

EVALUATE THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTS): WITH SPECIAL REFERENCE TO LIVESTOCK PRODUCTION TECHNOLOGIES IN BALOCHISTAN

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Abstract

In order to measure the perceived perception of the respondents this research was conducted in Balochistan. Cross-sectional research design applied. Two districts such as Mastung and Pishin were selected randomly. Three hundred (300) respondents were selected using random sampling. 150 respondents from each district. Split-half and Cronbach Alpha program was carried out so as to estimate the inner-consistency by using the SPSS. Cronbach Alpha program value between the range of 0.77 and 0.73. Results show the majority (67%) of respondents were illiterate (52%). Overwhelming majority (87%) of respondents were married. Statistically differences were observed, three out of 11 eleven items regarding livestock production practices by using t-test. Based on the achieving outcomes following recommendations developed for policy implication. At the province level, livestock farmers face the



communication and knowledge gap and their ICTs section is fragile. Therefore, it should be recommended that the provincial government reduce the communication and knowledge gap by conducting the workshop, seminar and training programs frequently so as to enhance the competency level of livestock farmers. In order to enhance their ICTs section in effective mode and promote livestock production technologies, it should be recommended that livestock management or livestock production practices strengthen at considerable rate so as to improve respondent's information level.

Keywords: information and communication technologies (ICTS), Balochistan, livestock production, evaluate, Balochistan province.

1.1 Overview Regarding Livestock Importance in Pakistan

Livestock sector has played a significant role in Pakistan's economy. Livestock sector in this regard has a major income generation source of rural farmers in Pakistan. Livestock industry has constituted 60.6 % of the agriculture sector as well as contributing to sharing the 11.7 % overall country Gross Domestic Product during the year of 2020 (Wasim, 2020). On the other hand, 30 to 35 million individuals were involved in the labor force in the livestock sector at county level (EoN, 2011). In Pakistan, there is huge potential regarding the livestock potential existing. It was estimated that around 41.2 to 49.6 (million) buffaloes/ cattle respectively and 78.2 to 30.9 (million) goats and sheep respectively existed in Pakistan during the year of 2020 (Wasim, 2020).

Livestock is a profitable business for the rural farmers in Pakistan. In this regard, the wool is widely exported at a large quantity, However, Sahiwal Breed in Punjab and Red Sindhi cattle in the Sindh region has widely used for dairy production purposes. Fuel is obtained from animal dung that is excreted from cattle and cows. On the other hand, animal dung is also a major resource for bio-fertilizer and used as soil fertilizers for agriculture purposes (EoN, 2011).

Livestock sector is the best source for the socio-economic acceleration of the livestock farmers that raise economic conditions. On the other hand, the livestock sector is the best source for food, milk products, red meat, income generation vehicles, better sources for fuel, appropriate sources for fertilizer obtained from animal dung, as well as the best direction towards the economic stability at country level (Ali, 2007).



Around 70% of milk products and butter fat at country level were acquired from the livestock sector (Ahmad et al, 2009; Arrain, 2010). Therefore, livestock play a key role and best provision and option for the poor livestock farmers (Govt. of Pakistan, 2013).

1.2 Livestock Production Challenges

Due to lack of ICTs application in rural areas, the livestock sector facing the various challenges such as lack of accesses to modern technology regarding livestock production, lack of poor health facilities of animal in livestock sector, unhygienic or unhealthy conditions of livestock animal, very deprived liaison among livestock farmers, research wing and extension wing at province level in livestock department regarding dissemination of technology, very poor policy of livestock marketing and very poorer access of ICTs (Ahmad et al., 2009).

On the other hand, non-availability of fodder in slack season, low milk production due to poor feeding pattern of animal, ineffective linkages mechanism, limited diagnostic labs at province level, lack of livestock commodities export, improper policy implementation in livestock sector, deprived and poorer food safety measures for animals and the like were the major limiting factors as a results livestock production technologies damaged (Sterk, 2003; Kumervel, 2006; Thornton et al., 2008; and Afzal, 2009).

Other associated and allied challenges as faced by the livestock sector are very limited veterinary services especially in remote areas of province, weak HRD section, lack of supporting and technical veterinary staff, lack of substandard medicines for animals in remote areas of the province. incidence of various zoonotic disease in livestock sector, such as brucellosis, anthrax, foot and mouth disease, rabies, black quarter, parasites, avian influenza, mastitis and so forth, improper treatment of animals, lack of vaccination in Balochistan veterinary hospital, lack of shelter at night for animals, lack of credit facilities for livestock farmers in Balochistan by provincial government, insufficient technology demonstration, low literacy rate of livestock farmers, insufficient skill of livestock farmers, rural poverty, low access to ICTs section and lack capacity building program (Sterk, 2003; Kumervel, 2006; Mirsa et al., 2007; Tiwari et al., 2007; Bilal and Hameed, 2009; Sharif et al., 2009; and GoP, 2013).

