

**PROSPECTS AND PROBLEMS OF YOUTUBE AND VIRTUAL VIDEO
CHANNELS IN AGRICULTURAL CONTENT PREPARATION AND
DISSEMINATION**

**A Thesis
By**

**Tasnim Farabi
Student Id: MS-210829**



**A Thesis (Course No. AERD-6104) Submitted to the Agrotechnology Discipline in
Partial Fulfillment of the Requirements for the Degree of**

**MASTER OF SCIENCE
IN
AGRICULTURAL EXTENSION AND RURAL DEVELOPMENT**

**AGROTECHNOLOGY DISCIPLINE
LIFE SCIENCE SCHOOL
KHULNA UNIVERSITY
KHULNA -9208**

JUNE 2023

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Approved as to style and contents

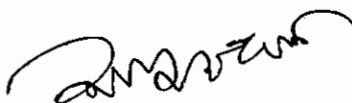
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JUNE 2023

Dedicated

To

My Beloved Daughter and Husband



ACKNOWLEDGMENTS

Foremost, the author would like to express all her devotion and reverence to the Omnipresent and almighty creator for the wisdom He bestowed upon me, the strength, peace of my mind and good health in order to finish this research successfully.

The author takes an opportunity to express her boundless gratitude and heartfelt thanks to Supervisor Prof. Dr. Md. Matiul Islam, Khulna University, Khulna for imparting his knowledge, cognitive suggestions, unprecedented cooperation, constant supervision, providing necessary information, inspiration throughout the course of this research work and expertise in this study. The author would like to express her sincere gratitude and appreciation to co-supervisor Prof. Dr. Md. Bashir Ahmed, Khulna University, Khulna for his kindles help, general advice, and supportive discussion in this research work. The author also thanks the Ministry of Science and Technology, Government of the People's Republic of Bangladesh for providing the National Science and Technology (NST) fellowship for conducting this research.

The author also expresses her sincere gratitude and appreciation to all the respected teachers of the Agrotechnology Discipline, Khulna University, Khulna for their help, guidance, and cooperation in this research work.

The author also expresses her respect and gratefulness to the respondents who have helped with providing data by question answering.

The author would like to give cordial thanks to her classmates, well-wishers, and all the people engaged with this research work for helping thee with their cooperation.

Last but not least, the author would like to thank her family especially her parents, husband, and her little daughter for their continuous support.

June, 2023

The Author

ABSTRACT

Nowadays farmers need new technologies and the latest information so that they can cope with the challenges and difficulties they face due to the lack of technical information. YouTube is a potential low-cost tool that has the ability to increase the scope and coverage of agricultural extension. YouTube can be regarded as social communication technology in which opportunities for farmers' feedback, interaction, and networking are much higher than other forms of extension information delivery. In order to utilize this tool for the benefit of farmers, it is necessary to know, the prospects and problems of YouTube and virtual video channels in agricultural content preparation and dissemination. Data were collected from 105 respondents under the Khulna metropolitan agriculture office (both Metro 1 and 2) and from the 3 content creators from February to May 2023. Descriptive statistics were used for data analysis. Respondents' perceptions regarding YouTube on agricultural content dissemination were the focus variables and eleven selected characteristics were the independent variables. The majority of the respondent's perception of the prospects of YouTube in agricultural content dissemination was high (94.3%). YouTube can be used anywhere and was the first ranked for prospects of YouTube in content dissemination. The majority of the respondent's perception of the problems of YouTube and virtual video channels in agricultural content dissemination was medium (64.8%) to high (30.5%). All the 3 content creator's perception regarding the problem during content preparation was medium. Internet purchasing is not cheap in our country is the major problem from the content creator's point of view. Respondent's perception of problems regarding YouTube in agricultural content dissemination was medium (64.8%). Age, farm size, experience, extension media contact, and training received had positive relationship with the respondent's perception of YouTube. Based on the findings, it is recommended that the reduction of internet cost and availability of devices at low prices need to be ascertained to both the respondents and content creators by the public extension system and the policymakers. Moreover, other virtual video platforms should be readily available like YouTube so that the audience can get information from diversified virtual video channels

Key words: YouTube, Prospects, Problems, Content Preparation, Content Dissemination

LIST OF CONTENTS

CHAPTER	TITLE	PAGE NO.
	ACKNOWLEDGMENTS	I
	ABSTRACT	II
	CONTENTS	III
	LIST OF TABLES	VIII
	LIST OF FIGURES	XI
CHAPTER I	INTRODUCTION	1-7
	1.1 General Background	1
	1.2 Statement of the Problem	2
	1.3 Specific Objectives of the Research	3
	1.4 Scope of the Study	3
	1.5 Justification of the Study	4
	1.6 Assumptions of the Study	4
	1.7 Hypothesis of the Study	5
	1.8 Limitations of the Study	5
	1.9 Definitions of Terms	5
CHAPTER II	REVIEW OF LITERATURE	8-12
	2.1 Concept of the Study	8
	2.2 Past Rrelated Study	9
	2.2.1 Farmer's perception of prospects of YouTube	9
	2.2.2 Problems confronated by the content creators and the farmers	10
	2.2.3 Relationship between the selected characteristics of the farmers and perception regarding YouTube	11
	2.3 Conceptual Framework of thea Study	11

CHAPTER	TITLE	PAGE NO.
CHAPTER III	METHODOLOGY	13-31
	3.1 Design of the Study	13
	3.2 Locale of the study	14
	3.3 Population and Sampling Technique	15
	3.4 Data Collection	15
	3.4.1 Preparation of interview schedule	15
	3.4.2 Method and time of data collection	15
	3.5 Specification and Measurement of Variables:	16
	3.5.1 Specification of variables	16
	3.5.2 Measurement of Focus Variable	16
	3.5.2.1 Respondents' perception regarding status on prepared content of YouTube and virtual video channels	16
	3.5.2.2 Respondents' perception of status of YouTube and virtual video channels in agricultural content dissemination	17
	3.5.2.3 Content creator's perception of prospects regarding content preparation of YouTube and virtual video channels	19
	3.5.2.4 Respondents' perception of prospects of YouTube and virtual video channels in agricultural content dissemination	20
	3.5.2.5 Respondent's perception of some open-type questions related to YouTube and virtual video channels	21
	3.5.2.6 A quasi case study of content creator	21
	3.5.2.7 Content Analysis of Agri-based YouTube Channel	22
	3.5.2.8 Respondents' perception of problems of YouTube and virtual video channels regarding prepared content	22



CHAPTER	TITLE	PAGE NO.
	3.5.2.9 Content creator's perception of YouTube and virtual video channels in agricultural content preparation	23
	3.5.2.10 Respondents' perception regarding problems of YouTube and virtual video channels in agricultural content dissemination	24
	3.5.3 Measurements of Independent Variables	25
	3.5.3.1 Age	25
	3.5.3.2 Family size	25
	3.5.3.3 Educational status	26
	3.5.3.4 Farm size	26
	3.5.3.5 Monthly family income	27
	3.5.3.6 Training received	28
	3.5.3.7 Extension media contact	28
	3.5.3.8 Cosmopolitanism	29
	3.5.3.9 Organizational participation	29
	3.5.3.10 experience in farming	29
	3.5.3.11 knowledge level of respondents about YouTube and virtual video channels	30
	3.6 Data Processing and Analysis	30
	3.6.1 Data processing and data tabulation	30
	3.6.2 Compilation of data	31
	3.6.3 Categorization of data	31
	3.6.4 Data analysis	31

CHAPTER	TITLE	PAGE NO.
CHAPTER IV	RESULTS AND DISCUSSION	32-65
	4.1 Relative position (rank order) of the statements related to respondent's perception of status of YouTube and other virtual video channels on prepared content	32
	4.2 Respondents perception of status of YouTube on prepared content	34
	4.3 Relative position (rank order) of the statements related to respondent's perception of status of YouTube and virtual video channels in agricultural content dissemination	34
	4.4 Respondents' perception of status of YouTube and virtual video channels in agricultural content dissemination	36
	4.5 Relative position (rank order) of the statements related to content creator's perception regarding prospects of YouTube and virtual video channels in agricultural content preparation	37
	4.6 Content creator's perception regarding prospects of YouTube and virtual video channels in agricultural content preparation	38
	4.7 Relative position (rank order) of the statements related to respondent's perception regarding prospects of YouTube and other virtual video channels in agricultural content dissemination	39
	4.8 Respondents' perception of prospects of YouTube and virtual video channels in agricultural content dissemination	40
	4.9 A descriptive analysis of some open type question to the respondents.	40
	4.10 Content Analysis of 5 Different YouTube channels	41
	4.10.1 Shykh Seraj	42
	4.10.2 <i>Krishi Bioscope</i>	42
	4.10.3 <i>Deepto Krishi</i>	44
	4.10.4 <i>Math Krishi</i>	45
	4.10.5 <i>Amader Krishi Digonto</i>	46

CHAPTER	TITLE	PAGE NO.
	4.11 a quassi case study of content creators	47
	4.12 Relative position (rank order) of the statements related to respondent's perception regarding problems of YouTube and virtual video channels in agricultural content preparation	48
	4.13 Respondent's perception regarding problems of YouTube and virtual video channels in agricultural content preparation	49
	4.14 Relative position (rank order) of the statements related to content creator's perception regarding problems of YouTube and virtual video channels in agricultural content preparation (for the content creators)	49
	4.15 Content creator's perception regarding problems of YouTube and virtual video channels in agricultural content preparation	52
	4.16 Relative position (rank order) of the statements related to respondent's perception of problems of YouTube and virtual video channels in agricultural content dissemination	52
	4.17 Respondents perception regarding problems of YouTube and virtual video channels in agricultural content dissemination	53
	4.18 Selected Characteristics of the Respondents	53
	4.18.1 Age	53
	4.18.2 Family size	54
	4.18.3 Educational status	55
	4.18.4 Farm size	55
	4.18.5 Monthly family income	56
	4.18.6 Training exposure	58
	4.18.7 Extension media contact	59
	4.18.8 Cosmopolitanism	59
	4.18.9 Organizational participation	60
	4.18.10 Experience in farming	60

CHAPTER	TITLE	PAGE NO.
	4.18.11 Knowledge level of farmers about YouTube and virtual vido channel	61
	4.19 Relationship between the selected characteristics of respondents and the perception of prospects and problems regarding YouTube in agricultural content preparation	62
CHAPTER V	SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION	64-70
	5.1 Major Findings	64
	5.1.1 Prospects of YouTube in Agricultural Content Preparation	64
	5.1.2 Prospects of YouTube in agricultural content dissemination	65
	5.1.3 Problems of YouTube in agricultural content preparation	65
	5.1.4 Problems of YouTube in agricultural content dissemination	65
	5.1.5 Relationship between the selected characteristics of respondents and, the prospects and problems of YouTube	65
	5.2 Selected characteristics of the respondnets	66
	5.3 Conclusion	68
	5.4 Recommendations	69
	5.4.1 Recommendations for policy implications	69
	5.4.2 Recommendations for further study	69
REFERENCES		70-72
APPENDIX A		73

LISTS OF TABLES

TABLE NO.	TITLE	PAGE NO.
Table 3.1	Score of respondents according to their perception of the status of prepared content on YouTube	16
Table 3.2	Respondent's perception score on status of YouTube in agricultural content dissemination	17
Table 3.3	Content creator's score on the prospects of YouTube in agricultural content preparation	19
Table 3.4	Respondent's score on the prospects of YouTube in agricultural content dissemination	20
Table 3.5	Respondent's score on the problems of YouTube and virtual video channels of prepared content	23
Table 3.6	Score of problems of YouTube and virtual video channels in agricultural content preparation (for the content creators)	23
Table 3.7	Problems confrontation scores of YouTube in agricultural content dissemination	24
Table 3.8	Categories of respondents according to their age	25
Table 3.9	Categories of respondents according to their family size	26
Table 3.10	Categories of respondents according to their educational status	26
Table 3.11	Categories of respondents according to their farm size	27
Table 3.12	Categories of respondents according to their monthly family income	27
Table 3.13	Categories of respondents according to their training received	28
Table 3.14	Categories of respondents according to their extension media contact	28
Table 3.15	Categories of respondents according to their cosmopolitanism	29
Table 3.16	Categories of respondents according to their organizational participation	29
Table 3.17	Categories of respondents according to their experience in farming	30

TABLE NO.	TITLE	PAGE NO.
Table 3.18	Categories of respondents according to their Knowledge level	30
Table 4.1	Relative position (rank order) of the statements related to respondent's perception on status regarding YouTube and virtual video channels on prepared content	32
Table 4.2	Distribution of respondents according to their perception regarding status of YouTube and virtual video channels on prepared content	34
Table 4.3	Relative position (rank order) of the statements related to respondents' perception regarding status of YouTube and virtual video channels in agricultural content dissemination	35
Table 4.4	Distribution of respondents according to their perception regarding status of YouTube and virtual video channels in agricultural content dissemination	37
Table 4.5	Relative position (rank order) of the statements related to content creator's perception of prospects of YouTube and virtual video channels in agricultural content preparation	38
Table 4.6	Distribution of content creators according to their perception regarding prospects of YouTube and virtual video channels in agricultural content preparation	38
Table 4.7	Relative position (rank order) of the statements related to respondent's perception regarding prospects of YouTube and virtual video channels in agricultural content dissemination	39
Table 4.8	Distribution of respondents according to their perception regarding prospects of YouTube and virtual video channels in agricultural content dissemination	40
Table 4.9	Available information of "Shykh Seraj" YouTube channels	42
Table 4.10	Available information of "Krishi Bioscope" YouTube channel	43
Table 4.11	Available information of "Deepto Krishi" YouTube channel	44

TABLE NO.	TITLE	PAGE NO.
Table 4.12	Available information of “Math Krishi” YouTube channel	45
Table 4.13	Available information of “ <i>Amader Krishi Digonto</i> ” YouTube channel	46
Table 4.14	Relative position (rank order) of the statements related to respondent’s perception regarding problems of YouTube and virtual video channels in prepared content	48
Table 4.15	Distribution of respondents according to their perception of problems of YouTube and virtual video channels toward prepared content	49
Table 4.16	Relative position (rank order) of the statements related to content creator’s perception on problems of YouTube and virtual video channels in agricultural content	49
Table 4.17	Distribution of content creators according to their perception of problems of YouTube and virtual video channels in agricultural content preparation	50
Table 4.18	Relative position (rank order) of the statements related to respondent’s perception regarding problems of YouTube and virtual video channels in agricultural content dissemination	51
Table 4.19	Distribution of respondents according to their perception on problems of YouTube and virtual video channels in agricultural content dissemination	53
Table 4.20	Distribution of respondents according to their age	53
Table 4.21	Distribution of respondents according to family size	54
Table 4.22	Distribution of respondents according to educational status	55
Table 4.23	Distribution of respondents according to their farm size	56
Table 4.24	Distribution of respondents according to monthly family income	57
Table 4.25	Distribution of respondents according to training exposure	58
Table 4.26	Distribution of respondents according to extension media contact	59
Table 4.27	Distribution of respondents according to their cosmopolitanism	59
Table 4.28	Distribution of respondents according to organizational participation	60

TABLE NO.	TITLE	PAGE NO.
Table 4.29	Distribution of respondents according to experience in farming	60
Table 4.30	Distribution of respondents according to their knowledge level about YouTube and virtual video channels	61
Table 4.31	Relationship between the selected characteristics of respondents and the perception of prospects and problems regarding YouTube in agricultural content dissemination	62

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE NO.
Figure 2.1	Conceptual framework of the study	12
Figure 3.1	A map of Khulna metropolitan area	14



CHAPTER I

INTRODUCTION

1.1 General Background

YouTube is a social media platform that allows users to interact, create, share, retrieve, and exchange information and ideas in any form that can be archived and used by virtual communities and networks. It is a video-sharing platform with a mission to give everyone a voice and show them to the world. YouTube is one of the most visited websites in the world and one of the most used search engines. As the second largest search network after Google, YouTube has an extensive audience reach (Johnson, 2017).

