



A Review on Understanding the Perception of Farmers on Effectiveness of Agricultural TV Programs for the Dissemination of Agricultural Information in Bangladesh

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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Review Article

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ABSTRACT

Television is an audio-visual medium of communication which is basically conceived as a powerful mass educator. The reason behind this, TV outreach has covered the several remote villages and tribal pockets and is ushering information explosion. The main focus of the study was to have an understanding on the perception of farmers regarding effectiveness of agriculture related TV programs for the dissemination of agricultural information. Attempt was also made to explore the relationship between some of the selected characteristics of the farmers and their perceived effectiveness of agriculture related TV programs for the dissemination of agricultural information.

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Over the last thirty years agriculture became technology based by using modern practices. Mass Communication media (Radio, Television, Newspaper, Mobile Phone etc.) took away the credit of this upgrade from traditional to modern. Out all of these, television is able to attract the audiences of all age groups, literate and illiterate and of all the strata of the society, thus it is a strong way of disseminating modern agricultural technological information to farmers via different TV Programs. TV programs motivate farmers by changing imparting critical agricultural technical knowledge, awareness and skills. The study was carried out to assess the perception of farmers regarding effectiveness of agriculture related TV programs for the dissemination of agricultural information. Attempt was also made to explore the relationship between the selected characteristics of the farmers and their perceived effectiveness of agriculture related TV programs for the dissemination of agricultural information. Most of the studies revealed that of majority of the farmers perceived agriculture related TV programs as medium effective while a minimal number of them found it either highly effective or opposite that means not so effective.

Keywords: Agricultural information; agricultural information service; dissemination; effectiveness; TV channels in Bangladesh.

1. INTRODUCTION

Agriculture is the economic backbone of Bangladesh with approximately 80% people depends on it directly or indirectly for their subsistence. But with the increase of population food shortage also increases gradually. Bangladesh is basically a rural based agricultural country. About 85% of the total populations of Bangladesh live in the rural areas and their standard of living is very low. They are mainly involved in agriculture and related activities. But agriculture in our country remains to be almost traditional. However, agricultural production can be increased if appropriate technologies are used by the farmers who are the primary unit of adoption of improved practices. Proper utilization of modern agricultural inputs, proper knowledge of the usefulness of inputs and the know-how of their use should reach to the farmers within a shortest possible time but that should be done very effectively. Further, diffusion of proper knowledge on modern agriculture among the rural people demands effective communication system. Now communication as a social process has attained so much importance that can hardly over emphasize its role. Communication media provides necessary information for the farmers to help them change their way of cultivations from traditional to modern one.

The necessity of communication is highly important when the right thing is communicated at the right time to the right people. In communication process message of advanced technology and its diffusion is very important [1]. For this flow of information should be as fast as possible and also should be understandable by the users. Television is an important means of

extension communication media because it covers great distances and leaps all kinds of natural barriers. In the adoption of new ideas Television (TV) plays an important role especially in the awareness and interest stages (Kashem, 1992). It is not effective when the audiences are aware of or interest in an idea. Messages through television can motivate, stimulate, induce and change basic attitudes of the people. Thus, most important advantage of television is that it reaches at all cultural and age levels [2]. "Those who watch TV believe that it is a most important source of information, entertainment and company. Therefore, it has an audience that is not often reached, by other mass media. Television is the most important communication media for disseminating information. It can provide information not only on agriculture but also the all sphere of life. Television is an important medium through which the information of modern technology can spread easily and quickly to all level of farmers [3].

"Many informative agricultural programs are broadcast on radio and public and private channels of television in Bangladesh. Mati o Manush, Banglar Krishi, Krishi Dibanishi, Bangladesh Krishi, SAARC Krishi, Hridoye Mati o Manush, Hridoye Mati o Manusher Dak, Fire Cholo Matir Tane, Shamol Bangla, Shabuj Bangla, Dipto Krishi, Matir Shubash, Shonali Din, Krishi Jog, Khamarbari etc. are broadcast on television. Desh Amar, Mati Amar, KrishiSamachar, Amar Desh, Shonali Fasal, Krishikatha etc. are broadcast on radio" (Alam et al., 2012) [4]. In view of the foregoing discussion the researcher undertook a study entitled "Effectiveness of Agriculture related TV programs for disseminating agricultural information

perceived by the farmers". In this study some popular agriculture related television programs of Bangladesh such as Mati-O-Manush (BTV), Krshi Diba- Nishi (BTV); Shayamol Bangla (Bangla Vision); Hridoya Mati-O-Manush (Channel I), Hridoya Mati O Manusher Dak (Channel I), Krishi o Jibon (Boishakhi Television), Shobuj Bangla (Gazi Tv) were selected for work. These weekly programs responsible for transferring farm production technologies to the TV viewing farmers. The dissemination of farm information through TV and also the amount of perciveness is highly dependent on the selection of information, timeliness of information, adequacy of information, usefulness and scope of application in the real situation.

