Community Radio for Sustainability in Rural Areas: Listeners' Perception

Md Shahzalal

Department of Marketing, Begum Rokeya University, Rangpur, Bangladesh

Post code: 5404, Rangpur Sadar, Rangpur, Bangladesh

Phone: +8801742685430   E-mail: shahzalalstar@gmail.com

Abstract

Community radios are very popular in many developing countries due to their development orientation. A partial least square based structural equation modelling approach is used in the research. 300 community radio listeners do a self-administered questionnaire survey. The variables are identified in a focus group discussion of the members of a community radio listener. Based on the multiple aspects of reliability and validity analysis the model is found valid. The current research finds that community radios can change attitude to sustainable development as well as enhance skills, therefore increase intention to take sustainable actions by the rural people. Rural people like community radios because of its unique characteristics unlike other mass media, which in turn enhance the acceptance of the sustainability communications aired by them. So, any sustainable development ideas can be diffused through airing participatory based communications by a community radio.

Keywords: Community radio, sustainable development, sustainability communications, structured equation modelling.

1. Introduction

Rural development has been importantly included as an agenda of sustainable development in the framework of sustainable development goals to be achieved by 2030 (United Nations, 2016). However, sustainable development is not a short-term achievement rather than based on a rural community's long-term attitude, ability and intention for economic, environmental, social, and cultural development (Gitonga, 2013). The only communication with its extraordinary power can inform, inspire (UNEP, 2005), improve knowledge and skills, and change the attitude of rural people toward sustainable development (Sood et al. 2004: Mefalopulos 2008). However, the most effective sustainability communication is one, which purpose and process are sustainable. It means that communication must aim at fostering sustainable development. Community media is widely recognized due to its unique way of reaching and motivating people, which has become an agent of participatory development (Rahman, 2013). Unlike public and private commercial media, it is a mean to express diversified community issues, concerns, cultures and languages through community-level debate, information and knowledge sharing, and public decision making (Buckley, 2011).

However, among the community media (i.e. TV, radio, internet, magazine, and newspaper, and video, film), radio is the most accessible and interactive form of media (GFK, 2017). Moreover, the community radio broadcast community's needs and solutions of problems in local language and local accent (Girard, 2001). Rural people can easily avail it as the set-up cost, production cost, and broadcasting cost are low than any other media. The tiny station of community radio can be run using a generator or solar system and can be integrated with modern technology so accessible by the rural people everywhere using a mobile phone and another FM receiver (Tabing, 2002). The community radio simultaneously a place of participatory and mass communication (Ouattara,2006). Rural people can participate a station's program preparation and broadcasting (Fraser and Estrada, 2001), discussions and dialogues for their development. (Hussain and Tongia, 2007), so the means of communication and the communication itself both are determined by the rural people. Thus, the community is itself a sustainable process of communication, and its purpose is to promote sustainability.

This research aims to evaluate community radio as a sustainable media for sustainable rural development based on the listeners' perception. The specific objectives are to explain community radio as a sustainable media, to explain community radio as a tool of sustainability communications, and to justify whether community radio is a sustainable media and tool for sustainable development in rural areas based on the empirical findings. The study is done in Bangladesh, where 17 community radio stations are working to implement sustainable development

goals (Sen, 2015). However, no study is done yet to understand the perception of the listeners about the effectiveness of a community radio, and therefore, in sustainability community radio interdisciplinary literature, the country is underrepresented. This research tries to reduce this gap through a comprehensive study using structural equation modelling. Based on the perception survey of the listeners of six community radio, this research finds that the listeners of community radios believe that community radio can change their attitudes to sustainable development, their abilities to be involved in sustainable development, and their intention to do so.

2. Literature Review

In Latin American countries in 1947 the first two community radios were set up in two to reduce poverty and establish social cohesion (Fraser and Estrada, 2001). Since its inception, it has proved its ability to motivate, educate, and diffuse innovations among the rural people (Fao, 2017). So, during the 1990s community radio has grown very firstly compare to the state or commercial radios in many African countries (Mayers, 2011) as well as being considered as a tool to harvest the outcome of information and communication technology in Bangladesh (Noronha, 2003).