According to the latest statistics, the number of YouTube users (defined as those who use YouTube at least once a month) has been growing one after year. In 2023, the total number of YouTube users worldwide is forecasted to hit 868.4 million, a 10.6% increase from 2022 . In this modernized world, YouTube secures a crucial position in farming because it creates the scope to connect with farmers and content creators from around the world over large geographical distances. The benefits of this can be as large or as small as the farmers choose, depending on the way and how much time the farmers wish to spend on it. It also allows businesses and organizations direct access to consumers and their genuine thoughts, giving up-to-date and relevant information on trends and preferences (Chui,et al., 2012). The most visited agri-related YouTube channels depend on subscriptions, views, likes are “*Shykh Seraj*”, “*Deepto Krishi*”, “*Krishi Bioscope*”, “*Math krishi*” etc. these channels contribute in enhancing interactions and information flows among different actors involved in agricultural innovation and also enhance promotes of agricultural extension and advisory service providers. It also has removed the limitations of geographical distance from users, which enables a platform that shares knowledge and can play a part in the economic status.

In the global context, the agricultural sector is progressively involved in agriculture-based YouTube content creation to promote relevant information and knowledge. Information has become a critical factor in agricultural production (Rao, 2007). Agricultural information is necessary to reach farmers and agriculturists in order to meet their needs. If farmers for example have access to relevant agricultural information, food shortages may be eradicated. Such information is crucial to their farming activities and impacts on household food security. YouTube can be beneficial in agricultural marketing to create an image of authority, build

credibility and trust, and engage with the audience, more so than many other forms of media (Agrawal, 2016).

Virtual video channels are contemporary channels of digital communication for discussion and sharing of information among people. Besides YouTube, other Virtual video channels have enhanced and strengthened the relationships between agri-based communities and it has crossed geographical boundaries, thereby connecting peasant communities and rural workers. Aistube (www.aistube.com), Akkbd (<https://akkbd.com>), Greeniculture (<https://greeniculture.com>), etc. are different virtual video platform that also plays a crucial role in agricultural information and technology dissemination. This information must be relevant and meaningful to farmers, in addition to being packaged and delivered in a way preferred by them (Diekmann et al., 2009). The conversation characteristic of YouTube and other virtual video channels extends to two-way communication rather than merely broadcasting or one-way transfer of information. Connectedness with people highlights the ability to link with other people. Earlier, farmers used to exchange information when they got together at a meeting place or depended on newspapers, television, and radio for news. But now YouTube and other virtual video channels are empowering agricultural professionals, transforming agricultural organizations, and connecting farmers. This is a blessing but very little research work has been done on it. That's why the researcher felt the necessity to conduct a research entitled "Prospects and Problems of YouTube and Virtual Video Channels in Agricultural Content Preparation and Dissemination". The purpose of the proposed research work was to introduce YouTube and virtual video channels to the respondents and all the people who are engaged with agriculture to disseminate and exchange agricultural information and to find out the limitation and problems of the viewers and content creators.

1.2 Statement of the Problem

To cope with this modern era, it becomes very worthwhile to conduct research about YouTube for agricultural content preparation and dissemination. However, a very scanty amount of academic research has been conducted on this issue. In view of the above background and the facts, the present study entitled, "Prospects and Problems of YouTube and Virtual Video Channels in Agricultural Content Preparation and Dissemination" was conducted. The researcher intended to find out the answers to the following research questions through this piece of research.

- i. Do farmers accept information from virtual video channels?

- ii. How do YouTube and virtual video channels affect the respondents in the case of agricultural content preparation and dissemination?
- iii. What types of problems are being faced by the YouTube content creators and the respondents?

1.3. Specific Objectives of the Research

Objectives provide a clear and concise way to define what the researcher wants to achieve. It helps the researcher to stay focused, motivated, and on track toward the goals. Without objectives, it's easy to get lost in the details and lose sight of the big picture. To keep these important points in mind, the researcher conducted the research to fulfill the following objectives,

- i. To scrutinize the status and the prospects of YouTube and virtual video channel in the provision of agricultural content preparation and dissemination.
- ii. To find out the problems faced by the content creators during content preparation and the problems faced by the respondents during watching any content.
- iii. To ascertain the relationship between the selected characteristics of the respondents and the perception of the respondents towards YouTube in agricultural content dissemination.

1.4. Scope of the Study

The focus of the study was to find out the respondent's perception of the prospects and problems of YouTube and virtual video channels in agricultural content preparation and dissemination. The findings of the study were applicable to Khulna metropolitan areas 1 and 2. However, the findings may also be applicable to other areas of Bangladesh where the physical, socio-economic, and cultural conditions do not differ much from those of the study area. The following remarkable scope of YouTube and virtual video channels can create a field to disseminate agricultural content very easily.

- i. It may encourage scientists and extension personnel who work at the field level to create YouTube channels to share agricultural related videos.
- ii. It may be useful for the extension personnel to download videos from YouTube and show it on the projector to the small groups of farmers to get them easily understandable.
- iii. It may encourage young entrepreneurs to produce and upload their best practices and success stories on YouTube to disseminate their stories with a positive vibe

1.5 Justification of the Study

YouTube has become a very influential social media in this present time. People want more information by investigating in less time and YouTube gives them the scope to find out the solution to any problem quickly. Agricultural sector is facing many problems in obtaining new information about market prices, cultivation procedures, weather updates, and other related issues. Nowadays, YouTube helps the respondents by giving information and different methods of agricultural technologies to solve their own problems. There is no doubt that YouTube is both a challenge and an opportunity for developing countries and it has great prospects for agricultural content dissemination. Moreover, content preparation is a challenging part for content creators. There was no research about what type of problems are faced by content creators during creating any content in agricultural aspects in Bangladesh. So the researcher felt the necessity to conduct the research work on “Prospects and Problems of YouTube and Virtual Video Channels in Agricultural Content Preparation and Dissemination”. In this study, the researcher tried to find out the prospects and the problems of YouTube in the case of agricultural content dissemination as well as the researcher tried to find out the problems of the content creator when they prepare any content and disseminate it through YouTube.

1.6 Assumptions of the Study

An assumption is the supposition that an apparent fact or principle is true in the light of available evidence (Goode and Hatt, 1945). The researcher had considered the following assumptions while undertaking the study:

- i. The selected respondents were representative of the whole population of the study area. Views and opinions furnished by the respondents were the representative views and opinions of the whole population of the study.
- ii. The researcher who acted as the interviewer was well adjusted to the social and cultural environment of that area and the data collected by the researcher were free from bias.
- iii. The respondents in this study responded the interview questions honestly and factually and truly expressed their opinion on prospects and problems of YouTube. The information sought by the researcher revealed the real situation to satisfy the objectives of the study.

1.7 Hypothesis

The following null hypothesis was formulated to test the relationship between the selected characteristics of the respondents and the perception of respondents towards YouTube and virtual video channels in agricultural content dissemination. Pearson's correlation coefficient was used to test the null hypothesis.

The null hypothesis was: There is no relationship between the selected characteristics (age, family size, educational status, farm size, monthly family income, organizational participation, extension media contact, experience in farming, training receive, cosmopolitanism, knowledge level about YouTube) of the respondents and the perception of respondents towards YouTube and virtual video channels in agricultural content dissemination.

1.8 Limitations of the Study:

To make the study manageable and meaningful from the research point of the view it has become necessary to mention the following limitation.

- i. Population of the study was limited. Only 3 content creators and 105 respondents were selected randomly as a sample of the study. As content creators were not readily available, so it took time to contact the content creators.
- ii. The study was conducted in only Khulna metropolitan areas 1 and 2. The respondents were located in urban and semi-urban areas and they were more exposed to YouTube, the findings may differ in the case of rural people.
- iii. Information and data were collected by the researcher and applied to the present situation in the selected area.

The findings could be applicable only for the study area and only for the similar situation of the physical, socio-economic culture and geographic condition.

1.9 Definitions of Terms

The terms which have been frequently used throughout the research work are defined and interpreted below:

Age: A period of human life, measured by years from birth, usually marked by a certain stage or degree of mental or physical development and involving legal responsibility and capacity.

✧ **Education:** In the formal sense, education is structured learning. From children to adults, people receive their education mainly through classroom instruction. Education is the transmission of knowledge, skill, and character traits. It is measured in terms of formal schooling years.

Family Size: Family size refers to the number of persons in the family. Family refers to a group of two or more persons who live in the same dwelling and are related to each other by blood, marriage, common-law union, adoption, or a foster relationship.

Farm size: It refers to the area of land, together with the buildings on it, that is used for growing crops or raising animals or others. Farm size can be measured in terms of production value (gross or net).

Family income: Family income is the combined total income received by all members of a family before taxes. That means, the total earning of the respondents and the members of their family from agriculture and other sources (services, business, labor, etc) during a year.

△ **Training exposure:** Training means the process of increasing the knowledge and skills of an employee for doing a particular job. Training has specific goals of improving one's capability, capacity, productivity, and performance.

Extension media contact: The term extension media contact refers to individual access to the extension personnel, any communication media or sources, or any other extension teaching methods being used for the dispersion of new technologies among rural women.

Cosmopolitanism: Cosmopolitanism is a moral perspective that emphasizes the inherent worthiness of human beings regardless of their location. It refers to the orientation or exposure of the respondents external to their social system.

★ **Experience in farming:** Farming experience is a process through which farmers perceive and participate, accumulate knowledge, and adopt technologies. That means livestock rearing, crop production, and aquaculture experience.

Knowledge: It refers to the facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject. That is the understanding of or information about a subject. Here knowledge level of farmers about YouTube means a basic

understanding of YouTube in the case of agricultural information and technology dissemination.

✖ **YouTube:** YouTube is a free, international, video-sharing and social networking website and app on the internet. The website lets people upload, view, and share videos. YouTube was founded on February 14, 2005 by three former members of PayPal. Google (a search engine company) has owned and operated YouTube since 2006.

Content creator: A content creator is someone who creates entertaining or educational material to be expressed through any social media or YouTube channel. Content creation can mean creating new content for social media with the intention of interacting and resonating with their target audience, often making money as a part-time or full-time job.

Prospects: Prospects imply the expectation of a particular event, condition, or development of definite interest. Agricultural innovation can be easily disseminated with large audiences through YouTube within a short time. This is the main expectation from YouTube in agricultural aspects.

♪ **Problem:** A problem is a situation, question, or thing that causes difficulty, stress, or doubt.

Dissemination: It refers to the action or fact of spreading something, especially information. Here, the term is used for agricultural content dissemination through YouTube.

CHAPTER II

REVIEW OF LITERATURE

A literature review is a comprehensive summary of previous research on a topic. The literature review surveys scholarly articles, books, and other sources relevant to a particular area of research. Conducting a literature review establishes familiarity with and understanding of current research in a particular field before carrying out a new investigation. The purpose of a literature review is to gain an understanding of the existing research and debates relevant to a particular topic or area of study and to present that knowledge in the form of a written report. Conducting a literature review helps to build knowledge in the current research field. After doing a literature review, one may know what research has already been done and be able to identify what is unknown within one's topic.

In this chapter, a review of literature relevant to the research study was presented. After giving full effort, an adequate number of directly related literature were not readily available for this study. The present study is mainly concerned with the prospects and problems of YouTube and virtual video channels in agricultural content preparation and dissemination. However, the literature of available studies has been discussed briefly in this study.

2.1 Concept of the Study

YouTube, an invention of modern times assists to disseminate information with a strong sense of communication providing visual scenarios as well as a medium of showing the application of several adaptive measurements unknown to others along with entertainment purposes. Therefore, the new idea for order of extension and making acceptable to others YouTube acts as an important medium having contents of making the exclusive new idea comprehensible (Allgaier, 2020). Even in the case of long-distance for providing accurate technological information via any training, YouTube can be the best anchor as it carries the knowledge visible to the audience which is easily applicable after watching videos (Wickman et al., 2021). For being a great popular and highly used channel, YouTube can be the best option for spreading agricultural information more (Holt-Day et al., 2020). YouTube, as a medium, provides material related to public demand with the intent of disseminating a wide range of necessary demandable information (Panuju, 2019). As the videos are made at hand on a specific theme, some new perceivable information carried in the content has made the learning capability of viewers better (Moghavvemi et al., 2018). Besides, an illiterate farmer can also participate to view the shared videos of agriculture on YouTube as it does not require any special criterion

or skill for enrolment. The farmers prefer YouTube videos as it is equipped with visual material so there is no problem if the language is unknown to them (Balkrishna and Deshmukh, 2017). Moreover, when compared to other websites for improving skills, especially in the medical sector, YouTube has a considerable upper hand over any other vulnerable websites since it prefers video over audio (Bhandarkar et al., 2021). But the quality of content is not all time good enough. Many videos especially self-made ones are spotted in an unskilled manner which is clearly perceived during watching videos and has raised questions about its quality (Müller, 2009). Low educational video and a general tendency of biases to make their own video prevalent to others sometimes deteriorate its quality which needs to be erased to capture its standard quality (Ward et al., 2020).

