A Study on Effectiveness of Agricultural Marketing Information System

Dr. Anupama Sundar D

Associate Professor, JSS Centre for Management Studies, JSS Science and Technology University
JSS Technical Institutions Campus, Mysuru-570006

1. Introduction

Information is critical to the social and economic activities that comprise the development process. Development economy has witnessed agricultural (green, white, yellow, blue and now rainbow), industrial and information technology revolutions. Good communication system and information system reinforce commitments to sustainable productivity. The Government of India has given more thrust on agriculture, food and information technology sectors towards achievement of economic reforms for achieving high growth rate in production. Information system is a process that transforms data into information. When this information is further refined it acts as a basis for decision-making leading to the development of decision support system. Thus, strategic questions posed by researchers and policy makers in agriculture sector can best be answered by thorough and reliable exploration of related data. This is very essential in agricultural marketing system. Market information is an important facilitating function in the agriculture marketing system. It facilitates marketing decisions, regulates the competitive market process and simplifies marketing mechanisms. Market information is a means of increasing the efficiency of marketing system and promoting improved price formation. It is crucial to the farmers to make informed decisions about what to grow, when to harvest, to which market produce should be sent and whether or not to store it. Improved information should enable traders to move produce profitably from a surplus to a deficit market and to make decisions about the viability of carrying out storage where technically possible. Market information is defined as "A service usually operated by the public sector, which involves the collection on a regular basis of information on prices and, in some cases quantities of widely traded agricultural products from rural assembly markets, wholesale and retail markets, as appropriate and dissemination of this information on a timely and regular basis through various media to farmers, traders, government officials, policy makers and others, including consumers." (Anonymous, 2003). The availability of prompt and reliable information about what is happening in the market, what quantities are arriving and what prices are quoted for different commodities considerably improve the decision making capability of the farmers and strengthens their bargaining power. Conventionally the markets maintain information in the form of registers. The daily prices are compiled manually and written on the blackboards for the use of farmers visiting the markets. At present, the information is disseminated through various media like radio, newspapers, blackboard display and public address system at market yards. The information provided by these methods is stale and does not help the farmers sufficiently in taking decisions in marketing their produce. The farmers are also not able to know about the prices prevailing in other markets, as the market committees are able to disseminate information in respect of their own markets only. The farmers are therefore, left with no alternatives but to dispose off their produce in the nearest market, even at uneconomic prices.

Purpose of Agricultural Marketing Information System

The main purpose of Agricultural Marketing Information System (AMIS) is to disseminate accurate and timely marketing information so as to support in marketing decision making and marketing efforts of entrepreneurs, farmers, government, development organizations, academicians, and researchers. Agricultural Market Information System (AMIS) helps in ensuring that produce goes to markets where there is a demand for it. It shortens marketing channels and cuts down on transport costs, and helps ensure that each marketing transaction is a fair one, and that all participants share the risks and benefits. However, this does not happen if marketing information is distributed unequally, as is generally the case when many small-scale farmers in India are selling to a relatively few large-scale dealers. The farmers then end up bearing the greater part of the risk, while the dealers end up with the greater part of the profits. Farmers must be able to seek out and compare the information available for different outlets if they are to sell to best advantage. Price information is less useful if there is only a single market outlet, or if farmers are price takers rather than price seekers. Where there is a very wide gap between the farm gate price and the price paid in wholesale markets and by consumers, marketing information can help narrow the gap.

Components of AMIS System
- Agricultural markets and prices
- Selection of crops
- Fertilising and crop growth information.
- Irrigation system information
- Farm equipment information
- Soil testing information
- Weather information
- Pest control methods
- Policies of government

Objectives
- To understand the awareness of farmers on the AMIS and the various components of AMIS developed by government of Karnataka.

- To analyse the impact of education , age , occupation type etc on awareness of AMIS on farmers.
- To suggest ways of improving the existing AMIS in Karnataka.

Need & Importance of Ideal Agricultural Marketing Information System (AMIS)
- Sourcing all the market data/information being collected by various agencies;
- Processing and analyzing such data/information to turn it into useable knowledge; and
- Developing mechanisms/systems for information/ knowledge dissemination through various media such as radio, TV, newsletters, bulletins, and websites.

