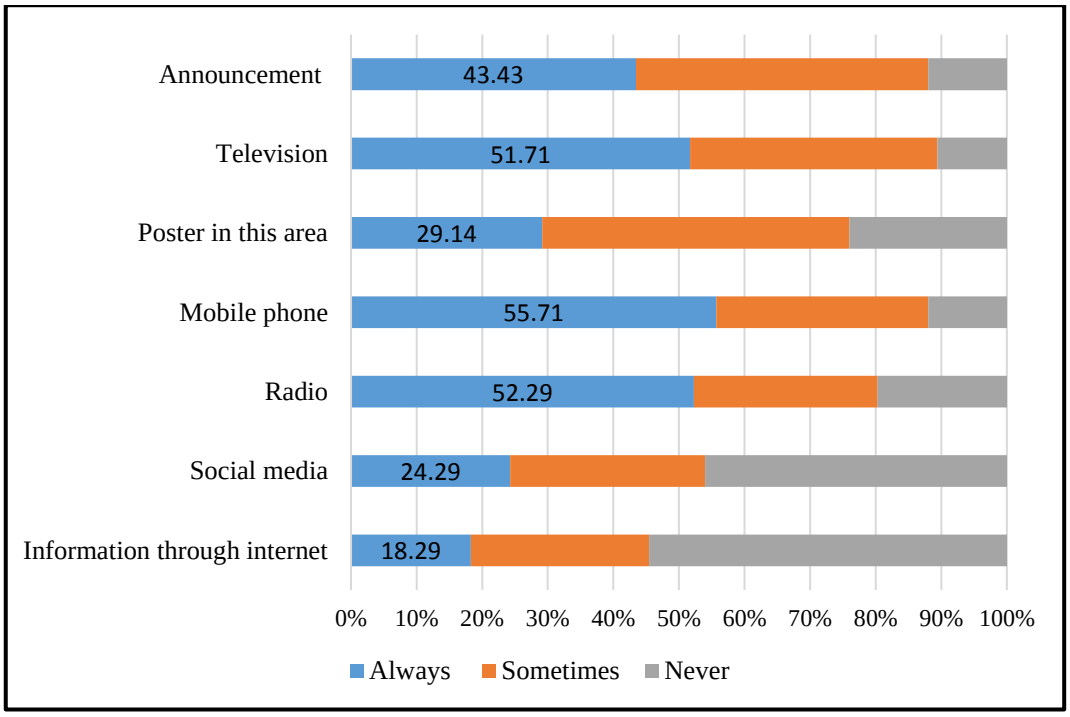

Figure 5.15: Use of Non-Conventional Sources of Information

From the above figure, it is clear that various non-conventional sources like radio, mobile phones, posters in this area, television, announcement etc. are used more frequently than other non-conventional sources like the internet and social media. It may be assumed that fisherwomen are unaware of how they can get information through the internet and social media. Hence, the local government and library should arrange more awareness programs regarding the use of mobile phones to get information more quickly.

5.5.3 Indigenous Sources of information

There are various types of indigenous sources like friends/relatives, market place, community leaders, co-workers and people of village used by the fisherwomen community. The opinion of the respondents regarding the use of indigenous sources is represented in table 5.32.

Table 5.32: Use of Indigenous Sources of information

Sl. No	Indigenous sources	Always		Sometimes		Never	
		No	%	No	%	No	%
1.	Friends/ Relative	243	69.43	84	24	23	6.57
2.	Market place	209	59.71	120	34.29	21	6
3.	Community leaders	186	53.14	107	30.57	54	15.43
4.	Co-workers	256	73.14	71	20.29	23	6.57
5.	People of village	191	54.57	110	31.43	49	14

Source: Primary Data

It is obvious from table 5.32 that 69.43 percent of the respondents always collect information, 24 percent sometimes collect information and 6.57 percent never collect information from friends/relatives. Besides, 59.71 percent of the respondents always collect information, 34.29 percent sometimes collect information, and 6 percent never collect information from the market place. It is also clear that community leaders are used as indigenous sources always by 53.14 percent of the respondents, sometimes by 30.57 percent and never by 15.43 percent. Again, 73.14 percent of the respondents always collect information, 20.29 percent sometimes collect information, and 6.57 percent never collect information from co-workers. Also, the village people are always used as an information source by 54.57 percent of the respondents, sometimes by 31.43 percent and never by 14 percent.

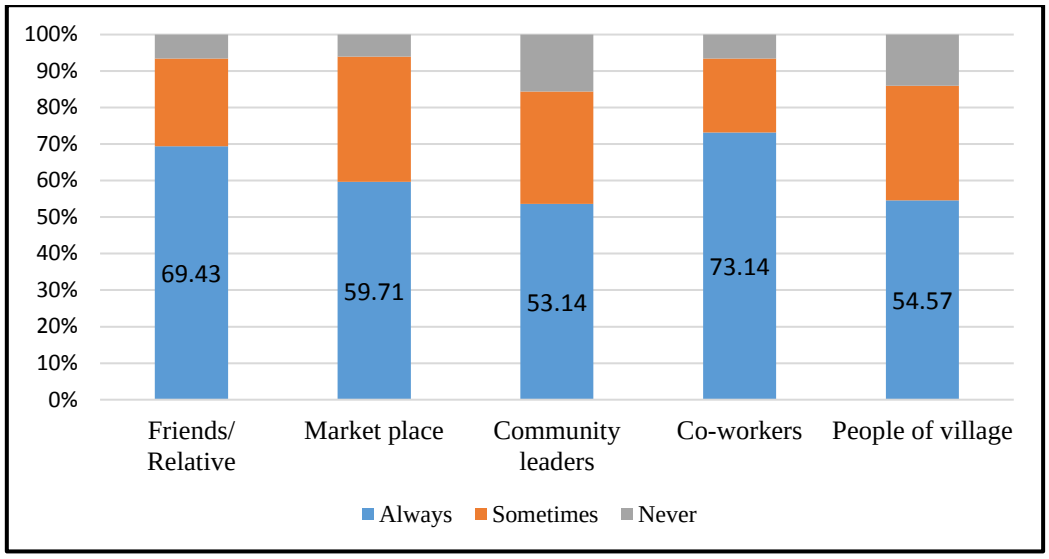

Figure 5.16: Use of Indigenous Sources of Information

It is also obvious from the above figure that the fisherwomen collect their information and fulfil their information needs by using more indigenous sources than other kinds of sources. Fisherwomen feel easy to ask about their information needs to friends/relatives, market place, community leaders, co-workers and people of the village.

5.5.4 Information sources

The data about the use of information sources is presented in the following table.

Table 5.33: Use of Information sources

Sl. No.	Information sources	Always		Sometimes		Never	
		No	%	No	%	No	%
1.	Conventional sources	26	7.43	101	28.86	223	63.71
2.	Non-Conventional sources	63	18	229	65.43	58	16.57
3.	Indigenous Source	184	52.57	93	26.57	73	20.86

Source: Primary Data

Table 5.33 reveals that 7.43% of the respondents always preferred conventional sources of information to reach their information requirements, whereas 28.86% of the respondents sometimes prefer conventional sources, and 63.71% of the respondents never use conventional sources of information. Besides, non-conventional sources are always preferred by 18% of the respondents, it is sometimes preferred by 65.43% of the respondents and it is never preferred by 16.57% of the respondents, this table also reveals that 52.57% of the respondents always prefer indigenous sources of information whereas 26.57% of the respondents sometimes prefer this sources and 20.86% of the respondents never prefer this sources.

5.6 Visiting any information centres by the respondents

There are different kinds of information centres, like libraries, information centres, local committees, fishing departments etc., used by respondents to meet their information requirements. The respondents' opinion regarding the habit of visiting any information centres is summarized in table 5.34.

Table 5.34: Habit of visiting any information centres

Sl. No	Information centres	Number
1.	Yes	206(58.86)
2.	No	144(41.14)

Source: Primary Data
Note: Figures in brackets are percentage to the total

Table 5.34 reveals that only 58.86% of the respondents have the habit of visiting any kind of information centre to seek information. But 41.14% of the respondents do not have the habit of visiting the information centre to meet their daily information

needs. They may depend on other information sources, like indigenous sources, for their information needs.

5.6.1 Use of information centres by category of respondents

The use of an information centre by fisherwomen is analysed on the responses of 350 respondents. With the chi-square test, the significant association between the use of the information centre and the fisherwomen's type is also presented in table 5.35. The detail of the chi-square analysis, along with the frequency of the respondents, is provided below.

Table 5.35: Use of information centres

Sl. No	**Type of fisherwomen**	**Use of information centre**		**Total**	**Chi-square value**
		Yes	**No**		
1.	Only Fisherwomen	136	105	**241**	**2.61** **d.f= 2**
2.	Crabber	42	20	**62**	
3.	Shrimp	28	19	**47**	
4.	**Total**	**206**	**144**	**350**	

Source: Primary Data
Note: Figures in brackets are percentage to the total
(d.f= Decrease of freedom)

Table 5.35 shows that out of 350 respondents, the number of 206 respondents use the information centre for collecting information, and the number of 144 respondents do not use the information centre. Among 206 respondents, 136 were only fisherwomen, 42 crabbers and 28 shrimp catchers who used the information centre to fulfil their information needs. On the other hand, there are 105 fisherwomen, 20 crabbers and 19 shrimp catchers who do not use any information centre.

Hypothesis: there is no significant association between the types of fisherwomen and their use of information centres.

Table 5.35 reveals that the calculated value of the chi-square test 2.61 is lower than the table value at 0.05 level and 2 degrees of freedom. It shows that the null hypothesis that there is no significant association between the types of fisherwomen and their use of information centre is accepted at 0.05 level.

Hence, it can be said that there is no significant association between the types of fisherwomen and their use of information centres.

5.6.2 Use of information centre by different age of respondents

The use of information centres by different age groups of the respondents is explored on the responses of 350 respondents. Using chi-square test, the association between the use of the information centres by the types of age groups is also analysed. The details of the chi-square analysis are given in table 5.36.

Table 5.36: Use of information centre by different age group

Sl. No.	**Types of respondents**	**Use of information centre**		**Total (n=350)**	**Chi-square value**
		Yes	**No**		
1.	**Under 20 years**	28 (8)	13 (3.71)	**41 (11.71)**	**11.63**
2.	**21 to 30 years**	61 (17.43)	33 (9.43)	**94 (26.86)**	**d.f= 4**
3.	**31 to 40 years**	56 (16)	30 (8.57)	**86 (24.57)**	
4.	**41 to 50 years**	47 (13.43)	49 (14)	**96 (27.43)**	
5.	**Above 51 years**	14 (4)	19 (5.43)	**33 (9.43)**	
6.	**Total**	**206** (58.86)	**144 (**41.14)	**350**	

Source: Primary Data
Note: Figures in brackets are percentage to the total
(d.f= Decrease of freedom)

Table 5.36 reveals that 206 (58.86%) respondents use information centres for their information needs. Among them, 8 percent of respondents are under 20 years, 17.43 percent are between 21 to 30 years old, 16 percent are between 31 to 40 years old, 13.43 percent are between 41 to 50 years old and 4 percent are above 51 years old.

This table also reveals that 144 (41.14%) respondents do not visit any information centres for their information needs. Among them, 3.71 percent respondents are under 20 years, 9.43 percent are between 21 to 30 years old, 8.57 percent are between 31 to 40 years old, 14 percent are between 41 to 50 years old and 5.43 percent are above 51 years old.

Hypothesis: There is no significant association between the age of respondents and their use of information centres.

Table 5.36 disclose that the calculated value of the chi-square test 11.63 is greater than the table value at 0.05 level and the decrease of freedom is 4. It shows that the null hypothesis that there is no significant association between the age of respondents and their use of the information centres is rejected at 0.05 level.

5.6.3 Types of information centre used by different age group of the respondents

The type of information centres used by different age groups is presented in the following table. With the help of the chi-square test, the association between the respondents from different age group and their use of the information centre is examined. The details of the chi-square analysis are provided in table 5.37.

Table 5.37: Types of information centre used by respondents

Sl. No.	Types of centres	Age Group		Total	Chi-square value
		Below 20y to 40y	**41y to above 50y**		
1.	**Libraries**	12 (5.83)	1 (0.49)	**13 (6.31)**	**9.83**
2.	**Information centres**	44 (21.36)	6 (2.91)	**50 (24.27)**	**d.f= 3**
3.	**Local committees**	36 (17.48)	19 (9.22)	**55 (26.70)**	
4.	**Fishing department**	59 (28.64)	29 (14.07)	**88 (42.72)**	
5.	**Total**	**151 (73.30)**	**55 (26.70)**	**206**	

Source: Primary Data
Note: Figures in brackets are percentage to the total
(d.f= Decrease of freedom)

Table 5.37 reveals that 206 respondents use information centres for their information needs. Among them, 151 (73.30%) respondents are below 20 to 40 years old and 55 (26.70) are from 41 years to above 50 years old. Again, 13(6.31%) respondents prefer to visit the libraries for their information needs. Among them, 5.83 percent respondents are from under 20 to 40 years old and 0.49 percent are from 41 to above 50 years old.

Further, it is inferred that 50 (24.27%) respondents prefer to visit the information centres for their information needs. Among them, 21.36 percent of respondents are under 20 to 40 years old, and 2.91 percent are from 41 to above 50 years old.

It is noticed from the table that 55 (26.70%) respondents prefer to visit the local committee for their information needs. Among them, 17.48 percent respondents are under 20 to 40 years old, and 9.22 percent are 41 to above 50 years old.

Again, it is observed that 88 (42.72%) respondents go to the fishing department for their information needs. Among them, 28.64 percent respondents are under 20 to 40 years old and 14.07 percent are 41 to above 50 years old.

Hypothesis: there is no significant association between the respondents from different age group and their use of the information centres.

Table 5.37 Indicates that the calculated chi-square value is 9.83, which is greater than the table value at 0.05 level and 3 degrees of freedom. Hence the null hypothesis is rejected here.

Thus, it is inferred that there is a significant association between the respondents from different age groups and the use of information centres

5.6.4 Frequency of visit in an information centre by different age group of the respondents

The frequency of visits by the respondents depicts the result of the question of how often they have visited an information centre. The data about the frequency of visits in an information centre is summarized in table 5.38. The frequency of visits by different age groups of the respondents is analyzed in the following table with the help of a chi-square test. The details of the chi-square analysis are also given in table 5.38.

Table 5.38: Frequency of visit by the respondents

Sl. No	**Frequency of visit**	**Age Group**		**Total (n=206)**	**Chi-square value**
		Below 20y to 40y	**41y to above 60y**		
1.	1 time in a week	11 (5.34)	1 (0.49)	**12 (5.83)**	**10.08**
2.	2 time in a month	31 (15.05)	4 (1.94)	**35 (16.99)**	**d.f= 3**
3.	1 time in a month	67 (19.14)	25 (12.14)	**92 (44.66)**	
4.	Rarely	42 (20.39)	25 (12.14)	**67 (32.52)**	
5.	**Total**	**151**	**55**	**206**	

Source: Primary Data
Note: Figures in brackets are percentage to the total
(d.f= Decrease of freedom)

Table 5.38 shows that among 151 respondents belonging to the age group of below 20y to 40y, 5.34 percent of respondents visit one time in a week, 15.05 percent visit twice in a month, 19.14 percent visit one time in a month and 20.39 percent rarely visit the information centres. Besides, among 55 respondents belonging to the age group of 41y to above 60y, 0.49 percent of respondents visit one time in a week, 1.94 percent visit twice in a month, 12.14 percent visit one time in a month and 12.14 percent visit rarely to the information centres.

