A TCV+ STUDY ON DIGITALLY COMPLETION AND STANDARDIZATION OF PLANTS PROBLEMS IDENTIFICATION SYSTEM (DPPIS)

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a2i
জনগণের দোরগোড়ায় সেবা
Service @ Doorsteps

Access to Information (a2i) Programme
Prime Minister's Office

UNDP
Empowered lives.
Resilient nations.

TABLE OF CONTENTS

I. LIST OF FIGURES

II. ACRONYMS

a2i	Access to Information
DPPIS	Digital Plants Problems Identification System
GDP	Gross National Production
TCV	Time, Cost and Visit
UAO	Upazilla Agriculture Officer
UDC	Union Digital Center

III. EXECUTIVE SUMMARY

Digital Plants Problems Identification System is an online system to suggest farmers on plant problems. This service has been developed with an application that provides instant support to the service recipients. A study has been conducted to evaluate this system in terms of saving Time, Cost and Visit of the beneficiaries. This research has been conducted by following scientific research method. By employing survey technique with semi-structured questionnaire, the study gathered primary information. Secondary data were also reviewed for a wide understanding of the issue.

Broad objectives of this study were to find out the monetary and non- monetary benefits of the provided facility among service recipients. The monitory benefits are related with the exploration of the reduction of time, cost and visit. The non-monitory services are related to the findings of behavior of service providers, service quality, advantages and disadvantages of the service, satisfaction level of service recipient & appropriateness of the provided service.

Regarding TCV (time, cost and visit), the study revealed that new process has reduced the time up to 48% and Cost up to 86%. Though the number of visit remain same, the beneficiaries traveling distance has reduced in new process. Moreover, it has reduced farmer's hassle for availing service and their complaints against service provider. Apart from this study found the level of satisfaction of the beneficiaries has increased due to the easier and quality of services. This new service process has a positive outcome among the citizen. However, still there exist some challenges towards the more users-friendly process. In this regards, slow internet speed is the key hindrance. Study also suggests providing this facilities form UDC.

1 INTRODUCTION AND BACKGROUND

Digital Plants Problems Identification System (DPPIS) is one such project developed by the app developer for the farmers and agricultural workers who need services and information regarding plants' diseases and associate problems with minimum cost, time and frequency of visits. The rate of growth of agriculture in Bangladesh and its share in GDP is decreasing. The rate of growth in agriculture came down from 5.24 percent in fiscal year 2009-2010 to 5.13 percent. This declining trend in growth of agriculture sector can largely be attributed to gradual loss of cultivable land, lack of invention, adoption and dissemination of new technology and lack of sufficient support for agricultural research and training in the country.

When a farmer comes to the agricultural office or to an agricultural extension worker, sometimes he/she fails to come with a symptom of the disease or the farmer fails to explain the problem clearly to the extension worker and thus it becomes difficult for the extension worker to identify the disease. He/she then has to make field visit to identify the problem and suggest requisite solution to overcome the problem. The process is costly in terms of both money and time. The problem becomes larger when the farmer is (a tribe/tribal?) or disabled one. This conventional system associated with complexities in the system can be improved through an online dynamic system. Now-a-days, mobile and internet access can enable us having all these services through e-specialized resources at our doorstep. The a2i Programme is playing an important role in simplifying existing services and creating new services, so that the citizens of the state can receive public and private services at a minimized cost, time and frequency of visits. The present **Digital Plants Problems Identification System (DPPIS)** is therefore, targeted for the farmers and agricultural workers who need services and information regarding identification and recovery of plants' diseases and associate problems with minimum cost, time and frequency of visits for better production and quality of their products.

2 OBJECTIVE OF THE STUDY

Broad objective of this study is to find out the monetary and non-monetary benefits of farmers who take services from DPPIS.