Nevertheless, It is a platform for sharing ideas along with a huge opportunity of expressing viewers' sentiments and a feature on how they accept the idea regarding their rejection through comments part. The replies of other viewers in negative and positive comments especially more reactive replies in the negative comments than positive comment shows their sentiment on how they feel about the represented videos (Thelwall et al., 2012). The video makers get chances to correct themselves by providing new informative videos with demanded relevant topics asked by the viewers according to the comments section.

2.2 Past Related Research

There was no direct research work was found. But hardly, some related study was found which can be helpful to the researcher to conduct the present study.

2.2.1 Farmer's perception of prospects of YouTube

Latif, Iftikhar & Shahzadi (2020) in their study area found that most of the farmers (86%) trusted the agricultural technology and information from social media (Facebook, YouTube) and very few farmers did not trust regarding the agricultural technology and information. Agricultural information has recently been considered to be an important production input by the farmers like other inputs of agricultural production. On the basis of the uses of 16.1 percent had low, 66.7 percent had medium and, 17.2 percent had high use of YouTube (Barua, 2021). It might be due to farmers are advanced in using of YouTube for receiving agricultural information. Sebotsa et al., (2020) found that the least platform YouTube used (8.7%) by the respondents. It seems that most of the respondents had secondary education and their basic knowledge helps to develop their eagerness towards using YouTube for agricultural purpose.

The information supplied by the YouTube along with its utilization by the farmers is also equally important for increasing farm productivity. The core point of the discussion was, most of the respondents have get good perception on status and prospects.

2.2.2 Problems confronted by the content creators and the farmers

YouTube allows contents to be viewed, shared, embedded, and discussed (Burgess & Green, 2013). YouTube allows two major user functions (i.e., content creation and content seeking). Content seeking is an intuitive user-action that allows users to browse and search for specific videos for individual gratification. In content creation, content creators make and share their own video content with specific individuals and groups or with the general public. Content creation in online networking terminology is referred to as user-generated content (UGC). UGC allows users to convey their opinions, thoughts, and creative content with others online (Boyd & Ellison, 2007) Meanwhile, YouTube serves as a platform for professionals to showcase themselves, which is subjectively stronger in comparison with UGC (Cha, 2014). There is much interaction possible, in the form of commenting or uploading original and repeat content. In case of YouTube, content creators tend to react to the comments by, reading, responding, cross-commenting in commentator channels, extending friend requests to the commentators, and subscribing to commentator channels (Lange, 2007). Siersdorfer, Chelaru, Nejd, and San Pedro (2010) infer that comments comprise different sentiments with respect to video types. These have made the content creator well prepared for their participation in the online community site. The major problems of content creators was to edit their content because it is time consuming to make a qualityful content and they think that internet cost is comparatively high to disseminate their content to the audience.

Barua, (2021) in his study investigated the problems confrontation of the farmers in using YouTube. Six problems were selected with the consultation of concerned personnel. Data indicate that the farmers confronted highest problem in “high price of internet package” as indicated. This was the main problem of the farmers in using YouTube. The second and third problems confronted by them are “unavailability of smart phone” and “ignorance of using smart phone” respectively. In this way comparatively less problem confronted by the farmers is “criticize to other farmers for using YouTube” that means it is not a serious problem for the farmers in using YouTube (Barua, 2021). Khou et al., (2018) in their study found that most of the farmers indicated the first problem of using digital self-help approach (YouTube) is weak

data and networks and the second problem is insufficient in training and education of using YouTube.

2.2.3 Relationship between the selected characteristics of the farmers and perception regarding YouTube

There was a significant contribution of the farmers' annual family income (0.002) and innovativeness (0.001) were the most contributing factors significant at a 1 % level for the innovative agricultural technology diffusion through YouTube. There was a significant contribution of effective farm size (0.052), farming experience (.042), agricultural extension media contact (0.042) and agricultural knowledge (0.050) was the second contributing factors which was significant at 5% level for the innovative agricultural technology diffusion through YouTube (Barua, 2021).

2.3 Conceptual Framework of the Study

The conceptual framework is the researcher's understanding of how the particular variables in the study connect. Thus, it identifies the variables required in the research investigation. These variables have a relationship with the study. Some of these are social, personal, economical factors and the behavior of respondents are influenced by these characteristics. Normally two type of variables are found in a research study, one is independent variable and the other is dependent or focus variable. A dependent variable is what you measure in the experiment and what is affected during the experiment. The independent variable is the variable the experimenter manipulates or changes and is assumed to directly affect the dependent variable. In this study, status and prospects, and problems of YouTube and virtual video channels in agricultural content preparation and dissemination were focus variable and 11 selected characteristics of the respondents were considered as the independent variable in this study.

Considering the above mentioned situation and discussion, a conceptual framework have been developed for this study, which is diagrammatically presented below.

CHAPTER III

METHODOLOGY

Research methodology simply refers to the practical “how” of a research study. More specifically, it’s about how a researcher systematically designs a study to ensure valid and reliable results that address the research aim, research objectives and research questions.

A research methodology gives research legitimacy and provides scientifically sound findings. It also provides a detailed plan that helps to keep researchers on track, making the process smooth, effective and manageable. Specifically, how the researcher went about deciding: what type of data to collect (qualitative or quantitative data), how to collect it (the data collection method), how to analyse it (the data analysis methods). It allows the reader to understand the approach and methods used to reach conclusions. All this means that, it is necessary for the researcher to design his methodology for his problem (Kothari, 2004). So, a chronological description of the methods followed in conducting this research work has been presented in this chapter.

3.1 Design of the Study

The design of the study was descriptive and diagnostic survey research. The study was conducted on the basis of the collection of data through the survey by interviewing the respondents. An interview schedule was prepared considering the objectives of the proposed study to know the status and prospects of YouTube and the virtual video channels in agricultural content dissemination and the problems faced by the content creators during preparing agri-based content. It was also designed to describe the personal socio-economic characteristics of the respondents and also to draw the relationship between those characteristics and the perception of respondents towards prospects and problems of YouTube and virtual video channels in agricultural content preparation and dissemination. The Likert scale was used for the relevant statements to know the status, prospects and the problems of YouTube in content preparation and dissemination.

3.2 Locale of the study

There are two Metro Agriculture Offices in Khulna metropolitan city. Both the Metro Agriculture Offices (Metro 1 and 2) were considered the study's locale. The two offices are located in Daulatpur and Rupsa Traffic Mor. Total of 31 wards are included in both Khulna metro areas 1 and 2. These two areas are divided based on two Metro Agriculture Offices. The literacy rate of the Khulna metropolitan area is 71.5% (BBS, 2011). The literacy rate is comparatively high than in rural areas. That means they are more conscious and people in the urban or semi-urban area are more digitalized than rural people. It was assumed that the metro-dwellers (engaged in agricultural activities, partially or completely) are more exposed to virtual video channels than rural farmers. The main purpose of this study was to find out the respondents' perception regarding YouTube of the metropolitan city, not to compare the rural and urban areas respondent's perceptions. Typically, urban people are more involved in rooftop and homestead gardening. When they face any problem which is related to farming they normally search for it on YouTube rather than contact with extension personnel. That's why metropolitan city was considered to conduct this study.

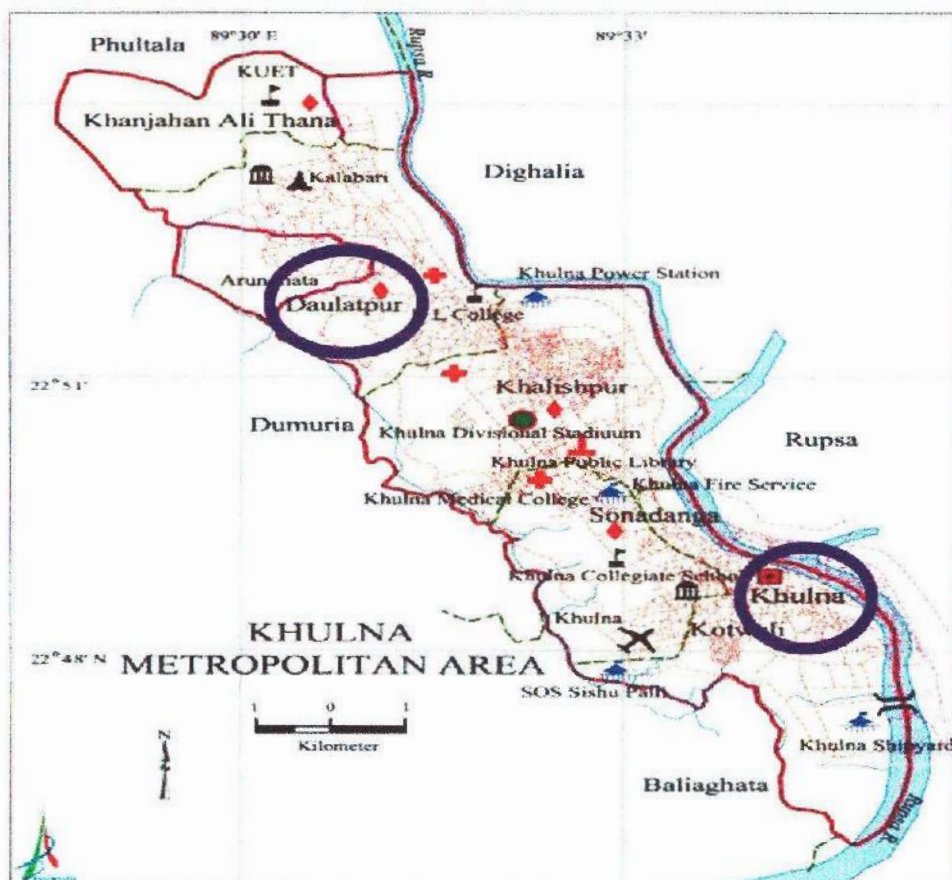


Figure 3.1: A map of Khulna metropolitan area

3.3 Population and Sampling Technique

All the respondents and the stakeholders of Metropolitan area 1 and 2 under Khulna district were considered as the population of the study. This sub-division in 1 and 2 is made by the Department of Agricultural Extension (DAE) for the ease of operation and convenience. The sample size was determined based on the standard formula of a representative sample and data were collected through a random sampling technique. The number of the respondents were determined purposively. However the researcher remain unbiased while selecting each of the respondents for interview. The researcher also selected 3 content creators for interview. The number of content creators were low due to the scarcity of content creators. So, the sample size for the respondents was 105 and for the content creators was 3.

3.4 Data Collection

3.4.1 Preparation of interview schedule:

An interview schedule was prepared including both open and closed-type questions and statements. It was carefully designed focusing the objectives of the study. Simple and direct questions were included for the better understanding to the respondents. The interview schedule was written in English version and it has been placed in Appendix A.

3.4.2 Method and time of data collection

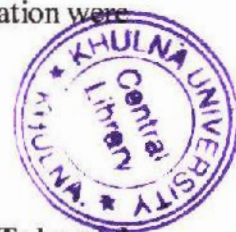
The researcher collected data from the respondents through face-to-face survey from February 2023 to May 2023. Before collecting data, the researcher met Metro Agriculture Officers of two Metro Agriculture Offices in Khulna metropolitan city. The researcher also met Sub Assistant Agriculture Officers (SAAO) who are assigned to different wards in Khulna metropolitan city. With the help of the concerned authority, the researcher met with the respondents and interviewed them. The researcher gave a full effort to build rapport with the respondents so that they feel free to share their thought and their perceptions regarding YouTube and virtual video channels. However, if any respondent failed to understand any statement, the researcher explained and clarified the statements. The researcher analyzed some open-type questions regarding YouTube and virtual video channels to know the respondent's perceptions broadly. The researcher also analyzed five YouTube channels to assess the quality of the content, viewers' attitudes toward the agri-based content, and the demand for agri-based content by checking the comments section of those YouTube channels. The researcher also interviewed 3 content creators of agri- based YouTube channels over the phone to know their

perceptions, thoughts, or problems regarding YouTube content preparation and dissemination. The researcher did not face any major problems in collecting data. Excellent cooperation and coordination between the respondents and the content creators made it comparatively easy to collect data.

3.5 Specification and Measurement of Variables:

3.5.1 Specification of variables

A variable is any characteristic that can assume varying or different values are successive individual cases (Ezekiel and Fox, 1959). In this research study, independent and focus variables were used. An independent variable is a factor that is manipulated by the researcher in his attempt to ascertain its relationship to an observed phenomenon. The focus variable is the effect. Its value depends on changes in the independent variable. Age, family size, education, monthly family income, farm size, training received, extension contact, organizational participation, cosmopolitanism, the experience of farming, and knowledge level of YouTube were independent variables. The status and prospects of YouTube and virtual video channels in agricultural content preparation and dissemination, and the problems of YouTube and virtual video channels in agricultural content preparation and dissemination were the focus variable in the study.



3.5.2 Measurement of Focus Variable

3.5.2.1 Respondents' perception regarding status on prepared content of YouTube and virtual video channels

Knowing of status from the respondents regarding YouTube in agricultural content preparation empowered the researcher to build an informative and clear decisions. Each respondent was asked 10 statements to know the respondent's perception regarding YouTube in agricultural content preparation. Against each statement, a weight of 5, 4, 3, 2 and 1 was given for strongly agree, agree, undecided, disagree and strongly disagree respectively. Thus the score could range from 10-50, where 10 means strongly disagree and 50 means strongly agree for each statement. The scores of respondents were classified into following categories according to their perception on status of YouTube in agricultural content preparation as shown in Table 3.1.