Hypothesis: there is no significant association between the age group of the respondents and their frequency of visits to the information centres.

Table 5.38 reveals that the calculated chi-square value is 10.08 is greater than the table value at 0.05 level and 3 degrees of freedom. This clearly shows that the null hypothesis that there is no significant association between the respondents' age group and their frequency of visit to the library is rejected at 0.05 levels.

Hence it is inferred that there is a significant association between the age group of the respondents and their frequency of use.

5.6.5 Time spend by the respondents

Time spent by the respondents from different age group at information centres is presented in the following. With the help of the chi-square test, the association between the respondents' age groups and their frequency of use of the information centres is provided in table 5.39.

Table 5.39: Time spend by the respondents

Sl. No	**Time spend**	**Age Group**		**Total (n=206)**	**Chi-square value**
		Below 20y to 40y	**41y to above 60y**		
1.	Less than 30 minute	76 (36.89)	40 (19.42)	**116 (56.31)**	**8.97**
2.	Between 30 to 60 minute	39 (18.93)	10 (4.85)	**49 (23.79)**	**d.f =2**
3.	More than 1 hour	36 (17.48)	5 (2.43)	**41 (19.90)**	
4.	**Total**	**151**	**55**	**206**	

Source: Primary Data
Note: Figures in brackets are percentage to the total
(d.f= Decrease of freedom)

Table 5.39 reveals that 151 respondents belong to the age group under 20 to 41 years old. Among them, 36.89 percent of respondents spent less than 30 minutes, 18.93 percent spent 30 to 60 minutes, and 17.48 percent spent more than 1 hour in information centres. Again total 55 respondents belong to the age group of 41 to above 50 years. Among them, 19.42 percent of respondents spent less than 30 minutes, 4.85 percent spent 30 to 60 minutes, and 2.43 percent spent more than 1 hour in information centres.

Hypothesis: there is no significant association between the respondents' age group and their time spends in the information centre.

The table discloses that the calculated chi-square value is 8.97 which is greater than the table value at 0.05 level and 2 degrees of freedom. That distinctly shows that the null hypothesis that there is no significant association between respondents' age group and their time spent in the information centre is rejected at 0.05 levels.

Hence, it can be said that there is a significant association between the age group of the respondent and their time spent in the information centres.

5.6.6 Preferred time of visiting in a centre by different age group

The respondents' preferred time for visiting the information centre is presented in table 5.40. The association between the respondents' age group and their preferred time of visiting the information centres is analyzed with the help of the chi-square test. A detailed analysis of the chi-square test is provided in table 5.40.

Table 5.40: Preferred time of visiting

Sl. No	**Preferred time**	**Age Group**		**Total (n=206)**	**Chi-square value**
		Below 20y to 40y	**41y to above 60y**		
	Morning	34 (9.71)	18 (8.74)	**52(25.24)**	**2.24**
	Noon	69 (33.50)	22 (10.68)	**91(44.17)**	**d.f=2**
	Evening	48 (23.30)	15 (7.28)	**63(30.56)**	
	Total	**151**	**55**	**206**	

Source: Primary Data
Note: Figures in brackets are percentage to the total
(d.f= Decrease of freedom)

It is clear from the above table that most respondents prefer noon to visit the information centres for their needs rather than morning and evening. This table discloses that among the respondents belonging to the age group below 20 to 40 years, 9.71 percent of respondents prefer morning time, 33.50 percent prefer noon time, and 23.30 percent prefer evening time for visiting the information centres. Again among the respondents belonging to the age group between 41 to 60 years, 8.74 percent of respondents prefer morning time, 10.68 percent prefer noon time and 7.28 percent prefer evening time for visiting information centres.

Hypothesis: there is no significant association between the respondents' age group and their preferred time of visiting the information centres.

Table 5.40 reveals that the calculated chi-square value is 2.24 is lower than the table value at 0.05 level and 2 degrees of freedom. That revealed the null hypothesis that no significant association exists between the respondents' age group and their preferred time of visiting information centres is accepted at 0.05 levels.

Hence it is argued that there is no significant association between the respondents' age group and their preferred time of visiting the information centres.

5.6.7 Motivated person to use the library

Fisherwomen are motivated by co-workers, community leaders and library professionals to use the information centres for their information requirements. The respondents' opinion regarding the motivated person is summarized in table 5.41. Data about the person who encouraged the respondents to visit the information centres is presented in the following table. With the help of chi-square test, the association between the respondents' age group and the motivated person is presented in the following.

Table 5.41: Motivated person to the respondents

Sl. No	Motivated person	Age Group		Total (n=206)	Chi-square value
		Below 20y to 40y	41y to above 60y		
1.	**Co-workers**	71 (34.47)	15 (7.28)	**86(41.75)**	**7.26**
2.	**Community Leader**	48 (23.30)	27 (13.11)	**75(36.41)**	**d.f= 3**
3.	**Library professionals**	6 (2.91)	2 (0.97)	**8(3.88)**	
4.	**Others**	26 (12.62)	11 (5.34)	**37(17.96)**	
5.	**Total**	**151**	**55**	**206**	

Source: Primary Data
Note: Figures in brackets are percentage to the total
(d.f= Decrease of freedom)

Table 5.41 shows 151 respondents belonging to the age group below 20 to 40 years old. Among them, 34.47 percent of respondents are motivated by co-workers, 23.30 percent by community leaders, 2.91 percent by library professionals, and 12.62 percent by other persons. Besides, the respondents belonging to the age group 41 to 60 years, 7.28 percent of respondents are motivated by co-workers, 13.11 percent by community leaders, 0.97 percent by library professionals and 5.34 percent by other persons. It is clear from the above table that more than half of the respondents are inspired by co-workers and community leaders, while a few are motivated by library professionals. Hence, library professionals should take more effective steps to motivate the respondents.

Hypothesis: there is no significant association between the different age group of the respondents and motivated person to visit the information centres.

Table 5.41 reveals that the calculated chi-square value 7.26 is lower than the table value at 0.05 level and 3 degrees of freedom. It focuses on the null hypothesis that

there is no significant association between the respondents' age group and motivated persons is accepted at 0.05 levels.

Thus it is inferred that there is no significant association between the age group of the respondents and motivated persons to use information centres.

5.6.8 Satisfaction towards information sources

Satisfaction towards information sources by the respondents from different age group is presented in table 5.42. The association between the respondents from different age group and their satisfaction to information sources is analysed with the help of a chi-square test.

Table 5.42: Satisfaction towards information sources

Sl. No	Satisfaction to information sources	Age Group		Total (n=350)	Chi-square value
		Below 20y to 40y	41y to above 60y		
1.	Very satisfied	29 (8.29)	13 (3.71)	**42 (12)**	**6.35**
2.	Satisfied	51 (14.57)	25 (7.14)	**76 (21.71)**	**d.f=3**
3.	Dissatisfied	104 (29.71)	55 (15.71)	**159 (45.43)**	
4.	Undecided	37 (10.57)	36 (10.29)	**73 (20.86)**	
5.	**Total**	**221**	**129**	**350**	

Source: Primary Data
Note: Figures in brackets are percentage to the total
(d.f= Decrease of freedom)

Table 5.42 shows that 221 respondents belonging to the age group 20 years to 40 years old. Among them, 8.29 percent of respondents are very satisfied, 14.57 percent are satisfied, 29.71 percent are dissatisfied and 10.57 percent are undecided about using information sources. On the other hand, among respondents belonging to the age group 41 to 60 years, 3.71 percent of respondents are very satisfied, 7.14 percent are satisfied,

15.71 percent are dissatisfied and 10.29 percent are undecided about the use of information sources.

Hypothesis: there is no significant association between the respondents from different age group and their satisfaction to information sources.

Table 5.42 reveals that the calculated chi-square value is 6.35 which is lower than the table value at 0.05 level and 3 degrees of freedom. It is inferred the null hypothesis that there is no significant association between the respondents' age group and their satisfaction to information sources is accepted at 0.05 levels.

So, it can be said that there is no significant association between the respondents from different age group and their satisfaction to information sources

5.6.9 Satisfaction towards information centre

Satisfaction towards information centres by the respondents from different age group is presented in table 5.43. With the help of chi-square test, the association between respondents' age group and their satisfaction toward information centre is analysed.

Table 5.43: Satisfaction towards information centres

Sl. No	Satisfaction to information certres	Age Group		Total (n=350)	Chi-square value
		Below 20y to 40y	41y to above 60y		
	Very satisfied	18 (8.73)	4 (1.94)	**38(10.86%)**	**4.17**
	Satisfied	66 (32.04)	19 (9.22)	**144(41.14%)**	**d.f=3**
	Dissatisfied	21 (10.19)	13 (6.31)	**57(16.29%)**	
	Undecided	46 (22.33)	19 (9.22)	**111(31.71%)**	
	Total	**221**	**129**	**206**	

Source: Primary Data
Note: Figures in brackets are percentage to the total
(d.f= Decrease of freedom)

The table 5.43 discloses that 10.86 percent of respondents are very satisfied about the information centres, 41.14 percent are satisfied, 16.29 percent are dissatisfied and 31.71 percent are undecided. Again, of the respondents belonging to the age group 20 to 40 years, 8.73 percent are very satisfied, 32.04 percent are satisfied, 10.19 percent are dissatisfied and 22.33 percent are undecided about the use of the information centres. Besides, the respondents belonging to the age group 41 to 50 years, 1.94 percent are very satisfied, 9.22 percent are satisfied, 6.31 percent are dissatisfied and 9.22 percent are undecided about the use of information centres.

Hypothesis: there is no significant association between the respondents from different age group and their satisfaction to information centre.

Table 5.43 reveals that the calculated chi-square value 4.17 is lower than the table value at 0.05 level and 3 degrees of freedom. It is inferred the null hypothesis that there is no significant association between the respondents' age groups and their satisfaction to information centres is accepted at 0.05 levels.

So, it can be say that there is no significant association between the respondents from different age group and their satisfaction to information centres.

5.6.10 Suggestions of the fisherwomen community

Some pre-planned suggestions were asking to the respondents. The opinion of the respondents regarding this suggestion is summarised in table 5.44.

Table 5.44: Suggestions of the fisherwomen community

Sl. no	Suggestions	No (n=350)	%
1.	**To improve information literacy**	80	22.86
2.	**Arrange awareness programs**	121	34.57
3.	**Arrange welfare programs**	95	27.14
4.	**For access up to date technology is necessary**	54	15.43
5.	**Total**	**350**	**100**

Source: Primary Data

Table 5.44 revealed that 22.86 percent of respondents suggested improving their information literacy, 34.57 percent suggested arranging awareness programs, 27.14 percent told arranging welfare programs, and 15.43 percent suggested improving the latest technology for access to information.

Chapter 6
Findings and Suggestions

Chapter 6
Findings and Suggestions

The study is taken to analyse the information-seeking behavior of fisherwomen community in the coastal area of South 24 Parganas district has brought many findings which match or partially match with the hypotheses that have been taken for this study. Based on data analysis, the findings are given for a clear interpretation of data.

6.2 Summery of findings

The data collected from the fisherwomen and the data analyses have led to the following findings.

6.2.1 Findings related to the respondents

The data collected from the fisherwomen and analysed in chapter 5 indicates the following significant findings**.**

1. Among the respondents, 241(68.86%) respondents are fisherwomen, 62(17.71%) respondents are crabber and 47(13.43%) respondents are shrimp catcher.
2. The age-wise distribution of the respondents shows that 41(11.71%) respondents belong to the age group under 20 years, 94(26.86%) respondents belong to the age group between 21 to 30 years, 86(24.57%) respondents belong to the age group between 31 to 40 years, 96(27.43%) respondents belong to the age group between 41 to 50 years and 33(9.43%) respondents belong to the age group above 51 years.
3. Most of the respondents (54.57%) have their education up to primary school, 20.57 percent have their education up to high school, 8.57 percent have their education up to higher secondary and 5.43 percent have their education up to graduate course. There are 10.86 percent illiterate people among the respondents. It also focuses on that the educational status of fisherwomen is very low.
4. Data about respondents' marital status shows that the majority of the respondents (70.57%) are married, whereas 81(23.14%) respondents are widowed and 22(6.29%) respondents are unmarried. The respondents' age group and their marital status also indicate that child marriage is a more common incident among the fisherwomen community
5. Most of the respondents 219(62.57%) are from Hindu religion. Followed by 35.71% Muslim and 1.72% Christian. It is obvious that the Hindu and Muslim religions dominate the entire study area.

6. Majority of the respondents 184(52.57%) are from nuclear family followed by 148(42.29%) from extended family and 18(5.14%) from joint family.
7. Data of this study reveals that the majority of the respondents, 143(40.86%) earn monthly under Rs. 5000, 27.43 percent of respondents earn between Rs. 5001 to 10000, 20 percent earn between Rs. 10001 to 15000, 9.71 percents earn between Rs. 15001 to 20000 and only 2 percent earn above Rs 20000. It also focuses on the low monthly income of fisherwomen in South 24 pgs district.
8. Majority of the respondents 121(34.57%) have 5 to 10 years' experiences in fishing. Whereas, least of the respondents, 28(8%) have 20 years experience in fishing.
9. Among the total respondents, 146(41.71%) borrow money from any sources and 204(58.29%) do not borrow any money for any sources. It also focuses on older respondents who borrowed more money than younger ones.
10. Among the money borrower respondents, most respondents (41.78%) borrow money from local money lenders followed by 30.82 percent borrow money from microfinance organizations, 21.33 percent borrow money from relatives and friends, and 6.16 percent borrow money from other sources.

6.2.2 Findings related to the profession of the respondents

1. Most of the respondents 165 (47.14%) choose this profession only because it is their traditional job. Though, 31.14 percent of respondents select this profession due to more income and 21.71 percent preferred this job only because of unemployment.

2. Most of the respondents, 271(77.43%) catch fish with free access. Though 9.43 percent of respondents have a registration, 8.29 percent have a license and 4.86 percent catch fish with share fishing right.
3. The majority of the respondents, 193(55.14%) are not sure about their changing status of income. Though income level increased for 12.57 percent of respondents, it decreased for 18.86 percent and stable for 16.29 percent.
4. Among the respondents, 128(36.57%) respondents are the member of local committee whereas 222(63.43%) respondents are not the member of any committee.
5. It also shows that most of the respondents (29.69%) became the member for access market, followed by 26.56 percent of respondents for access fishing right, 20.31 percent for access information, 17.97 percent for access micro-credit and 5.47 percent for other reasons.
6. Among the respondents, only 107(30.57%) use fishing boats and 243(69.43%) do not use any boats for fishing. Among all types of boats, majority of the respondents 53(49.53%) use dinghy followed by chat boat 32(29.91%), butchery 19(17.76%) and mechanical boat 3(2.80%).
7. Most of the respondents 45(42.05%) have their own boats for fishing. Whereas 15.89 percent use boat by rental, 11.21 percent use boats by lease.
8. Out of 350 respondents, 218 (62.28%) respondents use fishing gear and 132(37.71%) respondents do not use any gear for fishing. Various types of fishing gears such as hook and line (14.67%), cast net (11%), bag net (12.39%), box net (16.05%), crab net (20.18%), shrimp net (17.89%) are used by the respondents.