In Bangladesh Since 1971, the state-owned broadcasting system, Bangladesh Betar, has been serving the people of Bangladesh with social and national development messages through its 15 radio stations throughout the country (Ullah, 2010). In the age of liberalization, several commercial radio stations are also transmitting programs through FM radio stations, mostly surrounding the big cities in the metropolitan divisions of the country. However, these two broadcasting services are criticized as being controlled by either urban-based bureaucrats or government where people 's participation is neglected in the media climate (Reza, 2012). Also, unidirectional broadcasting services fail to reflect grassroots' input and feedback on media content. To democratize and decentralize the communication system at the grassroots level, community radio, therefore, emerged as a third-tier broadcasting service in Bangladesh in 2011 along with the country 's state-owned and commercial radio (Rahman, 2013; Khan et al., 2017). Presently the 17 community radios have already posited themselves as a catalyst for development. The community radios are insisting that they are working on to empower the rural community, bringing social cohesion, enhancing the skills of the rural poor, motivating for technology-driven development, and helping people to fight against the effects of climate change (Sen, 2015; Khan, 2017)).

2.1. Community radio is a sustainable media

In general, a community radio's principles include its establishment, management, administration and financing are in the hands of locals, it emphasizes on participatory communication, use of local language, and air substantiality communication for sustainable local development (AMARC 2007). A community radio is set up based on the local people's assistance including the support of individuals, institutions, and organizations within the community in the form of donations, grants, or membership fees or supports by the NGOs and governmental agencies (Hussain and Tongia, 2007). People of diversified communities including, farmers, small shopkeepers, social activists, political figures, illiterate persons, and educated persons from ethnic or minority groups can participate in the management of a community radio (Tabing 2002). So, ordinary people or member of the listeners' club can hear their chosen programs and their feedbacks in their way (Ouattara, 2006). Moreover, community radio stations are now being used as a community telecentre due to the integration of traditional information and communication technology facilities like phone, fax, computer and internet (AMARC, 2007). Therefore, in one hand rural people can use it to be connected globally on the other hand global information can be presented locally simultaneously. The station is based on very simple radio technology and can be run with renewable energy sources so can broadcast programs in any natural disasters in developing countries (Khan, 2017).

The communication for sustainability is based on the foundation of participation and empowerment simultaneously in the communication process, which is realized by a community radio (Mefalopulos, 2008). A community radio station gives access to the listeners to participate in program planning, scheduling, implementation, and evaluation (Tabing, 2002). The rural people can participate in one too many or many to one conversation and share their needs and solutions of problems or success stories and feedback on development (Hussain and Tongia, 2007). It can enhance the accountability of development agents through taking the officials and local people in the question and answer sessions (Mefalopulos, 2008). This process of community radio empowers the actual beneficiaries (Manyozo, 2012). As a result, the rural people trust community radio as a development partner (Servaes and Lie, 2013). It then accelerates the civil society development, democracy (AMARC, 2007), and build capacity for sustainable development (Servaes and Lie, 2013). So, based on these

unique characteristics community radio is being considered as a sustainable media.

2.2. Community radio is a media for sustainability communications toward sustainable development

The domain of sustainable development includes social, economic, environmental, and cultural sustainability (Basiago, 1999). Social sustainability includes women empowerment, health, education, justice, peace, social cohesion, etc. (Axelson et al., 2013). The economic sustainability of rural people includes enhancing economic growth and productivity through guiding on (Kahn 1995) sustainable farming, and financing to the farms (Mrutu, 2008) alternative earnings during the crisis (Champman et al. 2003), as well as patronizing small businesses (Al-Hassan et al. 2011).The environmental sustainability of the rural people includes keeping the present eco-system fit, conserving the biodiversity, adapting climate change (Vinnari, & Vinnari, 2014), and diffusing the renewable energy resources (Harris, 2003). Cultural sustainability is to keep the local people to the root (Vinnari, & Vinnari, 2014) towards a satisfactory society through respecting local norms, values, beliefs, traditions customs, fashions, and verbal and nonverbal cultural elements (UNESCO, 2002).