2. Literature Review

Marketing Information Systems as an interacting structure of people, equipments and procedures to gather sort, analyze, evaluate and distribute, timely and accurate information for use by marketing decision makers to improve their marketing planning, implementation, and control. Marketing Information System has four parts, which are Internal Records, Marketing Intelligence, Marketing Research, and Marketing Decision Support System (MDSS). Internal records are the most used information in all the companies around the world such as reports of orders, sales, prices, costs, inventory levels, receivables, payables and so on. Marketing intelligence system is a set of procedures and sources used by managers to obtain their everyday information about pertinent developments in the marketing environment (Kotler and Armstrong, 2010).

1) Market information system and its application for agricultural commodities in Karnataka state - Amrutha C.P.
Market information is a means of increasing the efficiency of marketing system and promoting improved price formation. It is crucial to the farmers to make informed decisions about what to grow, when to harvest, to which market produce should be sent and whether or not to store it. Hence there is a need to create awareness among the farmers through the agricultural extension agencies like the State Department of Agriculture, Krishi Vigyan Kendras so that the marketing information on agriculture commodities are incorporated in the extension services along with production aspects to the farmers.

2) Dissemination and Utilization of Market Information System by Farmers forGram Crop in Bhiwani District of Haryana, India - Veer Sain
Farmer's sources of market information at village level, neighbors and newspapers were the main source of market information to the farmers whereas, commission agents were the most sought source at the market level.The MIS should be deliver fast, reliable and accurate information in a user friendly manner for utilization by the farmers and other stakeholders in order to facilitate the farmers to decide what and when make crop and marketing planning, how to cultivate, when and how to harvest, what post harvest management practices to follow, when, where, how to sell etc. of the agricultural produce in the study area

3) Agricultural Marketing Information Usage among Soybean Farmers in Nigeria - Asogwa, B. C., Ezihe, J. A. C., and Ogebe, F.O.
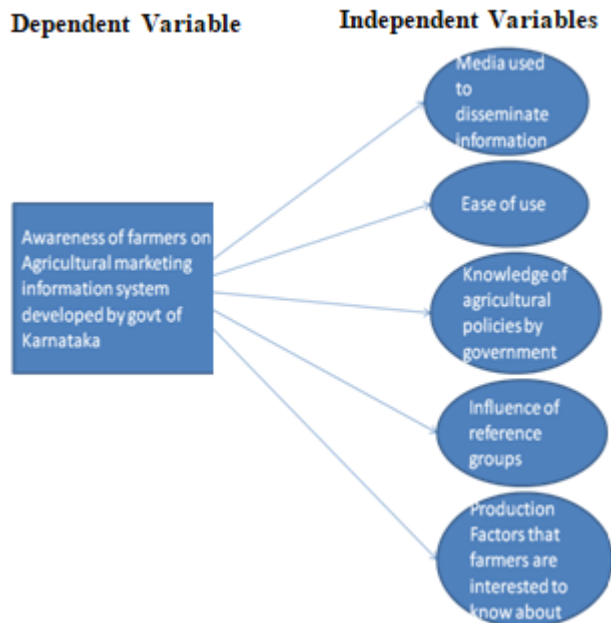The study showed that the soya bean farmers get marketing information mainly through other soya bean producers, family, neighbours, and farmers' cooperative organization and extension agents. Only very few of the farmers indicated print and electronic media as sources of information because sources are not readily affordable, reliable, or reliable in the rural communities. However, research institutes and universities have not put in enough efforts to carry out their function of information generation and delivery to farmers. Other soya bean producers, family, neighbours, farmer cooperative society, extension agents were evaluated as USEFUL or VERY USEFUL by the farmers. Information sources with low evaluation included middlemen, print media and electronic media. Farm sales, age, other sorghum producers, and education, cooperative society, off-farm employment, Availability of extension services and agricultural information and access to markets all had significant influence on the probability of producers evaluating their marketing information as adequate.

