

Assessing the Role of Mobile Phone in Information Seeking of Fish Markets in Abobo and Itang Woreda, Gambella Regional State, Ethiopia

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Abstract:

This study assesses the role of mobile phone in information seeking of fish markets in two woreda of Gambella regional state. The main objective of the study was to assess the role of mobile phone in information seeking of fish market information in Abobo and Itang woreda. The sampling techniques deployed for this study was both simple random sampling and purposive sampling of probability sampling and non-probability sampling respectively. Data was analyzed using descriptive statistics, which included frequencies, percentages, and non-parametric statistics that used to test for statistical significance of the difference in the number of landing sites visited before and after the mobile introduction. Both qualitative and quantitative approaches were used in this study. The data analysis was done with the help of statistical Package for Social Science version 20.0 and Ms excel Package. Data was represented in tables and figures to give a clear picture of the research findings and data gathering tools were questionnaires, interview and observation methods. The study shows how mobile phone use among fishermen has enhanced the purchasing of fishermen necessary materials from the markets for

artisanal fishing and improved their businesses relations and livelihoods. The results indicate that market friendship improved and price variations reduced as a result of better availability of up-to-date, fingertip fish market information with fishermen. The use of mobile phone has enabled fishermen to boon from their catches, improve and boost incomes, expand their markets, feel more secure at sea, and keep in touch with close customers, families and other fishermen and exchange their catches with good mood among themselves. Even though there are problems related to network coverage, mobile phone has helped fishermen to break down transportation cost, cost of time, cost of searching for good fish price and effort, simplify the work, motivate the fishermen and reduced the quantities of catch spoilage in the markets and inspired both sellers and buyers. The principal recommendation by researcher to improve the usefulness of mobile phones would be the regional Ethio-telecom. Sub-office should expand the reach of network coverage beyond the long range of kilo meters at sea. The Gambella government and other NGOs should analyze the cost-effectiveness of encouraging mobile phones and compare it to other programs that are intended to bridge access to fish market information gaps among fishermen and business partners and also should established new strategies and policies to extend the electric power facilities to the remote rural communities and fishermen would charge their mobile phones and get enough access to market information easily.

Key words: Information Seeking Behavior, Mobile Phone, Fish Market, Gambella

I. INTRODUCTION

Fisher folk are those people which include fishermen, fish processors, and fishmongers, who deal in fish and its products. These individuals make up the fishing industry in Gambella, an industry that provides employment for estimated thousands of fishermen directly, and is supported by an estimated unknown numbers of people involved in related activities. At the artisan

level, these activities include fishnet making, fish processing, marketing, distribution, and boat building. The fresh water fauna of Ethiopia is of particular interest since it contains mixture of the Nilo-sudanic, east African, and endemic forms. The Nilo-sudanic forms are represented by a large number of fish species found in Baro-Akobo, Omo-Ghibe and Abay Drainage basins. Fishery is an important economic activity practiced in Gambella region due to the presence of perennial rivers. Abobo and Itang woreda are particularly endowed with abundant fish resources. So far over 92 species of fish have been identified in the region in [5]

Most agriculture ICT projects in Ethiopia have focused on marketing and market information in addition to a handful of smaller radio initiatives focusing on extension or agricultural information. To cope up with the goals and purposes of the country ICT agriculture initiatives some specific challenges are identified which include: literacy, language barriers (numerous regional and local languages), computer and mobile phone literacy (low access to computers and electricity), Telecom market sector, project sustainability, trustworthiness, credibility, and relevance of information, electricity access, internet access, lack of access to market information in rural areas, technical knowledge in [10].

Though the country has had different projects that are carry out different goals and purposes to promote market oriented agricultural development, they remain focusing on the general agricultural market information and still not solving some problems related to specific agricultural sector market information issues, like fishery. In general, establishing and operating these projects is not a guarantee for access to fish market information. However, there are also no studies have been carried out on the usage of mobile phones as a communication tools to solve development problems in the Gambella region. The researcher therefore, decided to carry out

a study to determine the role of mobile phone in information seeking of fish markets.

Specific Objectives of the Study

1. To assess the role of mobile phone usage in information seeking for the necessary materials those are required in fishing, supply and demand of fish.
2. To determine how mobile phone use to facilitates the flow of information among fishermen and their business partners.
3. To examine the extent to which mobile phone use to level price variations of fish along the landing sites in Abobo, Itang and beyond.
4. To recommend appropriate interventions and useful ideas to improve and enhance knowledge innovation on market information accessibility in the study areas.

II. RELATED WORK

2.1. Information Communication Technology (ICT) and the Mobile phone

ICTs had been defined as a range of electronic technologies which when converged in a new configuration are flexible, adaptable, enabling and capable of transforming organizations and redefining social relations in [6].