9. Most of the respondents 77(22%) use 1-4 hours for fishing. Whereas the least of the respondents, 14(4%) use whole day for fishing.
10. Out of 350 respondents, 33.43 percent of respondents spent all day for fishing. The respondents prefer to catch fish according to fishing time rather than all-day
11. Majority of the respondents 96(27.43%) prefer to sell fish in co-operative followed by 82(23.42%) respondents in local market, 68(19.43%) respondents to middle men and 53(15.14%) respondents in sea shore.

6.2.3 Findings related to the information needs and information sources used by the respondents.

1. The respondents have so much general information needs more frequently. These are climate, health information, current information, socio-cultural information, geographic information, economic information, technical information and environmental information at 328(93.71%), 285(81.43%), 273(78%), 246(70.29%), 231(66%), 223(63.71%), 208(59.43%), 183(52.29%)
2. The respondents have some specific information needs. These are about wind flow, Purnima & Amabasya, manufacture of fish nets, hurricanes & sea storms, ice plant, manufacture of fish vessels, dry fish stock, packing of dry fish at 316(90.29%), 310(88.57%), 308(88%), 295(84.29%), 249(71.14%), 184(52.57%), 164(46.86%), 161(46%) respectively**.**
3. The respondents also have many specific information needs related to fish production & market. These are about daily price, market condition, fish export opportunities and also the market condition for dry fish at 329(94%), 301(86%), 269(76.86%) and 160(45.71%), respectively.

4. Out of 350 respondents, 83.42 percent of respondents seek information to know about climatic change, followed by 78 percent about health, 75.71 percent about updated knowledge, 75.43 percent about government subsidies and training, 70.57 percent about the potential fishing zone and 63.43 percent about the latest technology and methods of fishing field.
5. Most of the respondents, 326(93.14%) have their mobile phone for sharing and collecting information. Also, 82.29 percent of respondents have television and 59.43 percent have radio for collecting information.
6. The respondents hardly used conventional sources to meet their information requirements. All conventional sources like public libraries, books, community centres, fishes department, government organizations, and newspapers are always used by 6 percent, 4.86 percent, 19.43 percent, 13.43 percent, 10 percent and 7.43 percent of the respondents, respectively.
7. All non-conventional sources such as the internet, social media, radio, mobile phone, posters in this area, television, and announcement are always used by 18.29 percent, 24.29 percent, 52.29 percent, 55.71 percent, 29.14 percent, 51.71 percent, and 43.43 percent of the respondents, respectively.
8. This study also shows that indigenous sources of information like friends/relatives, market place, community leaders, co-workers and people of the village are always used by 69.43 percent, 59.71 percent, 53.14 percent, 73.14 percent and 54.57 percent of the respondents, respectively. It denotes that indigenous sources of information are more popular among the respondents.
9. This study focuses on 7.43 percent of respondents always prefer conventional sources of information, 18 percent always prefer non-conventional sources of information and 52.57 percent always prefer indigenous sources of information.

6.2.4 Findings related to the information seeking behavior pattern of the respondents

1. Only 206 (58.86%) respondents have the habit of visiting information centres to seek information to meet their daily information need.
2. Most of the respondents (88 out of 206) prefer to visit the fishing department for their information requirements. It is followed by local committees (55 out of 206), information centres (50 out of 206) and libraries (13 out of 206).
3. Majority of the respondents (44.66%) visit the information centre at least one time in a month, followed by 67(32.52%) respondents who visit rarely, 35(16.99%) visit two time in a month and 12(5.83%) visit one time in a week.
4. Most of the respondents (116 out of 206) spent less than 30 minutes for seeking information. A few numbers of respondents (41 out of 206) spent more than one hour.
5. Most respondents (91 out of 206) prefer noon time for visiting the information centre.
6. Most of the respondents (86 out of 206) are motivated by co-workers, followed by community leaders 75(36.41%) and library professionals 8(3.88%).
7. Most of the respondents (159 out of 350) are not satisfied with the information sources.
8. Majority of the respondents (41.14%) are satisfied with the information centre.

6.3 Testing of hypothesis

6.3.1 Hypothesis 1

The socio-economic conditions of fishermen as well as their level of education and monthly income are miserable.

According to this hypothesis, the necessary information is provided in table 5.3 and 5.7 showing the level of education and monthly income of fisherwomen, respectively.

It also found that half and more respondents, 54.57% completed their education up to primary school, 20.57% up to high school, 8.57% up to higher secondary and only a few respondents 5.43% up to graduate level. Also, there are so many respondents, 10.86% who are illiterate. The poor condition of the respondents related to education points out so many facts that they are not aware enough of the latest fishing technology. Again they are unaware of how they are well informed with updated information and fulfil their information need. Due to the lack of advanced technology in fishing and updated information, the fisherwomen's productivity decreased.

Table 5.7 focuses on the economic condition of the respondents. It shows that almost half of the respondents 40.86 percent earn monthly under Rs 5000, followed by 27.43 percent earn Rs 5001 to 10000, 20 percent earn Rs 10001 to 15000, 9.71 percent earn Rs 15001 to 20000 and only 2 percent Rs above 20000.

So, it also supports the first hypothesis that the socio-economical condition of fisherwomen is miserable.

6.3.2 Hypothesis 2

The fisherwomen often borrow money from various sources and rarely use fishing boats and gears to uplift their profession. This hypothesis is partially fulfilled.

According to this hypothesis, the necessary information is provided in table 5.9 related to the borrowed money by the respondents. This table also discloses that the calculated chi-square value 11.04 is greater than the table value at 5% level and 2 degrees of freedom. It clearly shows the alternative hypothesis that there is a significant

association between the respondents' category and their borrowed money from any sources is accepted at 5% level.

Hence it is inferred that there is a significant association between the respondents' category and their borrowed money from any sources.

Besides, tables 5.16 and 5.19 represent the use of fishing boats and fishing gear by the category of respondents, respectively. This table also focuses on the fact that among the total respondents, a few respondents use fishing boats.

The chi-square value of table 5.16 is 3.38, which is lower than the table value at a 5% level of significance and 2 degrees of freedom. So, it can be argued that there is no significant association between the category of respondents and their use of fishing boats. Again, table 5.19 also focuses on the chi-square value 14.57, which is greater than the table value at 5% level of significance and 2 degrees of freedom. So, it can be said that there is a significant association between the category of respondents and their use of fishing gear.

6.3.3 Hypothesis 3

The respondents scarcely visit the information centre for their information needs. With the basis of this hypothesis, the necessary information is provided in table 5.36. Table 5.36 shows the use of information centres by the different ages of respondents. This table also reveals that the number of 206 respondents use information centres whereas 144 respondents do not use any information centres. The table discloses that the chi-square value 11.63 is greater than the table value at 5% significance and 4 degrees of freedom. It also proves that a significant association between the respondents' age group and their use of information centres is accepted at

5% level. It also focuses on the use of information centres by the respondents depending on their age group.

6.3.4 Hypothesis 4

According to this hypothesis, the association between respondents from different age group and their frequency of visits, time spent in the centres, preferred time of visiting, motivated person and satisfaction to the information sources and centres are considered. This above hypothesis is partially fulfilled, whose information is provided in table 5.37 5.38, 5.39, 5.40, 5.41, 5.42, and 5.43, respectively, in chapter 5. These tables reveal a significant association between the respondents from different age group and types of information centres used by them, their frequency of visits, time spent, and satisfaction to information centres. Whereas, there is no significant association between the respondents from other age group and their preferred time of visiting the information centres, motivated person and satisfaction with information sources. It also argued that the frequency of visits to information centres, time spent by the respondents, and their satisfaction to information centres depends on the respondents' age group. On the other hand, the preferred time of the respondents, motivated people and satisfaction to sources are not depending on the age group of the respondents

6.4 Suggestions

Based on above findings, the following suggestions can be proposed for fruitful utilization of information sources by the fisherwomen community in South 24 pgs district.

1. There were still many illiterate people among the fisherwomen community. So, proper education is needed for all people for betterment their profession.

2. Grants or other assistance from the government should be provided to reduce respondents' propensity to borrow money.
3. Most of the fisherwomen should be the member of the local fishing associations to get more facilities.
4. The fisherwomen should use modern crafts and gears for fishing and be equipped with the latest technology and information system rather than traditional fishing equipment.
5. Government should have fixed a rate for the sale and purchase of fish, crabs and shrimps to prevent the economic loss of the fishing community.
6. The governments should make efforts to take necessary steps for the conservation of fishes.
7. This study disclosed that the fisherwomen communities prefer indigenous sources to many other sources. Hence, attempts must be made to make these sources more available to them.
8. Government organizations, fisheries departments, community centres and public libraries should disseminate the information need of the fisherwomen community and take the necessary steps for it.
9. Fisherwomen community should be provided proper fishing training and marketing that may improve their socio-economic status.
10. This study also focuses on the fisherwomen community being less aware of the information sources, government subsidies, and health and welfare measures. Hence appropriate awareness programs should be arranged by local authorities.
11. Modern electronic equipment such as GPS, biometric cards, radio, mobile phones etc., are to be provided to the respondents at the least cost or free of charge.

12. Information literacy skills should be developed among the fisherwomen community to achieve the information properly.
13. Attempts must be taken to develop the habit to using the library and information centre by the respondents.
14. Public libraries and other information centres should be more effective about the information need of the fisherwomen community and also provide information at the doorsteps of the respondents.

6.5 Scope for further research

Research is a continuous process. One research creates the scope for another research in that same area. The present study also suggests some recommendations for further research.

1. This type of research can be done with the more geographical area with more number of respondents.
2. A comparative study can be done about the information-seeking behaviour between two districts.
3. A comparative study can also be done on information-seeking behavior among the fisherwomen and fishermen.
4. A study can be done about how the information literacy skill of fisherwomen affects their socio-economic conditions.

6.6 Conclusion

South 24 pgs district possesses the first position for marine fish production and 2nd position for inland fish production in West Bengal. Fishing plays a vital role in the economy of that region and also generates employment for the coastal population.

Though, the socio-economic condition of fishermen's community is deplorable in this region. Due to their low educational status, the fisherwomen community cannot remain aware of the latest technology and updated information. Attempts should be made to properly educate fisherwomen about the use of library and other information centres to fulfil their daily information needs. This also will help them get updated information, increasing their productivity and leading to upgrade their socio-economic condition.

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Appendix A
Questionnaire

A Study on Information Seeking Behaviour of the Fisherwomen in the Coastal area of South 24 parganas district: An analytical study

Dear Sir/Madam

I am studying to completemy Ph.D. in Library and Information Science. The study targets the information-seeking behaviour of fisherwomen in South 24 pgs district. I request you kindly respond to the questionnaire by marking (√) in the appropriate category. If no particular answer is appropriate, so you are free to express your opinion.

I would like to assure you that the information you gave will be kept strictly confidential and used for research purposes only.

I am hopeful to receive your co-operation.

(Jayita Naskar)

A. General Information

1. Name :
2. Address :
3. Block :
4. Type of work : a) Fisherwomen b) Crabber
   c) Shrimp catcher
5. Age Group : a) Under 20 years b) 21 to 30 years
   c) 31 to 40 years d) 41 to 50 years
   e) Above 51 years
6. Education : a) Up to primary school b) Up to High school
   c) Up to Higher Secondary d) Up to Graduate course
   e) Illiterate

7. Marital Status : a) Married b) Unmarried
c) Widow

8. Religion : a) Hindu b) Muslim
c) Christian d) Others

9. Type of family : a) Nuclear family b) Extended family
c) Joint family

10. Monthly income : a) under Rs. 5000 b) Rs 5001 to 10000
c) Rs 10001 to 15000 d) Rs 15001 to 20000
e) Above 20000

11. Year of experience in fishing/fishing related activities
a) Below 5 years b) Between 5 to 10 years
c) Between 10 to 15 years d) Between 15 to 20 years
e) Above 20 years

12. Have you ever borrowed money from any source?
a) Yes b) No

13. If yes, then from what source?
a) Microfinance organisation
b) Local money lenders
c) Relatives and friends
d) Others

B. Specific Information about the respondents

1. Why have you become a fisherwoman?
a) Unemployment b) Traditional job
c) More income c) Other reasons

2. How do you access fishing right?
a) Registration b) Share
c) License d) Free access

3. Over the last 5 years has your income from fishing changed
a) Increased b) Decreased

c) Stayed the same/stable d) Not sure

4. Are you a member of a fisher's association or local committee?

a) Yes b) No

5. If yes, then why?

a) Access to information/knowledge

b) To solve the fishing related problems

c) Access to market

d) Access to fishing right

e) Other

6. Do you use fishing vessels: a) Yes b) No

7. If yes, what type of vessels were used: a) Mechanical boats b) Batchari boat

c) Chot boat d) Dinghi

8. Mode of ownership a) Own b) Lease

c) Rental d) Others

9. Do you use fishing gear: a) Yes b) No

10. Which of the following gear have you used for fishing more?

a) Hook and line b) Cast net c) Bag net d) Box trap

e) Crab net f) Shrimp net g) others

11. How much time do you fish in one day?

a) 1-4 hours b) 4-8 hours

c) 8-10 hours d) Whole day

e) Other

12. How many days you have spent for fishing in a month?

a) One week b) Two weeks

c) Three weeks d) All days

13. Preferred method for sale of fishes

a) In sea shore b) In local markets

c) In co-Operative d) To middlemen

d) Others

14. Do you use fishing crafts and gears?

a) Yes b) No

15. If yes, please specify

a) Fishing crafts b) Fishing gears

c) Both d) None

C. Information Needs

1. General information need for your occupation?

Sl. No	**Type of information**	**Always**	**Sometimes**	**Never**
a)	Technical information			
b)	Climate			
c)	Environmental Information			
d)	Current Information			
e)	Economic Information			
f)	Socio-Cultural Information			
g)	Geographical Information			
h)	Health Information			

2.The specific Information neededfrom the fisher community

Sl. No	**Information**	**Always**	**Sometimes**	**Never**
a)	Ice plant			
b)	Dry fish stock			
c)	Packing dry fish			
d)	Manufacture of fish nets			
e)	Manufacture of fish vessels			
f)	Purnima & Amabasya			
g)	Hoist the flag			
h)	For wind flow			
i)	Hurricanes & sea storms			

3. Information needed about fish production & market

a) Daily price b) Market condition

c) Market condition for dry fish d) Fish expert opportunities

4. Purpose of seeking information by the fisherwomen

a) To collect information
b) To know the latest technology and methods of fishing field
c) To identify the potential fishing zone
d) To update knowledge

e) To know government subsidies and training
f) To collect information about health

5. Do you have your own radio/Transistor

a) Yes b) No

6. Purpose of using Radio

Sl. No	Purpose	Always	Sometimes	Never
	To know the weather condition			
	To know the current information			
	For updated knowledge			
	For entertainment			
	To collect health information			