Many national programs and projects were undertaken for agricultural development from 1950s, which resulted very limited success in the transfer of agricultural technology. In order to expedite the process of technology transfer, the donor agencies now give more emphasis on communication media. Television is an important and effective powerful communication media. Television plays a great role to gain and retention of knowledge. It is a great communication media through which farmers get different types of information. In television Agriculture related programs are now promising. This programs not only deliver various information but also visually and practically show its practice. Through which farmers are really get benefited. The purpose of this study was to know the effectiveness of agriculture related TV programs for disseminating agricultural information to the farmers and also to explore relationship between selected characteristics and effectiveness of these programs.

However, in order to better understand and justify the key concepts of this study, a large amount of literature was reviewed and presented in this paper.

Section I: Concept of usefulness of agriculture related TV programs or related matters.

Section II: Literatures related to relationship between selected characteristics of the respondents and their perceived effectiveness of agriculture related TV programs or related matters.

Section III: Theoretical model of the study.

Section IV: Conceptual framework of the study.

2. SECTION I: CONCEPT OF USEFULNESS OF AGRICULTURE RELATED TV PROGRAMS OR RELATED MATTERS

"The study results point out that the radio and television had an effective role in improving Awareness and increasing the modern technological knowledge of farmers" [5]. "About 41% of the farmers consider that these services are useful, about 20% consider them to be very useful but some farmers (35%) think that these services are neither useful nor useless. However, a small portion of the respondents (4%) are in favor of assessing that the services are not useful at all" [5].

"Family communication (53%) is the main purpose behind having mobile set whereas carrying out agricultural information (37%) is the second priority for them. Women think that holding mobile set is regarded as the best bridge for communication. Out of little spare time, 67.14% of the female farmers watch selected agricultural news and 17.14% female watch agricultural programs on TV as they advised by SAAO" [1].

"Edutainment TV can be a viable approach to nudge farmers to implement practices that contribute to addressing local and global challenges including adapting to and mitigating against climate change, reducing poverty, and increasing productivity and income of smallholders in developing countries". [6]. "A TV edutainment program, Shamba-Shape-UP (SSU). In Kenya has an influence on maize and dairy farmers' decisions to implement changes of agricultural practices. Farmers who watch SSU have a higher probability to implement a greater number of agricultural practices" [6]. "Easy access to information: Radio, TV and Mobile were perceived highly effective offering easy access to information with mean values of 4.28, 4.22 and 4.02 respectively. Fixed schedule of agricultural programs on radio and TV were considered as prime reason of easy access and high effectiveness in result. Radio and TV were perceived effective information source among farmers because of easy access and tendency of information dissemination among large group of audience". (Raza, 2020).

The findings indicated that farmers prefer media that are stimulating and engaging such as television and demonstrations; convenient such as mobile phones and detailed such as books

probably because the majority of them do not have training in agriculture [7].

“Around 300,000 farmers were benefitted from the information broadcasted in the agricultural programs of four TV Channels in Bangladesh [3]. One exception is the work by [8] who estimated that the interaction of Kenyan farmers with one edutainment TV program, SSU (a TV edutainment programs, Shamba-Shape-UP) in Kenya, benefitted 430,000 farmers through increased income and/or a range of related social benefits. Therefore, TV edutainment programs can potentially influence farmer's decision to implement more productive and sustainable agricultural practices” [8].

“Radio and television the most important media for diffusing the technical, systematic and scientific information to the farmer society” [9]. According to her, the analysis also shows that radios are still widely used in disseminating agriculture information to rural farmers, while computers are mainly used by researchers. Though the mobile-based services were aimed at improving access to accurate and timely agriculture information, the literature review indicates that the adoption of the services is constrained by poor technological infrastructure, inappropriate ICT policies, and low level of user skills, especially of farmers, in using the technologies.