1.3 Role of ICTs Within Terms of Livestock Production

ICTs term as a technology is the prime importance for rapid social and economic development along with livestock production development. Therefore, ICTs have the great importance of knowledge (Dahama, 1994).



Effective information technology and information and communication technologies (ICTs) have a great scope because this or present era waves changed human life significantly. Communication patterns and its application were mostly used in every sphere of life and also used in livestock production technology especially in livestock management or practices, livestock medicine, livestock politics, livestock business and so forth. ICTs is the major electronic means regarding diffusion of latest and broad range technology and networking in the livestock sector (Elijah et al., 2006; and Kwake et al., 2008).

Education has a direct relation with the ICTs' utilization. Female farmers need the latest information on livestock management regarding production technology, disease control, and modern breeding methods (Khan, 2009). The female farmers are not aware of the importance of breed improvement. In most cases, they use natural breeding methods to produce young ones with low potential. Calf mortality is another concern due to traditional practices of female farmers. Information gap leads to an adoption gap causing production losses by reason of unawareness of modern technologies (Hashmi et al., 2007).

1.4 Study Significance

Economic development aspect: Livestock sector is the prime driver for development particularly for small ruminants in Balochistan that arise from the financial aspects of livestock farmers (Schoenian, 2003).

Valuable for livestock stakeholders: Small ruminant's business is helpful for rural farmers. Therefore, the current study was not only beneficial for livestock farmers but also fruitful for other stakeholders (UNICEF, 1995).

Socio-economic acceleration aspect: Livestock sector business actually improves the overall socio-economic aspect and livelihood option of the livestock farmers (Nasira, 2000).

For future research aspect: Current study was a significant contribution and provides the new dimensions in livestock sector special reference with ITCs dynamics in livestock sector (UNICEF, 2009).

1.5 Problem Statement



Since the time of ancient times livestock has been the major occupation and significant profession of the rural farmers and provides the food and fiber at considerable rate. Technology is the imperative aspect and very important factor of any structural development. Majority of the farm families in Balochistan are illiterate. In Balochistan the livestock industry still faced various challenges and neglected the sector as a result the socio-economic condition of the livestock farmers did not improve (Siddiqi, 1977). It was also believed that the farm families in Balochistan used the conventional indigenous knowledge. In modern days the access of technology and modern sources of information is part and parcel aspect. In order to change the conventional style of technology towards modern technology by using ICTs for livestock development this research was carried out.

1.6 Objectives

1.6.1 General Objective of the Research

To evaluate the role of information and communication technologies (ICTS): with special reference to livestock production technologies in Balochistan, Pakistan.

1.6.2 Specific Objectives of the Research

- I. To find out the socio-economic profile as an independent variable of the respondents.
- II. To assess the ICTs and its development factor regarding dissemination of livestock production technologies between respondents.
- III. To develop a solid policy regarding improving the operative execution of ICTs in livestock development.

1.7 Research Methodology Reflection

Research methodology is wide-ranging techniques to be applied. Therefore, in this study, various techniques were used as a Research Methodology (RM) (Anderson, 2004). Cross-sectional research design applied. Quantitative research method was carried out, because the quantitative research method was most appropriate to determine the in-depth understanding of phenomena like evaluate the role of information and communication technologies related with livestock production technologies (Creswell & Clark, 2011; Sandelowski, 2003; and Kelle, 2001). In this regard, a questionnaire was developed considering the objectives of research study. The data and information was obtained at field level from the livestock farmers (Gravetter & Forzano, 2002; Anderson, 2004; Radhakrishna, 2007). Two districts such as Mastung and Pishin were selected randomly. Three hundred (300) respondents were selected using random sampling. 150 respondents

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from each district. Fitzgibbon and Morris (1987) table was used by using the Likert scaling (Likert, 1932). Face-to-face interview as a major communication tool was used in this study in order to measure the relationship between and among dependent variables as socio-economic factors and independent variables as a general factor (Creswell, 2003). Split-half and Cronbach Alpha program was applied and carried on variables so as to estimate the inner-consistency by using the SPSS. Cronbach Alpha program value between the range of 0.77 and 0.73 (Joppe, 2000; and Best and Kahn, 2006). Differences between dependent and independent variables were drawn through Simple Independent t-test so as to draw the inferences. T-test was carried out. However, in this regard, the p-value is fixed on (p<0.05).

1.8. Results and Findings

1.8.1 Socio-Economic Information and Attributes

Socio-economic information and their attributes were present in this results section. Socio-economic attributes like educational status of the respondents, age size, livestock farmer's marital status and so forth are the major socio-economic attributes that play an imperative role regarding decision-making process (Hassan et al., 2007).