7. Do you use mobile phones for collecting information

a) Yes b) No

8. Purpose of using mobile phone

Sl. No	Purpose of use	Always	Sometimes	Never
	For updated information			
	To know about climatic change			
	To inform about natural disaster			
	To know price fluctuation in the fish market			

9. Do you have the habit of visiting Libraries/Information centres/local committees to collect information?

a) Yes b) No

D. Sources of Information

1. Which conventional sources have you used for information collection?

Sl.No.	Conventional sources	Always	Sometimes	Never
	Library-Public library			
	Books			
	Journals and magazines			
	Community centres			
	Fishes department			
	Government Organization			
	Newspaper & other news			

2. Which of the following Non-Conventional sources are used by fishermen?

Sl.No.	Non-conventional sources	Always	Sometimes	Never
	Information through internet			
	Radio			
	Mobile phone			
	GPS			
	Poster			
	Television			

3. Which of the following Indigenous sources are used for seeking information?

Sl.No	Indigenous sources	Always	Sometimes	Never
	Friends/ Relative			
	Market place			
	Community leaders			
	Co-workers			
	People of village			
	Poster in the area			
	Announcement			

4. Which of the following sources provide you more information related to fishing?

Sl. No	Information sources	Always	Sometimes	Never
	Conventional sources			
	Non-Conventional sources			
	Indigenous Source			
	Any others			

E. Information seeking behaviour

1. Do you collect information from Libraries/Information centres/local committee

a) Yes b) No

2. In which centres you prefer to go?

a) Village Libraries b) Community Library

c) Others

3. Frequency of visiting the library in a month

a) 1 time in a week b) 2 times in a month

c) 1 time in a month d) Rarely

d) Never

4. How much time do you spend in a library?

a) Less than 30 minutes b) Between 30-60 minutes

c) More than 1 hour

5. Preferred time for visiting the library

a) Morning b) Evening

c) Any other time

6. Who motivates you to visit the library?

a) Friends b) Community Leader

c) Library professionals d) Others

7. Satisfaction of fisherwoman community towards information sources

a) Very satisfied
b) Satisfied
c) Dissatisfied
d) Undecided

F. Problems in acquiring information

1. Problems encountered while seeking information from the library

a) Library is not available in nearby locality
b) Inadequate resources in the Library
c) Library staffs are unwilling to service
d) Lack of knowledge of using the library
e) Facilities
f) Lack of time
g) Information available in the library is too old

2. Other kinds of problems encountered in the time of seeking information

a) Lack of personal radio
b) Lack of personal television
c) Do not have the skill to use the internet
d) Do not have the mobile phone
e) High cost of mobile services

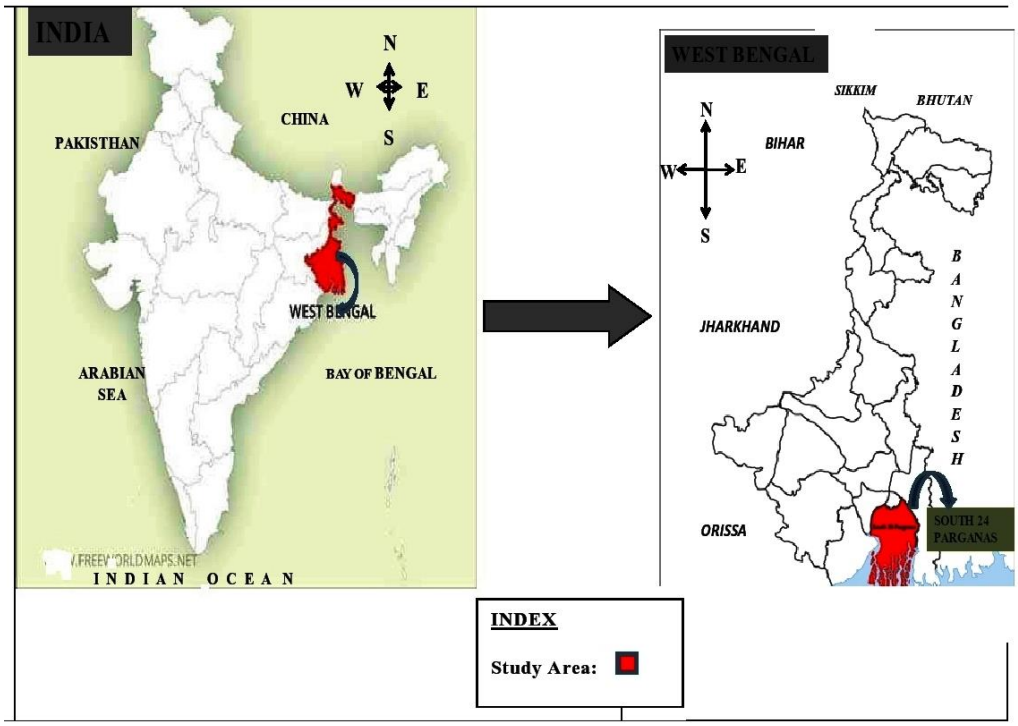
3. Please provide your suggestion to improve the existing information

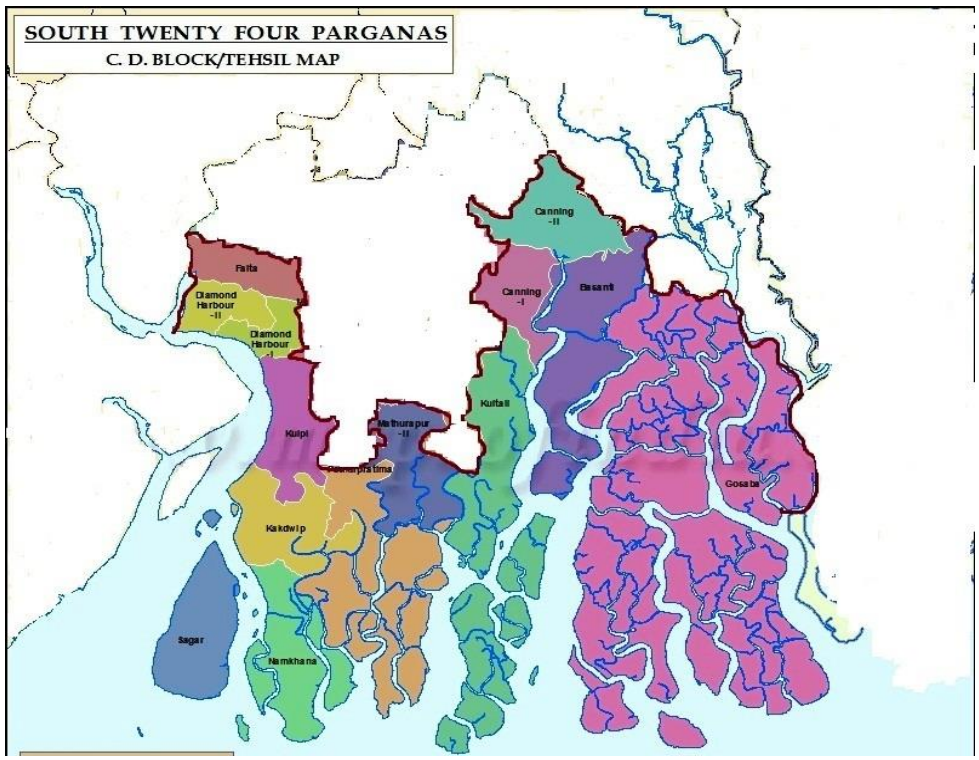
a) Information literacy is to be improved
b) More awareness programs are necessary
c) Government welfare programs are also necessary
d) Latest technologies are made to be accessible to all

Appendix B

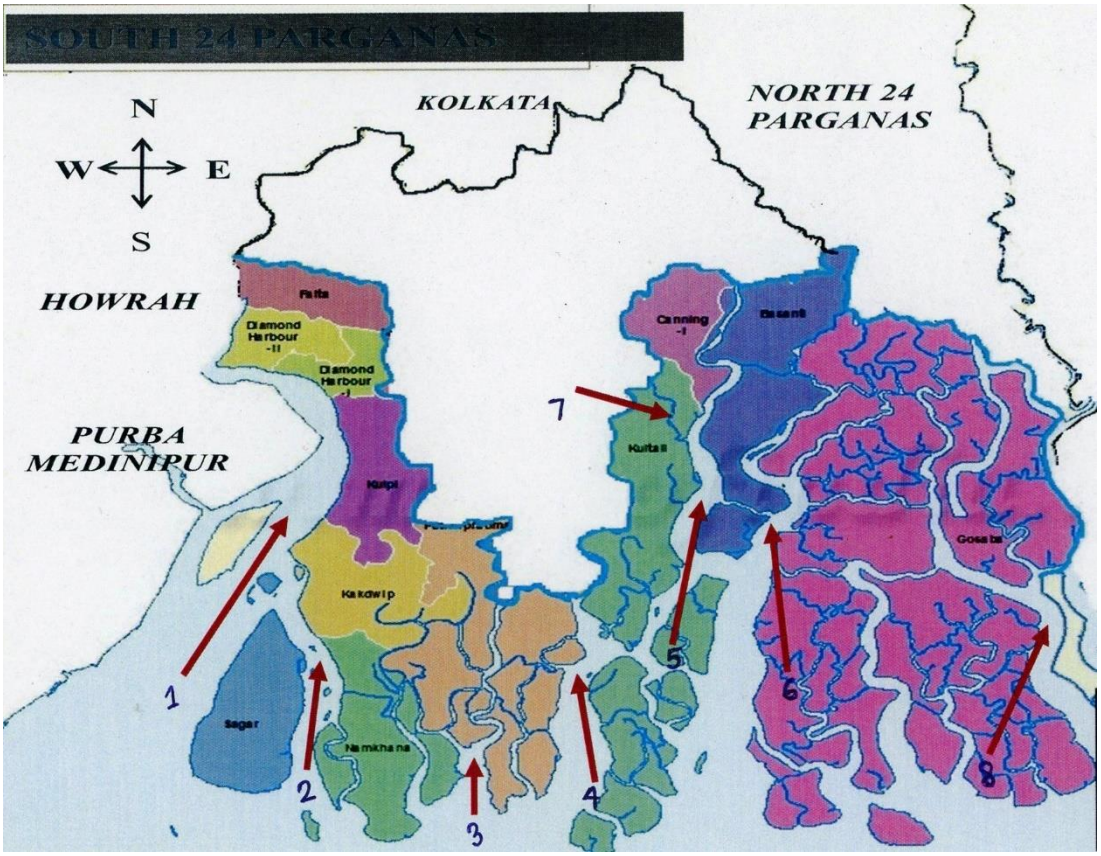
Maps

Map 1: Area of study



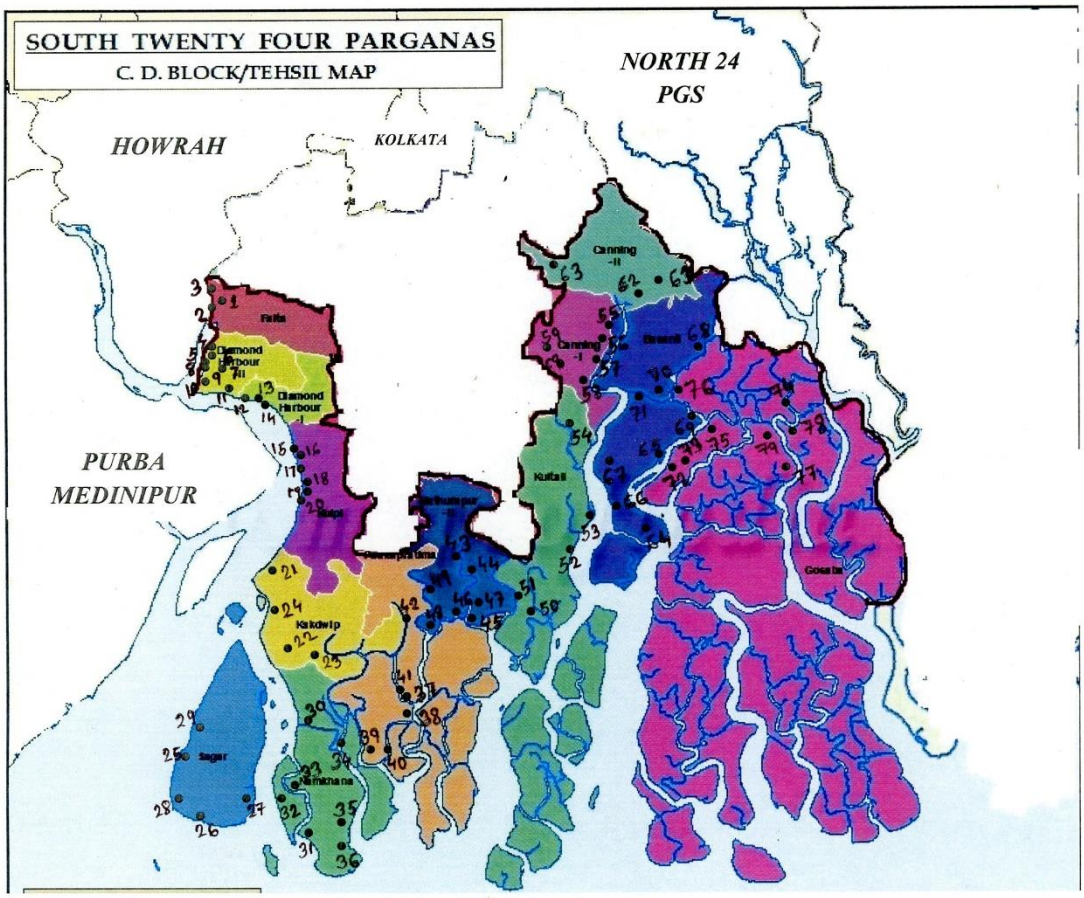


Map 2: Major Rivers in this study area



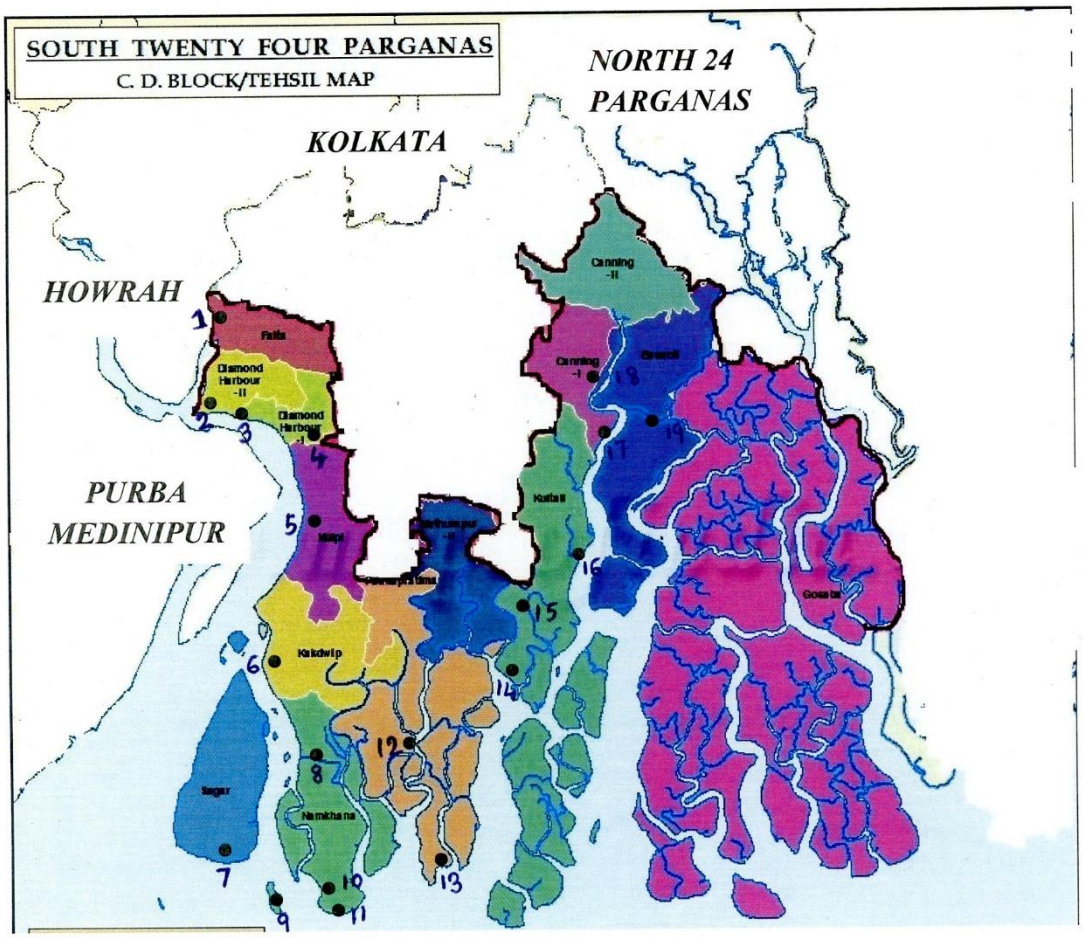
1. **Hooghly River**
2. **Muriganga River**
3. **Saptamukhi River**
4. **Thakuran River**
5. **Matla River**
6. **Bidyadhari River**
7. **Piyali River**
8. **Raimangal River**