However, For, sustainable development a particular type of communication that can increase knowledge and involvement in sustainable development is needed (Godemann, and Michelsen, 2011), however the community media which is particularly sustainability oriented (Algül, 2003) can only effective in this regard (Hedlund-de, 2012). Because, community media mainly broadcasts programs on local political, economic, and social development (Mefalopulous, 2008). Community radio can communicate with the people who can't read the newspaper, have no access to TV, multimedia-enabled gadgets, and internet (Myers, 2011).

However, for sustainable development rural people's traditional attitude to development and ability needed to be changed for protection and enhancement of their social, economic, environmental, and cultural assets without compromising their future generations' long-term gains (Gitonga, 2013). Because, it is important to grow positive feeling about change or interest to a sustainable action is a precondition to engaging people in the sustainable initiative (Oroujlou and Vahedi, 2011). Community radio uses participatory communication, so it can easily affect the mental state or attitude to a subject (Mefalopulous, 2008), where people physically, mentally, and emotionally participate in a decision-making process, thus enhance the acceptance of the communication (Ochichi, 2014). In addition to rural people's attitude, their level of ability is needed to be changed to engage them in sustainable development. It consists of their level of capabilities, knowledge, skills, techniques, etc. (Jepson et al., 2014). Community radios through broadcasting the guidelines, tips and techniques from the external experts or successful opinion leaders in illustrative format from social and economic viewpoint (Ouattara and Ouattara, 2006) sharpen a community's present level of skills and builds new capacities in social, economic, environmental, and cultural perspectives (Al-Hassan et al., 2014). Both attitude and ability foster intention to do a task (Gardner, 1985), and intention is the key determinant of behavior (Bagozzi et al. 1989). So, all the three are interrelated. For example, if a people of a community have a positive attitude to development and relevant skills or ability they are intended to behave sustainably (Sood et al.,2004).

From the above literature, it is found that community radio engages the beneficiaries in the communication process and their voices can be heard for their development (Servaes and Lie, 2013) as a collective unit of decision-making, so they are very much empowered in this media than any other media (Manyozo, 2012). The participants are not apart from the sufferer community. As a result, the solutions are based on the realization of the community (Romanow and Bruce, 2006), and these seem to be workable and as are presented in their voices, which enhances trustworthiness among the listeners for accepting sustainable change among the stakeholders (Dagron, 2001). The community involvement builds trust among the stakeholders about the message delivered by a radio station and generates a commitment to implement the message in their practical life (FAO, 2017). Such commitment is enlarged while CR is being converged with the internet in modern days for content development and social networking (Dagron, 2001). So, without any doubt, CR has influential power to change attitude, increase ability and intention to change behavior towards sustainable development. So, the following hypothesis is proposed for the study:

H1a: Community radio through sustainability communications can change the rural people's attitude to sustainable development

H1b: Community radio through sustainability communications can change rural people's ability to sustainable development

H2a: If the rural peoples' attitude is changed they are intended to adopt sustainable behaviour or development.

H2b: If the rural peoples' ability is changed they are intended to adopt sustainable behaviour or development.

3. Methodology

An explanatory approach is applied in the research as the main purpose of the research is to explain the perception of the community radio listeners about the impact of community radio on rural people's intention to adopt sustainable behavior. This kind of research shows the structured or cause and effect relationships between some observed phenomenon (Saunders et al., 2009). A mixed method including a focus group and a survey is done. Focus group is a useful tool at the beginning stage of research (O'Neill, 2012), which help to identify and explain question items (O'Sullivan et al., 2008). The constructs and the items (see Table 01 for the translated version of the questionnaire) under each construct are identified based on the focus group discussion of the ten members of a community radio listener club in a northern district of Bangladesh. The members are given a clue on measuring the impact of community radio on people's change in behavior. Then the members identified four constructs named as acceptance of the communication of community radio, change in attitude to sustainable behavior, change in the level of skills/knowledge, and intention to adopt sustainable development. The literature review is done to explain the constructs. The hypotheses are developed. The survey of a self-administered questionnaire in Bengali (the native language of Bangladesh) is done among people who have at least up to class 12 education as a survey is an appropriate method to study human behavior (Bhattacharjee, 2012).

