

Marketing Agricultural Output with the help of ICT- A Research of Chickballapur District of Karnataka

Shakeela Banu

Abstract: Research was conducted in Gauribidanur Taluk of Chickballapur District. According to 2011 census the total population of Gauribidanur was 80,673, Agriculture plays a prominent role here. Maize, ragi, coconut, sunflower, silkworm are the main crops. Karnataka is considered as the role model for agricultural products marketing. The use of technology to market agricultural products is seen as the most formidable measures by the government. The Karnataka government has implemented Agriculture Produce Market Committee (APMC) in the state through an act of APMC Model Act 2003. The state has 161 APMCs to help the farmers. The online sale of agricultural products was a great hit among the farmers, the state government introduced the -Unified Market Platform (UMP) which integrated the APMCs to form a strong structure and a centralized mechanism to sell the farmer's produce. The idea of "My Product My Price" is being promoted to ensure that farmers go on-line. Karnataka makes its agricultural market digital with Unified Market Platform. 103 APMCs have been integrated into the UMP system. 39 lakh farmers are registered under UMP, & 18,000 commission agents.

Two objectives and two hypotheses have been picked up from the thesis and presented in a form of paper. Questionnaire was drafted to collect and analyze the data. Data was analyzed at three levels Macro Perspective-Kruskal-Wallis Test, Mann-Whitney U Test, Micro Perspective- ANOVA, Focused Path Analysis. (Thesis title: "Determinants for Adoption of ICT for Marketing Agricultural Output: An Analytical Study")

Key Words: APMC, ICT, UMP

I. INTRODUCTION

The term ICT came into existence in 1997 with Stevenson first coining the revolutionary word. This marked the conceptualization of a broad understanding of technology that facilitates storing, processing, communicating, transmitting and receiving through electronic means in one single concept – ICT.

Corresponding Author

The concept of ICT has been defined with great diligence and in-depth in the literature (World Bank, 2002). The World Bank (2002:1) defines ICT as -hardware, software, networks, and media collection, storage, processing, transmission, and presentation of information (voice, data, text, images). ICT is a diverse set of technological tools, disseminate, store, being ICT value addition and manage information. Knowledge is important to achieve development. Rural India lacks

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* Correspondence Author

Dr. Shakeela Banu, CMS-Business School (Jain Deemed to be University)
Bangalore Email : dr.shakeelabanu@cms.ac.in , Mobile : 9844506208

knowledge. Rural India needs knowledge empowerment. Government has realized the contribution of ICT in Rural development. There are number of projects using ICT to reduce poverty. Various ICT initiatives are undertaken by the Government, NGO and the corporate to bring a change in the rural economy. It is well established that ICT can contribute to agriculture in a tremendous way. ICT provides with the required knowledge for all agricultural needs. The data is scattered and needs to be compiled geographically before it is flooded to the farmer.

A. ICT in Karnataka:

Karnataka makes its agricultural market digital with Unified Market Platform:

Agricultural business in Karnataka is on line. UMP has eliminated middlemen completely. 103 APMC's have been integrated into the UMP system. 39 lakh farmers are registered under UMP, 18,000 commission agents. Assaying facilities provided to 40 major markets. Some of the major crops marketed here are Arecanut, Jowar, Groundnut, Ragi, Copra, Chilly, Horsegram, Green gram, Tur, Dal, Cotton, Paddy, Maize, Sunflower, and Turmeric etc.

B. Unique Features Of UMP:

- Single unified trade license.
- Licensed traders can login through web portal.
- Commodities are displayed on electronic platform.
- Facilities of cleaning, grading and packing is available.
- Online payment.
- Price information is provided through mobile app.

Maharashtra, Kerala, Haryana, Tamil Nadu, Delhi, West-Bengal and Andhra Pradesh have taken the license to participate in Karnataka UMP.

II. LITERATURE REVIEW

Shakeel-Ul-Rehman, (2012) has suggested in his study that to a greater extent agriculture is an important aspect for Indians. Major portion of the population depends on agriculture for its day-to-day life however the agricultural sector in India has seen many improvements. The study suggests that there has been a lot of effort from the Indian Government to make sure that the farmer gets a fare share of every Rupee that is made from their produce.

The study also highlights that there are many schemes and also organizations that helps the farmers to market their produce in a right way since marketing is very important and crucial in agriculture.

Anil Kalotra, (2013) IT penetration in rural India will help rural India develop, as all eyes are on the rural market, MNC's are eyeing the rural. MNC's are looking for new opportunities, as there is a decline in the urban market. NCAER survey indicates that rural income is keeping pace with urban income leading to rise in purchasing power of the rural consumer. Rural is growing at 12% while urban is growing at 13%.