Specific objectives of this study are:

- To determine the amount of time saved on average of farmers who has taken services from DPPIS
- To determine the amount of cost saved on average of beneficiary farmers who has taken services from DPPIS
- To determine the number of visits saved on average of beneficiary farmers who has taken services from DPPIS
- To assess the non-monetary benefits of farmers who has taken services from DPPIS.

3 METHODOLOGY

The proposed study was based upon two types of data collection.

1. Primary Data and
2. Secondary Data

Primary data were collected from fieldwork data collection, telephone interview and key informant interview with project focal. To complete this research in-depth Interview of 201 farmers was conducted to gather data, 4 interviews were gathered as key informant interview.

Secondary data were collected from several sources to fulfill the objectives of the study through reviewing secondary documents. Baseline survey report and internet browsing were the main sources.

3.1 Research Approach and Design

This study is both qualitative and quantitative manner. This research defines quantitative research as a formal, objective, systematic process to describe and test

relationships and examine cause and effect interactions among variables. A descriptive survey design was used. It provides an accurate portrayal or account of the characteristics, for example behavior, opinions, abilities, beliefs and knowledge of a particular individual, situation or group.

3.2 The Study Area and Population

The study is about to compare online service of DPPIS and manual. This study has been conducted among those farmers and agricultural workers who need services and information regarding identification and recovery of plants' diseases and associate problems with minimum cost, time and frequency of visits for better production and quality of their products. The study was conducted at Fulbaria, Mymensing.

3.3 Data Analysis

Data entry or importation was done concurrently with data collection. Data was analyzed into SPSS software (IBM, v22). The researchers reviewed, edited and cleaned the data by performing a series of frequency and data range checks. Any inconsistencies were checked visually by comparing the electronic entry to the entry on the original questionnaire**.** Data was analyzed by using descriptive statistics**.**

3.4 Limitation

The researchers faced several challenges at the time of collecting data, such as;

- Contact numbers of previous method were unavailable. As a result, interviewers had to spend considerable time for set up appointments.
- In addition, some appointments had to be rescheduled due to the unavailability of target respondents.

4 FINDINGS OF THE STUDY

Findings of the study revealed that existing online service saved huge amount of cost, time, and number of visits of its consumer. Findings also suggested that, existing service method took minimum time, and effort than previous training method.

Type of Service

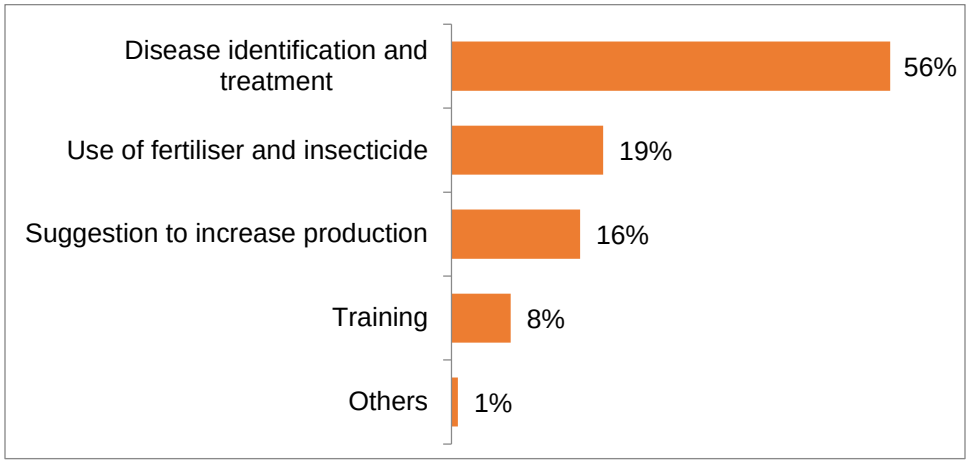

Figure 1: Type of service received

Digital Plants Problems Identification System (DPPIS) provides services for farmers in a systematic way. In this service, 56% farmer takes this service to identify the diseases and their treatments. Few of them use this service for fertilizing and uses of insecticides.