Map 3: Fishing Villages in this study Area



1. Shyamsundarpur
2. Falta
3. Abad Simulgunge
4. Bishra
5. Uttar Simulberia
6. Akalmegh
7. Nainan
8. Gopalpur
9. Ramnagar
10. Noorpur
11. Raichak
12. Kalicharanpur
13. Krishnarampur
14. ChakDeulpotar
15. Hanra
16. Bishnurampur
17. Uttar Mukundapur
18. Hari Narayanpur
19. Inchinberia
20. Masamari
21. Nischinta Pur
22. Akhyaynagar
23. Gobindarampur
24. Shibkalinagar
25. RadhaKrisnapur
26. Gangasagar
27. Chemaguri
28. Beguakhali
29. Naraharipur
30. Namkhana
31. Patibunia,
32. Mousuni
33. Dakshin Durgapur
34. Iswaripur
35. Haripur
36. Debnibas
37. Ramganga
38. DakshinSibgunge
39. Bhagabatpur
40. Kishori Nagar
41. DakshinGobindapur
42. Parbatipur
43. Raydighi Abad
44. Kankandighi
45. Damkal
46. JagannathChak
47. Nagendrapur
48. Mahabatnagar
49. Nandakumarpur
50. Maipith
51. Bhubaneswari
52. Deulbari
53. Gopalgunge
54. Marigunge 2
55. Itkhola
56. Nikarighata
57. Matla 1
58. Matla 2
59. Basra
60. Gopalpur
61. Daharani
62. Hediar Abad
63. Iswaripur
64. Jharkhali
65. Jatishpur
66. Nafargunge
67. Bharatgarh
68. Charabidhya
69. Masjidbari
70. Ramchandrakhali
71. Basanti
72. Bali 1
73. Bali 2
74. Chotomollakhali
75. Gosaba
76. Pathankhali
77. Lahiripur
78. Kumirmari
79. Satjelia

Map 4: Landing Centres



1.Falta	6. Kakdwip	11. Bakkhali	16. Kaikhali
2. Noorpur	7. Sagar	12. Patharpratima	17. Madhukhali
3. Roychak	8. Namkhana	13. Buroburir Tat	18. Canning
4.Daimond Harbour	9. Jammu	14. Maipith	19. Basanti
5. Kulpi	10. Frazergunj	15. Kultali	

Appendix C

Photographs

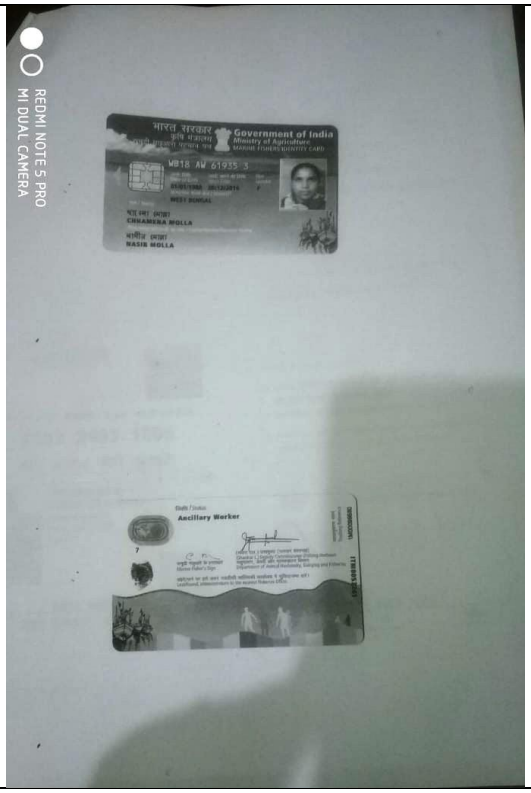


Photo 1: Biometric card for fisherwomen

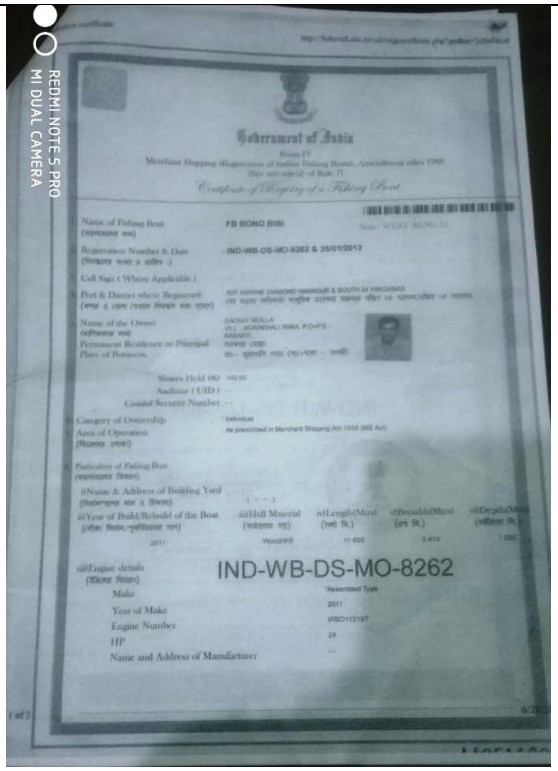


Photo 2: Registration for fishing boat

Photo 3: Prawn seed collection by fisherwomen

Photo 4: Fisherwomen

Photo 5: Fisherwomen with bag net

Photo 6: Fishing boats

Appendix D
Published Papers

The Information Practices of Fishermen Community in Canning Subdivision of South 24 Parganas District: a case study

JayitaNaskar

Ph.D. Scholar, Department of Library and Information Science, Jadavpur University

Dr. Subarna Kumar Das

Professor, Department of Library and Information Science, Jadavpur University.

Abstract

This paper attempts to evaluate the information practices of fishermen community in Canning subdivision of South 24 Parganas district. The main purpose of this study is to identify the basic information needs of the fishermen and find out the appropriate sources of information. Mainly the survey method was used for data collection. In this study, 150 fishermen in total were randomly selected from the four blocks (Basanti, Canning I, Canning II and Gosaba) of Canning subdivision. Data were collected from sampling persons by questionnaire with the help of personal interview conducted by the researcher. The findings of this study reveal about the sex, age group, religion, marital status, type of family, level of education and monthly income of the fishermen community in this region. This study also investigates the various types of information needs such as technical, climatic, environmental, economic and so on. Also the different type of information sources used by the fishermen has also been described here. This study is an original depiction of the information practices of fishermen community of Canning subdivision.

Keywords : Canning subdivision, Fishermen community, Fishing, Information needs, Information practices, Information source

1. Introduction

In most of the developed and developing countries, fishing is an important sector from the viewpoint of income and employment. Fishing industry also supports some income generator professions such as processing of fishing boats, refrigeration and ice making, gear and equipment manufacturers and transport services. It also provides protein-rich food, several items for sell like fish meal, fish oil, fish scales, fish manure etc. There are two types of fisheries such as marine fisheries and inland fisheries which can be categorized as capture and culture fisheries.

In spite of the development of the fisheries sectors, the fishermen community lives in a low status in society. Various elements like low economic status, poor social conditions, illiteracy, use of traditional fishing equipments and methods of fishing low production rate and income affect the socio-economic conditions of fishermen. Therefore, socio-economic progress of fishermen is important for proper development of the fishing industry in India.

2. Area profile

It is obvious that the present study deals with the information practices of fishermen community in the Canning subdivision. There are four blocks named Basanti, Canning 1, Canning 2 and Gosaba. The survey of this study is confined to these particular 4 blocks of this district. The scope of the study is limited only to fishermen of these blocks.

The District Human Development Report, South 24 Parganas, writes, "Canning has emerged as a major market for supply of fish to Kolkata. The fishermen of the area bring their catch to the all-night fish market at Canning. Here the commission agents receive the fish and auction them. It is bought by the wholesalers and transported to Kolkata for sale to retailers, who sell it in different markets".

3. Review of literature

It is implied that everyone can create, access, share and utilize information in the information society to acquire their information need (Hossain, 2012) and also information seeking process of a professional begins with a subjective task (Zoontjes, 2015) that leads to information need is influenced by different factors (Kundu, 2017). It has been showed that the research scholars seek for information for writing research articles (Singh & Khanchandani, 2015) whereas the post-graduate students seek information for their study (Ajiboye, 2007) are mostly collected from the internet by utilization of data in the term of session and pages viewed were more than the other academic community (David, 2009). Students and faculties of professional course like Dentistry always prefer to access specialized information which fulfills the special need in their professional field (Biswas, Chakrabarti, & Das Biswas, 2013). It has also been identified that information seeking behaviour of rural inhabitants of one region varies from the other region on the basis of socio-economic condition (Shariful Islam & Ahmed, 2012) whereas the farmer's information seeking behaviours are gender specific (Lwoga, Ngulube & Stilwell, 2010). It indicates to the poor information skills (Ali Amour, 2017), suffering for poverty (Bakar, 2011), remote location of the libraries (Shukla, 2018), language barrier, internet connection, computing, use of database are some barriers during the time of information seeking (Mussa & António, 2020). The information needs of fishermen are mostly occupation directed and their chief sources of information include colleagues, friends, neighbours, relatives (Njoku, 2004), fellow farmers, the technicians of the feed (Alagappan & Kumaran, 2020). Use of mobile phone plays an important role (Ifejika, 2016) and with the help of mobile technology and information technology (Mandalia & Joshi, 2020) majority of fishermen fulfill their information need related day-to-day activities (Ramadas & Saravanan, 2016). It has also been revealed that fisher folk require different kinds of information to carry out fishing activities effectively (Ikoja-Odongo & Ocholla, 2003) related to loan facility, fish processing, preservation, modern fishing equipment (Otolo, 2009) and also for health, climate, type of vessels, type of fish net, fishing, education needs of their children, marketing information (Vanaja, 2015),fish price, fishing instruments, weather and so on (Rachman, 2019). Fishermen faces problems to acquire information in marine fishing (Saha, 2006) that led to belong half of the fishermen to low level (Oli et.al 2019).

It is very essential to understand information seeking behaviour to satisfy the information need by providing the available sources. The fishermen community is one of the important parts of our society. The studies

so far have been conducted on fishermen bring forth their various information need and level of satisfaction in terms of availability of required information.

4. Statement of the problem

The studied literatures have focused on fishermen community of various regions within India and outside India. But no such literature is found which highlighted the information practices of fishermen community in West Bengal. As already mentioned in the area profile about the importance of fish market in Canning subdivision where lot of fishermen are connected to supply the fishes. Those who are playing such an important role to supply the favourite food of Bengalis in Kolkata and its suburban areas have not been studied so far properly in terms of their information practices. Therefore this study comes forward to fill up this research gap and has been entitled as "The Information Practices of Fishermen Community in Canning Subdivision of South 24 Parganas District: a case study".

5. Objectives

The objectives of the study have been set forth as:

1. To identify the information needs of fishermen community
2. To determine the sources of information used by the fishermen community
3. To study the social conditions and social status of fishermen

6. Methodology

To conduct the study mainly the survey method was used for data collection. A stratified accidental random sample method was used for the selection of respondents those who were found during the survey period, viz., May to October, 2021. Based on the simple random sampling procedure, 150 fishermen were randomly selected for study from the four blocks (Basanti, Canning I, Canning II and Gosaba) of Canning subdivision. Data were collected from sampling persons by questionnaire with the help of personal interviews conducted by the researcher. The collected data has been presented in the form of a table and then analyzed. For representation of data, some graphical methods such as bars, pie charts are used for perception of data more clearly, effectively and constructively.

7. Findings and discussion

With the stated methodology data has been collected to fulfill the stated objectives of this study. The collected data has been presented in the following way with appropriate interpretation:

7.1 *General information about the fishermen*

Table 1: General information about the fishermen in the Canning subdivision

General Information		Respondents (n=150)	
		No	%
Sex	Male	87	58
	Female	63	42
Age Group	Below 20 year	5	3.33
	20 to 30 years	13	8.67
	30 to 40 years	36	24
	40 to 50 years	49	32.67
	above 50 years	45	30
Religion	Hindu	76	50.67
	Muslim	66	44
	Christian	2	1.33
	Others	6	4
Marital status	Married	134	89.33
	Unmarried	16	10.67
Type of family	Nuclear family	101	67.33
	Extended family	26	17.33
	Joint family	23	15.33
Level of education	Up to primary school	28	18.67
	Up to High school	87	58
	Up to Higher Secondary	13	8.67
	Up to Graduate course	4	2.67
	Illiterate	18	12
Monthly income	Below Rs. 5000	31	20.67
	Between 5001 to 10000	76	50.67
	Between 10001 to 15000	22	14.67
	Between 15001 to 20000	13	8.67
	Above 20000	8	5.33

Data of table 1 has been shown general information about the respondents. This data also exposes about sex, age group, religion, marital status, type of family, level of education and monthly income of the respondents. Most of the fishermen are male 87(58%) among the respondents. Most of the respondents belong in age between 40 to 50 years 49(32.67%) rather than other age group above 50 years 45(30%), 30 to 40 years 36(24%), 20 to 30 years 13(8.67%) and below 20 year 5(3.33%). Observing the data about the religion of fishermen, it has been shown that there are Hindu 76(50.67%) followed by the Muslim 66(44%), Christian 2(1.33%) and others 6(4%) among the respondents.Most of the respondents are married 134(89.33%) rather than unmarried 16(10.67%). The family in this area is nuclear family 101(67.33%), extended family 26(17.33%)

and joint family 23(15.33%). Education level of most of the respondents are up to high school 87(58%), up to primary school 28(18.67%), up to higher secondary 13(8.67%), up to graduate course 4(2.67%) and illiterate are 18(12%). According to the survey results, 76(50.67%) respondents earn between Rs.5001 and 10,000 a month, 31 (20.67%) have income below Rs.5,000, 22(14.67%) have income between Rs.10001 and 15000, 13(14.67%) have income between Rs.15001 and 200000, and 8 (5.33%) have income above Rs.20000.