Pawan, (2013) in their study speak about the effect of green revolution and consumption pattern. There is a demand for large quantity of manufactured and industrial products. Before 1960's rural market was completely unorganized with dominance of mahajans and banyas. 1960 to 1990 rural market observed drastic change due to green revolution; technological methods were adopted in farming.

Simone and Monica, (2002) have given the example of Warana "wired village" project of Maharashtra to show that ICT helps in rural development related to sugar cane growing and harvesting. The main aim of this project was to increase efficiency and productivity by providing information services to Warana's villages, which are 70 in number. Village information Kiosks provide complete information to the farmers. Their Kiosks have email and Internet facilities. This project has empowered Warana community.

Kameswari et al (2011) "ICT" for agricultural extension: A study in the Himalayan Region" examines that information plays an important role in agriculture. Agencies responsible for disseminating, refining and developing latest technologies to farmers are ICAR, SAU and Krishi Vigyan Kendra's. State Agricultural Department's, NGO's and private agri-business companies provide extension activities.

III. METHODOLOGY

A.Objectives:

- 1) Factors considered for Successful IT in Marketing content.
- 2) To evaluate the mode of seeking a crop loan from financial institutions and adoptability of ICT.

B.Hypothesis:

- 1) There is no significant difference in preferences between set of respondents with respect to Factors considered for Successful IT in Agricultural Marketing.
- 2) There is no significant difference in preferences between set of respondents with respect to Obtaining loan from Financial Institutions and Adoptability of ICT

C.Research gap:

Despite huge attention and implementation of various ICT projects by many State and Central Governments, this sector is not flourishing. In spite of technology available and ICT facility available in Kolar District people of Gauribidanur Taluk are unable to adopt and use it.

D.Sampling Technique and Sample Size:

E.Sampling Population:

- Total Population: 49246
- Sample collected from: 600
- Convenience sampling
- Area of study: Gauribidanur Taluq

F. Analytical Tools Used:

- Data was analyzed using suitable statistical techniques such as Mean, KW Test, Mann-Whitney U Test, ANOVA, Structured Equation Modelling (SEM), and (AMOS) Statistical Packages for Social Sciences (SPSS. IBM 21.0) has been used for the analysis.
- Descriptive statistics comprising of standard deviation, mean scores, percentages, and coefficient of variation was used to summarize the characteristics of the respondents.
- Inferential statistics was applied to establish the relationship between variables.

G. Analysis of Data at Three Levels:

- 1) To evaluate the significant differences Mann-Whitney U test is applied to evaluate 3 or more groups.
- 2) To assess the differences in the 02 parameters, their impact and significance were analyzed using ANOVA.
- 3) Path analysis is drawn using AMOS.

H. Scope of Study:

- Gauribidanur Taluk is considered for study.
- Farmers are covered.
- Sample size 600.
- Questionnaire was used for Data Collection

IV. ANALYSIS AND INTERPRETATION

IT in Marketing Content

Table:1- Mean averages - σ calculated S D & calculated Statistics of Factors considered for Successful IT in Marketing Content

$H_0 =$ Kasaba = Hosur = M-halli = Thondebhavi = D-alya = Nagaragere

Alternate Hypothesis \neq at least one of them not equal to another.

$\alpha = 0.05$ Significance level

Table 1: IT in Marketing Content

Code	Descriptive Statistics			Test Statistics 1,2	
	Factors considered for successful IT In Marketing Content	Mean	SD	Asymp. Sig.	Decision
CC1	Classify crop to be cultivated	4.5337	0.4823	0.0046	Sig.Diff
AQ2	Ascertain quality and grade the Crop	4.811	0.404	0.0031	Sig.Diff
RB3	Show the product for its registered buyers	4.7038	0.6904	0.0009	Sig.Diff
OB4	Organize for online bid	4.3257	0.0145	0.009	Sig.Diff
ED5	Take decision on sale/extend display of bid	4.8269	0.0441	0.0067	Sig.Diff
AB6	Thorough sale by accepting bid on behalf of farmers	4.5959	0.2211	0.0079	Sig.Diff
SE7	Settle expenses	4.3512	0.387	0.0081	Sig.Diff
GP8	Get potential purchasers to Register	4.9252	0.2086	0.0026	Sig.Diff
AC9	Arrange for conveyance service on request	4.6646	0.7652	0.0522	Sig.Diff
Df=5	1.KW Test	2. Area dimensions: Sectorial Belonging			

Source: Primary Data

As per **Table: 3**, it is inferred that averages of CC1, AQ2, RB3, OB4, ED5, AB6, SE7, GP8 & AC9 are 4.5337, 4.8110, 4.7038, 4.3257, 4.8269, 4.5959, 4.3512, 4.9252 & 4.6646 Correspondingly, which specify that the target group is in agreed state with reference to Factors considered for Successful IT in **Marketing Content** will have impact on Adoption of ICT- based market Information services for marketing agricultural outputs.