Places of taking service

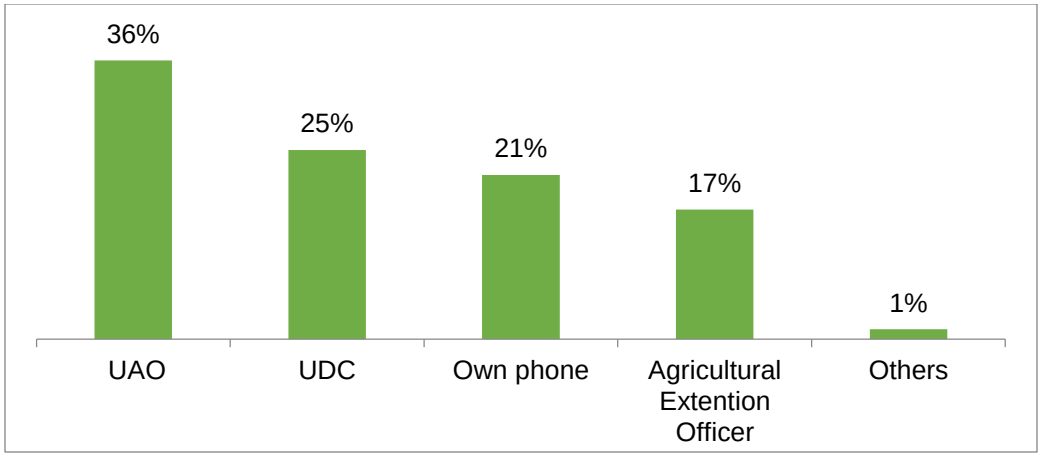

Figure 2: Places from where last service were received

Finding revealed that about 36% attain the service from Upazilla Agriculture office and 25% of people get the service from UDC and among the respondents 21% farmer get the facility from their own phone. At the other end, 17% of the people get the service from Agriculture extension officer of certain locality.

Types of Problem

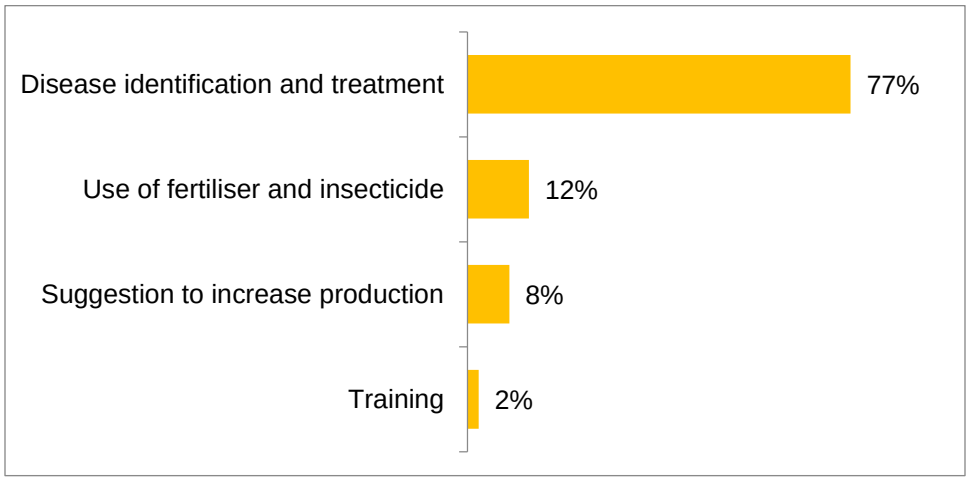

Figure 3: Type of Problem faced

In the manual process, respondents mentioned that they faced problem in disease identification and treatment of plants. Other problems they face include using fertilizer, insecticides, and lack of suggestions to increase production.