4) ICTs for Agricultural Extension: Bagalkot, Karnataka - B.S. Yenagi1, K.B. Yadahalli, R. Gurumurthy and L. Krishna Naik
Information is one of the key inputs in agriculture and information deficits constrain agricultural productivity in India. The present study discussed the agricultural information seeking behavior of farmers in the northern part of Karnataka state, India. It tried to explain the reasons behind use of certain media—including ICTs—by the farmers over other available sources. It was observed that, though farmers have access to a wide range of sources, they mostly relied on middlemen, and local and official sources for agricultural information. Among new ICTs, mobile phones were widely available in the study area but were mostly being used for post sale inquiry rather than information for increasing production efficiency. In the rural Indian context, the availability of ICTs does alter the reciprocal relationship between the seller (farmer) and the buyer (middlemen). In the absence of formal and effective institutions, the middleman is also the supplier of farm inputs and credit to the farmers and this skewed relation limits the advantage that can be derived from use of ICTs. This study indicates that the possible advantages from use of ICTs in rural areas are offset by an absence of other input agencies; interventions in other parts of the country indicate that the entire agricultural supply chain can be made more efficient by use of ICTs. Hence, rather than negating the possible benefits that can be derived from the use of ICTs in agriculture sector, this study points to issues that need to be addressed simultaneously.

2.1 Conceptual Framework of Awareness of Farmers on Agricultural Marketing Information System

Conceptual Model

Dependent Variable   **Independent Variables**

Media used to disseminate information

Ease of use

Awareness of farmers on Agricultural marketing information system developed by govt of Karnataka

Knowledge of agricultural policies by government

Influence of reference groups

Production Factors that farmers are interested to know about

3. Research Methodology

Research Design
The research design indicates the type of research methodology under taken to collect the information for the study. The research used both descriptive and analytical type of research design for this research study. The main objective of using descriptive research is to describe the state of affairs as it exists at present. It mainly involves surveys and fact finding enquiries of different kinds.

Area of Study
The area of study is confined to farmers of Chamarajanagar district of Karnataka state.

Research Instrument
The structured questionnaire is used at the research instrument for the study.

Questionnaire Design
The questionnaire framed for the research study is a structured questionnaire in which all the questions are predetermined before conducting the survey. The form of question is of "5 point Likert scale method".

The awareness of farmers on agricultural information system questionnaire consists of demographic data and 26 questions relating to 5 parameters namely, Media used to disseminate information, Ease of use, Knowledge of agricultural policies by government, Influence of reference groups and Production Factors that farmers are interested to know about.

The questionnaire was done in the local language KANNADA so that the farmers would find it easy to understand and provide the correct feedback.

Data Collection Method
The steps in which the project was carried out by collecting both the primary and the secondary data. The primary data was collected from farmers by using the questionnaire. The secondary data was collected first. This collection of data was done by means of reading various materials such as books, journals, magazines, websites, etc; looking for similar content online (i.e. is internet).

There are two types of data collections
1) **Primary Data**
The scales used to evaluate questions are
- 5 Point Likert scale method
- Observation

Sampling Design:
Sample Size - A sample is a definite plan for obtaining a sample from a given population. The researcher adopted simple random sampling for the study. Here 100 respondents have been chosen as sample size.

Statistical Tools Used:
- Factor analysis
- Z-test.
- Graphical representations

Hypothesis

1) **Media used to disseminate information**.
   H_0 : There is no significant impact of Media used to disseminate information on awareness of farmers on agricultural marketing information systems.
   H_1 : There is significant impact of Media used to disseminate information on awareness of farmers on agricultural marketing information systems.
2) **Ease of use of information**.
   H_0 : There is no significant impact of ease of use of information on awareness of farmers on agricultural marketing information systems.
   H_1 : There is significant impact of ease of use of information on awareness of farmers on agricultural marketing information systems.
3) **Knowledge of farmers on agricultural policies given by government**.
   H_0 : There is no significant impact of Knowledge of farmers on agricultural policies given by government and awareness of farmers on agricultural marketing information systems.
   H_1 : There is significant impact of Knowledge of farmers on agricultural policies given by government and awareness of farmers on agricultural marketing information systems.
4) **Influence of reference groups**.
   H_0 : There is no significant impact of Influence of reference groups on awareness of farmers on agricultural marketing information systems.
   H_1 : There is significant impact of Influence of reference groups on awareness of farmers on agricultural marketing information systems.
5) **Production Factors that farmers are interested to know about**.
   H_0 : There is no significant impact of Production Factors that farmers are interested to know about on awareness of farmers on agricultural marketing information systems.
   H_1: There is significant impact of Production Factors that farmers are interested to know about on awareness

of farmers on agricultural marketing information systems.

