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Research Article
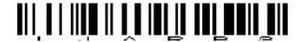
Effectiveness of information sources regarding livestock production in Punjab, Pakistan

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Abstract

Livestock is the net cash income of millions of people in Pakistan and they are consistently working to improve production to meet their needs but may factors hinder their efforts. Lack of technical knowledge and information is one of them. Therefore, the present study was conducted in tehsil Bahawalpur during 2012 to assess the effectiveness of informations sources on the adoption of improved livestock production practices. Multistage random sampling technique was used for the selection of study respondents. Data were collected through interview schedule from the 120 respondents from the research area and were analyzed with the help of SPSS (Statistical Package for Social Sciences). Pearson product moment correlation and chi-squares test was also used for in-depth analysis. Results indicated that family farmers and neighbor farmers were proved as the most effective information sources while extension field services and animal festivals got the lowest rank. Regarding constraints lack of technical skills was ranked 1st followed by the finance shortage, because of this shortage farmers were unable to purchase the recommended ingredients i.e. ration, nutrients, supplements etc. for their animals. Results of correlation show that there is a positive significant relationship between age, education, and effectiveness of information sources while Chi-square analysis opposed the rejection of hypothesis. On the basis of results it is suggested that Extension field staff need training so they should be trained regarding latest livestock techniques by the Punjab agriculture department through refresher courses and training workshops. Public sector should launch some micro credit schemes or interest free loan to reduce the finance shortage problem.

Keywords: Information sources, livestock, Bahawalpur

Introduction

In Pakistan of distinctive geographical location and environment, Farmers rear various breeds of dairy animals such as buffaloes, cattle, goats, sheep etc. (PBIT, 2011) that's why Pakistan stands 2nd largest buffalo and 4th milk producer in the world (Govt. of Pakistan, 2011). Majority of the farmers adopted livestock as dairy farming which has been proved as a profitable business for them (Ahmad, 2005) and livestock also serves as a net cash income among rural families through refreshment activities like horse camel race/ dancing and show jumping etc. (Akmal and Taj, 2004). Despite of this critical importance and

dependence of millions of people on livestock sector, livestock production is lowers than the potential and expectation in Pakistan just because of low adoption of recommended practices and poor dissemination of information through information sources as supported by Ahmed et al. (2004) that low productivity could be attributed to, among other factors, the existence of millions of small-scale dairy producers who do not use improved dairy husbandry practices and for whom dairying is only a secondary enterprise. Despite having a great contribution of livestock among rural people in raising their living standard, there are serious threats in

shape of low reproduction rate, higher infertility rate and low frequency of animal survival. These threats can be reduced by delivering the accurate and proper livestock extension services and by adopting the improved techniques like artificial insemination, better management and accurate knowledge for animal survival in different environment conditions (SMEDA, 2004). It is obvious that the livestock farmers desperately needed the informations regarding animals' production practices via various sources to boost the production level. As it is supported by Abbas et al. (2003), that in order to accelerate the pace of effectiveness of the research findings to farmers, utilization of a variety of communication channels is compulsory with the assumption that technical informations being disseminated are suitable to the farmers. For dissemination of innovative technologies various methods/media are being used by the extension wing involving both interpersonal and impersonal contacts (Muhammad, 2005). Moreover, Ango (2001) indicated that the most urgent bridge needed for effective application of improved farm technology is for good agricultural extension and advisory services to be provided on a sustainable basis among the livestock farmers in the developing countries (Ango, 2001). Adoption is also influenced by the socio-economic characteristics of the end users and previous researchers many time indicated the relationship such as Bulale (2000) working on the adoption of dairy production technologies in Ethiopia found differential effects of farm size on adoption of dairy production technologies. Farm size, positively and significantly influenced the adoption of pasture fencing along with many more practices i.e. scientific feeding. Al-Sakran (2001) found a statistically significant positive relationship between the age and education with adoption while Shibah et al. (2002) reported no relationship between age and adoption. Keeping in view the above mentioned facts present study was conducted in tehsil Bahawalpur with the objectives to assess the effectiveness of information sources on the adoption of livestock production practices and constraints faced by the farmers were also probed. Moreover, the relationship was also found between socio economic characteristics and the effectiveness of information sources helping in improving the adoption level.