4.1 TCV analysis

On the separate analysis of time cost and visit the comparative benefit of the both service processes are as given in the following chart;

Total Time required for availing service

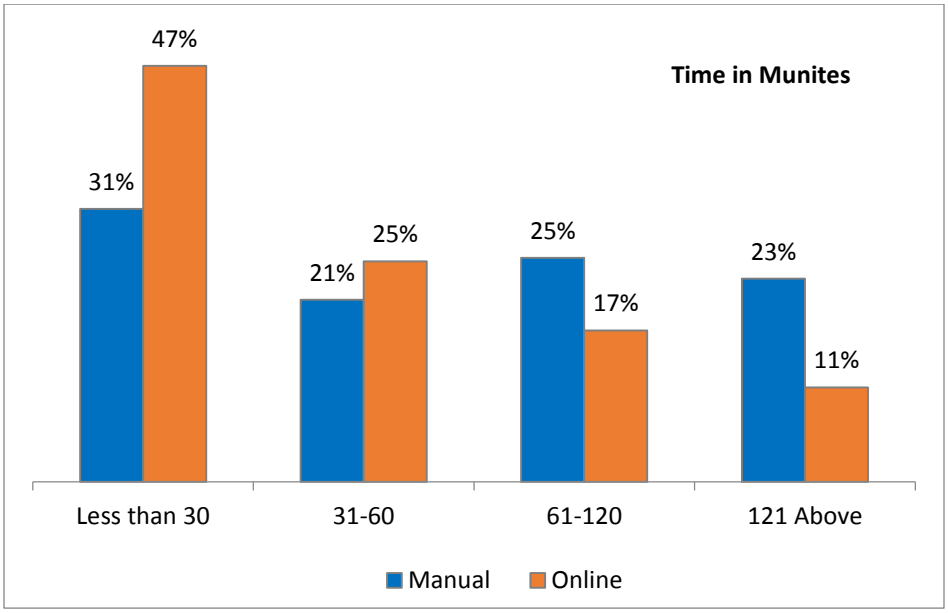

Figure 4: Time required in both process

The study finding showed that about 47% respondent stated it took less than 30 taka in online service while 31% respondent said it took less than 30 taka in manual service. On contrast 25% online service recipient and 21% manual service recipient mentioned it took 30 to 60 taka. On the other hand, 11% online service recipient and 23% manual service recipient stated it took more than 121 taka.

Total cost required for availing service

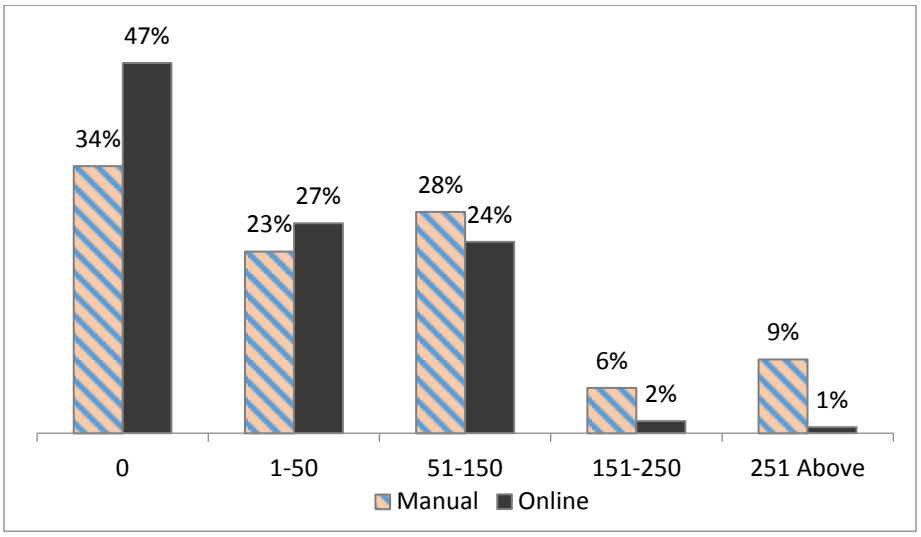

Figure 5: Total cost in both processes.