7.2 *Information needs of fishermen*

Table 2: Distribution of basic information needs of fishermen community

Sl. No.	Type of information	Always		Sometimes		Never	
		No	%	No	%	No	%
a)	Technical information	67	44.67	44	29.33	39	26
b)	Climate	96	57.33	37	24.67	17	11.33
c)	Environmental Information	54	36	62	41.33	34	22.67
d)	Current Information	84	56	37	24.67	29	19.33
e)	Economic Information	87	58	48	32	15	10
f)	Socio-Cultural Information	58	38.67	53	35.33	39	26
g)	Geographical Information	69	46	44	29.33	37	24.67
h)	Health Information	78	52	47	31.33	25	16.67

By analyzing the data from table 2, we can understand about the information needs of the fishermen community of the mentioned sample area. Most of the fishermen of that region always need information about climate 96(64%) followed by the economic information 87(58%), current information 84(56%), health information 78(52%), geographic information 69(46%), technological information 67(44.67%), socio-cultural information 58(38.67%) and environmental information 54(36%). It is obvious from the table 2 that the fishermen of Canning subdivision also need various type of information for betterment of their profession

7.3 *Major Information Sources*

Table 3: Sources of information used by fisherman

Information Sources		Regularly		Sometimes		Never	
		No	%	No	%	No	%
Conventional Sources	Library-Public library	41	27.33	72	48	37	24.67
	Books	21	14	67	44.67	62	41.33
	Journal and magazine	56	37.33	59	39.33	35	23.33
	Community centers	46	30.67	66	44	38	25.33
	Fishing department	34	22.67	63	42	53	35.33
	Fisheries university	27	18	37	24.67	86	57.33
	Government Organization	38	25.33	43	28.66	69	46
Non-conventional Sources	Information through internet	27	18	54	36	69	46
	Social media	87	58	38	25.33	25	16.67
	Radio	121	80.67	19	12.67	10	6.67
	Mobile phone	76	50.67	41	27.33	33	22
	GPS	64	42.67	34	22.67	52	34.67
	Poster	22	14.67	54	36	74	49.33
	Television	105	70	18	12	27	18
Indigenous Sources	Friends/Relative	115	76.67	21	14	14	9.33
	Market place	127	84.67	18	12	5	3.33
	Community leaders	36	24	65	43.33	49	32.67
	Co-workers	111	74	25	16.67	14	9.33

Table 3 shows that there are three kinds of information sources such as conventional sources, non-conventional sources and indigenous sources used by the fishermen community and their frequencies of use also categorized into 3 types as regularly, sometimes and never. The data represents the number of respondents who use the particular information sources.

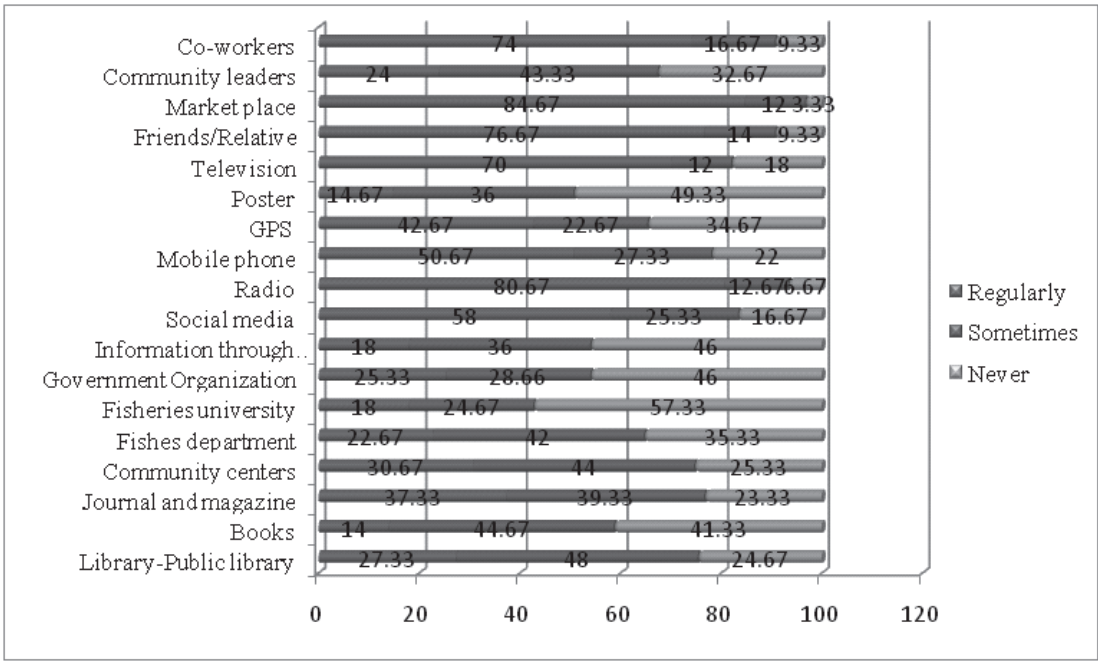


Figure 1: Major information sources

From figure number 1, it has been shown that non-conventional sources and indigenous sources are more used rather than conventional sources. Among the indigenous sources, most of the respondents collect information from market place 127(84.67%) followed by friend/ relative 115(76.67%), co-workers 111(74%) and community leaders 36(24%). On the other hand, among the non-conventional sources radio is used more regularly 121(80.67%) rather than television 105(70%), social media 87(58%), mobile phone 76(50.67%), GPS 64(42.67%) and poster 22(14.67%). All conventional sources are also essential for fulfill the information need of fishermen. Among those sources, most of the fishermen collect information regularly from journal and magazine 56(37.33%) rather than community centers 46(30.67%), library 41(27.33%), government organization 38(25.33%), fishing department 34(22.67%), fisheries university 27(18%), books 21(14%).

7.4 *Ownership of assets*

Table 4: Ownership of assetsacquired by the fishermen

Assets		No. of respondents (n=150)	
		No	%
Mobile phone	Yes	127	84.67
	No	23	15.33
Electricity	General electricity	88	58.67
	Solar electricity	43	28.67
	No electricity	19	12.67
Television	Yes	93	62
	No	57	38
Radio	Yes	113	75.33
	No	37	24.67

Analyzed data from table 4 enlighten about the assets of fishermen in this region. A large number of fishermen have mobile phones (84.67%), radios (75.33%), televisions (93%) and electricity (88%).

7.5 *Use of social media*

Table 5: Used of social media by the fishermen community

Social media	Below 20 y		20 to 30 y		30 to 40 y		40 to 50 y		Above 50 y		Total	%
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Facebook	4	2.67	11	7.33	27	18	14	9.33	16	10.67	72	48
WhatsApp	4	2.67	9	6	27	18	17	11.33	14	9.33	71	47.33
YouTube	5	3.33	9	6	29	19.33	22	14.67	21	14	86	57.33
Twitter	0		1	0.67	0		0		0		1	0.66
Others	0		0		0		0		0		0	0

Table 5 represents the uses of different types of social media like Facebook, WhatsApp, YouTube, Twitter by fishermen from different age group.

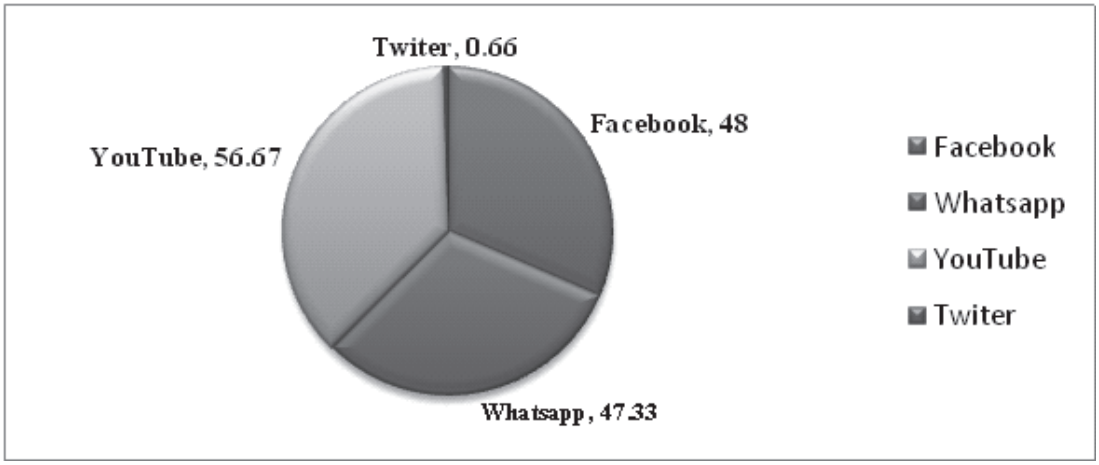


Figure 2: Use of social media

Use of social media by the fishermen is known from the figure 2. Most of the fishermen fulfill their information need by using the social media like YouTube 86(57.33%) followed by the Face book 72(48%), WhatsApp 71(47.33%) and Twitter 1(0.66%).

8. Conclusion and suggestions

A certain conclusion can be drawn from the study of information practices of fishermen community in Canning subdivision. From the above explanation, it is obvious that the fishermen community have the need of various type of information such as technical information, current information, economic information, geographical information, information about climate and information about health more frequently for improvement their fishing techniques, utilization of modern implements and equipment. Most of the fisherman use friends/relative, market place, co-workers as their major source to satisfy their information need. They also use mobile phones, television and radio to understand their occupation better. It also shows that the social media like Facebook, WhatsApp, YouTube, Twitter etc. are more used by age groups below 20 years to 40 years old rather than 40 years to above 50 years old.

Some suggestions have been made in the following:

- The government should increase sufficient library services to expand the use of conventional sources more.
- Adult education programmes should be organized to increase their information utilization capacity.
- An attempt should have been made to disseminate the right information to the friends, relatives, family members, co-workers as they are the major information sources to the fishermen.
- The fishermen should be encouraged to use electronic gadgets more to satisfy their information need.

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Information Need about Agriculture and Animal Husbandry among the Fishermen of Kakdwip Subdivision in South 24 pgs District : A study

Jayita Naskar*
Dr. Subarna Kumar Das**

ABSTRACT

In this study attempt is made to explore the need of information about agriculture and animal husbandry among the fishermen community in the Kakdwip subdivision of South 24 pgs district in West Bengal. Population of this study involved all the fishermen of that region but this study has done on the basis of sample survey (20 fishermen from each block among four blocks). Questionnaire by personal interview is used for collecting data. Then the data is analysed. The findings of the study reveals about the specific information need on agriculture such as climate/weather, monsoons, goods seeds, fertilizer and information need on animal husbandry such as diseases of cattle, symptoms of sick animals etc. this study also disclose about the major information sources that are consulted by the fishermen. Also the problems and the challenges faces by the fisherman in acquiring information are mentioned. The finding of the study shows that the government should arrange some facilities for uses the information properly.

Keywords : Information Seeking behavior, Fishermen, Agriculture, Kakdwip Subdivision

1. Introduction

Kakdwip is an administrative sub-division of the South 24 pgs District of West Bengal. In this subdivision, there are four community development blocks which are Kakdwip, Namkhana, Sagar Patharpatima. The geographic position of that region is surrounded by sea. For that reason, this is enriching of marine resources. Therefore, most of the population of that region depends on marine resources. So they engaged in fishing and fish farming activities both on the land and the sea.

It has also be shown that in addition to fishing, they also engaged in agriculture and the animal husbandry for fulfill their economic needs. Proper information can also improve the productivity of any profession. So the fishermen also need information about agriculture and animal husbandry as well as the information about fishing gear, traps, hooks, net, trawler etc. Thus proper information resources are essential. To find the proper information resources, it is necessary to identify the information needs of the fishermen for increase their productivity.

Munyua(2000)[7] attempts to analyze that information is more cheap input for rural upliftment and it can also be stated as a essential ingredient for economic and social changing in rural areas. So the main objective of the study is to investigate the proper information needs about the agriculture and animal husbandry among the fishermen in the Kakdwip region.

2. Review of Literature

L. A. Akinbile and E.U. Alabi (2008)[1] discuss about the information seeking behavior of the fisher folks in Oyo State. The association among personal characteristics like age, material status, educational attainment and information seeking was prime activity for their income. From different sources, the registered farmers also renovate their knowledge. **Edda Tandi Lwoga, Patri Ngulube, Crristine Stilwell (2010)**[5] analyse that the need of information and information seeking patterns sometimes depends on region and gender. Oral communication is more popular to the

*Ph.D. Scholar - Department of Library & Information Science, Jadavpur University
**Professor - Department of Library & Information Science, Jadavpur University

farmer rather than direct sources of information. It has also been stated that government should improve appropriate extension services and arrange sufficient information resources. **OtoloPatience Uzezi (2015)**[11] stated that most of the literate and illiterate fishermen have their information need about agriculture. This study also forecast about the problems that take place in the time of information seeking regarding the problem such as agricultural information included lack of good roads, high cost and maintenance of mobile phone, lack of visits by agricultural officer and so on. This study also suggests that for the enhancement of migrant fishermen government should construct proper road in the remote villages. **Otolo Patience Uzezi (2015)**[12] also analyse about information seeking behavior and information need among the migrant fisher folk of Isoko community in Delta State, Nigeria. This study also disclose that migrant fisher folk mostly required information on credit/loan facility and they fulfill their information requirement by consulting neighbours/friends, personal experiences etc. **P. I. Ifejika (2016)**[4] suggested that information service providers must use effective pattern and fruitful medium of information seeking behavior for fulfill the requirement of information need of fishermen in the lake valley. For the sake of benefit, most of the mobile network must upgrade their quality of services, decrease tariff in addition increasing their social responsibility and promotion strategies. **G. Ramadas and P. Saravanan(2016)**[9] analysed about the information seeking process of fisher folk in Tamilnadu. The fisher folk in three districts in Tamilnadu namely Kanyakumari, Titruneveli and Thoothukudi were the study area. This study explores that most of the respondents required information about their day-to-day activities and they fulfill their information need through modern technology and gadget. **Nafiz Zaman Shuva(2017)**[6] explore that most of the respondent regularly studied for fulfill the information requirement about buying and selling prices of fish, weather update, selling products, entertainment and religion. Fisher folks also depend on informal information sources to satisfy the information needs. The various problem faces by the respondent are also stated in this study. It is transparent from this study that the respondents strategically avoid information services due to undesirable information environment by information provider. **Awatade Sudarshan Chandrakant, Souvik Ghosh and R.B. Singandhupe (2017)**[2] reveal that soil, weather, and climate, nutrient management, market prices and income generating activities are the are the prime needed aspects related to agricultural input with mean need perception score more than 3.5 on four point continuum scale followed by livelihood diversification, agricultural marketing, seeds, agri-entripreneurship subsidies, plant protection material, weed management, pest and disease management and crop diversification had mead need perception score more than average on four point continuum scale. **Daryl L Superio, Jessica B Canaman, Janet P Jo, Melda L Estember(2018)**[10] stated that the respondents scarcely go to the library although they realize it fruitfulness to get cooperation from the librarian and to use current resources. It has been shown that for searching information remote library services mainly phone and email services were highly used for satisfy the information need. Respondents prefer to get information through internet via search engine in place of visiting library or using its online database (OPAC). **Yeni Budi Rachman (2019)**[8] shows that fishermen in Kaliadem fishing village rely on fellow fishermen as their main source of information. The most important needs include information about fishing equipments, fish price, and the weather. Information needs for those things are considered important to increase the fish catch result, which eventually can increase their income.