Table 3.1: Score of respondents according to their perception of the status of prepared content on YouTube

Categories	Score
Low status	0-17
Medium status	18-33
High status	34-50

To compare the respondent's perception on status of YouTube in agricultural content preparation, a Respondent Perception Index (RPI) was calculated by using the following formula:

$$\text{RPI} = \text{Nsa} \times 5 + \text{Na} \times 4 + \text{Nu} \times 3 + \text{Nda} \times 2 + \text{Nsda} \times 1$$

Where,

RPI= Respondent Perception Index

Nsa= Number of respondents rated the statements as strongly agree

Na= Number of respondents rated the statements as agree

Nu= Number of respondents rated the statements as undecided

Nda= Number of respondents rated the statements as disagree

Nsda= Number of respondents rated the statements as strongly disagree

Respondent Perception Index is the ratio of the observed score on status of content preparation to possible score on status content preparation and multiplied by 100. It was calculated by following formula:

$$\text{Respondent Perception Index} = \frac{\text{observed score on status of prepared content}}{\text{possible score on status of prepared content}} \times 100$$

3.5.2.2 Respondents' perception of status of YouTube and virtual video channels in agricultural content dissemination

Knowing status of YouTube for agricultural content dissemination helps the researcher measure the perception of the respondents toward the information which they get from YouTube. Each respondent was asked 10 statements to know the perception of the respondents

regarding YouTube in agricultural content dissemination. Against each statement, a weight of 5, 4, 3, 2 and 1 was given for strongly agree, agree, undecided, disagree and strongly disagree respectively. Thus the score could range from 10-50, where 10 means strongly disagree and 50 meaning strongly agree for each statement. The respondents were classified into following categories according to their perception on status of YouTube in agricultural content dissemination as shown in Table 3.2.

Table 3.2 Respondent's perception score on status of YouTube in agricultural content dissemination

Categories	Score
Low	0-17
Medium	18-33
High	34-50

To compare the perception of the respondents on status of YouTube in agricultural content preparation, a Respondents Perception Index (RPI) was calculated by using the following formula:

$$\text{RPI} = \text{Nsa} \times 5 + \text{Na} \times 4 + \text{Nu} \times 3 + \text{Nda} \times 2 + \text{Nsda} \times 1$$

Where,

RPI= Respondent Perception Index

Nsa= Number of respondents rated the statements as strongly agree

Na= Number of respondents rated the statements as agree

Nu= Number of respondents rated the statements as undecided

Nda= Number of respondents rated the statements as disagree

Nsda= Number of respondents rated the statements as strongly disagree

Respondents Perception Index is the ratio of the observed score on status of agricultural content dissemination to possible score on status of agricultural content dissemination and multiplied by 100. It was calculated by following formula:

$$\text{Respondents Perception Index} = \frac{\text{observed score on status of content dissemination}}{\text{possible score on status of content dissemination}} \times 100$$

3.5.2.3 Content creator's perception of prospects regarding content preparation of YouTube and virtual video channels

In this study, the researcher took interview with three agricultural content creators of agri-based YouTube channels over phone. Three of them were DAE personnel and besides their main profession they operate YouTube channel to disseminate their knowledge what they achieve in the field level, new innovation and technology. Each content creator was asked 6 statements to know the content creator's perception regarding prospects of YouTube in agricultural content preparation. Against each statement, a weight of 5, 4, 3, 2 and 1 was given for strongly agree, agree, undecided, disagree and strongly disagree respectively. Thus the score could range from 10-30, where 10 means strongly disagree and 30 means strongly agree for each statement. The prospects were classified into following categories according to their perception on prospects of YouTube in agricultural content preparation as shown in Table 3.3.

Table 3.3 Content creator's score on the prospects of YouTube in agricultural content preparation

Categories	Score
Low number of prospect	10
Medium number of prospect	11-20
High number of prospect	21-30

To compare the perception of the content creators of prospects regarding YouTube in agricultural content preparation, a Content creator Perception Index (CPI) was calculated by using the following formula:

$$\text{CPI} = \text{Nsa} \times 5 + \text{Na} \times 4 + \text{Nu} \times 3 + \text{Nda} \times 2 + \text{Nsda} \times 1$$

Where,

CPI= Content creator Perception Index

Nsa= Number of content creator rated the statements as strongly agree

Na= Number of content creator rated the statements as agree

Nu= Number of content creator rated the statements as undecided

Nda= Number of content creator rated the statements as disagree

Nsda= Number of content creator rated the statements as strongly disagree

Content Creators Perception Index is the ratio of the observed score on prospects of agricultural content preparation to possible score on prospects of agricultural content preparation and multiplied by 100. It was calculated by following formula:

Content Creators Perception Index

$$= \frac{\text{observed score of prospects regarding content preparation}}{\text{possible score of prospects regarding content preparation}} \times 100$$

3.5.2.4 Respondents' perception regarding prospects of YouTube and virtual video channels in agricultural content dissemination

The prospects of YouTube was measured on the basis of opinion provided by the respondents regarding the extent of accuracy, simplicity, and effectiveness of statements. Each respondent was asked 6 statements to know the perception on prospects of YouTube regarding agricultural content dissemination. Against each statement, a weight of 5, 4, 3, 2 and 1 was given for strongly agree, agree, undecided, disagree and strongly disagree respectively. Prospects of YouTube and virtual video channels in agricultural content dissemination is included in the interview schedule as item number 15 and Appendix A. The prospects were classified into following categories according to their perception on prospects of YouTube in agricultural content dissemination as shown in Table 3.4

Table 3.4 Respondent's score on the prospects of YouTube in agricultural content dissemination

Categories	Score
Low	10
Medium	11-20
High	21-30

$$\text{RPI} = \text{Nsa} \times 5 + \text{Na} \times 4 + \text{Nu} \times 3 + \text{Nda} \times 2 + \text{Nsda} \times 1$$

Where,

RPI= Respondent Perception Index

Nsa= Number of respondents rated the statements as strongly agree

Na= Number of respondents rated the statements as agree

Nu= Number of respondents rated the statements as undecided

Nda= Number of respondents rated the statements as disagree

Nsda= Number of respondents rated the statements as strongly disagree

Respondents Perception Index is the ratio of the observed score on prospects of YouTube in agricultural content dissemination to possible score on prospects of YouTube in agricultural content dissemination and multiplied by 100. It was calculated by following formula:

$$\text{Respondent Perception Index} = \frac{\text{observed score on prospects in content dissemination}}{\text{possible score on prospects in content dissemination}} \times 100$$

3.5.2.5 Respondent's perception of some open-type questions related to YouTube and virtual video channels

Some open-type questions were asked to the respondents to know the point of view of respondents' perception broadly. The questions are analyzed descriptively in the chapter of results and discussion. The questions were:

- i. When do you watch YouTube?
- ii. Do You Think information through YouTube is as effective as face-to-face extension contact?
- iii. Do you think radio and television are always better options than YouTube for receiving agriculture-related information?
- iv. Which device do you use to watch videos?
- v. Is there any virtual video channel except YouTube?

3.5.2.6 A quasi case study of content creator

The researcher talked with 3 content creators to know their in-depth perception of YouTube. Because YouTube is not only for the audience but also for the content creators. They are the leading supplier of the contents. 3 content creators were selected because content creators are limited. All the data about the prospects and problems of YouTube were collected from the respondent's points of view. But if the researcher did not listen to the content creators about their perception of YouTube and their problems during content creation and dissemination, the objectives of the research did not accomplish. That's why the researcher contacted with the content creators to conduct the research study smoothly.

3.5.2.7 Content Analysis of Agri-based YouTube Channel

5 popular agri-based YouTube Channels' contents were analyzed based on their views, likes, comments, content popularity. As per the scope of this investigation, 5 most popular Youtube channels (Shykh Seraj, *Math Krishi*, *krishi Bioscope*, *Deepto Krishi*, *Amader Krishi Digonto*) contents were viewed and pertinent data were collected and a Table was formed where content type, like, views, video quality, audio quality, duration (content time, on-air), comments (positive, negative) were included. The video contents were analyzed for 3 months (January-March, 2023).

3.5.2.8 Respondents' perception of problems of YouTube and virtual video channels regarding prepared content

To find out the problems of agri-based YouTube contents several consultation talks were hold with the respondents. The score obtained from all the problems were added together to get the problems confrontation score for a respondent. Each respondent was asked 4 statements of problems to know the perception on problems of YouTube regarding agricultural content preparation. The problems of YouTube in agricultutal content preparation was related as highly severe, severe, moderately severe and not at all and the rating scale was assigned as 3,2,1 and 0 respectively. The possible range of the score was 0 to 12 for 4 statements. The problems were classified into following categories according to their perception on problems of YouTube in agricultural content preparation as shown in Table 3.5.

Table 3.5 Respondent's score on the problems of YouTube and virtual video channels of prepared content

Categories	Score
Low number of problem	1-4
Medium number of problem	5-8
High number of problem	9-12

The severity of a problem of YouTube in agricultural content preparation was determined based on Problem Severity Index (PSI). It was determined by the following formula,

$$PSI = Na \times 0 + Nb \times 1 + Nc \times 2 + Nd \times 3$$

Where,

PSI= Problem Severity Index

Na= Number of respondents did not extent the problem at all

Nb= Number of respondents extented the problem and rated as less severe

Nc= Number of respondents extented the problem and rated as severe

Nd= Number of respondents extented the problem and rated as highly severe

After determination of PSI, the severity of the problem was determined by following formula

$$\text{Problem Severity Index} = \frac{\text{observed score of problems in content preparation}}{\text{possible score of problems in content preparation}} \times 100$$

3.5.2.10 Respondents' perception regarding problems of YouTube and virtual video channels in agricultural content dissemination

To find out problems regarding agricultural contents some statements of the problem were asked to the respondents. The score obtained from all the problems were added together to get the problems confrontation score for a respondent. Each respondent was asked 10 statements of problems to know the perception on problems of YouTube regarding agricultural content dissemination. The problems of YouTube in agricultutal content dissemination was related as highly severe, severe, moderately severe and not at all and the rating scale was assigned as 3,2,1 and 0 respectively. The possible range of the score was 0 to 30. The problems were classified into following categories according to their perception on problems of YouTube in agricultural content dissemination as shown in Table 3.7.

Table 3.7 Problems confrontation scores of YouTube in agricultural content dessimination

Categories	Score
Low	0-10
Medium	11-20
High	21-30

The severity of a problem of YouTube in agricultural content dessimination was determined based on problem severity index (PSI). It was determined by the following formula,

$$\text{PSI} = \text{Na} \times 0 + \text{Nb} \times 1 + \text{Nc} \times 2 + \text{Nd} \times 3$$

Where,

PSI= Problem Severity Index

Na= Number of respondents did not extent the problem at all

Nb= Number of respondents extented the problem and rated as less severe

Nc= Number of respondents extented the problem and rated as severe

Nd= Number of respondents extented the problem and rated as highly severe

After determination of PSI, the severity of the problem was determined by following formula:

$$\text{Problem Severity Index} = \frac{\text{observed score of problems in content dissemination}}{\text{possible score of problems in content dissemination}} \times 100$$

3.5.3 Measurement of independent variables

Eleven socio-economics characteristics of respondents were considered as independent variables of this study. The procedure followed in measuring the independent variables has been discussed in the subsequent sections.

3.5.3.1 Age

The age of an individual is one of the important factors pertaining to his personality makeup (Smith and Zope,1970) which can play an essential role in socio-economic development. Age was measured in actual years. It was expressed in terms of complete years. The respondent's age were classified into three categories which are shown in the following Table 3.8

Table 3.8 Categories of respondents according to their age

Categories	Age limits (years)
Young aged	≤ 35
Middle aged	36-55
Old aged	> 55

3.5.3.2 Family size

Family size means the number of people who reside together as part of the same household and are related by birth, marriage, or adoption. The scoring was done by actual number as mentioned by the respondent. On the basis of family size, the respondents were classified into three categories shown in the following Table 3.9

Table 3.9 Categories of respondents according to their family size

Categories	No. of family members
Small sized	≤ 4
Medium sized	5-7
Large sized	> 7

3.5.3.3 Educational status

Educational status refers to the official confirmation, usually in the form of a certificate, diploma, or degree, certifying the successful completion of an education program or a stage of a program. It was expressed in the terms of year of schooling. The educational status of the respondents was measured by asking them the actual year of schooling during the interview. The respondent who had no education, his score was given '0' and the respondent who can only sign his name, was scored 0.5. On the basis of educational status, the respondents were classified into the following categories which was shown in the following Table 3.10.

Table 3.10 Categories of respondents according to their educational status

Categories	Score (Year of schooling)
Illiterate	0
Can sign only	0.5
Primary	1-5
Secondary	6-10
Higher secondary	11-12
Undergraduate	13-16
Postgraduate	>16

3.5.3.4 Farm size

Farm size refers to the total area of land owned by a respondent including homestead area. It also includes the land obtained from others or sharecropping/leasing or taken from others on lease. The farm size was calculated using the following formula,

$$FS = A1 + A2 + 1/2(A3 + A4) + A5 + A6$$

Where,

FS= Farm size

A1= Homestead area

A2= Own land under cultivation

A3= Land given to others on barga

A4= Land taken from others on barga

A5= Land taken from others on lease

A6= Others

The farm size was recorded into local units and then converted into hectares. On the basis of farm size, the respondents were classified into the following categories which was shown in the following Table 3.11.

Table 3.11: Categories of respondents according to their farm size

Categories	Score (hectare)
Landless	≤ 0.02
Marginal	0.02-.20
Small	0.21-1.0
Medium	1.01-3.00
Large	> 3

(BBS, 2016)

3.5.3.5 Monthly family income

Family income refers to the amount of money, property, and other transfers of value received over a set period of time by the members of a family, in exchange for services or products. It was estimated by considering the total income last year from different agricultural and non-agricultural sources. The classification of family income was purposively categorized in this research study because the respondents belonged to metropolitan areas and their living status and monthly income was comparatively better than in rural area. The respondents were classified into the following categories according to monthly income as shown in Table 3.12

Table 3.12: Categories of respondents according to their monthly family income

Categories	Take (BDT)
Low income	≤ 20000
Medium income	20001-35000
High income	> 35000

CHAPTER IV

RESULTS AND DISCUSSION

The recorded data in accordance with the objectives of the study were presented. A meaningful and significant discussion was made of the findings with relevant interpretation under this chapter. The study was about, "Prospects and Problems of YouTube and Virtual Video Channels in Agricultural Content Preparation and Dissemination". The findings of the study have been presented in the following sections;

- i. Prospects and status of YouTube and virtual video channel applications in the provision of agricultural information and technology dissemination.
- ii. The problems of YouTube faced by the content creators and the respondents.
- iii. The relationship between the selected characteristics of the respondents and the perception of respondents towards YouTube in agricultural content preparation and dissemination.