Finding reveals that about 47% respondent stated in online service no cost needed while 27% online service recipient and 23% manual service recipient said it took 1 to 50 taka. On the other hand, only 1% online service recipient and 9% manual service recipient mentioned it took more than 251 taka.

Number of visits required for availing service

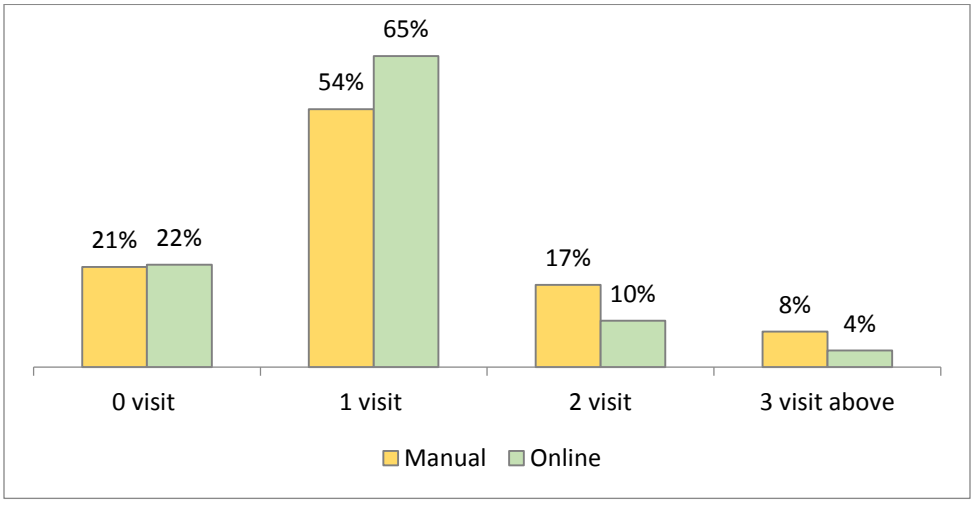

Figure 6: Number of visits in both processes

Finding shows that- taking the digital service in manual process and online process, 21% got it in no visit and 22% get the service in no visits respectively. On the other hand, 54% got the service manually in one visit and 65% get the service online through one visit. About 17 percent manual users got it in two visits and 10 percent online users get the service in two visits.