3. Objectives of the study

The main objective of this study is to investigate the proper information needs about agriculture and animal husbandry of fishermen in Kakdwip subdivision. So the main objectives of the study are stated below.

I) To find out the information needs of fishermen about agriculture and animal husbandry of Kakdwip subdivision.

ii) To identify the major information sources of the fishermen of Kakdwip subdivision.

iii) To determine the problems that occurs to fulfill such kind of information need.

4. Methodology

According to District Census Handbook [3], salty soil is unhealthy for cultivation in this sector though the rest of the land is very fruitful for plantation. Rice becomes the most important crop as well as jute of this region. Proper methodology of research is needed for fulfillment of the proposed objectives of the study. Based on the simple random sampling procedure, 20 fishermen were randomly selected for study from each block among the four blocks (Kakdwip, Namkhana, Sagar and Patharpratima) of Kakdwip subdivision. Information need related to agriculture and animal husbandry such as seeds, plant protection, information about soil, weather, climate, land preparation, pest control and diseases etc are investigated through questionnaire by personal interview. Document research and observation method is also applied in this study.

5. Findings & Discussion

5.1 Information needs of fishermen

Table 1: Specific information needs of the fishermen related agriculture and animal husbandry

Sl. No	Specific Information	Frequently		Sometimes		Never	
		No	%	No	%	No	%
1	Climate/Weather	52	65	17	21.25	11	13.75
2	Monsoons	68	85	8	0.1	4	0.05
3	Good seeds	71	88.75	3	0.03	6	0.07
4	Fertilizers	60	75	8	0.1	12	15
5	Plant protection material	47	58.75	21	26.25	12	15
6	Irrigational system	35	43.75	19	23.75	26	32.50
7	Implements & equipments	41	51.25	22	27.50	17	21.25
8	Loans	65	81.25	11	13.75	4	0.05
9	Subsidies	67	83.75	9	11.25	4	0.05
10	Soil/Land preparation	44	555	17	21.25	19	23.75
11	Pest control	36	45	20	25	24	30
12	Diseases of cattle	63	78.75	10	12.50	7	0.08
13	Symptoms of sick animal	57	71.25	12	15	11	13.75
14	How to prevent cattle diseases	65	81.25	5	0.06	10	12.50

Source -Primary data

The analyzed data of table 1 reveals that majority of fishermen need information about good seeds 71(88.75%), monsoons 68(85%), loans 65(81.25%), subsidies 67(83.75%),fertilizers 60(75%), climate/weather 52(65%), plant protection material 47(58.75%), implements and equipments 41(51.25%), soil/land preparation 44(55%), diseases of cattle 63(78.75%), symptoms of seek animals 57(71.25%), prevention of cattle diseases 65(81.25%). From this table it is obvious that most of the respondents need a wide range of information about agriculture and animal husbandry.

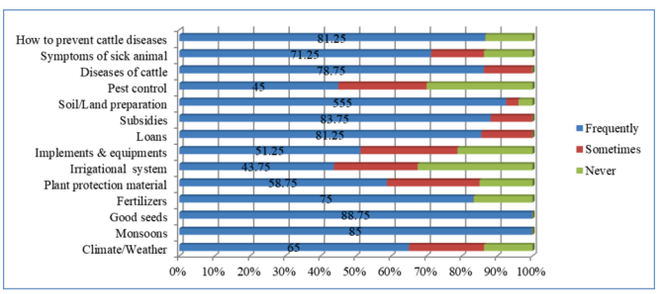


Figure 1: Specific information needs of the respondent

5.2 Major information sources

Table 2: Information sources that consulted by fishermen

Information Sources		Frequently		Sometime		Never	
		No	%	No	%	No	%
Conventional Sources	Public library	15	18.29	12	15	53	66.25
	Books	16	20	19	23.75	45	56.25
	Journal/magazine/Newspaper	31	38.75	22	27.50	27	33.75
	Community centre	23	28.75	34	42.50	23	28.75
	Government Organization	11	13.75	34	42.50	35	43.75
Non-Conventional Sources	Internet	7	8.75	26	32.50	47	58.75
	Social media	26	32.50	32	40	22	27.50
	Radio	46	57.50	24	30	10	12.50
	GPS	32	40	12	15	36	45
	Television	33	41.25	30	37.50	14	17.50
	Poster	23	28.75	28	35	29	36.25
	Mobile phone	65	81.25	10	12.50	5	0.06
Indigenous Sources	Friends/Relatives	66	82.50	11	13.75	3	0.03
	Market place	62	77.50	16	20	2	0.02
	Community leaders	17	21.25	56	70	7	8.75
	Co-workers	35	43.75	43	53.75	2	0.02

Source -Primary data

From the above table no 2 it has been shown that most of the indigenous sources of information are frequently used rather than conventional sources and non-conventional sources. Most of the respondents consult with journal, magazine/newspaper 31(38.75%) and community centre 23(28.75%) in place of public library 15(18.29%), books 16(20%) and government organization 11(13.75) as the conventional sources of information. Among these non-conventional sources, mobile phone is used most frequently 65(81.25%) for fulfill information need by the fishermen rather than internet 7(8.75%), social media 26(32.50%), GPS 32(40%), television 33(41.25%) and poster 23(28.75%). Radio 46(57.50) is the second popular non-conventional sources of information. Fishermen also feel comfortable by meeting information need from friends/relative 66(82.50%) and market place 62(77.50%) instead of community leaders 17(21.25%) in the indigenous sources. The respondents hardly go to the library 53(66.25%) to get cooperation of the librarian and use current information for fulfill their information demand about profession.

5.3 Problems and challenges in seeking information

Table 3: Problems encountered while seeking information

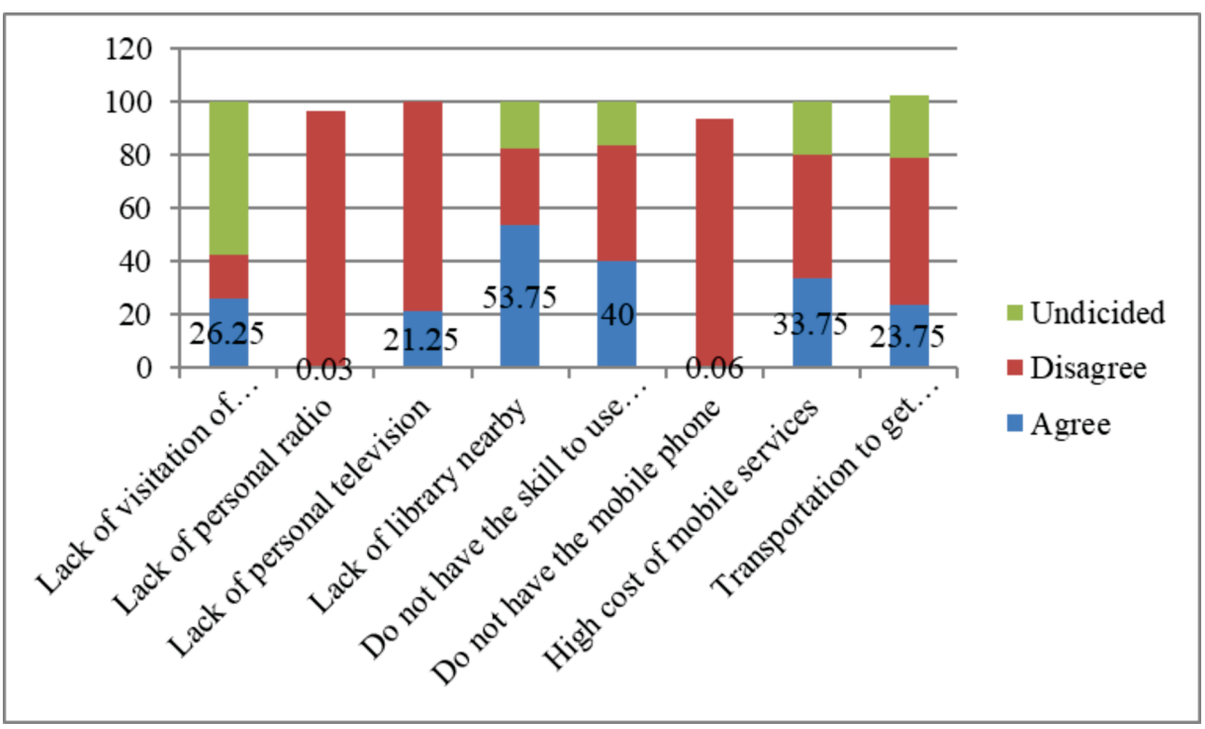
Sl. No.	Problems	Agree		Disagree		Undecided	
		No	%	No	%	No	%
1	Lack of visita tion of agricultural officers	21	26.25	13	16.25	46	57.50
2	Lack of personal radio	3	0.03	77	96.25	0	0
3	Lack of personal television	17	21.25	63	78.75	0	0
4	Lack of library nearby	43	53.75	23	28.75	14	17.50
5	Do not have the skill to use the internet	32	40	35	43.75	13	16.25

6	Do not have the mobile phone	5	0.06	75	93.75	0	0
7	High cost of mobile services	27	33.75	37	46.25	16	20
8	Transportation to get information is not good	19	23.75	44	55	19	23.75

Source -Primary data

Result from the table no 3 shows that most of the respondent agreed with the problems lack of library nearby 43(53.75%) for satisfy their information need. The majority of fishermen agreed to the irregular visit of agriculture officers 21(26.25%), do not have the skill to use internet 32(40%), high cost of mobile services 27(33.75%), bad transportation to get information 19(23.75%), lack of personal television 47(58.75%). Also a few number of fisherman agreed with the problem such as lack of personal radio 3(0.03%) and do not have the mobile phone 5(0.06%). The most number of fishermen have the radio 77(96.25%), mobile phone 75(93.75%) follow by television 33(41.25%). From the table it can be stated that awareness should be created by government for visitation of agricultural officers and provide library services properly. Also the transportation system should be good enough so that the fishermen can reach their information sources.

Figure 2: Problems encounter in seeking information



6. Conclusion

To conclude it could be stated from the analysis of the study that the fishermen of the Kakdwip subdivision need information.

There is a proper information need about agriculture and animal husbandry among the fishermen. The information acquired and utilized would help the fishermen to improve their agricultural techniques, to use modern implements and equipments, to use high quality fertilizer, to control the pest, to prevent cattle diseases and so on.

There also have some problems and challenges in acquiring information. For that reasons, the government should provide good transportation, regular visitation of agricultural officers, increases sufficient library services, spread internet services for all and so on.

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Use of Open Educational Resources by the Fisheries Department in the Time of Covid 19 Pandemic in West Bengal: A Survey

Jayita Naskar *
Research Scholar, Department of Library & Information Science, Jadavpur University
Dr. Subarna Kumar Das #
Professor, Department of Library & Information Science, Jadavpur University
* *corresponding author and available at joyitanaskar90@gmail.com, # available at skd_ju2002@yahoo.co.in*

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Abstract:

Purpose: *The aim of this paper is to explore the use of Educational Resources by the fisheries department in West Bengal. This study also explores the reason for use OER materials, the barrier and the necessity of OER material amidst the pandemic situation to the respondents.*

Methodology: *Data were collected with the help of structured questionnaire through email from the respondents. No of 75 questionnaires were sent to the students and out of these only 60 questionnaires are returned and analyzed. The students from different courses like Diploma, UG, PG and Ph.D. are also selected for the collection of data. Then the data is organized, tabulated and analyzed with the help of MS excel.*

Finding: *OER material is more useful in the time of pandemic situation according to this study. The OER materials like videos, textbooks, full course material are used more by the respondents.*

Originality/value: *This study is made by the primary data collection. It not only delivers the use of OER with its particular consideration during the pandemic situation but makes it clear that OER materials are more effective for the students beyond the pandemic.*

Keywords: *Open Educational Resources, OER, Fishery, Covid 19, Pandemic.*

1 Introduction

Open Educational Resources (OER) are educational resources which is used freely by anyone, and one can adapt, reused, revise and redistribute of this resources with few or no limitation. In 2012, for providing equal access of knowledge to everyone, the world OER congress emphasized

on the use of OER materials. A huge number of OER materials are free for use although some materials are payable. OER also include the materials for publicly used. There is no copyright on the OER material. The author creates the material and distributes this to the public domain for use. OER materials may be various types such as text books, videos, open access journal, online tutorial, digital learning object and so on. UNESCO also define OER as a material which are available in the public domain or launch with an open license. Vast utilization of OER materials increase the efficiency of educators raise the quality of teaching and decrease the economic as well as geographic barrier in the higher education.

This article deals with the use of OER materials in fisheries education and research also. The use of various type of OER materials, reason for use the materials by the student, the barrier faced by the users and the necessity of OER materials to the students are also discussed in this study.

2 Review of literature

Gary D. Grossman and Kirill Y. Chernoff (2018)presentsopen educational resources (OER) as a subset of functional learning methodologies that engage students in research with the help of pedagogical exercises. So many learning attributes like conduct quantitative and qualitative observations, draw up scientific hypothesis, analyse data, check hypothesis, scientific conclusions from findings are included in learning whereas Alexandra Pounds & John Bostock (2019) point out the students in higher education are more interested in registration in institution which offer OER material but were not ready to pay the tuition fees. Due to institutional support, technological barrier, lack of awareness, a little number of OER materials found in the higher education in fisheries sectors. This paper also shows that the OER materials also have the potentiality in higher education in fisheries department for the improvement of skill that leads to increase the global sea food production. According to Jennifer Van Allen and Stacy Katz (2020)benefit of OERmaterials and practical use of it also help for the implement of higher education and the educators during the pandemic situation. Also, David Wiley (2007) describes about the various issues of sustainability of OER material in higher education. So many aspects of OER such as overview of OER, several model of OER initiatives, various type of reuse of OER material, several potential funding models of OER are also describe in this paper. Konkol, M., Jager-Ringoir, K. &Zurita-Milla, R. (2021) interpretabout the basic concepts, challenges and business models of OER. Besides these the benefit, limitations, the opportunities of OER materials are also discuss in this document. According to Tlili, A., Nascimbeni, F., Burgos, D., Zhang, X., Huang, R., & Chang, T. W. (2020)used a triangulation method for the investigation of potential OER sustainability models that are developed by the universities. The findings of these study also support the organization for their development. Rory Mcgreal (2017)also stated clearly that OER materials are mostly benefited in developing countries than countries which

are considered as developed. OER materials are mainly used to increase the access of learning materials, decrease the cost and maintain the quality and equity of products. Stephen Downes (2007) also depicts about the sustainability of Open Educational Resources (OER) on its three aspects such as funding, technical and content.