“Cheaper source of information: Respondents argued that TV was most effective being cheaper source of information (M=4.28). Respondents elaborated that TV technology has become common and buying TV does not require huge investment. TV was perceived more user friendly among farmers as compared to other ICT tools. In the category of user friendly, TV gained high mean value (4.21) followed by the mobile phone with the mean value 3.95”. (Ekoja, 2003 & Sanga *et al.*, 2013) mutually inferred that Radio along with TV were the prominent and effective information source because of their easy access and dissemination of information to larger audiences.

“Radio and TV were highly effective tool in disseminating innovations because of their broadcast for every farmer regardless of their age, gender and education. Similarly, respondents arbitrated that making calls, texts, sharing audiovisual contents is easy to handle on phone” (Nazari and Hasbullah, 2009).

“61.6% of the farmer had medium adoption while 22.7% had low adoption and 15.7% had high adoption of selected technologies by using television” [10]. The highest portion (39%) of the respondent were medium level viewer as compared to 17% high level viewer and 11% low level viewer. 33% of the respondent were non viewer. The study revealed that an appreciable farmers (40%) watched TV below 1 to 2 hour [11]. The innovativeness of the farmers and their opinion on the ‘Mati-o-Manush’ TV program in disseminating agricultural information was favorable and very effective. It was very helpful to the farmers for adoption of innovations received from television program [12]. The women of modern villages with higher socio-economic status used more cosmopolite media of information rather than localite media. Cosmopolite media included radio, television, extension agents etc. Among the mass media, they used radio and television as a vital source of information. Radio was very frequently (69.7%) used by all categories of farm women, while TV was used by less number of women (26.9%) [13].

DAE [4] in order to achieve the objectives of the extension program consider the following methods and strategies:

- ❖ Media campaign including printed media, radio and television
- ❖ Upazila and district fair
- ❖ Traditional and folk media
- ❖ Group meeting
- ❖ Farmers training, motivational tour, farm walk, method demonstrations field days, result demonstrations, individual farm visit etc. Printed media commonly used are bulletin, poster, leaflet circular letter, newspapers and magazines.

DAE [4] further reported that the media cell has been established within the Department Having responsibility for overseeing all media issues. The main tasks of the media cell are to:

- ❖ Coordinate the production and dissemination of technical bulletins
- ❖ Assist Radio Bangladesh and Bangladesh Television in the production of farm broadcast
- ❖ Create publication formatted for the DAE
- ❖ Assist districts and Upazilas with their extension publication

The mass approach in agricultural extension uses a single or combination of different

communication media to a large client group, and are usually organized at the national level and decentralized for implementation at regional, district and upazila levels. They are aimed to create awareness and interest on issues that concern the majority of the population [14]. Television and radio were the most widely used communication media in Mexico, and talks, demonstrations and training courses were the preferred media for receiving information [15].

The impact of radio and television on rural people and found that the responses regarding the usefulness of TV program were similar to responses regarding the usefulness of radio broadcasts. All of the telecasts were of average benefit to most of the male and female audience. No one of the respondents stated that many of the selected program had adequate use to him or her. That the program were of no use was said by none of the female TV audience. Among the need based telecasts "Apnar Shasthya" seems to be the most effective program for male viewers. About 53 percent of the male respondents watch this program. The next important one is "Mati-O-Manush". This had a 35.25 percent audience [16]. Consumer attitude towards food safety of product in Costa Rica that information sources on which consumers rely were television (92%), radio (73%) and newspapers (63%) [17].

Farm telecast viewing behavior of farmers in India that about two thirds of the respondents reported the Krishi Darshan Program (KDP) of Delhi Doordarshan Kendra was very useful. The study implied that the perception of usefulness increased with the increase in one's periodicity of viewing the program [18]. Radio was the highest rated sources of agricultural information, followed by television [19]. In Philippines, the availability of mass communication media channels, radio and TV were the most available. A great majority of the respondents listen the radio every day and consider it as their main source of news. The communication channels they preferred credible were radio, interpersonal sources and TV [20]. Mass media can perform a better role in technology diffusion than what those do today. Therefore, planned efforts to introduce more of mass media strategies that are proven effective by experiments are highly recommended [21]. Seventy percent of the items of Krishi Darshan Program of Delhi Door Darshan Kendra were considered 'Timely'. But it is sad that about one third of the times were either too early or too late. Because of untimely telecast these telecasts might not have much practical utility. As far as,

relevancy of the message of the farmers of Haryana state is concerned, it was found that almost all the items were highly relevant. Only one item under field crop was reported to be of much utility [18]. In 1987, an UNDP/ILO/FAO assisted Project in Brazil initiated a study on the experience of Brazilian extension service and reported that television plays an important role, where in every Sunday morning, an agricultural program is watched by millions of farmers [22].