4.1 Relative position (rank order) of the statements related to respondent's perception on status of YouTube and other virtual video channels in agricultural content preparation

The data presented in Table 4.1 showed different status of YouTube and virtual video channels in agricultural content preparation and their relative rank order position perceived by the respondents. The score of range from 485 to 275 where possible range was 111 to 555.

Table 4.1 Relative position (rank order) of the statements related to respondent's perception of status of YouTube and virtual video channels on prepared content

Sl. No.	Status	Strongly Agree (5)	Agree (4)	Undecided (3)	Dis-agree (2)	Strongly Disagree (1)	Score	RPI	Rank
1	All time good quality content are published on YouTube	5×19	4×55	3×3	2×23	1×5	375	71.43	5 th
2	Views, Likes, Durations can be considered to judge the agri-contents quality of YouTube	5×0	4×30	3×7	2×66	1×2	275	52.38	9 th

3	Content are made according to farmer's need and demand	5×8	4×87	3×1	2×13	1×0	417	79.43	4 th =
4	The educational background of content creators are agriculture based	5×8	4×32	3×15	2×48	1×2	311	59.24	8 th
5	Farmer watch YouTube content to learn and adopt new technologies.	5×20	4×82	3×2	2×1	1×0	436	83.04	2 nd
6	Regular activities of different agri-institution are found on other virtual media besides YouTube	5×10	4×36	3×53	2×6	1×0	365	69.52	6 th
7.	YouTube helps in increasing farming production	5×29	4×66	3×6	2×4	1×0	435	82.85	3 rd
8.	Latest update of farming is found on YouTube channel	5×13	4×43	3×15	2×33	1×0	348	66.29	7 th
9	Farmers are satisfied with the message from YouTube	5×33	4×55	3×1	2×14	1×1	417	79.43	4 th =
10.	YouTube provides retrievable agricultural information	5×65	4×40	3×0	2×0	1×0	485	92.38	1 st

From Table 4.1 it was noticeable that the statement “YouTube provides retrievable agricultural information” for the status of YouTube in agricultural content preparation secured the first rank. “Farmer watches YouTube content to learn and adopt new technologies” secured the second position. Another main important status of YouTube was “YouTube helps in increasing

farming production, Content are made according to farmer's need and demand, Farmers are satisfied with the message from YouTube" which was ranked third and fourth position respectively. The last two statements both secured the same position and it was ranked fourth.

4.2 Respondents perception of status of YouTube in agricultural content preparation

Results presented in Table 4.3 indicates that majority of the respondent's perception on status of YouTube in agricultural content preparation was high (81%) and 19% was medium status.

Table 4.2 Distribution of respondents according to their perception of status of YouTube and virtual video channels on prepared content

Categories	Score	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Low	1-17	0	0	36.43±4.05	24	44
Medium	18-33	20	19			
High	34-50	85	81			
Total		105	100		Possible range (10-50)	

SD=Standard Deviation

There were no respondents whose perception on the status about YouTube was low category. 81% of the respondent's perception on status in agricultural content preparation was high which means YouTube is very influential and has a large social network. Respondents were satisfied with the information from the YouTube content. The minimum and maximum score was 24 and 44 respectively with a mean of 36.43 and 4.05. The possible range was 10-50.

4.3 Relative position (rank order) of the statements related to respondent's perception on status of YouTube and virtual video channels in agricultural content dissemination

The data presented in Table 4.3 showed different status of YouTube and virtual video channels in agricultural content dissemination and their relative rank order position perceived by the respondents. The observed range was 251 to 501 where possible range was 111 to 555.

Table 4.3 Relative position (rank order) of the statements related to respondents' perception of status of YouTube and virtual video channels in agricultural content dissemination

SL No	Status	Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly Disagree (1)	Score	RPI	Rank
1.	For young farmers and professional agriculturists, YouTube is a popular medium for information seeking	5×75	4×28	3×0	2×2	1×0	491	93.52	2 nd
2.	Agricultural new technologies can be easily disseminated through YouTube	5×85	4×72	3×0	2×2	1×0	501	95.43	1 st
3.	Any new technology first share on YouTube	5×85	4×4	3×38	2×5	1×15	251	47.80	10 th
4.	Farmers usually adopt agricultural information from YouTube and other virtual video channels	5×6	4×79	3×5	2×15	1×0	391	74.48	8 th
5.	YouTube can arise the commercial interest in farming	5×23	4×70	3×0	2×12	1×0	419	79.8	6 th
6.	People quickly get solutions of the problem in farming from YouTube	5×46	4×57	3×0	2×2	1×0	462	88	3 rd
7.	Farmers regularly watch agri-based videos	5×7	4×33	3×5	2×59	1×1	301	57.33	9 th

	and other virtual channels								
8.	YouTube publishers can establish a personal brand and generate money	5×16	4×86	3×3	2×0	1×0	433	82.48	5 th
9.	All types of content related to farming found on YouTube and virtual video channels	5×7	4×83	3×1	2×14	1×0	398	75.8	7 th
10.	Virtual video channels can be used as an agricultural advertising and marketing places.	5×30	4×67	3×5	2×3	1×0	439	83.62	4 th

From Table 4.3 it was clear that the statement of “Agricultural new technologies can be easily disseminated through YouTube” secured the first rank. “For young farmers and professional agriculturists, YouTube is a popular media for information seeking ” secured the second position. “Any new technology first share on YouTube” was ranked the last position and it was 10. Many of the respondents thought that any new information and technology was first share on Facebook and many of them were undecided that whether the new technology was first share on YouTube or not, they had no idea.

4.4 Respondent’s perception on status of YouTube and virtual video channels in agricultural content dissemination

Results presented in Table 4.4 indicates that majority of the respondent’s perception on status of YouTube in agricultural content dissemination was high (94.3%) and then 5.7% was medium status.

Table 4.4 Distribution of respondents according to their perception of status of YouTube and virtual video channels in agricultural content dissemination

Categories	Score	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Low	1-17	0	0	39.21±3.39	28	45
Medium	18-33	6	5.7			
High	34-50	99	94.3			
Total		105	100	Possible range (0-50)		

Similarly, it could be predicted that they might have the same status on virtual video channels in agricultural content dissemination if the channels are made easily available and accessible. The minimum and maximum score was 28 and 45 respectively with a mean of 39.21 and standard deviation of 3.39. The Possible range was 10-50.

4.5 Relative position (rank order) of the statements related to content creator's perception regarding prospects of YouTube and virtual video channels in agricultural content preparation

To know the content creator's perception on prospects of YouTube the researcher talked with the content creators and the findings were presented in the following Table 4.5. The possible range for each statement was 3-15. The observed range was 9-15.

Table 4.5 Relative position (rank order) of the statements related to content creator's perception of prospects of YouTube and virtual video channels in agricultural content preparation

Sl. No.	Prospects	Strongly Agree (5)	Agree (4)	Undecided (3)	Dis-agree (2)	Strongly Dis-agree (1)	Score	CPI	Rank
1.	Many people watch YouTube videos	5×3	4×0	3×0	2×0	1×0	15	100	1 st =
2	Content creators feel happy to do this work	5×2	4×1	3×0	2×0	1×0	14	93.3	2 nd
3	Many people can be reached in a limited time	5×3	4×0	3×0	2×0	1×0	15	100	1 st =
4	International coverage is possible	5×3	4×0	3×0	2×0	1×0	15	100	1 st =

5	Necessary editing can be done easily	5×1	4×0	3×0	2×2	1×0	9	60	3 rd
6	Knowledge can be disseminated at a very low cost	5×3	4×0	3×0	2×0	1×0	15	100	1 st =

Among the 6 statements related to prospects in agricultural content preparation, four statements were ranked in the first position. That means all of the content creators were strongly agree with those statements. The statements were “Many people watch YouTube videos, Many people can be reached in a limited time, International coverage is possible, and Knowledge can be disseminated at a very low cost”. The other statements were “Content creators feel happy to do this work, Necessary editing can be done easily” which were ranked third and fourth position respectively. The content creators expressed that video editing is a time-consuming task. It can not be done very easily that’s why they kept it in the last position

4.6 Content creator’s perception regarding prospects of YouTube and virtual video channels in agricultural content preparation

Results presented in Table 4.6 indicate all the content creators (100%) had highly scored on prospects of YouTube in the agricultural content preparation. The minimum and maximum score was 26 and 30 respectively with a mean of 27.67 and standard deviation of 2.08. The Possible range was 6-30.

Table 4.6 Distribution of content creators according to their perception of prospects of YouTube and virtual video channels in agricultural content preparation

Categories	Score	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Low	0-10	0	0	27.67±2.08	26	30
Medium	11-20	0	0			
High	21-30	3	100			
Total		3	100	Possible range (0-30)		

The content creators expressed that YouTube has a high potential to disseminate knowledge, innovation, technologies, etc. with a large number of people in a very short time. They also notified that as they were DAE personnel and also operate YouTube channels, it’s a chance for

them to spread out authentic information, scientific research, different problems of farming, and so on related to farming through YouTube.

4.7 Relative position (rank order) of respondent's perception regarding prospects of YouTube and other virtual video channels in agricultural content dissemination

The data presented in Table 4.7 showed different prospects of YouTube and virtual video channels in agricultural content dissemination and their relative rank order position perceived by the respondents. The observed range was 293 to 512 whereas the possible range was 111 to 555.

Table 4.7 Relative position (rank order) of the statements related to respondent's perception regarding prospects of YouTube and virtual video channels in agricultural content dissemination

Sl. No.	Prospects	Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly Disagree (1)	Score	RPI	Rank
1.	YouTube provides new concepts about agricultural technology	5×15	4×61	3×17	2×11	1×1	373	71	5 th
2	Maintenance cost is not so high	5×1	4×48	3×1	2×38	1×17	293	55.8	6 th
3	YouTube can be used anywhere	5×92	4×13	3×0	2×0	1×0	512	97.5	1 st
4	Information can be stored and used as per one's need	5×67	4×38	3×0	2×0	1×0	487	92.8	3 rd
5	Media coverage can be achieved to an extent that is not possible by the Extension Department	5×19	4×57	3×22	2×7	1×0	403	76.8	4 th
6	Learning by watching videos make it easier to remember.	5×50	4×48	3×0	2×7	1×0	486	92.6	2 nd

“YouTube can be used anywhere” was the first ranked for prospects of YouTube in content dissemination. The statement which ranked the second position was “Learning by watching videos makes it easier to remember”. The respondents expressed that as the mobile phone can be carried out anywhere so it is possible to watch videos on Youtube anywhere and anytime if the internet package is available. YouTube is an audio-with-video sharing platform at a time, so watching videos make any information easier to remember. Most of the respondents informed that maintenance costs can be reduced to make it more available to all people. Purchasing internet package comparatively high. So most of them disagree with that statement and the statement was “Maintenance cost is not so high”. Although some of the respondents agree with this statement who were wifi users. This statement was ranked the sixth position.

4.8 Respondent's perception regarding prospects of YouTube and virtual video channels in agricultural content dissemination

Results presented in Table 4.8 indicates that the majority of the respondent's perception of prospects of YouTube in agricultural content dissemination was high (94.3%) and then 5.7% was medium status.

Table 4.8 Distribution of respondents according to their perception regarding prospects of YouTube and virtual video channels in agricultural content dissemination

Categories	Score	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Low	0-10	0	0	24.33±2.05	20	29
Medium	11-20	6	5.7			
High	21-30	99	94.3			
Total		105	100	Possible range (0-30)		

The minimum and maximum score was 20 and 29 respectively with a mean of 24.33 and standard deviation of 2.05. The Possible range was 6-30.

4.9 A descriptive analysis of some open type question to the respondents

To know the perception broadly of the respondents some open-type questions were asked about YouTube. The questions were analyzed descriptively. The questions are given in the following section.

i. When do you watch YouTube?

Most of the respondents replied that they watch YouTube when they are free or when they need to know something. The old-aged respondents replied that they watch YouTube when they are free.

ii. Do you think information through YouTube is as effective as face to face extension contact?

Most of the respondents replied that YouTube is as effective as face to face extension contact. The respondents who are all in all dependent on YouTube for seeking any information they thought YouTube is more effective. But those respondents who had contact with extension personnel they think face to face contact is more effective than YouTube.

iii. Do you think Radio and Television are always better options than YouTube for receiving agricultural-related information?

All the respondents replied that YouTube is a better option to receive any information because all time all types of programs are not available on Radio or Television. Moreover, now a days radio is not used at all. But on YouTube, one can search for any content anytime according to their demand or necessity.

iv. Which device you use to watch video?

All the respondents replied that they use mobile phones to watch videos on YouTube. Because a Mobile can be carried out anywhere any time. So it is easy to watch videos on a mobile phone.

v. Is there any virtual video channel except YouTube?

All most maximum respondents had no idea about it. They were totally unknown that there are also virtual video channels except YouTube. Only a few respondents knew about it but they very rarely used or didn't use at all it because what they need, can be easily found on YouTube.

4.10 Content Analysis of 5 Different YouTube channels

Content analysis of different YouTube channels were done to know the likes, views, audio-video quality, duration, comments of a content. It helped to know how YouTube influence others, what type of contents audience like most, their attitude or adoption pattern towards the information from YouTube and so on. The content were analysed from January to March, 2023.

4.10.1 Shykh Seraj

‘Shykh Seraj’ YouTube channel is the top most popular YouTube channel in Bangladesh. The content type of this channels are diversified.

Table 4.9 Available information of “Shykh Seraj” YouTube channel

SL No.	Content type		Likes [k= 1000]	Views [k= 1000]	Video quality	Audio quality	Duration		Comments	
							Content time	On air	Positive	Negative
A	Sunflower		783	25k	Good	Good	17 min 56sec	2 days	78	0
B	1	Rooftop Gardening	781	31k	Good	Good	22min 11 sec	3 days	92	0
	2	RoofTop Gardening	639	25k	Good	Good	10min 59sec	3weeks	44	0
	3	Rooftop Gardening	2.8k	219k	Good	Good	21min 25sec	3weeks	136	0
	4	Rooftop Gardening	678	28k	Good	Good	14min 4sec	3 months	50	0
C	Onion seed		1.1k	35k	Good	Good	2min 57sec	4 days	76	0
D	Poultry Farm		3.4k	159k	Good	Good	21min 5sec	2 weeks2	223	3
E	Fruits									
1	Avacado		9.9k	575k	Good	Good	16min 39sec	1 month	627	0
2	Citrus		23k	1.7M	Good	Good	26min 34sec	2 months	890	0
F	Ganabhaban farmlands		12k	3M	Good	Good	53min 57sec	1 month	9.2k	0

From the Table 4.9 it was clear that the audience like to watch the video related to “Ganabhaban farmland”. It had more views compare to others. In this video various types of farming in Ganabhanan was showed. Then they like to watch fruit related videos. Audience like more citrus related content, then avacoda, poultry farm, onion seed, roof top gardening, sunflower respectively. The video and audio qualites were good enough. The duration was on an average 20 minutes (content time) and these videos were uploaded from january to March. All most all the comments were positive.