According to [7] ICTs have become a driving force in development, providing a means of narrowing the information gap between developed and developing countries and among their communities. The accessibility to information which is made readily available by ICTs has helped in molding our attitudes towards life as there is more information about certain aspects of life including the agricultural sector in [9].

Information communication technologies are set of activities that facilitate the capturing, storage, processing, transmission and display of information by electronic means in [8]. The range of technologies is increasing all the time and there is convergence between the new and old media. [8] He asserted that ICTs are assumed to improve lives by making it easier to communicate and less expensive to find information. ICTs are seen as enabling tools that will help developing countries and in particular rural communities catch up with the rest of the world.

The introduction of mobile telephony in fishing has been seen as a boon to artisanal fishermen, by giving them access to information on alternative prices from different buyers at different markets, as well as on locations of shoals at different points in the sea. A study of fishermen in Kerala state in India argues that mobile phone use by fishermen was associated with a great reduction in price dispersion, elimination of waste, and almost near-perfect adherence to the law of one price: a study of fishermen in India finds that the mobile phones help fishermen to choose a fish market where they can sell their fish for a higher price in [4].

2.2. The Use of Mobile phone /ICT in Information Seeking and Dissemination

Ethiopia was a latecomer to the global telecommunications boom: its first internet connection was not until 1997 in [11]. Over the past decade the Ethiopian government has made considerable investments in ICT, including one of the largest government telecom contracts in sub-Saharan Africa (SSA) with the Chinese ZTE Corporation at \$1.5 billion dollars in [2].

In Ethiopia access to mobile phone is expanding widely. The expansion of services to rural and inaccessible areas has made them a preferred way of communication. Ethio-Telecom, the sole telecommunication services provider in the nation, has

From the figure 1 it indicates the flow of information seeking principle, begins from the fisherman (producer) up to the consumers. On the right time the fisherman starts contact with commission agents through mobile phone and the information will flow down accordingly. Finally the business chain can be achieved via using mobile phones and information seeking flow down among fishermen and their business partners by following communication chain. Fisherman catches the fish and submits to the commission agents and pay tax (VAT) to those who thereby ensures control over the sale of the catches. On the landing site the catches, the commission agents auction the fish to both retail and wholesale merchants, who then sell the fish to consumers either directly, in the case of retail merchants, or through other retail merchants, in the case of wholesale merchants.

It is known that younger households have more experiences on techniques of fishing and access to information of fish markets, because fishing is the most dangerous activity, while older households have enough experiences on techniques of fishing, but they are not access to fish market information due to illiteracy. People located at rural areas have lower school attendance rates across two woredas of the region, because the expansion of education is very poor in these areas. Generally, it is indicated that educated households will have enough access to fish market information easily. While an illiterate household naturally would depend on simply visit the market without any information, a literate household has the additional source of information delivered through mobile phone.

Households that belong to a market group have access to information delivered via mobile and households have cultivated the spirit of sharing through their membership in an organization and such communities have access to get enough extension training than other households who are not a member of the associations.

Regardless of their location those who have mobile within the member of the market will have information flow with their business partners. Even though households are away from the market through mobile phone they can run their business without any doubt if network coverage is available in the areas. A fishermen who have enough educational background may have enough knowledge about fish market information than those who are illiterate and they have an opportunity to seek for fish market information and achieve their financial benefit of their fish market information. Those fishermen who participated in the social patterns may have strong linkage with their business partners than those who have not any participation in the societies. This is because in the world of business people should interact with one another to run out their business target goals. Fishermen who seek for relevant fish market information and highly benefit from their fish sold may be strongly known the usefulness of fish market information in their real life. This is because they may know their entire customers' moods in the market conditions and they may share a common good with their colleagues.

III. METHODOLOGY

Gambella regional state is one of the nine states of the Federal Democratic Republic of Ethiopia. The region is located in the south western part of Ethiopia. It borders with the Oromiya regional state in the East: with Benishangul Gumuz regional state in the North: with the Southern Nations Nationalities and people's regional State in the South and East: with the Republic of South Sudan in the West and North.

The study was conducted using appropriate design to improve relevant and accuracy of research findings by using relevant representative sample size of respondents are important.

Descriptive statistics method was deployed in this study and data was collected using survey research method, both quantitative and qualitative from a cross section of fishermen inhabitants residing in the rural riparian, the division in both Abobo and Itang woreda respectively.

Primary data was collected by using observation of respondents at their work sites and interview from fish producers by six diploma holdings trained enumerators, closely supervised by the researcher. Interview was prepared in English and translated to Agnuak language, pre-tested and modified before the execution of the survey. Secondary data was collected through reviewing secondary documents from different sources from both woreda, pastoral and rural development offices, cooperative promotion offices and fishery marketing and Trade Industry offices.