Comparative analysis of Time, Cost and Visit in both processes

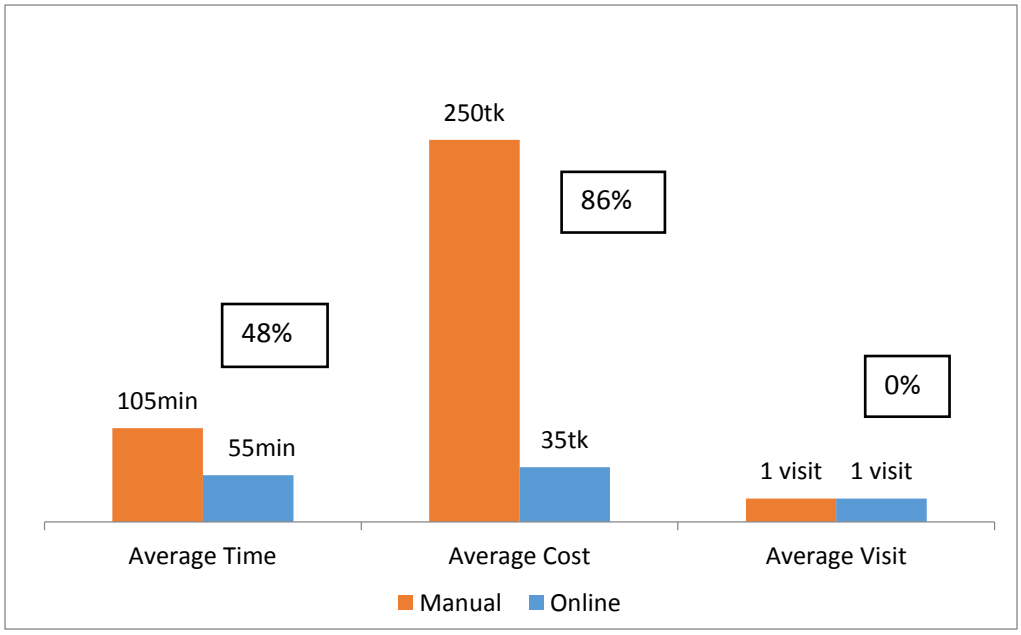

Figure 7: Average Time, Cost and Visit in both processes.

The study focuses on the monitory and non-monitory benefits of the digital services. In the TCV part, it describes the comparison between the before and after scenario in terms of TCV. The analysis focuses that after implementing the DPPIS services the average time has been reduced up to 48% and cost has been deducted up to 86%.

4.2 TCV+ Analysis

Advantages and Disadvantages of online service

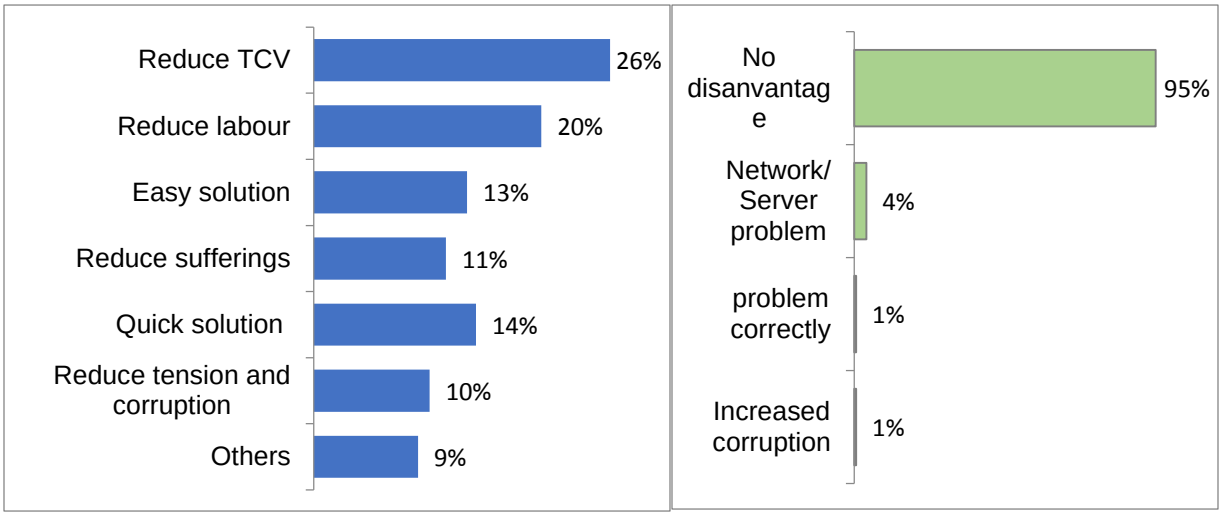

Figure 8: Advantages and challenges of receiving online service

Among the receivers of Digital Plant Problem Identification system, Respondents (26%) mentioned that - this service has reduced their consumption of Time; cost and Visit. 20% respondents mentioned that this service has reduced their labor. They got an easy solution to identified problems, 13% informants mentioned about these advantages. Besides, they also mentioned that the digital service has reduced their sufferings. They now can avail a quick solution. It also reduced tension and chances of facing corruption by the farmers who used to get this service from the digital center. About 95% of respondents mentioned that they did not face any problem while availing this service. They mentioned no disadvantages of the service. A few respondents complained about network or server problems.