Materials and Methods

Bahawalpur is situated in the south of the Punjab, holding an area of 15,918 square miles. The economy

of the district based on agriculture in which majority of people depends on livestock for acquiring their daily requirements (Govt. of Punjab, 2010). The present research was conducted in tehsil Bahawalpur consisting of 36 total union councils and out of these 17 were rural union councils (UCs). From these rural (UCs), 5 were selected at random. From each of the selected (UCs), 2 villages were selected at randomly. From each of randomly selected village, 12 livestock farmers were selected by using simple random sampling technique thereby making a sample size of 120 respondents. The data were collected through pre-tested and valid interview schedule and were analyzed with the help of SPSS (Statistical Package for Social Sciences). The data were tabulated and analyzed by working out descriptive Statistics (frequencies, means, & standard deviations).Moreover, Pearson moment correlation was also used to find analyze the relationship of ordinal variable (age and education) with effectiveness of information sources. Chi square test was also used for the analysis of nominal variables (family type, source of income and nature of livestock farming).

Conceptual framework

The model for this study is composed of three key constructs (see Figure 1) including Livestock farmers (socio economic characteristics i.e. age, education, source of income etc.), Livestock farming, and Information sources. Salama (2001) reported no relationship between age and the adoption of dairy technologies while the studies by MIZHER (2002), FOLTZ and CHANG (2002), reported a statistically significant negative relationship between them also between education and adoption. Goswami et al. (2001), Gad-Al-Rab (2000, Abd El-Razek (2002) reported significant positive relationship between dairy farmers exposure to mass media and adoption of improved practices while Singh et al.(1993) and Ahmed (1994) found no relationship. Based on existing literature it was assumed that there is a positive relationship between socio economic characteristics and the effectiveness of information sources. As financially sound farmers can use various information sources which ultimately motivate them to adopt the improved technologies. Due to this; the researcher proposed the framework enlightening the need to check the effectiveness of information source and also the relationship with livestock farmers socio-economic characters.
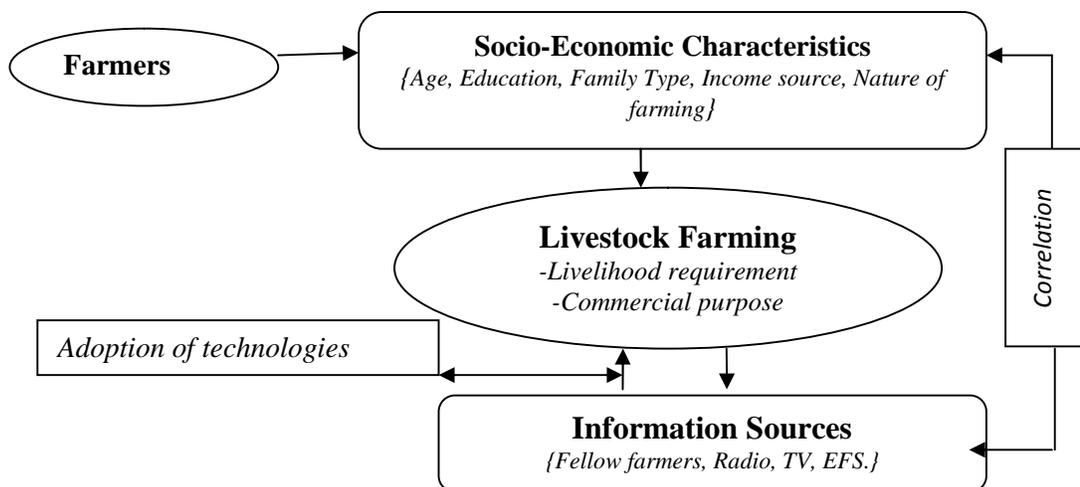
Figure 1: Conceptual Framework

From the model, following hypothesis is derived.