Both simple random sampling and purposive sampling of probability sampling and non-probability sampling were deployed. Respondents in the selected study areas were selected based on random sampling probabilistic and other development agents in Agriculture and rural development bureau (staff members) were selected based on purposive sampling techniques.

Data Collection Methods includes survey questionnaires, unstructured interview and observation using checklist. Data was analyzed using descriptive statistics. The descriptive statistics utilized in the study included frequencies and percentages. The analysis was done with the help of statistical Package for Social Science (SPSS) program version 20.0 and Ms excel Package. Data was represented in tables and figures to give a clear picture of the research findings. The qualitative data analysis was express in terms of text.

IV. RESULTS AND DISCUSSION

4.1. Duration the respondents own mobile phone

The study results revealed that, 45.7% of the respondents had owned mobile phones for two years and used at sea to seek for fish market information, 27.5% of them had experienced for three years about the use of mobile phone at sea to seek for fish market information, 15.2% and 6.1% of the respondents indicated that they had experienced for one year and no year used their mobile phone at sea to seek for fish market information respectively, while 5.5% of them had been experienced for more than three years having mobile phone. This shows that the majority of respondents had enough experiences in use of mobile phone at sea to seek for fish market information effectively, regardless of their educational qualifications. The respondents are conversant with the mobile phone in information seeking of fish market within their local community of the study area. The responses of these results are presented in figure 2.

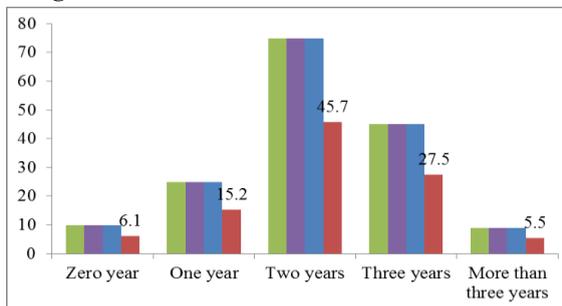


Figure 2. Duration the respondents own mobile phone

4.2 Group of people respondents use mobile phones to talk over

The study results revealed that, 49.3% of the respondents indicated that they used their mobile phone to call their business partners when they caught a fish, 18.2% of the respondents indicated that they were used their mobile phone

to call their Cooperative members of the group at the time they get their catches, 13.4% of the respondents indicated that they were used their mobile phone to call other nearby fishermen when they have fishes, 12.8% of the respondents indicated that they were used their mobile phone to call their friends, while 6.09% of the respondents indicated that they were used their mobile phone to call family members right they caught a fishes from sea. It is clearly seen from the analysis that the majority of the respondents are use mobile phone to call their business partners right they had caught fishes from sea any time. The responses of these results are presented in table 1.

| Responses | Frequency | Percentage |
|----------------------------------|------------------|-------------------|
| Other fishermen | 22 | 13.4 |
| Business partners | 81 | 49.4 |
| Family members | 10 | 6.1 |
| Friends | 21 | 12.9 |
| Cooperative members of the group | 30 | 18.2 |
| Total | 164 | 100.0 |

Table 1. Group of people respondents use mobile phone to talk over

4.3 Proportion of purchased specific necessary materials through mobile phones

The study shows 26.9% of fishermen indicated that they use mobile phones to arrange purchased fish kettles and 16.4%, 13.4%, 10.3%, 10.3%, 9.4%, 6.1%, 3.6% and 3.6% of fishermen indicated they use their phones to purchased necessary requirements and these were further break down by the types as food, hooks, fishnets mending twines, boat, ice block and bait from suppliers. The improved efficiency in necessary material requirements purchase made possible by mobile phones is illustrated by the following comment given by one of the canoe owner:

"...mobile phone is very necessary for these days, because it inspires me by saving time and cost of transport taken to

travel and buy fishnets and other necessary material requirements and also mobile phone keeps me awake in place to coordinate my necessary requirement materials and simplified everything he wants to buy from suppliers".