Rural women took interests in watching the television programs produced. The extent of watching the television program was more frequent in case of men than women. The television helped women and men to gain significant amount of knowledge about green leafy vegetables, polio, vaccination and laparoscopy. The gain in knowledge was more among females than males [23]. A study among three resource status group based on income, farm size and land holding in North-west Frontier and reported that about 40% of the farmers obtained agricultural information through radio and television broadcast. Less than 40% of the farmers read printed agricultural materials or attended extension sponsored group activities [24,25].

3. SECTION II: LITERATURES RELATED TO RELATIONSHIP BETWEEN SELECTED CHARACTERISTICS OF THE RESPONDENTS AND THEIR PERCEIVED EFFECTIVENESS OF AGRICULTURE RELATED TV PROGRAMS

3.1 Age and Effectiveness

The finding revealed that the age of the respondents has recorded a negative and significant correlation with the utilization of ICT tool [26]. In case of age and farming experience, negatively significant correlation was observed with perceived effectiveness of agriculture information [27].

There is no relationship between farmers' age and their perception of effectiveness of television as a medium of agricultural information [28].

The age of the farmers had no significant relationship with the effectiveness of agricultural TV programs in dissemination of agricultural information [12]. Similarly, the farmers had no significant relationship with their usefulness of

agricultural information [29]. The agricultural radio program did not vary significantly among the farm women of various age levels [30]. On the contrary, age of the farmers had negative relationship with effectiveness of agricultural information through agricultural radio programs [31].

3.2 Level of Education and Effectiveness

Education was positively and significantly correlated with the utilization of ICT tools [26]. People gain knowledge through the formal education system [32]. This may be the possible reason that the variable 'education' has shown a significant association with the dependent variable utilization of ICT tools. The findings are in conformity with the findings of [33,34,35].

There lies significant relationship between farmers' education and perception of effectiveness of Television as a medium of agricultural information [28].

Islam [12] found a significant relationship between educational level of the farmers and effectiveness of agricultural TV programs in disseminating agricultural information.

Education of the farmers had no significant relationship with their usefulness of agricultural information [29]. The effectiveness of agricultural information disseminated to the farmers through agricultural radio programs [31]. He obtained highly significant positive relationship of the educational level of the farmers with effectiveness of agricultural information. Education of the farm women had a significant positive influence on agricultural radio programs [30].

3.3 Farm Size and Effectiveness

The farm size variable was observed to be positive and significant related [27].

There is no relationship between farm size of the farmers and the effectiveness of TV as a medium of disseminating agricultural information (Hoque, 1982) [28].

There is no relationship of farm size of the farmers with the effectiveness of disseminating agricultural information through Television [12]. Size of the farmers had insignificant positive relationship with the effectiveness of agricultural information through agricultural radio programs

[31]. There is no significant relationship of farm size of the women with influence on agricultural radio programs [30]. The farm size of the farmers had no significant relationship with the usefulness of agricultural information from television [29].

3.4 Farming Experience and Effectiveness

The farming experience of the respondents neither contributes to the factor of accessing different ICT tools nor influences the capability to use the ICT tools efficiently. The results in this study that the land holding had a non-significant relationship with the usage of ICT [26]. This findings are supported by the study done by [36,34,37]. Farming experience, negatively significant correlation was observed with perceived effectiveness of agriculture information [27].

Farming experience of the farmers had no significant relationship with the effectiveness of agricultural information through agricultural radio programs [28].

There is no significant relationship between farming experience and "Mati o Manush" TV programmes in disseminating agricultural information to the farmers [12]. Farming experience of the farmers had insignificant negative relationship with the effectiveness of agricultural information through agricultural radio programs [31].

3.5 Annual Family Income and Effectiveness

Annual income with the utilization of ICT tools show a positive and significant relationship. The usage of ICT tools increases with the increase in family income [26]. This is also supported by the findings of [37].

The annual family income of the farmers had significant positive relationship with their usefulness of agricultural information from television [27].