Before delivering the questionnaire, the potential respondent is asked whether they listen to community radio regularly. If their answer is yes and agreed to give answers, they are given the questionnaire. There are sixteen questions about the main subject besides some demographic questions. The survey is done in six Northern districts of Bangladesh in June-July 2017. The surveyors are the Master's students of a public university in Bangladesh. They have finished a course in Marketing research with a little survey experience. The After that a survey questionnaire is designed. After distribution of the questionnaire, they are collected after three days. This way true responses have been collected.

After data collection, screening is done, and among 300 questionnaires distributed, ten were found with missing values, therefore, rejected, and finally, 290 respondents' responses are included in the Statistical Package for Social Science (SPSS) program. As the items are identified in the focus group discussion, so an exploratory factor analysis is done. Then a confirmatory factor analysis is done, which verifies the explained variance construct and convergent validity (Brown, 2015). Later a partial least square based structural equation modeling using SmartPLS 2.0 is used to do a path analysis. This shows the structural relationships between the dependent and independent constructs (Kline, 2011). Partial least square based structural equation modeling is suitable for a small sample. The reliability and validity of multiple aspects are assessed, and the hypothesis is tested based on the direct and total effects in the path.

Table-01: The constructs and items used in the research

Questions' codes used in data analysis	Items	Constructs
acp_1	The unique characteristics of community radio attract the rural people, so they accept its environmental communications	Acceptance of sustainability communications aired by a community radio
acp_2	The unique characteristics of community radio attract the rural people, so they accept its social sustainability-related contents	
acp_3	The unique characteristics of community radio attract the rural people, so they accept its economic sustainability-related contents communications	
acp_4	The unique characteristics of community radio attract the rural people, so they accept its cultural sustainability-related communications	
att_1	The communications aired by a community radio can change rural people's attitude to environmental sustainability	Attitude to sustainable development
att_2	The communications aired by a community radio can change rural people's attitude to social sustainability	
att_3	The communications aired by a community radio can change rural people's attitude to economic sustainability	

att_4	The communications aired by a community radio can change rural people's attitude to cultural sustainability	
abl_1	The communications aired by a community radio can enhance rural people's ability to adopt environmental sustainability	Ability to be involved in sustainable development
abl_2	The communications aired by a community radio can enhance rural people's ability to adopt cultural sustainability	
abl_3	The communications aired by a community radio can enhance rural people's ability to adopt social sustainability	
abl_4	The communications aired by a community radio can enhance rural people's ability to adopt economic sustainability	
int_1	If the rural people's attitude and ability are changed by the communications aired via community radio, then they can be intended to be involved in economically sustainable development actions.	Intention to be involved in sustainable development
int_2	If the rural people's attitude and ability are changed by the communications aired via community radio, then they can be intended to be involved in socially sustainable development actions	
int_3	If the rural people's attitude and ability are changed by the communications aired via community radio, then they can be intended to be involved in culturally sustainable development actions	
int_4	If the rural people's attitude and ability are changed by the communications aired via community radio, then they can be intended to be involved in environmentally sustainable development actions	

4. Findings and Discussion

After an exploratory factor analysis, the items identified by the focus group are found strongly loaded in their respective constructs, i.e., no <.55 (see Table 02 for detail results). Moreover, according to the statistics of Goodness-of-fit Test, the model is found with high probability level, i.e., insignificant P value with 62 degrees of freedom and low Chi-Square value 72.060. The goodness of fit test suggests the good quality of the data, therefore meet the criteria of a structural equation modeling (Kline, 2011). Therefore, next using SmartPLS a confirmatory factor analysis and path analysis is done. The survey results show that the data are reliable and valid too. For example, the values of the Cronbach's Alpha for the constructs are at .80 threshold, which tells that the perception about the impact of community radio in sustainable development is very consistent (Hair et al., 2014). Moreover, the values of R square is between .21 and .33, which also indicates moderate structural relationships between the constructs Henseler et al., 2013. The discriminant validity is achieved based on the accepted values of the correlation between constructs (i.e., .46 and .51). The data also ensures the convergent validity as the values of average variance extracted is >.50 (Hair et al., 2014). Finally, the construct reliability is super (i.e.,>.80) (Hair et al., 2013).