Table 2: Report on analysis of variance for Successful IT in Marketing Content

Values	Sum of Sq	D.f	Mean Sq.	F ratio	Sign.
Interacting Groups	1.48355	5	0.0766	3.6628	0.042
Inside Groups	4.23453E+15	594	0.0022		

Significant at 5 % level Source: Primary data

Table 2.1: Post hoc test Bonferroni p-numbers with Factors considered for Successful IT in Marketing Content

	Kasaba	Hosur	M-halli	Thondebhavi	D-palya	Nagaragere
Kasaba	-					
Hosur	0.007	-				
M-halli	0.0216	0.053	-			
Thondebhavi	0.0507	0.02	0.0438	-		
D-palya	0.0678	0.084	0.0027	0.0095	-	
Nagaragere	0.0126	0.07	0.0282	0.091	0.045	-

Source-primary data.

Analysis of variance report stated in table:2 the “p” number “0.0418” is < than confidence range (range = 0.05, i.e., 0.0418< 5%), we reject Null Hypothesis and accept alternate Hypothesis. In other words, the mean **Factors considered for Successful IT in Marketing Content** scores differ across respondents selected for the study and also within

respondents selected for the study. Obtaining Loan from a Financial Institution

Table 3: Loan from a Financial Institution

Code	Descriptive Statistics			Test Statistics 1,2	
	Factors Obtaining Loan from a Financial Institution	Mean	SD	Asymp. Sig.	Decision
CL1	Convenient location of financial institution	4.375	0.153	0.0076	Sig.Diff
QB2	Quick disbursement of loan	4.795	0.179	0.0094	Sig.Diff
QS3	Quality of service of financial Institution	4.01	0.05	0.0008	Sig.Diff
LI4	Low interest rate/cost of borrowing	4.706	0.05	0.0052	Sig.Diff
CR5	Convenient repayment period	4.075	0.351	0.0041	Sig.Diff
AR6	Absence of requirement for immovable property as collateral	4.015	0.644	0.0055	Sig.Diff
SB7	Availability of other financial services from same banks	4.359	0.507	0.0096	Sig.Diff
Df=5	1.KW Test	2. area dimensions: Sectorial Belonging			

Source-primary data.

As per Table no: 3 it is inferred that averages of CL1, QB2, QS3, LI4, CR5, AR6 & SB7 are 4.3750, 4.7945, 4.0103, 4.7062, 4.0752, 4.0149 & 4.3585 Correspondingly, which specify that the target group is in agreed state with reference to **Obtaining Loan from a Financial Institution** will have impact on Adoption of ICT-for marketing agricultural outputs.

Test Hypothesis: Whether mean **Obtaining Loan from a Financial Institution** scores (ranks) significantly differ across each type of respondents selected for the study.

Symbolically,
H₀= Kasaba = Hosur = M-halli = Thondebhavi = D-alya = Nagaragere

Alternate Hypothesis ≠ at least one of them not equal to another. Less than 5 percent level of Significance.

Table 4 : Report on Analysis of Variance for Obtaining Loan from a Financial Institution

Values	Sum of Sq	D.f	Mean. Sq.	F ratio	Sign.
Interacting Groups	1.83147	5	0.7576	3.7203	0.048
Inside Groups	43.5434	594	0.0664		

*Significant at 5 % level Source: Primary data

Table 4.1: Post hoc test Bonferroni p-numbers with Obtaining Loan from a Financial Institution factor

	Kasaba	Hosur	M-halli	Thondebhavi	D-palya	Nagaragere
Kasaba	-					
Hosur	0.0653	-				
M-halli	0.0845	0.091	-			
Thondebhavi	0.0913	0.01	0.055	-		
D-palya	0.0914	0.05	0.0824	0.0364	-	
Nagaragere	0.0224	0.043	0.0488	0.0933	0.0799	-

Source-primary data.

Analysis of variance report stated in table: 4 the “p” number “0.0483” is < than confidence range (range = 0.05, i.e., 0.0483 < 5%), we reject Null Hypothesis and accept alternate Hypothesis. In other words, the mean **Obtaining Loan from a Financial Institution** scores differ across respondents selected for the study and also within respondents selected for the study.