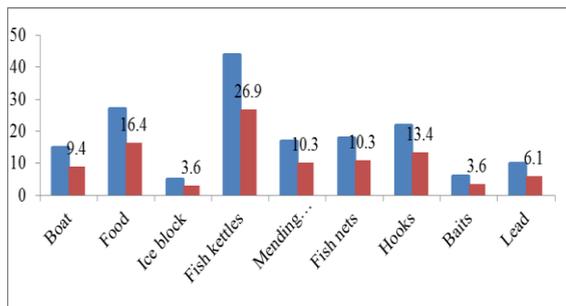


Figure 3. Proportion of purchased fishing materials through mobile phones

4.4 Means fishermen purchased fishing materials before and after mobile phone advent

Fishermen were interviewed to indicate how they requested their necessary requirement materials such as boat, food, ice blocks, fish kettles, mending twine, fish nets, hooks, baits and lead before and after they acquired mobile phones. The dominant mode before mobile phones 74.3% of respondents were used to walk or travel to the source of the necessary requirement materials to order the supply, while 19.8% indicated that they were contacted local agents (middleman) to order the necessary requirements for them and 5.9% of respondents were engaged their relatives to purchase or order the supplies on their behalf. After the introduction of mobile phone to the two studied woreda, those who walked or travelled to the sales point of the necessary requirements fell to 54.2%, while 18.4% and 25.9% of them were used mobile phones to arrange the purchases of necessary requirements from their suppliers respectively. The responses of these results are presented in table 2.

| Ways of purchasing necessary requirements | Before (%) | After (%) |
|---|-------------------|------------------|
| Walk/travel to source of Necessary materials to buy | 74.3 | 54.1 |
| Contract local agent (middleman) to buy Necessary materials | 19.8 | 18.4 |
| Others help me to buy Necessary materials (e.g. relatives, friends) | 5.9 | 25.9 |
| Total | 100 | 100 |

Table 2. Means fishermen purchased fishing materials before and after mobile

4.5 Percentage on mobile use in time reduction to prepared for sea by respondents

The study results revealed, 38.4% of the respondents indicated that the percentage proportion on mobile phone in time reduction to prepare for sea were above 50%, 31.7% of respondents indicated that the percentage proportion on mobile phone in time reduction to prepare for sea were 31-50%, 18.3% and 11.6% of the respondents indicated that the percentage proportion on mobile phone in time reduction to prepare for sea were 11-30% and below 10% respectively. This finding further implies that the majority of respondents are accepting the use of mobile phone to reduce the time to prepare for sea. The responses of these results are present in table 3.

| Range of percentages | Frequency | Percentage |
|-----------------------------|------------------|-------------------|
| Below 10% | 19 | 11.6 |
| 11-30% | 30 | 18.3 |
| 31-50% | 52 | 31.7 |
| Above 50% | 63 | 38.4 |
| Total | 164 | 100.0 |

Table 3. Percentage of mobile use in time reduction to prepared for sea by fishermen

4.6 Challenges fishermen faced in the use of mobile phone at sea

The findings revealed that, 97.5% of the respondents had pointed out the unavailability of good network coverage in the

Woreda is the very overwhelming challenges that are block access to information via mobile phone, 94.5% of the respondents indicated that they were faced with unavailability of electric power services in the fishing site and this return the problems related to network and mobile phone battery charge and such problems some fishermen are used to address by cutting the formal chargers' cable and make a hollow wood and put the dry cell batteries in and connect the two end sides of the dry cell batteries and finally they are charging their mobile phones batteries easily, 82.3% of the respondents indicated that they were suffering with how to operate (lack of enough skill to use) with the existing new mobile phone application due to their low in educational qualification and there is lack of educational extension to the fish farmers in the study areas, 86.5% of the respondents indicated that they were faced with expensiveness of the phone costs, while 23.7% of the respondents specified that they were suffered with failure of their mobile phone apparatus in to sea water. This finding further implies that the majority of the respondents were seriously faced with the problems associated with network coverage limitation and unavailability of 24 hours electricity service within the study areas respectively. Table 4 shows the results below.

| Responses | Frequency | Percentage |
|---------------------------------------|------------------|-------------------|
| Network coverage problem at fishery | 160 | 97.5% |
| Unavailability of electricity | 155 | 94.5% |
| Know-how to operate on mobile | 135 | 82.3% |
| Mobile phone some time fall in to sea | 39 | 23.7% |
| Mobile phone prices are expensive | 142 | 86.5% |

Table 4. Challenges fishermen faced in the use of mobile phone at sea

V. CONCLUSION

The newly acquired possibility to own or access a mobile phone has brought excellent changes to the modes Gambella regional

state fishing communities communicate, receive and disseminate information and boost optimum decision making on fishing and associated activities. Before the advent of mobile phones, fishermen had extremely small possibilities to communicate with others while out at sea. Even at shore and quay their possibilities to communicate were restricted to communication in person or through letters.

However, mobile phones have opened up the opportunity of collusion by sellers and buyers who may also conspire to punish those who conduct illegal trade outside local markets and makes fishermen well informed about their business. The improved access to reliable and fingertip information that mobile phones carry have resulted in changes in all the livelihood status of fishermen that researcher set out to observe. The fishermen have become more aspired due to access to market information about choices that affect them and acquired a better possibility to negotiate with institutions that affect their lives.

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