Ho1: Socio economic characteristics will have a significant relationship with the effectiveness of information sources

Results and Discussion

Table 1 Distribution of respondents according their Socio-Economic characteristics

Socio Economic Characteristics		Frequency	Percentages
Age (Year)	<35 (Young)	19	15.8
	35-50 (Middle age)	58	48.3
	>50 (Old)	43	35.8
Education	Illiterate	34	28.3
	Up to Primary	26	21.6
	Primary to Middle	11	9.2
	Middle to matric	47	39.2
	Above Matric	2	1.7
Family type	Joint	102	85
	Nuclear	18	15
Source of Income	Livestock only	43	35.8
	Livestock+ Crops	64	53.3
	Livestock+ Crops+ Other services	13	10.8
Nature of livestock farming	Livelihood requirement	46	38.3
	Commercial	2	1.7
	Both	72	60

Data depicted in Table 1 is reflecting that middle age appeared as a most prominent category of age. One fourth (28.4%) respondents were found illiterate while middle to matric level education holding farmers were 39.2% among the farmers having formal education. Vast majority (85%) of respondents were living in joint family system. Moreover, more than half (53.3%) respondents' source of income was livestock along with crops farming because rural trend is mostly dominant in the study area. A sound majority (60%) of farmers were doing livestock farming for livelihood and commercial purpose as well while just commercial livestock farming was found negligible (1.7%).

Information sources being used in the study area
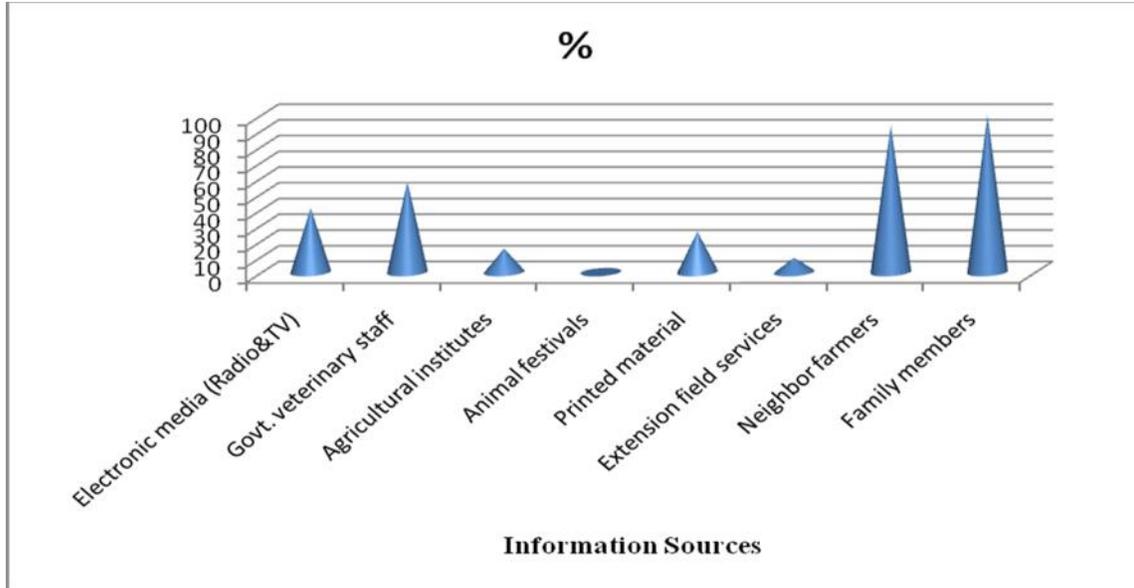
Fig: 2 Available information sources in the study area

Fig 2 representing the information sources being used in the study area. It is clear from the data that most prominent information source was family members followed by the neighbor farmers who are known as progressive farmers. Govt. veterinary staff was also being used as information source in the study area almost by the 60% of the respondents. Animal festivals were never arranged in the study area and extension field staffs were also known to almost one third respondents as the information source. It can be concluded from the number of the respondents that some respondents had benefited from more than one source of information, furthermore government veterinary staff, neighbor farmers and family members were playing very important role in dissemination of related information with regard to livestock production practices.