3 Objectives of this study

The main objectives of this study are stated below:

i. To identify the various type of Open Educational Resources used by the fisheries department
ii. To determine the reason for use the OER material by the students.
iii. To point out the barrier faced by the students to use the OER material.
iv. To recognize the importance of OER material in Pandemic situation.

4 Methodology

In order to investigate the objectives of the study stated earlier, proper methodology has been needed. Data were collected with the help of structured questionnaire through email from the respondents. No of 75 questionnaires were sent to the students and out of these only 60 questionnaires are returned and analyzed. The students from different courses like Diploma, UG, PG and Ph.D. are also selected for the collection of data. Then the data is organized, tabulated and analyzed with the help of MS Excel.

5 Findings & discussion

5.1 General Information about the respondents

Table 1 Information about the students

General Information		Respondents (n=60)	
		No	%
Sex	Male	42	70
	Female	18	30
Department	Fishery resources management	7	11.67
	Aquaculture	13	21.67
	Fish processing technology	9	15
	Fishing Engineering	12	20
	Fishing Economics and statistic	4	6.67
	Aquatic Environment Management	15	25

General Information		Respondents (n=60)	
		No	%
Course	Diploma	14	23.33
	Undergraduate	19	31.67
	Postgraduate	22	36.67
	Ph. D	5	8.33

Primary data of Table 1 has been shown general information about the respondents. Among all respondents, most of respondents (70%) are male whereas only 30% are female. The respondents also came from various department such as Fishery resources management 7(11.67%), Aquaculture 13(21.67%), Fish processing technology 9(15%), Fishing Engineering 12(20%), Fishing economics and statistic 4(6.67%), Aquatic Environment Management 15(25%). Most of the respondents are from Postgraduate (36.67%) followed by the Undergraduate (31.67%), Diploma (23.33%) and Ph.D. (8.33%).

5.2 Use of various OER materials by the respondents

Table 2 Use of OER materials by the respondents

Type of OER Materials	Diploma (n=14)		UG (n=19)		PG (n=22)		PhD (n=5)		Total (n=60)	
	No	%	No	%	No	%	No	%	No	%
Full course material	7	11.67	12	20	16	26.67	1	1.67	36	60
Modules	9	15	11	18.33	18	30	2	3.33	40	66.66
Textbooks	12	20	16	26.67	17	28.33	1	1.67	46	76.66
Videos	13	21.67	17	28.33	21	35	3	5	54	90
Open access journal	6	10	9	15	17	28.33	4	6.67	36	60
Online tutorial	10	16.67	16	26.67	17	28.33	2	3.33	45	75
Digital learning object	11	18.33	17	28.33	18	30	2	3.33	48	80

Analyzed data of Table 2 shows the OER material by the respondents from various courses such as Diploma, UG, PG, Ph.D. It is obvious from the Table 2 that most of the students use videos

(90%) as OER materials followed by digital learning object (80%), Textbooks (76.67%), Online tutorial (75%), Modules (66.67%), Full course material (60%), Open access journal 36(60%).

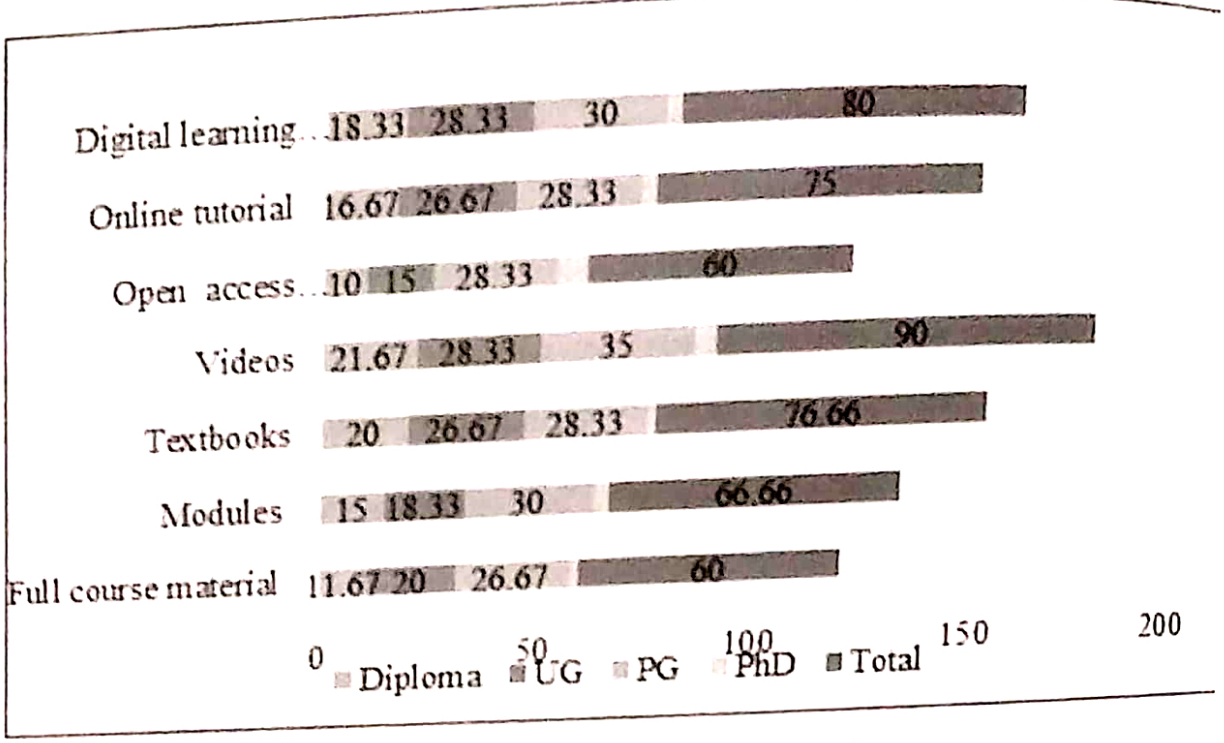

Figure 1 Use of OER materials by the respondents

5.3 Reason for use the OER materials

Table 3 Reason for use the OER material by the respondents

Reasons	Diploma (n=14)		UG (n=19)		PG (n=22)		PhD (n=5)		Total (n=60)	
	No	%	No	%	No	%	No	%	No	%
Accessible from anywhere	12	20	17	28.33	18	30	3	5	50	83.33
Easy to use	12	20	12	20	18	30	2	3.33	44	73.33
Find the material quickly	7	11.67	15	25	14	23.33	3	5	39	65
Materials are circulated quickly	9	15	9	15	13	21.67	4	6.67	35	58.33
For pandemic situation	11	18.33	16	26.67	19	31.67	4	6.67	50	83.33

From the data of Table 3, it has been shown that the respondents use OER material for various reasons. Most of the respondents (83.33%) use OER material accessible from anywhere; for pandemic situation (83.33%), Easy to use (73.33%), find the material quickly (65%), materials are circulated quickly (58.33%).

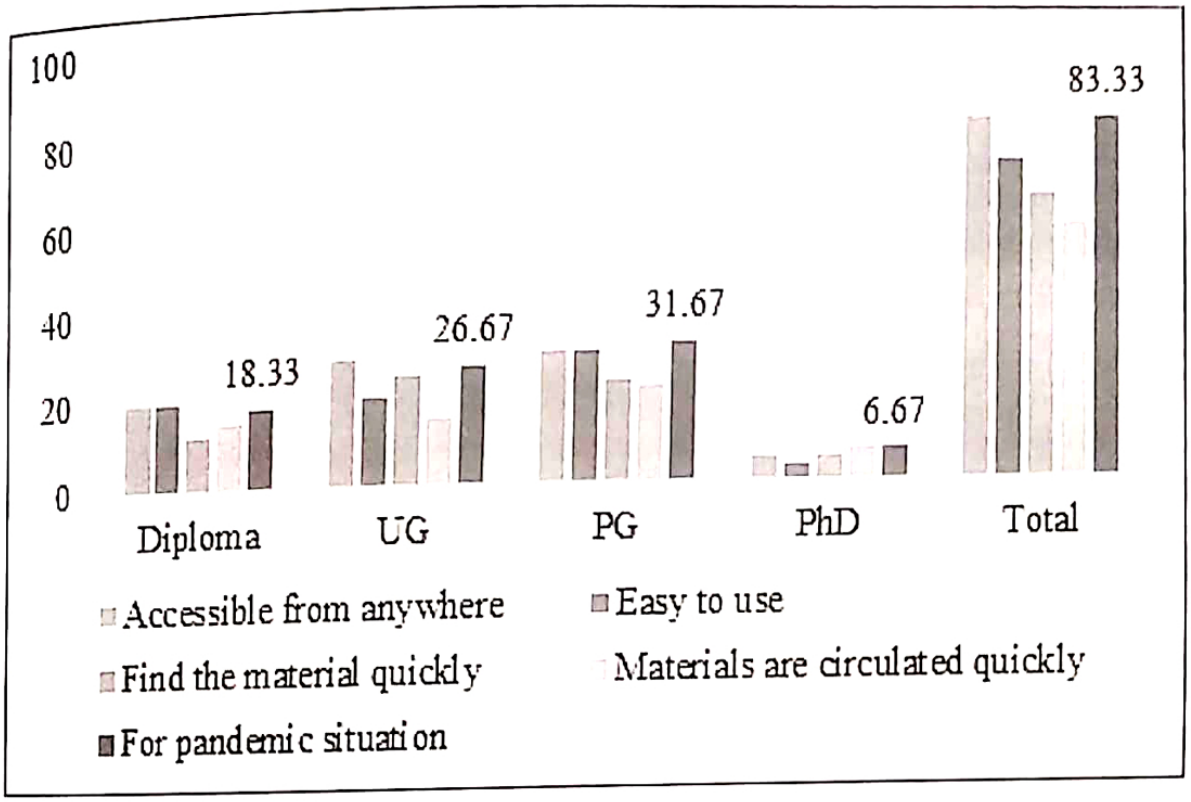

Figure 2 Reasons for use the OER material

5.4 Barrier faced by the respondents

Table 4 Barrier faced by the respondents at the time of using OER materials

Barrier	Diploma (n=14)		UG (n=19)		PG (n=22)		PhD (n=5)		Total (n=60)	
	No	%	No	%	No	%	No	%	No	%
Low awareness and availability of OER	8	13.33	8	13.33	9	15	1	1.67	26	43.33
Quality is very poor	6	10	4	6.67	11	18.33	1	1.67	22	36.67
Technological problems regarding sharing and adaption	10	16.67	8	13.33	7	11.67	3	5	28	46.67
Equity & Flexibility	8	13.33	11	18.33	7	11.67	1	1.67	27	45

Analyzed data of Table 4 shows the barrier faced by the respondents in the time of using OER materials. Among the various kind of barriers, most of the respondents (46.67%) suffer from technological problems regarding sharing and adaption followed by equity & flexibility (45%), Lack of awareness and availability of OER (43.30%) and poor quality (36.67%).

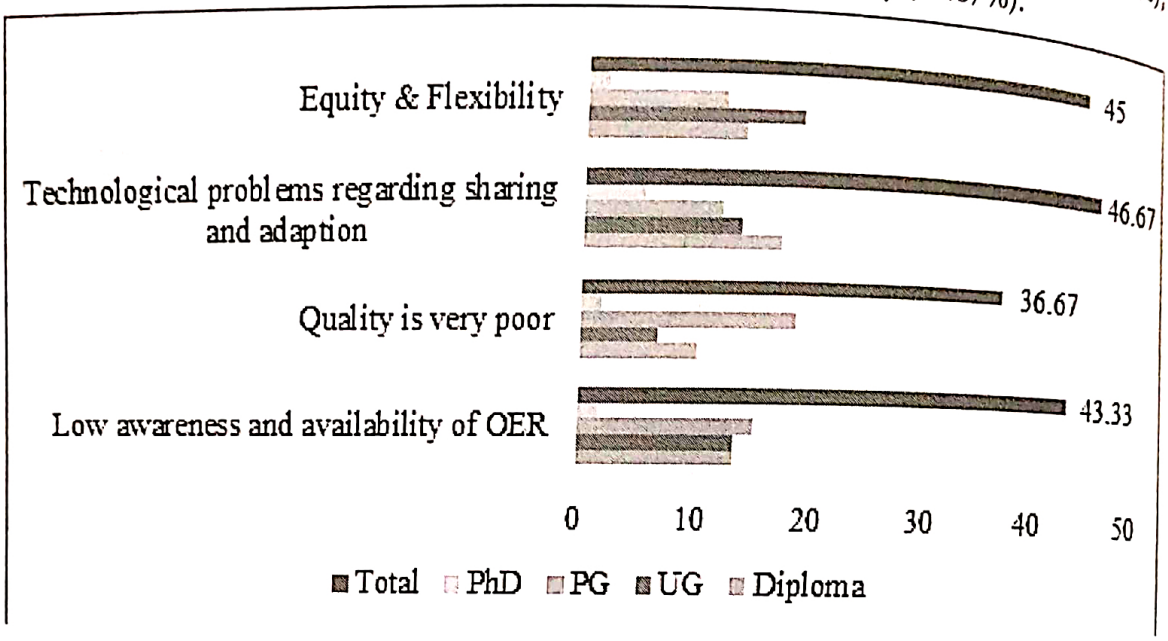

Figure 3 Barrier faced by the respondents

6 Conclusion

Analysis of survey data and the findings of this study suggest that OER attached with higher education in fisheries department have its potential benefit to the students from all courses like diploma, UG, PG, and Ph.D. This study also shows that the students from various department of aquaculture also use the different type of OER materials. OER initiatives associated with higher education institutions in aquaculture and fisheries subjects have the potentialfor theimprovement of a skilled workforce that will reach the increasing global demand for seafood production. It is obvious that national policy is also important for the promotion of higher education engagement in the open educational research field. Besides, a strong technological help for the user, the economic and non-economic facility to the institution as well as the individual and slight changes of institutional policies vigorously have a positive effect on OER initiative.

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Jayita Naskar is from Dakshin Barasat a small town of South 24 pgs District, West Bengal. She spent her school life in Sri Sri Sarodamoni Balika Vidyalaya, Dakshin Barasat. She completed her graduation with honors in English from Calcutta University. After graduation, she has completed BLIS from Calcutta University and MLIS from Jadavpur University. Presently, she works as Ph.D Research fellow under the supervision of Dr. Subarna Kumar Das in the Department of Library and Information Science, Jadavpur University. She also has written many articles and conference proceedings papers during her study.

Dr. Subarna Kumar Das is working as Professor (since May, 2013) in Dept. of Library and Information Science at Jadavpur University. He has 24 years LIS teaching experience at University level. He holds M.A. in Political Science from Calcutta University, MLISc (1998) and Ph.D (2005) from Jadavpur University, LLB & LLM from Fakir Mahan University, Orissa and UGC-Net (1998) qualified. He is the life member of BLA, ILA, IASLIC, IATLIS, SALIS and WBIS. He is also a regular talker, script writer on Science and culture of All India Radio from 2005. He has published 100 research papers in National and International journals and 25 International Conference Proceedings Publication and 35 Chapters in Composite/ Edited Books to his credit.