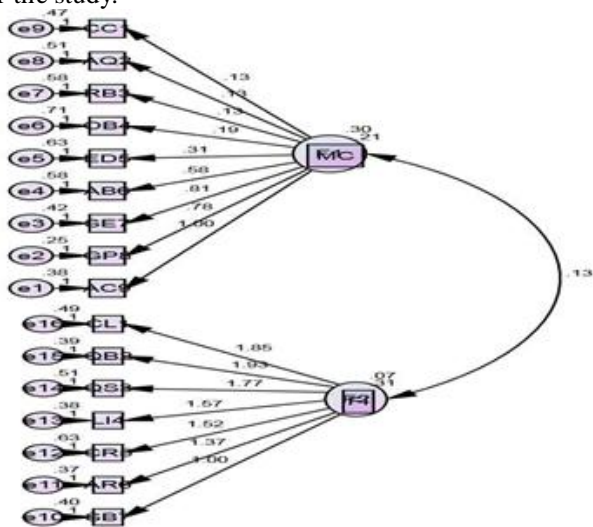


Figure 1: Relationship between Market Content, & Loan from Financial Institution and its impact on other statements

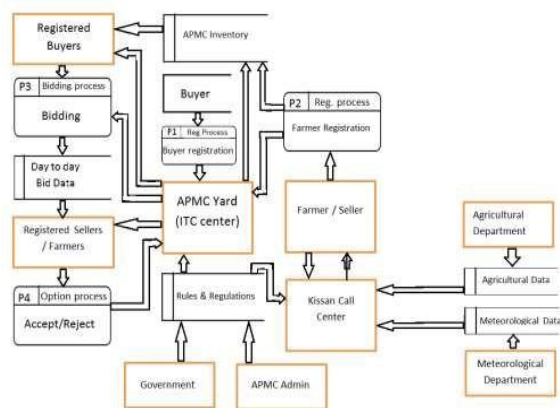


Figure 2 : Procedure for Adoption of ICT

V. RESULTS

F₁: Regression Weights: SE7-Settle Expenses, GP8- Get Potential Purchasers, AB6- Accepting Bid on Behalf of Farmers, ED5- Extent Display of Bid, OB4- Organize for Online Bid, AQ2- Ascertain Quality, CC1- Classify Crop, RB3- Register Buyers. These are the variables, which are significantly influencing on **Market**

Content. The above variables are arranged based on the level of influence on **Market Content** only.

F₂: Regression Weights for the following, QB2- Quick Display, CL1- Convenient Loan, QS3- Quality of Service, LI4-Low Interest, CR5-Convenient Repayment, AR6-Absence of Requirement. These are the variables, which are significantly influencing on **Loan from Financial Institution**. The above variables are arranged based on the level of influence on **Loan from Financial Institution** only.

Eigen value of F₁ ie e(4) AB6- Accepting Bid on Behalf of Farmers, is 0.578, e(7) RB3- Register Buyers 0.582 & e(8) AQ2- Ascertain Quality 0.511. So, it is influencing on **Market Content**.

Eigen value of F₂ is e (12) and e (14) CR5-Convenient Repayment 0.632 and QS3- Quality of Service, 0.514 are more influencing on **Loan from Financial Institution**.

All the variables are significant in nature. Therefore, we can infer that all the variables are appropriate for the study. However, the above variables are more influencing.

VI.FINDINGS:

Findings show that the factors considered for successful IT in Marketing Content are 1) Classification of crops 2) Grading of crop 3) Display of product to registered buyers 4) Organize online bid 5) Display of bid 6) Accepting bid on behalf. These factors were analyzed and it was found that there is a significant difference.

Gauribidanur farmers borrow from middlemen, interview conducted shows that farmers take loan on crop in advance. They are committed to the middlemen. It was found that many numbers of times APMC yards deny purchase of crop from farmers on various grounds.

- Factors considered for Successful IT in **Marketing Content** scores differ across respondents selected for the study and also within respondents selected for the study. It is found that there is a need for ICT in marketing agricultural output.
- The result of the ANOVA test shows that the alternate hypothesis is accepted which specifies that there is a significance difference in respondent’s response with reference to **Obtaining Loan from Financial Institution**.

VII. CONCLUSION & SUGGESTION

On detail study it is observed that the system is not reaching the large mass due to various factors. The study and understanding of these factors lead to reengineering the present system. The above procedure has been suggested.

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AUTHORS PROFILE



Dr Shakeela Banu is a faculty in CMS Business school (Jain Deemed to be University) having 27 years of experience, served as HOD Department of Economics, HOD Department of MBA. Published papers in UGC journals and has won various awards