4.10.2 *Krishi Bioscope*

It is a another popular agri-based YouTube channel. Different type of agri-related content were found here which is useful for the audience.

Table 4.10 Available information of “Krishi Bioscope” YouTube channel

Sl. No.	Content type	Likes [k=1000]	Views [k=1000]	Video quality	Audio quality	Duration		Comments	
						Content time	On air	Positive	Negative
A	Insect Control	116	4.8 k	Good	Good	4min 48sec	8 days	11	0
B	Vegetables	175	10k	Good	Good	3min 41 sec	3 weeks	16	0
C	Fruits								
1	Orange	666	24k	Good	Good	11 min 37 sec	2 months	73	4
2	Malta	545	15k	Good	Good	14min 27sec	2 months	45	1
3	African Orange	2.1k	89 k	Good	Good	11min 58sec	3 months	154	5
4	Malta	927	35k	Good	Good	16min 37sec	3 months	96	1

From the Table 4.10 it reveals that the audience like to watch the video related to African Orange. It had 2.1k likes and also it had more views. In this YouTube channels the audience preference was african orange, malta, orange, vegetable, insect control related content respectively. Audio and video qualities were good. The duration was on an average 10 minutes (content time) and these videos were uploaded from january to March. Almost all the comments were positive. Rarely a few negative comments were found. It might be due to personal conflict with the content creator or the contents were not relevant to them.

4.10.3 Deepto Krishi

Deepto Krishi is YouTube channel where the Deepto Krishi team travels all over the country gathering stories of people engaged in agriculture, livestock, fisheries, farming, etc.

Table 4.11 Available information of “Deepto Krishi” YouTube channels

Sl. No.	Content type	Likes [k=1000]	Views [k=1000]	Video quality	Audio quality	Duration		Comments	
						Content time	On air	Positive	Negative
A	Vegetable								
1	Onion Seed	45	1.3k	Good	Good	22min 7sec	3days	3	0
2	Puishak	8	334	Good	Good	3min 59sec	3days	0	0
B	Poultry farm								
1	Layer farm	126	3.7k	Good	Good	2min 31sec	4days	10	0
2	Broiler Farm	43	1.3k	Good	Good	4min 14sec	5days	2	0
C	Fruits								
1	Boroi	25	1.1k	Good	Good	5min 13sec	6days	3	0
2	Guava	41	849	Good	Good	8min	6days	2	0
D	Wheat	19	881	Good	Good	8min 4sec	8days	0	0
E	Vermico-mpost	46	1.7k	Good	Good	21min 25sec	3 weeks	4	0
F	Oil Crops	23	777	Good	Good	17min 49secs	1 month	3	0
G	Seasonal Fruits and Vegetables	10	482	Good	Good	20min 14sec	2 months	1	0
H	Deepto Krishi Songlap	4	1k	Good	Good	7min 31sec	3 months	1	0

From the Table 4.11 it is noticeable that different types of mixed contents were published in this channel. The audience like to watch the video, related to Layer farm . It had 126k likes

and also it had more views (3.7k). In this YouTube channels the audience preference was layer farm, vermicompost, broiler farm, onion seed, deep to krishi songlap, guava, wheat, oil crops, puishak, seasonal fruit and vegetables related content respectively. Audio and video qualities were good. The duration was on an average 11 minutes (content time) and these videos were uploaded from January to March. All the comments were positive. There was no negative comment.

4.10.4 Math Krishi

Math krishi is a agri-based YouTube channel which disseminate very useful information through YouTube.

Table 4.12 Available information of “Math Krishi” YouTube channels

Sl. No.	Content type	Likes [k=1000]	Views [k=1000]	Video quality	Audio quality	Duration		Comments	
						Content time	On air	Positive	Negative
A	Vegetable								
1	Radish	4	359	Good	Good	12 min	4days	8	0
2	Broccoli	22	450	Good	Good	13min 44 sec	3 weeks	10	0
3	Floating Vegetable	17	597	Good	Good	17min 14 sec	1 month	6	0
4	Red Amaranth	23	782	Good	Good	10 min 25 sec	1 month	6	0
5	Inter-cropping	35	1k	Good	Good	16min 8sec	1 month	9	0
6	Chilli	26	736	Good	Good	14min 3sec	2 months	9	0
7	Country bean	33	950	Good	Average	1min 24sec	2 months	13	0
B	Fruits								
1	Straw-berry	27	1k	Good	Good	16min 51sec	3 months	8	0
C	Flower	11	271	Good	Average	8min 2sec	2 weeks	1	0
D	Grain								
1	Black rice	21	637	Good	Good	15min 53sec	2 months	4	0
2	Borodhan SL8H	54	3k	Good	Good	17min 47sec	2 months	19	2
E	Pulse								
1	BARI mosur 6	9	392	Good	Good	10min 19sec	2 months	3	0

F	Oats cultivation	16	456	Good	Good	11min 28 sec	3 months	6	0
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The Table 4.12 reveals that different types of contents were uploaded in this channels. The viewers prefer most Borondhan SLGH variety cultivation because it had more views (3k) compared to others. Then the content of intercropping, strawberry cultivation, pulse, vegetables related content were their next choice respectively according to the views and likes. All most all the audio and video qualities were good. The duration was on an average 13 minutes (content time) and these videos were uploaded from January to March. All most all the comments were positive. There was one or two negative comment which is very negligible.

4.10.5 Amader Krishi Digonto

This YouTube channel is recently open to disseminate information. Only 3 videos were uploaded in this channel

4.13 Available information of “Amader Krishi Digonto” YouTube channels .

Sl. No.	Content type	Likes [k=1000]	Views [k=1000]	Video quality	Audio quality	Duration		Comments	
						Content time	On air	Positive	Negative
1	Alternate wetting and drying	36	1.8k	Good	Good	3min 2 sec	1year	1	0
2	Kul cultivation	4	49	Good	Good	4min 49sec	1year	1	0
3	Artificial pollination	15	220	Good	Good	5min 32 sec	2 years	3	0

3 videos were found in this YouTube channel. 1.8k viewers watched the video of alternate wetting and drying, the audience like this content more compare the rest of two. Then they liked artificial pollination, kul cultivation respectively. Audio and video qualities were good enough. The duration was on an average 4 minutes (content time) and these videos were uploaded from July 2020 to July 2021. All the comments were positive. The researcher talked with the content creator of this channels. He informed that he operates a Facebook page where he is more active than YouTube channels. As he is a DAE personnel, so he gets few time for YouTube channel due to his busy life but regularly he is active in his Facebook page and disseminating his field level knowledge to the people.

Now if the researcher go for the summerization for the 5 YouTube Channels it can be concluded that YouTube provides very useful, time demanding information to the audience. Most of the content are vegetables, fruits, crops cultivation related content. The content creators try to disseminate qualityful content to the audience. The video and audio qualities of the contents were good enough for the audience and the content creator can also know the audience's demand through the commenting section. So, overall it can be called a digital information service system for all level of people with a short time.

4.11 A quasicase study of the content creators

An interview was completed with the 3 popular channel's content creators over the phone. Because of the limitation of content creators, only 3 were interviewed, and as they were not available in the Khulna district so it did not possible to take interviews face-to-face. This was done to know their perception of YouTube from their point of view. To conduct this research study it was necessary to know their thought, their aim and their problem, etc as they disseminated content. All the content creators were Department of Agricultural extension (DAE) personnel and they are the founder of "*Krishi Bioscope*", "*Math Krishi*", "*Amader krishi Digonto*" YouTube channels. They believe that YouTube and other streaming platforms have not only been created for sharing content but also it is organized in a way that anyone can share content, download it, mention it to others, comment on it, or can judge content. So creating content is not so much easy. If any wrong information is shared, it can be harmful to the plants. Moreover, if any wrong information is spread from a YouTube channel, the audience can lose their trust in that YouTube channel. They also included that, there are many YouTube channels on YouTube but all the content creators can not be activated on youTube all time. Moreover, all the content creators don't give accurate information all time because of their lack of knowledge. The content creators thought that the knowledge level of content creators with an agriculture background can make meaningful, authentic content than non-agriculture background content creators. They also included that, good quality content with positive comments inspired the content creators but sometimes they lose their inspiration due to some negative comments intensionally, which may be due to personal conflict. But constructive negative comments help the content creators to do better next. As YouTube is a very popular social media, it can spread more information than other media in a very short time and the viewers are worldwide distributed. The problem the content creators are faced that internet purchasing is comparatively high and it takes time to make content and to edit it. Nevertheless, they feel happy to share their agri-related knowledge through YouTube. They gave a message

to the young generation, to make clear, meaningful, quality, demandable content for the viewers so that the people can apply it on their fields or farm and can get benefitted.

4.12 Relative position (rank order) of the statements related to respondent's perception of problems of YouTube and virtual video channels in agricultural content preparation

The researcher's tried to find out the problem related to content preparation in the view of respondent's perception. The data presented in Table 4.14 showed relative (rank order) position of the statements related to problem of content preparation. The observed range was 73-250 and the possible range was 0-315.

Table 4.14 Relative position (rank order) of the statements related to respondent's perception of problems of YouTube and virtual video channels toward prepared content

Sl. No.	Problems	Not at all (0)	Moderately severe (1)	Severe (2)	Highly severe (3)	Score	PSI	Rank
1.	Video quality is not good enough all time	0×33	1×51	2×21	3×0	93	29.52	3 rd
2.	YouTubers don't make agri-based content according to farmer's need	0×14	1×52	2×28	3×11	141	44.76	2 nd
3.	Unnecessary talks are sometimes used to make the video lengthy	0×0	1×10	2×45	3×50	250	79.36	1 st
4	audio quality is not good enough all time	0×45	1×47	2×13	3×0	73	23.17	4 th

“Unnecessary talks are sometimes used to make the video lengthy” this was the major problem in the case of content preparation in the view of respondent's perception. Most of them thought that to make the video more lengthy, the content creators sometimes use unnecessary words. Sometimes it was difficult to find out the main message from the content. Video and audio quality were minor problem because most of the time they found it good.



4.13 Respondent's perception on problems of YouTube and virtual video channels in agricultural content preparation

The perception of respondents of problems of YouTube in agricultural content preparation was medium (57.1%) to low (37.1%).

Table 4.15 Distribution of respondents according to their perception regarding problems of YouTube and virtual video channels toward prepared content

Categories	Score	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Low	1-4	39	37.1	5.33±2.04	2	10
Medium	5-8	60	57.1			
High	9-12	6	5.7			
Total		105	100	Possible range (0-12)		

Only 5.7% of the respondents marked it as high. The minimum and maximum score was 2 and 10 respectively with a mean of 5.33 and standard deviation of 2.04. The Possible range was 0-12.

4.14 Relative position (rank order) of the statements related to content creator's perception regarding problems of YouTube and virtual video channels in agricultural content preparation

The data presented in Table 4.16 showed different problems of YouTube in the agricultural content preparation. As content creators were not easily available, the researcher contacted three content creators to know their problems when they create any agri-based content. Table 4.16 showed those problems and their relative position.

Table 4.16 Relative position (rank order) of the statements related to content creator's perception on problems of YouTube and virtual video channels in agricultural content preparation (for the content creators)

Sl. No.	Problems	Not at all (0)	Moderately severe (1)	Severe (2)	Highly severe (3)	Score	CPI	Rank
1.	Content creators do not have vast knowledge in agriculture	0×1	1×1	2×1	3×0	3	16.67	3 rd
2.	Internet purchasing is not	0×0	1×0	2×2	3×1	7	38.8	1 st

	cheap in our country							
3.	Content making is a time consuming	0×0	1×1	2×1	3×1	6	33.33	2 nd
4.	Smartphone is needed to make content that is not affordable all time by the content creators	0×2	1×1	2×0	3×0	1	5.56	4 th
5.	There is no peer-reviewed system that ultimately defects the quality of content	0×0	1×1	2×1	3×1	6	33.33	2 nd
6.	Agricultural YouTube content cannot be monitored	0×2	1×0	2×0	3×1	3	16.67	3 rd

Data contained in Table 4.16 reveal that the content creators confronted the highest problem in “Internet purchasing is not cheap in our country”, that’s why it was ranked first position. The second problem they thought that “Content making is a time consuming”. They informed that during the time of content making several things keep in their minds like audio-video quality, time duration, their audience, etc. The statement “There is no peer reviewed system that ultimately defects the quality of content” was also ranked second. The other statements were minor problems. They thought that content creators with agriculture backgrounds can make more knowledgeable content than non-agricultural content creators. They also informed that smartphone is not a major issue to make content because now a days it is readily available to all level of people.

4.15 Content creator’s perception regarding problems of YouTube and virtual video channels in agricultural content preparation

The data in Table 4.17 reveals that all the content creators faced medium category problems during the time of preparing agri-based content.

Table 4.17 Distribution of respondents according to their perception on problems of YouTube and virtual video channels in agricultural content preparation

Categories	Score	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Low	0-6	0	0	8.67±1.53	7	10
Medium	7-11	3	100			
High	12-18	0	0			
Total		3	3	Possible range (0-18)		

The minimum and maximum score of the problem for the content creator was 7 and 10 respectively with a mean of 8.67 and standard deviation of 1.53. The Possible range was 0-18.

4.16 Relative position (rank order) of the statements related to respondent's perception of problems of YouTube and virtual video channels in agricultural content dissemination

The data presented in Table 4.18 showed different problem of YouTube and virtual video channels in agricultural content dissemination and their relative rank order position perceived by the respondents. The observed range was 89 to 247 where possible range was 0-315.