Effectiveness of information sources

Table 2: Ranking of various information sources effecting the adoption of recommended livestock production practices.

Source	Mean	Rank	Std. Deviation
Family farmers	4.808	1	0.395
Neighbor farmers	4.716	2	0.452
Govt. veterinary staff	3.808	3	0.853
Electronic Media	2.325	4	0.851
Printed material	2.125	5	0.379
Animal Festival	1.733	6	0.514
Extension field services	1.125	7	0.332
Agriculture Institute	1.066	8	0.250

Table 1 indicates the effectiveness of information sources on the adoption of improved livestock production practices. Ranking of information sources regarding effectiveness was calculated on the basis of their gained mean. Family farmers as information source got the maximum mean and was ranked 1st among all sources followed by the neighbor farmers which got 2nd highest mean and was ranked 2nd as most of the farmers especially small farmers reside on the information gained family farmers due to having family terms and good relations. Farmers of medium and poor wealth ranks depended more on neighbors for information than the rich since the rich could afford more of the alternative sources. Metz *et al.* (1995) and Miheso, (1998) observed that more than 50% of dairy farmers obtained information on feeding and breeding of dairy cattle from their neighbors. Further some of them also can't afford to own information medium such as TV and radio etc. Govt. Veterinary staff was ranked 3rd attaining the 3rd highest mean. These agents are working well in dissemination of latest improved livestock production practices in the study area as it was perceive from the opinions of farmers. Electronic media is considered best regarding the technology dissemination as it is the only medium which can disseminate the improved technology in a very short time to the maximum population but its lagging in its effectiveness because of many factors such as irrelevant programs on TV and lack of TV sets and the modern mediums that are becoming the alternate of radio and TV such as help lines, mobiles and internet. That's why it got lower rank and lower mean. Printed material is mostly considered best for the literate persons or farmers but in the study area most of the farmers were illiterate, having low educational level, therefore, it was ranked 5th. It's a modern era now and old cultural traditions are being replaced by the new fashion, so same case is with animals' festivals which were part of the tradition if we look few years back but now these festivals have no value and no one reported its existence in the study area. Due to lack of trainings and laziness extension field services provided by the extension filed staff was ranked 7th followed by the Agricultural institutes which got the last rank. Agricultural institutes and research centers are busy in making new technologies and cross breeds but nor working for the implications of these technologies in the field that's why these technologies became flopped.

Constraints regarding adoption of improved practices

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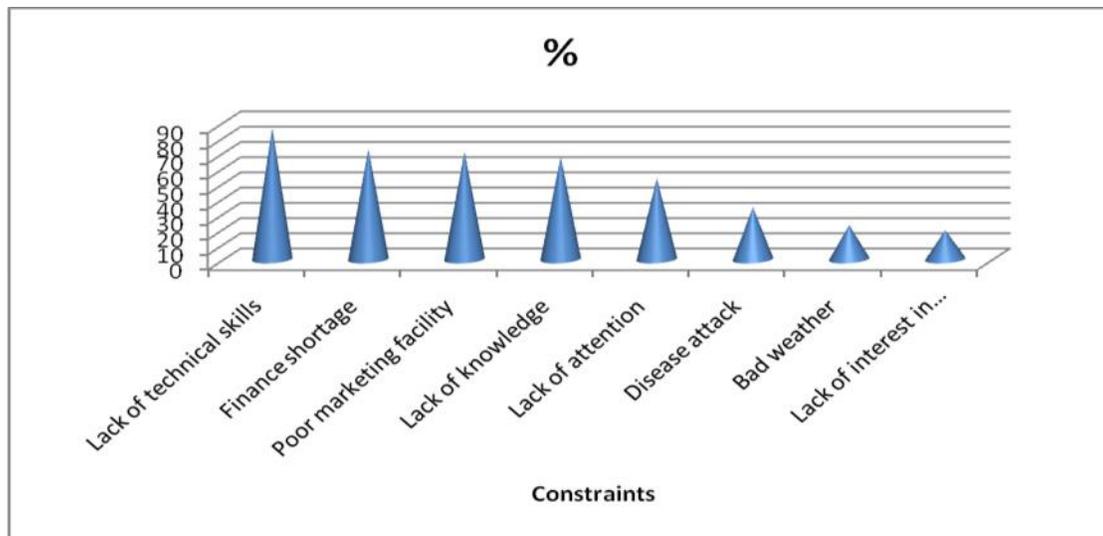
Fig: 3. Constraint being faced by the livestock farmers