4. Analysis and Interpretation of Data

Data collection is the systematic recording of information; data analysis involves working to uncover patterns and trends in data sets; data interpretation involves explaining those patterns and trends. Analyzing survey data is an important and exciting step in the survey process. It is the time that you may reveal important facts about your customers, uncover trends that you might not otherwise have known existed, or provide irrefutable facts to support your plans. By doing in-depth data comparisons, you can begin to identify relationships between various data that will help you understand more about your respondents, and guide you towards better decisions. Epidemiologists often find data analysis the most enjoyable part of carrying out an epidemiologic study, since after all of the hard work and waiting they get the chance to find out the answers. If the data do not provide answers, that presents yet another opportunity for creativity! So analyzing the data and interpreting the results are the "reward" for the work of collecting the data. Data do not, however, "speak for themselves". They reveal what the analyst can detect. So when the new investigator, attempting to collect this reward, finds him /herself alone with the dataset and no idea how to proceed, the feeling may be one more of anxiety than of eager anticipation. As with most other aspects of a study, analysis and interpretation of the study should relate to the study objectives and research questions. One often-helpful strategy is to begin by imagining or even outlining the manuscript(s) to be written from the data. The usual analysis approach is to begin with descriptive analyses, to explore and gain a "feel" for the data. The analyst then turns to address specific questions from the study aims or hypotheses, from findings and questions from studies reported in the literature, and from patterns suggested by the descriptive analyses. Before analysis begins in earnest, though, a considerable amount of preparatory work must usually be carried out.

The five independent variables adopted are:
- Media used to disseminate information
- Ease of use of information.
- Knowledge of farmers on agricultural policies given by government.
- Influence of reference groups.
- Production Factors that farmers are interested to know about.

Of the 100farmers, 100(100%) were male farmers and 0(0%) were female farmers: only 12(12%) were aged between 21-30, 48(48%) were aged between 31-40, 40(40%) were aged above 40 years: 4(4%) were illiterates, 40(40%) had completed primary schooling, 44(44%) had completed secondary schooling, 8(8%) were graduates and 4(4%) were post graduates:92(92%) were having agriculture as a primary occupation while8(8%) were having agriculture as a secondary occupation:80(80%) of the farmers had an agricultural experience of more than 10 years while 20(20%) of them had an agricultural experience of less than 10 years: 68(68%) of farmers owned lands below 10 acres while 32(32%) of farmers owned lands over 10 acres. To fulfill the objectives of the study the following statistical hypothesis were constructed and tested subsequently.

Factor Analysis

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.643
Bartlett's Test of Sphericity	Approx. Chi-Square	998.057
	df	120
	Sig.	.000

Communalities		
	Initial	Extraction
Awareness_on_AMIS	1.000	.782
price_related	1.000	.699
buyer_related	1.000	.781
crop_related	1.000	.765
pesticide_and_manure_related	1.000	.697
self_motivated	1.000	.728
role_model	1.000	.843
mobile_phone	1.000	.749
television	1.000	.736
pledge_loan_scheme	1.000	.792
minimum_price_support	1.000	.787
insurance	1.000	.513
reciepts_and_agreements_at_mandis	1.000	.803
practicality	1.000	.727
continuous_update	1.000	.797
ease_of_understanding	1.000	.722
Extraction Method: Principal Component Analysis.		

Component Matrix[a]					
	Component				
	1	2	3	4	5
minimum_price_support	.866				
reciepts_and_agreements_at_mandis	.822				
ease_of_understanding	.702				
pledge_loan_scheme	.702				
practicality	.666				
Awareness_on_AMIS	.659				
self_motivated	.646	-.515			
continuous_update	.576				
mobile_phone	.565		.545		
insurance	.532				
price_related		.608			
role_model			-.587		
pesticide_and_manure_related			.566		
television				.800	
crop_related				.564	
buyer_related	.554				.608
Extraction Method: Principal Component Analysis.					
Total Variance Explained					

a. 5 components extracted.