Table- 02: The results of exploratory and confirmatory factor analysis and path analysis

Exploratory/ Confirmatory EFA/CFA	Variables				Constructs	AVE	Composite Reliability	R Square	Cronbach's Alpha
	abl_1	abl_2	abl_3	abl_4	**Ability**	0.6557	0.8838	0.2181	0.8248
EFA	.690	.700	.660	.608					
CFA	0.8326	0.8448	0.7899	0.7695					
	acp_1	acp_2	acp_3	acp_4	**Acceptance**	0.6186	0.8663	-	0.7943
EFA	.629	.684	.579	.595					
CFA	0.8074	0.8184	0.7686	0.7496					
	att_1	att_2	att_3	att_4	**Attitude**	0.6466	0.8797	0.2692	0.8177
EFA	.584	.666	.713	.617					
CFA	0.7913	0.8275	0.8209	0.7757					
	int_1	int_2	int_3	int_4	**Intention**	0.6465	0.8797	0.3355	0.8176
EFA	.696	.633	.596	.645	**Effects**	Ability	Acceptance	Attitude	Intention
CFA	0.8134	0.8065	0.7701	0.825	Ability	-	-	-	0.3371
AVE- Average Variance Extracted					Acceptance	0.4670	-	0.5188	0.3309
					Attitude	-	-	-	0.3344
					Intention	-	-	-	-

Based on the results of the path analysis (see Table 02 for effects of the constructs on one another and Figure 01 for the path model), it is found that people accept the sustainability communications aired by community radio that can substantially change their attitude to sustainable development (i.e., .519). If people accept the sustainability communications, their ability to be involved in sustainable development is also substantially enhanced (.47), because the value of the effects at .50 thresholds is being treated as sufficient influence of one construct on others (Hair et al. 2014). So H1a and H1b are found true. Moreover, if people's attitude and ability are changed at a certain level their chance of being engaged in sustainability practices are moderately enhanced (i.e., attitude to intention- .334 and ability to intention .337). Thus, H2a and H2b are also found right from the results.

In a nutshell, the research found that the initial assumption of the focus group that the unique characteristics of a community radio build trust among the listeners. As a result, the local people accept the social, economic, environmental, and cultural sustainability-related contents aired by a community radio. Then the listeners' traditional attitude to development change to sustainable development. Also, their present level of skills is also changed due to the locally accessible presentation of scientific and endogenous knowledge on sustainability needs by the community radios. Thus, as their attitude is changed, and their abilities are enhanced through the communications, their intention to adopt sustainable development are also increased too. This finding is not a perception based, rather than there are some practical examples found by the community radio researchers that show community radio can change peoples' traditional behaviors to sustainability behaviors in many developing countries.