Fig 3 indicates that vast majority (86.6%) of the respondents reported the lack of technical knowledge as a prominent constraint to the adoption of recommended production practices followed by the key factor finance shortage which was reported by majority (72.5%) of respondents as a constraint. Livestock practices adoption varies from area to area and among the low income farmers and high income farmers as reported by (Delgado *et al.* 1999) that livestock situation was more crucial in low income

farmers as compared to high income. Moreover, Naylor *et al.* (2005) suggested that livestock production can only be increases by reducing the feed prices. Ramsey et al. (2005) also reported that several production practices can increase cowherd returns either by increasing revenue or by reducing costs. Marketing conditions were poor so it was also ranked among top 3 major constraint including lack of technical skills and finance shortage. Diseases always have negative impacts so keeping in this view, 34.1% of respondents reported as barrier of adoption. Bad weather and lack of interest was reported last among the constraint due to their low viability. These results in line with Ghafoor (2003) and Gillespie *et al.* (2007) study, who found that poor finance earning, lack of appropriate knowledge, negative attitude of government and poor marketing facilities, were the responsible in the adoption of improved farm practices.

Relationship

Differences in adoption of improved practices among various livestock growers raise questions regarding which factor influence farmers' tendency to adopt practices. Do demographic characteristics of the farmer affect adoption process? To find that answer an analysis was made using Pearson moment correlation and Chi square test.

Table 2: Relationship between socio-economic characteristics and effectiveness of information sources
i) Pearson Moment Correlation

Characteristics	Pearson correlation	Significant level
Age	0.820(**)	0.000
Education	-0.232(*)	0.011

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

ii) Chi-Squares test

Characteristics	Chi-test value (p)	d.f	Significant level (α)
Family type	112.618[a]	11	0.000
Source of income	198.740[b]	22	0.000
Nature of livestock	114.961[c]	22	0.000

a . 18 cells (75.0%) have expected count less than 5. The minimum expected count is .30.
b . 28 cells (77.8%) have expected count less than 5. The minimum expected count is .22.
a , 28 cells (77.8%) have expected count less than 5. The minimum expected count is .07

Based on the relationship between socio economic characters and effectiveness of information sources, Table 2 is reflecting a significant relationship between age, education, and effectiveness of information sources and these results are supported with Ayoade (2010) where he reported positive significant relationship between age and effectiveness of information sources. This is an indication that age and education plays significant roles in determining the information sources that are effective to farmers on livestock farming and production.

Table 2 further indicates the Chi-Square test results, where it is clear that all three variables family type, source of income and nature of livestock farming got p value less than (alpha).so. The hypothesis Ho: cannot be rejected.

Conclusion

The study has identified the most effective sources for disseminating livestock production practices, as well as identified the major constraints hindering the production practices in the study area. It is also concluded that age, education, family type, and nature of farming play a significant role in determining the information source. Extension field services got almost the lowest rank therefore, based on this; efforts should be directed towards improving the level of competency of the extension field staff through organizing training workshops and refresher coursed

organized by the Punjab agriculture department so that they may be able to disseminate improved practices. Subsidy should be provided on inputs for the good health of the animals by government sector boost the production and farmers' courage to do more livestock farming.

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