Rotated Component Matrix[a]					
	Component				
	1	2	3	4	5
pledge_loan_scheme	0.868				
self_motivated	0.831				
reciepts_and_agreements_at_mandis	0.789				
mobile_phone	0.752				
insurance	0.585				
continuous_update		0.867			
Awareness_on_AMIS		0.817			

practicality	0.798			
minimum_price_support	0.61			
price_related		0.783		
pesticide_and_manure_related		0.728		
ease_of_understanding		0.67		
crop_related			0.826	
television			0.749	
buyer_related				0.78
role_model				0.776
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.[a]				
a. Rotation converged in 6 iterations.				

Total Variance Explained

Component Transformation Matrix					
Component	1	2	3	4	5
1	0.658	0.561	0.349	0.223	0.285
2	-0.662	0.525	0.506	-0.172	0.007
3	0.22	-0.473	0.745	-0.111	-0.4
4	-0.285	-0.273	0.195	0.849	0.293
5	-0.015	-0.333	0.169	-0.433	0.82
Extraction Method: Principal Component Analysis.					
Rotation Method: Varimax with Kaiser Normalization.					

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.645	35.278	35.278	5.645	35.278	35.278	3.535	22.095	22.095
2	2.032	12.700	47.978	2.032	12.700	47.978	2.965	18.530	40.625
3	1.836	11.477	59.455	1.836	11.477	59.455	2.310	14.439	55.064
4	1.416	8.848	68.303	1.416	8.848	68.303	1.569	9.809	64.873
5	.995	6.218	74.520	.995	6.218	74.520	1.544	9.647	74.520
6	.859	5.369	79.890						
7	.761	4.754	84.644						
8	.693	4.329	88.973						
9	.442	2.765	91.738						
10	.322	2.013	93.751						
11	.281	1.754	95.505						
12	.218	1.364	96.869						
13	.187	1.166	98.035						
14	.142	.890	98.924						
15	.109	.680	99.604						
16	.063	.396	100.000						

Extraction Method: Principal Component Analysis.

Scree Plot
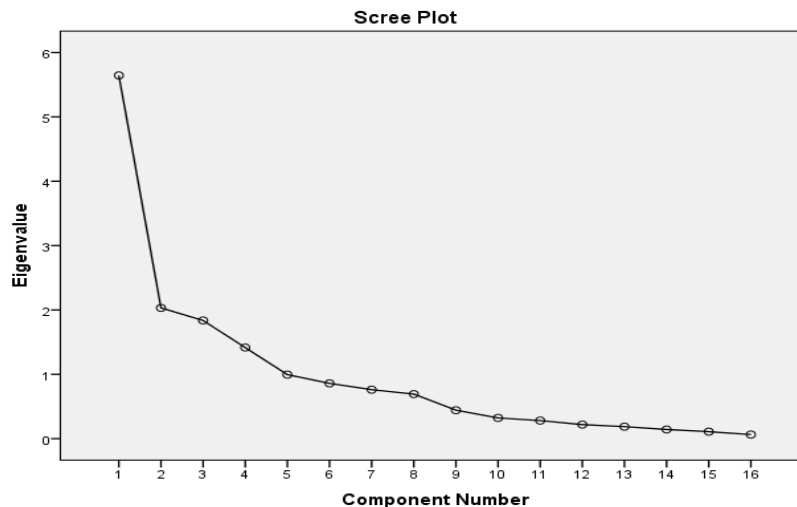
1) Production Factors that farmers are interested to know about

ANOVA[a]						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.333	6	4.722	9.566	.000[b]
	Residual	45.907	93	.494		
	Total	74.240	99			
a. Dependent Variable: Awareness_on_AMIS						
b. Predictors: (Constant), farm_equipment_related, policies_related, crop_related, price_related, buyer_related, pesticide_and_manure_related						