Table 4.18 Relative position (rank order) of the statements related to respondent's perception regarding problems of YouTube and virtual video channels in agricultural content dissemination

Sl. No.	Problems	Not at all (0)	Moderately severe (1)	Severe (2)	Highly severe (3)	Score	PSI	Rank
1	Internet and smartphone are not available to all level of rural farmers	0×15	1×58	2×12	3×20	142	45	8 th
2	Relevant videos are not found by the farmers in some cases	0×15	1×38	2×38	3×14	156	49.5	7 th
3	Agricultural universities do not have any YouTube channels to disseminate their research or technologies	0×29	1×22	2×42	3×12	142	45	8 th
4	Misleading information used in the videos can cause extensive damage at the field level	0×12	1×26	2×45	3×22	182	57.8	5 th
5	Anyone can share videos on virtual platform, so there remains a gap to disseminate authentic information	0×1	1×4	2×69	3×93	239	75.9	2 nd

6	Most of the time, viewers download content to see later on, but maximum time they miss it	0×35	1×56	2×9	3×5	89	28.25	9 th
7	People are more interested to see recreational videos rather than farming videos	0×2	1×10	2×61	3×32	228	72.38	3 rd
8	Poor internet connection in rural areas hinder agricultural content dissemination	0×6	1×25	2×25	3×49	222	70.47	4 th
9	Limited viewers; old age farmers have no access to see videos on YouTube because of illiteracy or unavailability of smartphone	0×1	1×10	2×45	3×49	247	78.4	1 st
10	People show interest more in those videos, which have more views.	0×32	1×11	2×28	3×34	169	53.65	6 th

Data contained in Table 4.18 indicate that the respondents confronted the highest problem in “Limited viewers; old age farmers have no access to see video on YouTube because of illiteracy or unavailability of the smartphone”. “Anyone can share video on a virtual platform, so there remains a gap to disseminating authentic information”, and “People are more interested to see recreational videos rather than farming videos” These statements were ranked second and third position respectively. The other statements secured minor problems in the case of agricultural content dissemination.

4.17 Respondents perception regarding problems of YouTube and Virtual Video Channels in Agricultural Content Dissemination

The majority of the respondent’s perception on problems of YouTube and virtual video channels in agricultural content dissemination was medium (64.8%) to high (30.5%).

Table 4.19 Distribution of respondents according to their perception on problems of YouTube and virtual video channels in agricultural content dissemination

Categories	Score	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Low	0-10	5	5	17.31±4.83	8	28
Medium	11-20	68	64.8			
High	21-30	32	30.5			
Total		105	100	Possible range (0-30)		

The minimum and maximum score of the problem for the content dissemination was 8 and 28 respectively with a mean of 17.31 and standard deviation of 4.83. The Possible range was 0-30.

4.18 Selected Characteristics of the Respondents

The selected characteristics of the respondents were age, education, family size, farm size, monthly family income, training receive, extension contact, cosmopolitanism, organizational participation, experience in farming, knowledge level of farmers about YouTube and virtual video channels.

4.20 Age

The respondents were distributed into following categories based on their age

Table 4.20 Distribution of respondents according to their age

Categories	Score (Years)	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Young aged	≤35	47	44.8	39.4±12.50	18	67
Middle aged	36-55	49	46.7			
Old aged	>55	9	8.6			
Total		105	100			

The data presented in the Table 4.20 represents that the majority of the respondents were middle aged (46.7%) and young aged (44.8%). Similar results observed by Latif, Iftikhar & Shahzadi (2020) in their study area where middle aged respondents group was higher than old and young aged group. The minimum and maximum age of the respondent was 18 and 67 respectively with a mean of 39.4 and standard deviation of 12.50. This study revealed that young to middle aged people were highly involved in YouTube channel to gather agriculture related knowledge.

Similarly, it could be predicted that they might have gathered knowledges from other virtual video channels if the channels are made easily available and accessible.

4.18.2 Family size

The respondents were distributed into following categories based on their family members

Table 4.21 Distribution of respondents according to family size

Categories	Score	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Small sized	≤ 4	54	51.4	4.5±1.42	2	10
Medium sized	5-7	49	46.7			
Large sized	> 7	2	1.9			
Total		105	100			

The data presented in the Table 4.21 represents that the majority of the families were small sized (51.4%) to medium sized (46.7%). Joshi and Dhaliwal (2019) found that majority (88%) had medium family. Large sized family were less compare to others. The minimum members of the family were 2 and the maximum members of the family were 10 with a mean of 4.5 and standard deviation of 1.42.

4.18.3 Educational status

The respondents were distributed into following categories based on their educational qualification

Table 4.22 Distribution of respondents according to educational status

Categories	Scores	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Illiterate	0	0	0	11.47±3.196	0.5	17
Can sign only	0.5	3	2.9			
Primary	1-5	9	8.6			
Secondary	6-10	20	19			
Higher secondary	11-12	15	14.3			
Undergraduate	13-16	30	28.6			
Postgraduate	>16	28	26.7			
Total		105	100			

The data presented in the Table 4.22 reveals that the highest portion of the respondents were undergraduated (28.6%) and postgraduated 26.7%. Kuria (2014) found that majority 44.2% of respondents had secondary level, followed by 24.7% diploma level. Only 2.9% respondents had low literacy who can only sign their name. That means the respondents were well educated. The minimum and maximum schooling were 0.5 and 17 classes respectively with a mean of 11.47 and standard deviation of 3.196.

4.18.4 Farm size

The farm size of the respondents' ranged from 0.01 hectare to 4 hectare. The respondents were categorized in the following groups as mentioned in Table 4.23

Table 4.23 Distribution of respondents according to their farm size

Categories	Score (hactare)	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Landless	<0.02	0	0	0.51±.65	0.03	3.36
Marginal	0.02-.20	51	48.6			
Small	0.21-1.0	35	33.3			
Medium	1.01-3.00	18	17.1			
Large	> 3	1	1			
Total		105	100			

The majority of the respondent's farm size were marginal (48.6%) and small farm (35%). Ghosh, et al. (2021) found that highest proportion (38.3%) small farm holder followed by marginal farm holder (31.7%). There was no landless person. Only 1% had large farm as the urban people are more involve in services and other income earning activities rather than agricultural farming. Most of the respondents were involved in homestead gardening, rooftop gardening and they were more exposed to YouTube. The minimum farm size was 0.03ha and the maximum farm sized was 3.36ha with a mean of 0.51 and standard deviation of 0.65.

4.19.5 Monthly family income

The respondents' monthly family income was categorized puposively. It is known that the urban people's income is comperatively higher than the rural people, because most of them were well educated and involved in different services, entreupneurships or other businesses. So, their living status is expected to be better than the rural people. The monthly income was categorized in the following Table 4.24

Table 4.24 Distribution of respondents according to monthly family income

Categories	Score (BDT)	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Low income	≤ 20000	24	22.9	35089.52±53878.25	11000	57000
Medium income	20001-35000	56	53.3			
High income	>35000	25	23.8			
Total		105	100			

The major proportion of the respondents (53.3%) had medium income to high income 23.8% . The minimum income of the respondent was 11000BDT and the maximum income was 57000BDT with a mean of 35089.52 and standard deviation 53878.25 . Joshi et al. (2019) found that majority (38%) of the farmers had medium monthly income. The result can be concluded that most of the respondents had medium monthly income.

4.19.6 Training received

The observed training exposure of the respondents ranged from 0-4 which were purposively categorized because it is reality that in urban area training are not vigorously extended due to their busy life, lack of time and lower availability of extension personnel.

Table 4.25 Distribution of respondents according to training exposure

Categories	Score	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
No training	0	66	62.9	0.75±1.19	0	5
Low training exposure	1-2	25	23.8			
Medium training exposure	3-4	12	11.4			
High training exposure	>4	2	1.9			
Total		105	100			

The above data shown in Table 4.25 reveals that the majority of the respondents (66%) did not receive any training, may be due to their busy life or may be what information they needed, they found on YouTube in a short time. 23.8% respondents had low training and only 1.9% respondents had high training and they are more exposed to extension personnel. The minimum training received was 0 and the maximum training received was 5 with a mean of 0.75 and standard deviation 1.19.

4.19.7 Extension media contact

The observed extension media contact of the respondents ranged from 0-45. The respondents were categorized in the following groups as mentioned in Table 4.26

Table 4.26 Distribution of respondents according to extension media contact

Categories	Score	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Rare	0-10	55	52.4	12.07±5.86	5	35
Occasional	11-20	43	41.0			
Often	21-30	4	3.8			
Regular	31-45	3	2.9			
Total		105	100			

The data shown in the Table 4.26 reveals that majority of the respondents (52.4%) were rarely to occasionally (41%) exposed with extension media. Only 2.9% respondents were regularly exposed with extension media. It may be due to urban people have tendency to lead formal life and may be they are busy with their regular activities. The minimum extension media expouser was 5 and the maximum extension media expouser was 35 with a mean of 12.07 and standard deviation 5.86.

4.19.8 Cosmopolitanism

The observed cosmopolitanism of the respondents ranged from 0-15. The respondents were categorized in the following groups as mentioned in Table 4.27

Table 4.27 Distribution of respondents according to their cosmopolitanism

Categories	Score	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Low	0-5	23	21.9	7.11±1.91	3	12
Medium	5-10	72	68.6			
High	11-15	10	9.5			
Total		105	100			

The above data shown in Table 4.27 reveals that the majority of the respondents had medium (68.6%) score of cosmopolitanism. The minimum cosmopolitanism score of the respondent

was 3 and the maximum cosmopolitanism score was 12 with a mean of 7.11 and standard deviation 1.91

4.19.9 Organizational participation

Organizational participation of the respondents varied from 0 to 1 that means no participation and participation. The categorization was shown in the following table

Table 4.28 Distribution of respondents according to organizational participation

Categories	Score	Respondents (N=105)	
		Number	Percentage
No participation	0	73	69.5
participation	1	32	30.5
Total		105	100

A major portion of the respondents had no participation (69.5%) and 30.5% participated in the organization and most of them were member of Khulna Plant Lover Family but this was not formalized organization. They meet once a year purposively.

4.19.10 Experience in farming

The experience in farming of the respondents were ranged from 0 to more than 20. The categorization of their experience was shown in the following Table 4.29

Table 4.29 Distribution of respondents according to experience in farming

Categories	Score (years)	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Low experience	<10	32	30.5	16.41±10.94	0.50	40
Medium experience	10-20	43	41			
High experience	>20	30	28.6			
Total		105	100			

Data in Table 4.29 represents that highest proportion of the respondents had medium experienced (43%) then low experienced 30.5% and high experienced 28.6% respectively. Khou et. al. (2018) found that 46% of the farmers have experience in farming for ten to fifteen years followed by 28% have fifteen or more years. The minimum experience of the respondent was 0.50 years and the maximum was 40 years with a mean of 16.41 years and standard deviation of 10.94 years.

4.19.11 Knowledge level of farmers about YouTube and virtual video channel

The categorization of knowledge level of the respondents towards YouTube and virtual video channel were included in the following table. The possible range of the knowledge level was 0-10.

Table 4.30 Distribution of respondents according to their knowledge level about YouTube and virtual video channels

Categories	Score	Respondents (N=105)		Mean±SD	Min.	Max.
		Number	Percentage			
Low	0-3	0	0	8.03±1.45	4	10
Medium	4-7	35	33.3			
High	8-10	70	66.7			
Total		105	100			

From the above data it can be concluded that majority of farmers had high (66.7%) level of knowledge about YouTube, 33.3% had medium level of knowledge and 0% of low knowledge respectively. But there is almost no knowledge about other virtual video channel. That means, majority of the respondents had basic knowledge about YouTube. YouTube provides the respondents an opportunity to watch, upload and download video, demonstrations, lectures, discussions, farming methods etc. with the feature of commenting and liking on the video. The minimum knowledge level of the respondents were 4 and the maximum knowledge level of the respondents were 10 with a mean of 8.03 and standard deviation of 1.45.



4.20 Relationship between the selected characteristics of respondents and the perception of prospects and problems regarding YouTube in agricultural content preparation and dissemination

Table 4.31 Relationship between the selected characteristics of respondents and the perception of prospects and problems regarding YouTube in agricultural content dissemination

Characteristics (Independent variables)	Focus variables	
	Prospects of YouTube in content dissemination	Problems of YouTube in content dissemination
1.Age	.333*	.065
2.Family size	.012	.091
3.Educational status	-.190	-.435**
4.Farm size	.350**	.382**
5.Monthly income	.000	-.227*
6.Training Received	.302**	.403**
7.Extension media contact	.387**	.325**
8.Cosmopolitanism	.127	-.018
9.Organizational Participation	-.135	-.351**
10. Experience in farming	.205*	.252**
11. Knowledge Level	.127	-.069

** Significant at 0.01 level of significance (2-tailed)

*Significant at 0.05 level of significance (2-tailed)

Age, farm size, training received, extension media contact, and experience in farming had a significant and positive relationship with their perception about prospects of YouTube in agricultural content dissemination. It means that the higher is the age, farm size, training received, extension media contact, and experience in farming the clearer is the respondent's perception about prospects in agricultural content dissemination. Family size, cosmopolitanism, and knowledge level had a positive but non-significant relationship with their perception about YouTube in agricultural content dissemination. Educational status and organizational participation had a negative non-significant and negative relationship. Based on the findings the null hypothesis is accepted.

Farm size, training received, extension media contact, and experience had a significant and positive relationship with the problems of YouTube from the respondent's point of view. It means that the higher the farm size, training received, extension media contact, and experience, the higher the ability to identify the problems of YouTube in agricultural content dissemination. Educational status, monthly income and organizational participation had a significant but negative relationship. The means, the higher educational status, monthly income and organizational participation the lower is the problems. Age and family size had a positive relationship but were non-significant. Cosmopolitanism and knowledge level negative but non-significant relationship with the problems of YouTube in content dissemination from the respondent's point of view. Based on the findings the null hypothesis could be accepted.

CHAPTER V

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

The study was conducted in Khulna metropolitan areas 1 and 2 of Khulna district to find out the prospects and problems of YouTube and virtual video channels in agricultural content preparation and dissemination. A well-structured interview schedule was developed based on the objectives of the study for collecting information. The independent variables were age, family size, educational status, farm size, monthly family income, organizational participation, extension media contact, training received, cosmopolitanism, experience in farming, and knowledge level of farmers about YouTube.