Level of satisfaction

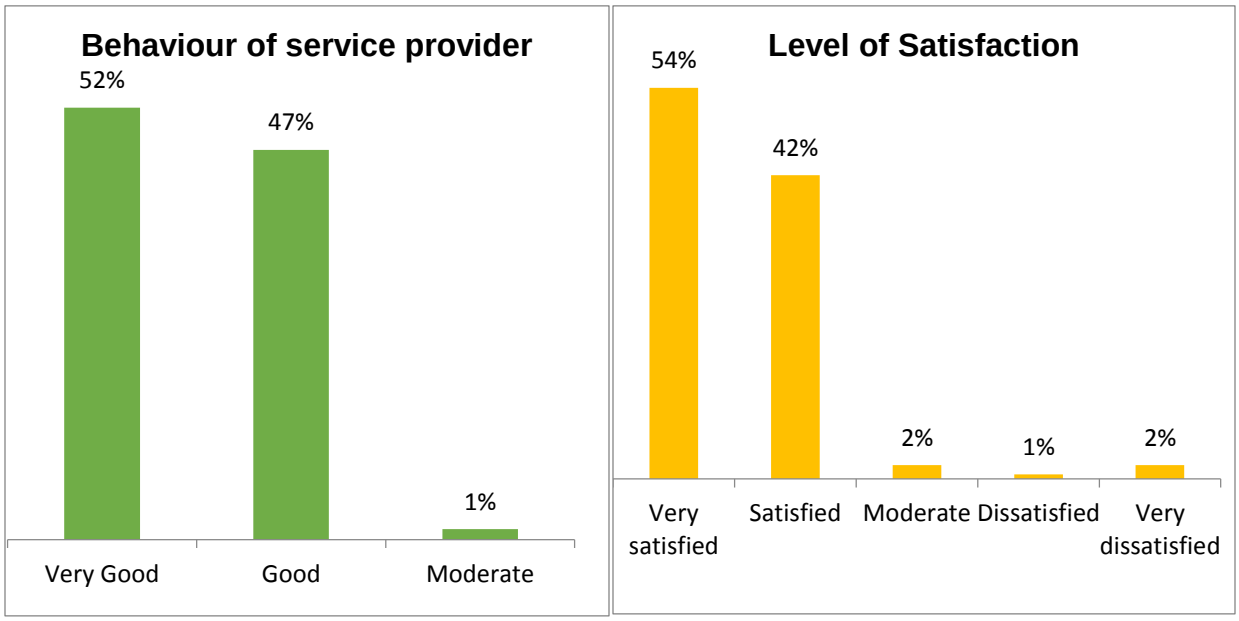

Figure 9: level of satisfaction due to getting service and Behavior of service provider

This analysis focuses on the non-monitory benefits and other related things of this project. Getting access over this service, 52% of the informants get the government officials' behavior toward them as very good and 47% of them mentioned that their behavior as good and other one percent rated their behavior as moderate. Satisfaction levels of the farmers after getting the service are as following where 54% of respondents are very satisfied with the service and 42% of them are satisfied with the service.

5 RECOMMENDATIONS

There is still scope of improvements DPPIS. The following recommendations may contribute in this regard-

- Development of the internet server and providing easy access of internet might help beneficiaries' to get online recommendation more flexibly.
- They recommended increasing the campaign about UDC and its activities.
- Increasing UDC's volunteer and work force was a strong recommendation, because it will continue the service of UDC.

6 CONCLUSION

DPPIS is the service to provide agricultural facilities among farmers, who take services for plant problems and identification. DPPIS introduced a facility regarding Digital Plants Problems Identification System. The vision of this programme was to reduce time, cost and visit of the farmers in terms of taking fertilizer recommendations. From the analyzed data, it can be sum up that the provided new service has created an easy and quick access on fertilizer recommendation. Now it takes 30 minutes less time to receive this service. Besides the time, cost and facility reduction, this study also discloses the beneficiaries' satisfaction level regarding service time and service provider beneficiaries. Therefore, it could be said that this newly introduced facility has reduced the time, cost and visit of beneficiaries and showed a changing scenario about service facility.

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