Coefficientsᵃ							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	-4.706	1.135		-4.147	.000	-6.959	-2.453
price_related	.454	.166	.258	2.737	.007	.125	.784
buyer_related	.752	.162	.419	4.627	.000	.429	1.074
policies_related	.376	.146	.216	2.569	.012	.085	.666
crop_related	.388	.117	.282	3.312	.001	.156	.621
pesticide_and_manure_related	-.104	.159	-.069	-.654	.514	-.419	.211
farm_equipment_related	.103	.170	.059	.607	.545	-.234	.440

From the above regression table we can infer that farmers are interested to know more about crops, price , buyer , policies related information. Farmers do not seek more information on pesticides and farm equipment related data. The overall "p" value for the analysis is .000 < .05. Therefore we can reject the null hypotheses (H0) and accept the alternate hypotheses (H1).

H_0 : There is no significant impact of Production Factors that farmers are interested to know about on awareness of farmers on agricultural marketing information systems.

H_1: There is significant impact of Production Factors that farmers are interested to know about on awareness of farmers on agricultural marketing information systems.

2) Influence of Reference Groups

ANOVAᵃ						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.728	5	5.746	11.867	.000ᵇ
	Residual	45.512	94	0.484		
	Total	74.24	99			

a. Dependent Variable: Awareness_on_AMIS
b. Predictors: (Constant), other_farmers, self_motivated, role_model, friends_and_family, kvk_officials

Coefficientsᵃ							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	-1.757	.735		-2.390	.019	-3.216	-.297
self_motivated	-.253	.173	-.141	-1.464	.147	-.595	.090
friends_and_family	.762	.172	.433	4.442	.000	.422	1.103
role_model	.180	.115	.140	1.560	.122	-.049	.408
kvk_officials	.082	.132	.066	.625	.533	-.179	.344
other_farmers	.591	.122	.552	4.862	.000	.350	.832
a. Dependent Variable: Awareness_on_AMIS							

From the above regression table we can infer that farmers are being encouraged to be aware of market information's related to agriculture by their friends and family and other farmers. The Krishi vigyan kendras established in each district should encourage farmers to know more about agricultural marketing information. The overall "p" value for the analysis is .000 < .05. Therefore we can reject the null hypotheses (H0) and accept the alternate hypotheses(H1).

H_0 : There is no significant impact of Influence of reference groups on awareness of farmers on agricultural marketing information systems.

H_1 : There is significant impact of Influence of reference groups on awareness of farmers on agricultural marketing information systems

3) Knowledge of Agricultural Policies by Government

ANOVAᵃ						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.504	5	7.301	18.187	.000ᵇ
	Residual	37.736	94	.401		
	Total	74.240	99			

a. Dependent Variable: Awareness_on_AMIS
b.Predictors: (Constant), bank_loans_and_waveoffs, insurance, pledge_loan_scheme, minimum_price_support, reciepts_and_agreements_at_mandis

Coefficientsᵃ							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	.276	.320		.864	.390	-.359	.912
pledge_loan_scheme	-.111	.137	-.096	-.807	.421	-.383	.161
minimum_price_support	.617	.140	.496	4.402	.000	.339	.896
insurance	.399	.126	.293	3.175	.002	.149	.648
reciepts_and_agreements_at_mandis	-.444	.155	-.360	-2.871	.005	-.751	-.137
bank_loans_and_waveoffs	.446	.126	.387	3.538	.001	.196	.696

The farmers are aware of the minimum price support , insurance scheme , receipts at mandis and bank loans ad waveoffs. These informations are obtained from other farmers and not by . They have less information on pledge loan schemes. The overall "p" value for the analysis is .000 < .05. Therefore we can reject the null hypotheses(H0) and accept the alternate hypotheses(H1).

H_0 : There is no significant impact of Knowledge of farmers on agricultural policies given by government and awareness of farmers on agricultural marketing information systems.