The dependent variable of this study were the prospects of YouTube and virtual video channels in agricultural content preparation and dissemination and the problems of YouTube and virtual video channels in agricultural content dissemination. Data collection was started from February 2023 to May 2023. Various statistical measures such as frequency, percentage, minimum score, maximum score, mean, and standard deviation were used in describing data. To know the relationship between the selected characteristics and the prospects and the problems of YouTube in agricultural content preparation and dissemination, spearman correlation coefficient was used. The major findings of the study are summarized below:

5.1 Major Findings

5.1.1 Prospects of YouTube in Agricultural Content Preparation

“Many people watch YouTube videos”, “Many people can be reached through YouTube in a limited time”, “International coverage is possible”, and “Knowledge can be disseminated at a very low cost”. All of the statements were ranked in the first position in the view of the content creator’s perception. The content creators expressed that YouTube has a high potential to disseminate knowledge, innovation, technologies, etc. with a large number of people in a very short time.

5.1.2 Prospects of YouTube in agricultural content dissemination

“YouTube can be used anywhere” was the first ranked for prospects of YouTube in content dissemination. The statement which ranked the second position was “Learning by watching videos makes it easier to remember”. The respondents told that as the mobile phone can be

carried out anywhere so it is possible to watch videos on YouTube anywhere and anytime if the internet package is available.

5.1.3 Problems of YouTube in agricultural content preparation

“Unnecessary talks are sometimes used to make the video lengthy” This statement was the major problem in the case of content preparation in the view of respondents’ perception. Most of them thought that to make the video more lengthy the content creators sometimes use unnecessary words. Sometimes it was difficult to find out the main message from the content.

5.1.4 Problems of YouTube in agricultural content dissemination

The respondents confronted the highest problem in “Limited viewers; old age farmers have no access to see video on YouTube because of illiteracy or unavailability of the smartphone”. Anyone can share video on a virtual platform, so there remains a gap to disseminate authentic information”, and “People are more interested to see recreational videos rather than farming videos” These statements were ranked second and third position respectively.

5.1.5 Relationship between the selected characteristics and, the prospects and problems of YouTube

Age, experience in farming, farm size, training receive, extension media contact, educational status, organizational participation had influence on prospects and problems of YouTube.

5.2 Selected characteristics of the respondents

Age: The majority of the respondents were middle aged (46.7%) and young aged (44.8%).

The minimum and maximum age of the respondent was 18 and 67 respectively

Family size: The majority of the families were small sized (51.4%) to medium sized .The minimum number of the family members were 2 and the maximum number of the family members were 10 respectively

Educational status: The highest portion of the respondents was undergraduated (28.6%) and postgraduated 26.7%. The minimum and maximum schooling were 0.5 and 17 classes respectively.

Farm size: The majority of the respondent’s farm size was marginal (48.6%) to small farm (35%). The minimum farm size was 0.03 ha and the maximum farm sized was 3.36 ha.

Monthly family income: The major proportion of the respondents (53.3%) had medium income to high income 23.8% . The minimum income of the respondent was 11000 BDT and the maximum income was 57000 BDT.

Training Exposure: The majority of the respondents (66%) did not receive any training. The minimum number of training received was 0 and the maximum number of training received was 5.

Extension media contact: Most of the respondents (52.4%) were rarely to occasionally (41%) exposed to extension media. The minimum extension media exposure was 5 and the maximum extension media exposure was 35.

Cosmopolitanism: The majority of the respondents had medium (68.6%) score of cosmopolitanism. The minimum cosmopolitanism score of the respondent was 3 and the maximum cosmopolitanism score was 12.

Organizational Participation: A major portion of the respondents had no participation (69.5%) in any organization and 30.5% participated in the organization.

Experience in farming: The majority of the respondents were medium experienced (43%) then low experienced 30.5% and high experienced 28.6% respectively. The minimum experience of the respondent was 0.50 years and the maximum was 40 years.

Knowledge Level: The majority of the farmers had a high (66.7%) level of knowledge, 33.3% had a medium level of knowledge about YouTube, and 0% of low knowledge respectively. The minimum score of knowledge level was 4 and the maximum score of knowledge level respondent was 10.

5.3 Conclusion

Agriculture is not a new concept; however, changing platforms for communication can seem foreign to some people. Perception of YouTube as a valuable tool for agricultural content dissemination. YouTube is a fantastic resource for information-sharing platforms and it can be used to disseminate learning materials as well as technology. The findings of the study were valid and reliable and government can participate in providing more technical opportunities to facilitate the respondents for more efficient involvement on YouTube. The findings and relevant facts of the research work prompted the researcher to draw the following conclusion.

- I. The majority (66.7%) of respondents had high knowledge of YouTube and the respondent's perception of prospects of YouTube in agricultural content dissemination was also high. That means it has a huge opportunity to gather knowledge about agriculture from YouTube. Using YouTube as a source of information, allows respondents to improve their knowledge and skills, which affects their actions. There is a definite lack of organized efforts to use YouTube from the public extension system and the internet cost, availability of the network were not too good. These lackings need to be improved by the policy makers.
- II. There are many YouTube channels but the audience is comparatively low and sometimes content creators don't make quality content. It may be they are busy with their other work, and they don't get extra benefits from it. So, in this case, they can be trained to make quality content and an incentive system may be launched based on the views of the content to inspire the content creators. Besides this, the reduction of internet cost and availability of devices at low prices to create content, need to be ascertained. Moreover, other virtual video platforms should be readily available like YouTube so that the audience can get information from diversified virtual video channels.
- III. Based on the findings, it can be concluded that age, farm size, training receive, extension media contact, experience in farming had influence on the respondents' perception of the prospects of YouTube. On the other hand, educational status, farm size, monthly income, training received, extension media contact, organisational participation, experience in farming had influence of problems of YouTube.

5.4 Recommendations

5.4.1 Recommendations for policy implications

- i. To increase their knowledge on agriculture, the usage of YouTube and virtual video channels should be increased.
- ii. Other virtual video channels are not readily available and most of the respondents had no idea about it. These channels should be made readily available to level of people like YouTube.
- iii. Internet purchasing cost should be reduced to make it available. Government should take necessary steps to reduce the high cost of internet.
- iv. Internet connection in rural area should be developed.

5.4.2 Recommendations for further study

On the basis of prospects and problems of the present study and observation made by the researcher, following recommendations are made for further study

- i. The present study was conducted in Khulna metropolitan area 1 and 2. It is recommended that similar studies should be conducted in other areas of Bangladesh.
- ii. This study investigated the contribution of 11 characteristics of the respondents with the perception of YouTube in agricultural content preparation and dissemination. Therefore, it is recommended that further study should be conducted with other characteristics of their perception of YouTube in agricultural content preparation and dissemination.
- iii. It is suggested that there should be continuous research in various aspects for agricultural content preparation and dissemination.



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APPENDIX A

Agrotechnology Discipline

Life Science School

Khulna University, Khulna-9208

Title :Prospects and Problems of YouTube and Virtual Video Channels in Agricultural Content Preparation and Dissemination

Interview Schedule

(Please answer the following question and put up a tick mark (✓) wherever applicable)

(All the data will be used only for research purpose, personal information must be hidden)

Respondent No:

Date:

Personal information of the respondent:

Name:	Contact No:
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1.Age of the respondent:

2.Family size of the respondent (number of family members):

3.Educational status: a)Illiterate b)Can sign only, c)Actual schooling years :Masters

4.Farm size(ha):

A1)Homestead area:

A2)Own area under cultivation:

A3)Land taken from others on barga:

A4)Land given to others on barga:

A5)Land taken to lease:

A6)Others:

$$FS=A1+A2+1/2(A3+A4)+A5\pm A6$$

5.Annual family income:

Please mention you and your family member annual income from different sources

A.Income from agricultural sectors

How much money did you receive from the following agricultural sectors in the preceding year?

Sl. No.	Income sources	Sources	Total Production (Local Unit)	Price/unit (Taka)	Total price (Taka)
1.	Agriculture	Crops			
		Vegetables			
		Fruits			
2.	Livestock rearing	Cattle			
		Goat			
		Poultry			
		Others			
3.	Fisheries				
4.	Social forestry				
5.	Homestead gardening				
6.	Others(Specify				
	Total				

B.Income from the non-agricultural sectors

How much money did you receive from the following non-agricultural sectors in the preceding year?

Sl.No.	Income source	Total value
1.	Services	
2.	Business	
3.	Day labor	
	Total	

Total income=A+B(TK)

6.Do you receive any agricultural training? Yes () No ()

If yes,please mention the nature and the duration of the training

Name of the training	Duration (Days)	Organization

7.ExtensionCcontact

Please mention your extension contact with the following media

SLNo.	Communication media	Frequency of contact			
		Regularly (Score 3)	Occasionally (Score -2)	Rarely (Score-1)	Not at all (score-0)

A. Personal media contact

1.	Sub Assistant Agricultural Officer (SAAO)				
2.	Agricultural extension Officer (AEO)				
3.	Upazilla Agricultural Officer (UAO)				
4.	Other Extension Officers (Livestock,Fisheries)				
5.	NGO workers				

B: Group media contact

1.	Village meeting				
2.	Result demonstration				
3.	Method demonstration				
4.	Farmers field day				

C. Mass media contact

1.	Television				
2.	Radio				
3.	Newspaper				

D. Virtual media contact

1.	YouTube				
2.	Website				
3.	Online agricultural apps				

8. Cosmopolitanism:

Please indicate the number of times you have visited the following places within the specified period:

Sl. No.	Place of visit	Nature of visit			
		Frequently (3)	Occasionally (2)	Rarely (1)	Not at all (0)
1.	Relative or other known persons located outside of your village				
2.	Union parishad office				
3.	Own upazila/ distric sadar				
4.	Other district upazila/ sadar				
5.	Capital and other cities				

9. Organizational Participation:

Are you a member of any social organization? Yes (.....), No(.....)

If yes, please mention the nature and duration of your participation in the following organizations

Participation (1)	No participation (0)



10. Experience in Farming

Sl. No.	Name of the farm	Low experience (below 10 years)	Medium experience (10-20 years)	Highly experience (more than 20years)
1.	Agriculture			
2.	Dairy			
3.	Poultry			
4.	Aquaculture			
5.	Others			

11. Knowledge level of farmers about YouTube and virtual video channels

Sl. No.	Question	Correct (2)	Partially Correct(1)	Wrong (0)
1	What information did you receive from YouTube? (2 example)			
2	Is it possible to watch YouTube on Mobile Phones?			
3	Can anybody create YouTube channel or content?			
4	How is it possible to solve agricultural problem by using YouTube?			
5	Mention two name of YouTube channels?			

12. Status of YouTube and other virtual video channels in agricultural content preparation

Sl. No.	Status	Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly Disagree (1)
1	All time good quality content are published on YouTube					
2	Views, Likes, Durations can be considered to judge the agri-contents quality of YouTube					
3	Content are made according to farmer's need and demand					
4	The educational background of content creators are agriculture based					
5	Farmers watch YouTube content to learn and adopt new technologies.					

6	Regular activities of different agri-institution are found on other virtual media platform besides YouTube					
7.	YouTube helps in increasing farming production					
8.	Latest update of farming is found on YouTube channel					
9	Farmers are satisfied with the message from YouTube					
10.	YouTube provides retrievable agricultural information					

13. Status of YouTube and other virtual video channels in agricultural content dissemination

Sl. No	Status	Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly Disagree (1)
1.	For young farmers and professional agriculturists, YouTube is a popular media platform for information seeking					
2.	Agricultural new technologies can be easily disseminated through YouTube					
3.	Any new technology first share on YouTube					
4.	Farmers usually adopt agricultural information from YouTube and other virtual video channels					
5.	YouTube can arise commercial interest of farming					
6.	People quickly get solution of the problem related to farming from YouTube					
7.	Farmer are regularly watched agri-based video and other virtual channels					
8.	YouTube publishers can establish a personal brand and generate money					
9.	All type of content related to farming like found on					

	YouTube and other virtual video channels					
10.	Virtual video channels can be used as an agricultural advertising and marketing place.					

14. Prospects of YouTube and other virtual video channels in Agricultural Content dissemination (for respondents point of view)

Sl. No.	Prospects	Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly Disagree (1)
1.	YouTube provides new concept about agricultural technology					
2	Maintenance cost is not so high					
3	It can be used anywhere					
4	Information can be stored and used as per one's need					
5	Media coverage can be achieved to an extent which is not possible by Extension Department					
6	Learning by watching videos make it easier to remember.					

15. Prospects of YouTube and other Virtual Video Channels in Agricultural Content Preparation (for content creator's point of view)

Sl. No.	Prospects	Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly Disagree (1)
1.	Many people watch YouTube videos					
2	Content creators feel happy to do this work					
3	It is less time consuming and more people can be reached in a limited time					
4	International coverage is possible					
5	Necessary editing can be done easily					
6	Knowledge can be disseminated at a very low cost					

16. Problems of YouTube and Virtual Video Channels in Agricultural Content Preparation (respondent's point of view)

Sl. No.	Problems	Not at all (0)	Moderately severe (1)	Severe (2)	Highly severe (3)
1.	Video and audio quality are not good enough all time				
2	You tubers don't make agri-based content according to farmer's need				
3	Unnecessary talks sometimes used to make the video lengthy				
4.	Audio quality is not good				

17. Problems of YouTube and Virtual Video Channels in Agricultural Content Preparation (content creator's point of view)

Sl. No.	Problems	Not at all (0)	Moderately severe (1)	Severe (2)	Highly severe (3)
1.	Content creators do not have vast knowledge about agriculture				
2.	Internet purchasing is not cheap in our country				
3.	Content making is a time consuming				
4.	Smartphone is needed to make content which is not affordable all time by the content creators				
5.	There is no peer reviewed system that ultimately defects the quality of content				
6.	Agricultural YouTube contents cannot be monitored				

18. Problems of YouTube and Virtual Video Channels in Agricultural Content dissemination

Sl. No.	Problems	Not at all (0)	Moderately severe (1)	Severe (2)	Highly severe (3)
1	Internet and smartphone are not available to the all level of rural farmers				
2	Relevant videos are not found by the farmers in some cases				
3	Agricultural universities do not have any YouTube channel to disseminate their research or technologies				
4	Misleading information used in the videos can cause extensive damage at the field level				
5	Anyone can share video on virtual platform, so there's remain gap to disseminate authentic information				
6	Most of the time, viewers download contents to see later on, but maximum time they miss it				