There is significant relationship between annual family income of the farmers and their opinion on the effectiveness of 'Mati-O-Manush' TV program for disseminating agricultural information [12].

The annual family income of the farm women were not significantly related with usefulness of

agricultural radio programs [30]. The annual family income of the farmers had significant positive relationship with their usefulness of agricultural information from television [29].

3.6 Agricultural Knowledge and Effectiveness

Agricultural knowledge of the farmers had significant positive relationship with the effectiveness of agricultural information through agricultural radio programs [28].

There is no significant relationship between agricultural knowledge of the farmers and their opinion on effectiveness of 'Mati-O- Manush' TV program for dissemination of agricultural information to the farmers [12]. Agricultural knowledge of the farmers had significant positive relationship with the effectiveness of agricultural information through agricultural radio programs [31].

3.7 Attitude towards Agriculture Related Television Programs and Effectiveness

There is significant relationship between farmers' attitude towards agricultural technologies and their perception of effectiveness of television as a medium of agricultural information [28].

The attitude towards agricultural technologies of the farmers showed positive relationship with the effectiveness of disseminating agricultural information through television [12]. The effectiveness of agricultural information disseminated to the farmers through agricultural radio programmes. He obtained non-significant positive relationship between the farmers' attitude towards agricultural technologies and the effectiveness of agricultural information disseminated to the farmers [31]. The attitude towards agricultural technologies of the farmers had no significant relationship with their usefulness of agricultural information from television [29].

3.8 Innovativeness and Effectiveness

The innovativeness is found to be significantly associated with the dependent variable 'utilization of ICT tools' in a positive direction [34].

The innovativeness of the farmers had significant positive relationship with their usefulness of agricultural information from television [28].

There is significant positive relationship between innovativeness of the farmers and their opinion on the effectiveness of Mati- O- Manush, an agricultural TV program in disseminating agricultural information to the farmers [12]. The innovativeness of the farmers had significant positive relationship with their usefulness of agricultural information from television [29].

3.9 Extension Media Exposure and Effectiveness

It was observed that extension contact and mass media exposure of farmers were found conducive to the utilization of ICT tools by farmers [26] they receive market information and a fair price for their produce, and ICT plays an important part in this [32].

Farmers, who attended a greater number of pieces of training, had more extension contact and mass media exposure and tend to use more ICT tools [33]. It might be the reason why mass media exposure and extension contacts are significantly and positively associated with ICT uses. The findings are in line with the findings of [37,33].

There is significant relationship between extension media exposure of the farmers with and the effectiveness of television for disseminating agricultural information [28].

There is significant positive relationship between individual contact of the farmers and their opinion on the effectiveness of Mati-O- Manush, an agricultural TV program in disseminating agricultural information to the farmers [12]. The individual contact of the farmers with the media had significant positive relationship with the effectiveness of agricultural information through agricultural radio program [31].

3.10 Time Expend for TV Watching and Effectiveness

There is significant relationship between time expend for TV watching and effectiveness of the farmers with and the effectiveness of television for disseminating agricultural information [28].

The frequency of watching television of the farmers was not found to relate with their usefulness of agricultural information from television [29].

4. SECTION III: THEORETICAL MODEL OF THE STUDY

4.1 Ability, Motivation and Opportunity (AMO) Model

Bailey [38] initially proposed the Ability, Motivation and Opportunity (AMO) framework. He suggested three components to ensure the individual's discretionary effort. The three components were skill, motivation and opportunity. Individuals had to have the necessary skills, they needed appropriate motivation and opportunity to participate [39]. Since its inception, the ability, motivation and opportunity (AMO) framework [40,39] are widely used for explaining the interrelationship between human resources management and performance [41,42]. The model suggests people performance will be higher when they can perform the particular task, have the adequate motivation and have a favorable work environment that provides opportunities to participate [43,44].