H_1 : There is significant impact of Knowledge of farmers on agricultural policies given by government and awareness of farmers on agricultural marketing information systems

4) Ease of use

ANOVAa						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41.093	5	8.219	23.306	.000b
	Residual	33.147	94	0.353		
	Total	74.24	99			

a. Dependent Variable: Awareness_on_AMIS
b. Predictors: (Constant), ease_of_understanding, reliability_and_correctness, continuous_update, ease_of_access, practicality

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-1.104	0.437		-2.526	0.013	-1.971	-0.236
	ease_of_access	0.195	0.12	0.145	1.62	0.109	-0.044	0.433
	reliability_and_correctness	0.103	0.139	0.06	0.74	0.461	-0.174	0.38
	practicality	0.022	0.118	0.019	0.19	0.85	-0.212	0.257
	continuous_update	0.94	0.138	0.653	6.821	0	0.666	1.213
	ease_of_understanding	0.057	0.093	0.053	0.615	0.54	-0.128	0.242

From the above regression table we can infer that there is only updating of existing information and no new information is provided easily. The ease of understanding and reliability of the information is low. The overall "p" value for the analysis is .000 < .05. Therefore we can reject the null hypotheses(H0) and accept the alternate hypotheses(H1).

H_0 : There is no significant impact of ease of use of information on awareness of farmers on agricultural marketing information systems.

H_1 : There is significant impact of ease of use of information on awareness of farmers on agricultural marketing information systems.

5) Media used to disseminate information

ANOVAa						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.698	4	3.925	6.369	.000b
	Residual	58.542	95	0.616		
	Total	74.24	99			
a. Dependent Variable: Awareness_on_AMIS						
a. Predictors: (Constant), internet, television, mobile_phone, radio Coefficientsa						

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.232	0.713		3.13	0.002	0.817	3.648
	mobile_phone	-0.265	0.135	-0.204	-1.967	0.052	-0.533	0.002
	radio	0.364	0.122	0.338	2.984	0.004	0.122	0.607
	television	-0.172	0.164	-0.103	-1.05	0.296	-0.498	0.154
	internet	0.304	0.142	0.265	2.148	0.034	0.023	0.585

a. Dependent Variable: Awareness_on_AMIS
b. Dependent Variable: Awareness_on_AMIS

From the above regression table we can infer that the farmers in the area are aware that radio , mobile phone and internet are being used to disseminate information related to agriculture.The farmers are a bit less aware that information about agricultural aspects are also disseminated through television. The overall "p" value for the analysis is .000 < .05. Therefore we can reject the null hypotheses(H0) and accept the alternate hypotheses(H1).

H_0 : There is no significant impact of Media used to disseminate information on awareness of farmers on agricultural marketing information systems.

H_1 : There is significant impact of Media used to disseminate information on awareness of farmers on agricultural marketing information systems.
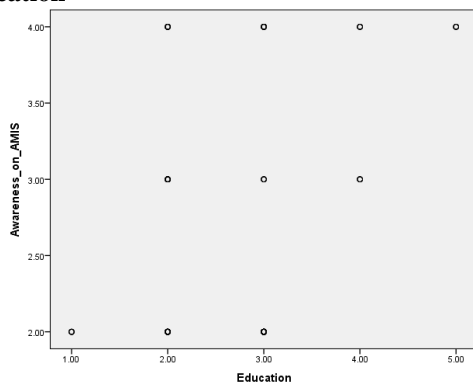
Graphical representations related to demographic information:

1) Age
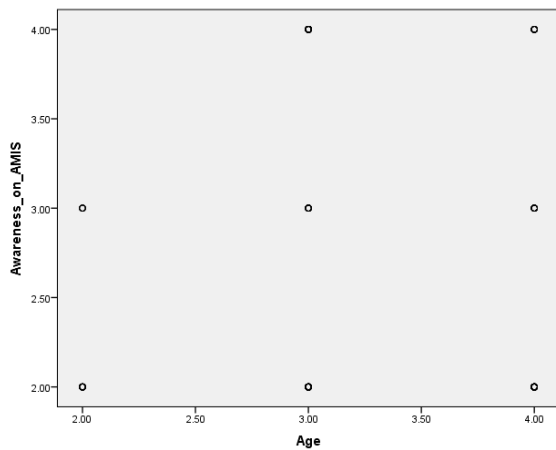
The farmers above age group of 30 years are more aware of the agricultural marketing systems developed by the government of Karnataka. The younger generation of farmers have to be educated and provided with informations related to agriculture.