1.9 Age

Age is another imperative socio-economic attribute regarding decision-making and also plays a significant role in the adoption of livestock technology (Rehman et al., 2011; Siddique et al., 2007). Livestock farmers were inquired about their age composition as shown in figure-1.







Majority (67%) of respondents fell in 41 to 50 years' age categories. Whereas, most of the respondents fell into age categories of 46-60 (23%) as shown in figure-1.

1.10 Educational Status

Education is a very impressive tool that brings about desirable change and mental development in individual attitudes towards development (Amir, 2003; Baser, 2006; Khan, 2008; and Rehman et al. 2011). In this regard the data was gathered at field level and livestock farmer's attributions were recorded on questionnaire.





Most of the respondents were illiterate (52%) as shown in figure-2. Whereas, most (36-12%) received religious and formal education respectively.

1.11 Marital Status

Marital status is a vital socio-economic attribute. In this classification or social strata mostly having the robust decision-making ability about livestock management practices (Hassan et al., 2007).





Figure-3, Information Regarding Marital Status

Overwhelming majority (87%) of respondents were married while, remaining 13% were unmarried (figure-3).

Table-1: T-Test Regarding Contribution of ICTs In Livestock Production Practices
and Technologies As District-Wise

Variables		Mastung		Pishin			~
		MS	SD	MS	SD	t-value	5
ICTs tools	Printed media	3.51	.9675	3.61	1.085	842	.110NS
	Electronic media	2.86	1.482	3.86	.8874	-7.090	.000**
	Smart phone	2.54	1.190	3.28	1.270	-5.204	.030*
livestock production practices and technologies	Vaccination of animal	2.98	1.575	3.26	1.217	-1.681	.009NS
	Grazing of animal	2.62	1.235	3.09	1.590	-2.879	.000**
	Artificial insemination	3.66	1.329	3.68	1.205	091	.133NS
	Milk management	3.70	1.020	3.57	1.119	1.078	.004*
	Marketing of animal	3.42	1.476	4.32	.4680	-7.065	.000**
	Balance ration	3.82	.7574	4.16	.3678	-4.848	.000**
	Silage/hay making	3.90	.7715	3.78	1.013	1.154	.004*
	Shed cleaning animal	2.41	1.081	3.50	1.379	-7.639	.000**

Difference is significant at the 0.05 level in mean score ırd deviation



In order to determine the perceived perception of the respondents regarding livestock production practices this research was carried out. In this regard district-wise comparison concerning livestock production practices were made as shown in table-1. The t value was calculated. However, the equality of mean score was set on 95% confidence interval by using t-test. Levene's Test for Equality put forward and to run in order to determine the variances in variables based on p, 5 level.

Livestock production practices as a dependent variable were significant:

- *ICTs dominion*: electronic media (*t-valve* -7.090; p, 5**); and, smart phone (*t-valve* -5.204; p, 5**);
- Livestock production practices dominion: animals grazing (*t-valve --2.879*; p, 5**), milk management (*t-valve 1.078*; p, 5**), marketing of animal (*t-valve -7.065*; p, 5**), balance ration (*t-valve -4.848*; p, 5**), silage (*t-valve 1.154*; p, 5**); and, shed management or cleaning (*t-valve -7.639*; p, 5**) respectively.

On the other hand, variables were found non-significant about livestock production practices:

- *ICTs dominion*: printed media (*t-valve* -842 p, 5^{NS}); and,
- *livestock production practices dominion*: vaccination of animal (*t-valve -*1.681; p, 5 ^{NS}), and artificial insemination (*t-valve -*.091; p, 5 ^{NS}).

Therefore, at 0.05 level the statistical differences were observed, three out of 11 eleven items regarding livestock production practices by using t-test.

1.12 Conclusion and Policy Implication Aspect

Balochistan has huge potential for livestock grazing and also a major earning field. ICTs are the imperative tools and gadgets. ICTs are a responsible factor to diffusion the latest livestock production practices at grass root level. Therefore, this research was carried out in order to reduce the communication about livestock production technologies among rural livestock farmers. And also measure the ICTs role in selected districts of Balochistan. Based on the achieving outcomes following recommendations developed for policy implication. At the province level, livestock farmers face the communication and knowledge gap and their ICTs section is fragile. Therefore, it should be recommended that the provincial government reduce the communication and knowledge gap by conducting the workshop, seminar and training programs frequently so as to enhance the competency level of livestock farmers. In order to enhance their ICTs section in effective mode and promote livestock production technologies, it should be recommended that



livestock management or livestock production practices strengthen at considerable rate so as to improve respondent's information level.

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