FIgure 01: The final path model with results
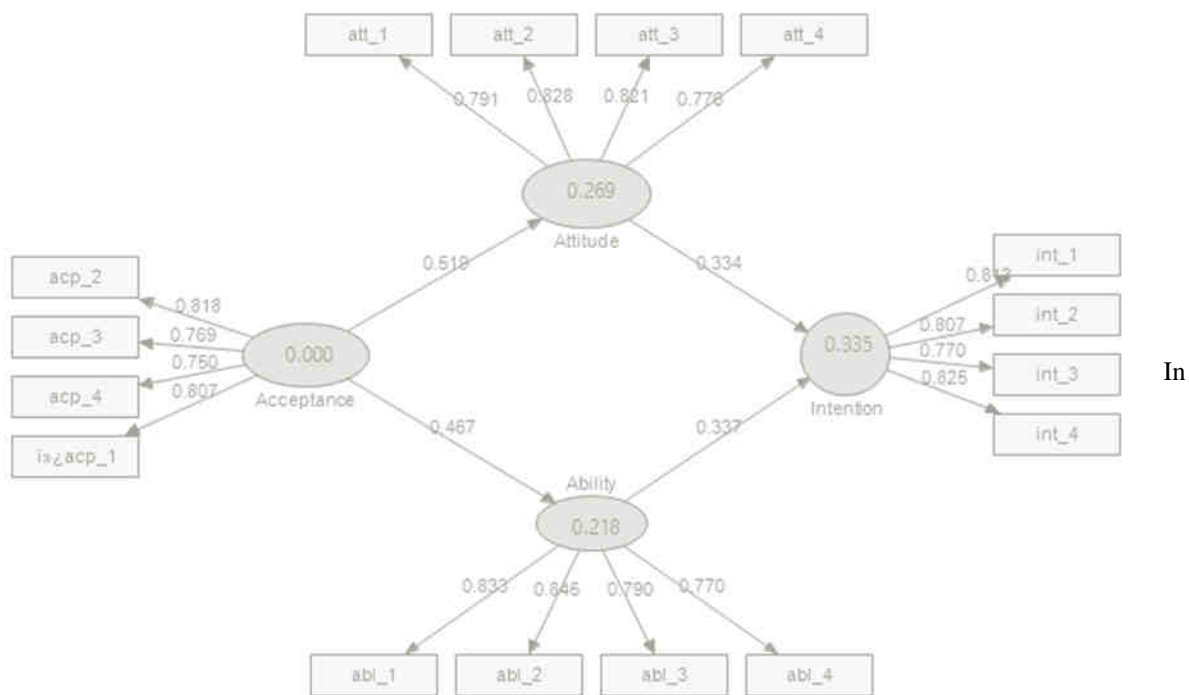
Bangladesh, it is already found that in the areas where community radios are running the people are involving many social, economic, environmental, and culturally sustainable development actions. In the study area, for example, Borendra radio in Naogaon change people attitude and intention to cumin cultivation by airing a special program, so people are now cultivation this crop without leaving their lands uncultivated (Rasheed, 2012). Radio Nalta and Sagorgiri are found a catalyst to change attitudes and abilities of local people to starting community-based adaptation programs to prevent the health risks associated with the climate change (Shumake-Guillemot, 2014). Another radio- Radio Mukti through airing local and national experts' dialogues, tips have changed the local people attitude to human-made disasters for river erosion and sustainable fishing (Morshed, 2017).

From a study by Sen (2015), it is found that child marriage has been significantly reduced by airing the pitfalls of it as well as informing the volunteers and the member of the radio listeners' clubs. The same thing happens for increasing the accountability of government officials by broadcasting the conversations between the local and the government officials (Rahman, 2015). Women are empowered with basic defense training then training on self-employment or small-scale entrepreneurship (Rooijen, and Schelting, 2017). Also, the cultural diversity of the marginalized communities including ethnic, tribal or indigenous, and Dalits are being preserved by airing special programs daily (Rahman, 2015). The successful contribution of community radio is not only seen in Bangladesh but many other developing countries. For example, the 'Shimly Radio' in Ghana has tremendously enhanced the children's school going rate, teaching the farmers with modern agricultural knowledge, hygiene and sanitation and keeping the rural people to their root by presenting cultural programs in the very indigenous way (Al-Hassan et al., 2011).

However, to use community radio properly, it is important to have a participatory base policy, where both the beneficiary and the benefactors would participate with the opportunity to share their needs and experiences to solve a community's problems. The policymakers should identify the strengths of a community radio. The management committee needs to identify the appropriate language and way of communication. They also need to evaluate the effectiveness of the programs over time. By collecting feedbacks, they need to improve the programs' quality. Finally, the community development orientation should be placed in every meeting between the locals and the experts of sustainability.

5. Conclusion

A community radio is a popular media among the rural people in developing countries. It is easily accessed by the local people. As the community radio is, by the rural people and for the rural people, so it is a trusted social institution. As people trust it, so accept its contents. Particularly the community radios are development oriented. They present the programs in a unique way that are understandable to both the educated and uneducated people. As a result, mass peoples' attitude to sustainable development can be changed if the community radios are properly utilized, including the broadcasting of conversations, dialogues, and skill development programs. This, in turn, can increase the intention of the rural people to take sustainable development actions, which is found by using a structural equation modeling based on survey data derived from a focus group discussion.

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