The model regards individuals' ability as natural capacity to perform a particular task efficiently [45]. It refers to personal attributes such as skills, experience, attitudes, prior related knowledge to complete a task [46,47]. On the other hand,

motivation is the degree to which individuals prefer to engage themselves in specific behavior [45]. It can be either extrinsic or intrinsic [47]. Opportunity is a set of circumstances that makes it possible to do something. It includes dimensions such as involvement in the decision-making process, horizontal communication and job enrichment [48]. The formula for the AMO is:

$$\text{Sum P} = f(A + M + O)$$

4.2 Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) is a widely cited model that explains users' intention to apply certain technology [49,50,51]. This model attempts to identify and test the relevance of certain factors, namely perceived usefulness (PU) and perceived ease of use (PEU), in influencing a potential user's decision to use or intention to use a certain technology. PEU refers to the degree to which an individual perceives the technology or system to be free of effort. In contrast, PU refers to the degree to which an individual perceives the technology to enhance their performance at work. PU and PEU, thus, jointly determine the behavioral intention towards using technology that ultimately influences the actual usage behavior (Fig. 2).

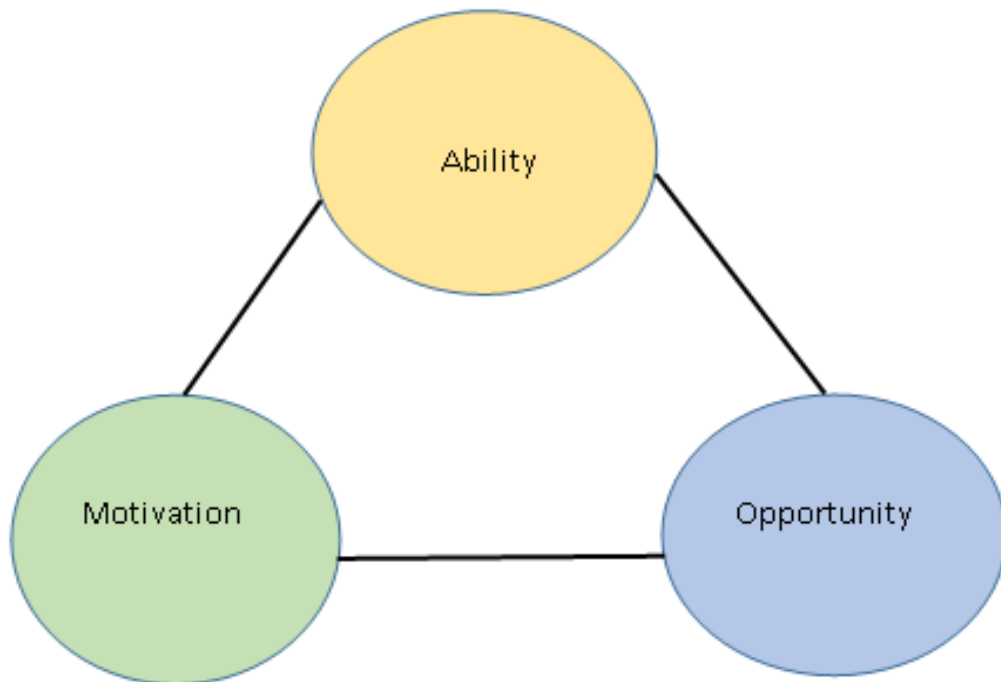


Fig. 1. Ability, Motivation and Opportunity (AMO) Model [39]

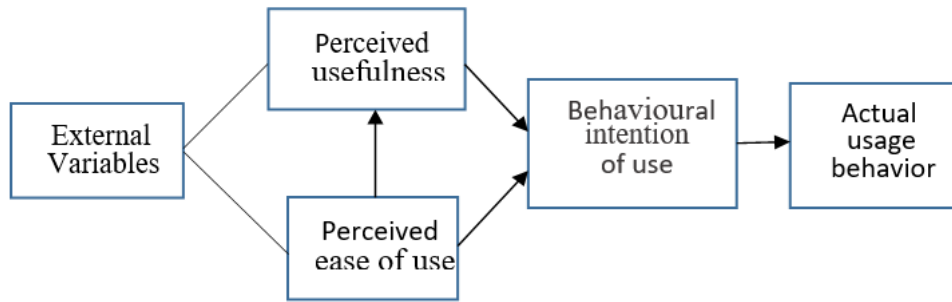


Fig. 2. Technology Acceptance Model (TAM) [49]

5. SECTION IV: CONCEPTUAL FRAMEWORK OF THE STUDY

Based on the theoretical model, the researcher develops a framework for the study. This research framework shows the research problem, the explored paths and the relationship between different variables in the study. Hence, theories and research frameworks are compulsory for academic research. Fig. 3 indicates the design of the research framework. The framework is designed based on previous literature, studies, and field experiences of the researcher.