2) Education

From the above graph , we can infer that Education plays a vital role in gathering information and being aware of the on going trends in agriculture. The awareness on AMIS is increasing as the education level of the farmers go high.

3) Occupation
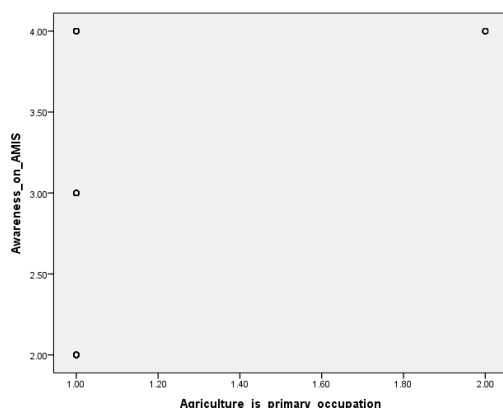
From the above graph, we can infer that the awareness on AMIS is more in farmers whose secondary occupation is agriculture. The farmers who depend upon agriculture as the primary source of income and occupation are less aware.

5. Conclusion and Suggestions

5.1 Conclusion

Based on the results and findings we can conclude that :
1) Farmers prefer to know the prices of commodities, crop selection information, Buyer related information, policies of the government. The information related to farm equipments and fertilizers are also preferred by some farmers.
2) The farmers are aware that mobile phones, internet, radio being used to disseminate information related to agriculture. Farmers are less aware that television is being used to disseminate agricultural information's.
3) Farmers are motivated by their friends and family and other farmers to be up to date with the information related to agriculture. The KVK officials are not motivating the farmers to know about agricultural information and it is found that the farmers are also less self motivated.
4) Farmers are aware of the minimum price support and bank loan wave offs . Farmers are less aware of the pledge loan schemes.
5) Farmers feel that there is a continuous updating of information related to agriculture but it cannot be easily accessed and the information they get through various sources are not reliable.
6) As the education level of the farmers increases they are more interested and are aware of the agricultural marketing information system.
7) Farmers above the age of 30 are more interested and are aware of the agricultural marketing information system.
8) The awareness on AMIS is more in farmers whose secondary occupation is agriculture. The farmers who depend upon agriculture as the primary source of income and occupation are less aware.

5.2 Suggestions

1) Poor awareness of farmers on available market information clearly highlights the need to create awareness on market led extension among the farmers through the agricultural extension agencies like the State Department of Agriculture, Krishi Vigyan Kendras so that the marketing information on agriculture commodities are incorporated in the extension services along with production aspects to the farmers.
2) Farmers' dependence on informal sources such as fellow farmers, friends and relatives for motivation to be up to date with the market information indicates the inability of formal sources in disseminating the required information to the farmers which calls for revitalizing he Market Intelligence System especially on dissemination aspects in public institutions like State Department of Agricultural Marketing, KSAMBs, State Agricultural Universities etc. with modern communication technology.
3) The existing marketing information is restricted to arrivals and prices. There is a need to cover other components of market information such as farm equipments and their uses, pesticides and fertilizers to be used for different crops, quality standards, post harvest management, storage, transportation of harvest etc.

4) The information obtained by the farmers are not from formal sources. The farmers find it difficult to trust the information they obtain from other farmers and friends, The farmers also find the information not easily accessible. These drawbacks and be overcome by the government by setting up for formal communication centers in each gram panchayath limits so that it becomes useful for the farmers to access information easily.

References

[1] Market information system and its application for agricultural commoditiesin karnataka state – a case of onion - amrutha c.p.
[2] Dissemination and Utilization of Market Information System by Farmers forGram Crop in Bhiwani District of Haryana, India - Veer Sain, K.K. Kundu and V.P. Mehta.
[3] Icts FOR AGRICULTURAL EXTENSION: A STUDY IN BAGALKOTDISTRICT OF KARNATAKA STATE, INDIA - B.S. Yenagi1, K.B. Yadahalli, R. Gurumurthy and L. Krishna Naik.
[4] Agricultural Marketing Information Usage among Soybean Farmers in Nigeria - Asogwa, B. C., Ezihe, J. A. C., and Ogebe, F.O