The conceptual framework of Rogers and Havens [52-54] was kept in mind while framing the structural arrangements of the variables. The study was concerned with effectiveness of agriculture related television programs for dissemination of agricultural information to the farmers. Thus effectiveness of agriculture related television programs as perceived farmers was considered as the dependent variable and selected characteristics of the farmers were considered as the independent variables.

Based on these above discussion and the review of literature, the conceptual framework of this study has been formulated and shown in Fig. 3.

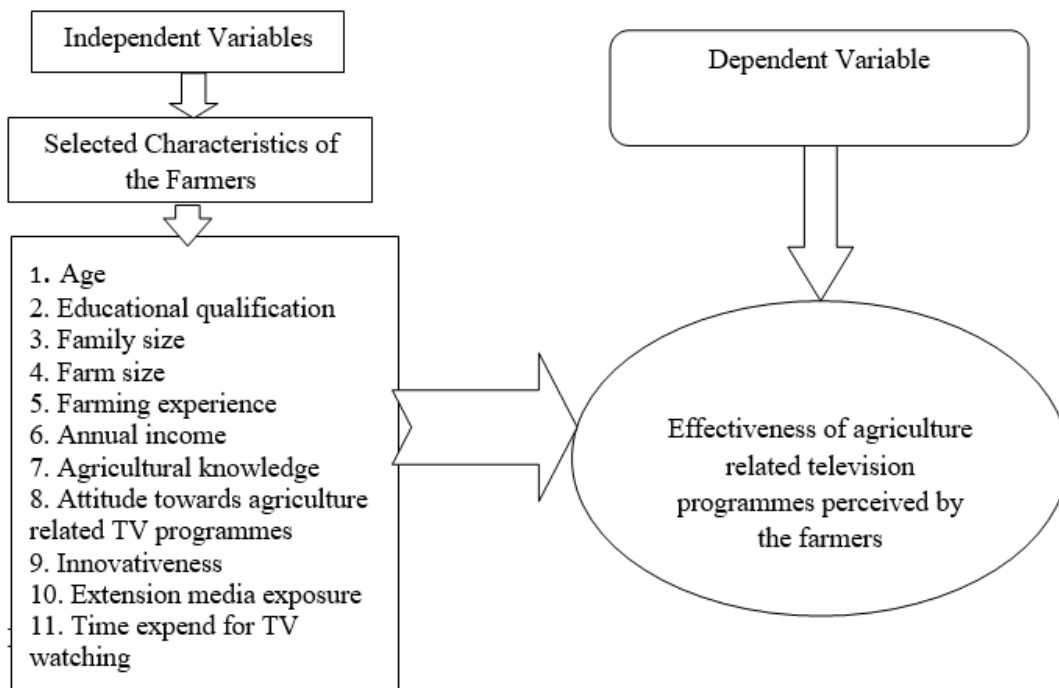


Fig. 3. Conceptual Framework of the study

6. CONCLUSION

The main objective of the study is to analyze the impact of a television channel on agricultural development. The discussions presented in the review of literature section have clearly revealed that information and communication technologies (ICT), where ICT in the context of the study is mainly focusing on satellite television programs is an important medium of communication in developed or developing countries across the world, including Bangladesh.

Although issues concerning accessibility have been highlighted rather extensively in this article, it must be remembered that this is an area of concern which involves not only heavy investments on infrastructure, hardware and software to overcome the problem, but it also involves other factors to overcome the problem which includes skills and knowledge among the general public, especially among the farmers to ensure they have the skills, knowledge and expertise to access agricultural-related programs which are aired on satellite television stations in the country. Apart from this, the general public, specifically the farmers should be able to understand the language which is used in the agricultural-related programs aired on satellite television channels. This is where the government should be taking steps and outlining initiatives and policies to ensure that the content of agricultural-related television programs aired by satellite channels are appropriate for the consumption of the general public, especially the farmers who generally have very low levels of education.

The content of the agricultural-related television programs should be tailored towards the appropriate consumption and understanding of the main audience, which is the farmers. It is important to take note that the findings of the study have revealed that the majority of the respondents, comprising of farmers have indicated they preferred to watch agricultural-related television programs as compared to other forms of television programs. Therefore, this is where the government should be taking special interest in ensuring the content of agricultural-related satellite television programs are well suited for the consumption of the Bangladeshi public at large and at the farmers specifically.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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