Impact of Knowledge Sharing and Dissemination on Agriculture Supply Chain Management: A Case Study on Cotton and Chill Farmers in Guntur and Prakasam Districts

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Abstract
The Research is undertaken among chilli and cotton farmers in various villages of Guntur and Prakasam districts of Andhra Pradesh. This study is formulated to analyse perceptions of farmers on knowledge sharing and dissemination practices that are applying in chilli and cotton crop supply chain functions. By this research the researcher made an attempt to assess and evaluate impact of knowledge sharing practices on effectiveness of agriculture supply chain management. The results are elicited by conducting survey among chilli and cotton farmers in different villages in Guntur and Prakasam districts. The survey was executed by selecting farmers purposefully among various regions in Guntur and Prakasam districts. For critical investigation on variables associated with research problem three categories are undertaken i.e. Knowledge sharing practices, Expertise on suppliers and distributors and Knowledge on marketing quality standards. The study results are extracted by analysing and evaluating perceptions of farmers on knowledge sharing practices, knowledge on suppliers and distributors.

Keywords: Agriculture Supply chain management, Knowledge sharing practices, distributors, marketing quality standards

I. Introduction
Agriculture has been recognised as primary occupation in Indian economy and it is necessary for government, NGO and cooperative societies to give...
significance for farmer and cultivate problems[I]. It is a fact that suitable knowledge sharing and application has significant role in solving any societal problem for this agriculture problems are not exempted[II] [III].

In Andhra Pradesh Guntur and Prakasam districts are having significant importance in cultivation of Chilli and Cottons crops. There are many evidences that most of the farmers are facing agriculture problems due to lack of proper knowledge and expertise assistance[IV] [V]. Even though government departments are initiating many interventions for filling knowledge gap in agriculture sector but results are not reaching to the farmers[VI].

In most of the cases farmers are unable to reach domestic and international marketing quality standards due to lack of suitable knowledge support[VII]. In this context the present study focuses on evaluating the farmer’s perception on knowledge sharing and dissemination practices for filling knowledge gaps in agriculture supply chain[VIII].

II. Research Problem

An extensive investigation of the literature provides numerous studies on the topic of knowledge sharing and dissemination practices[IX] [X]. However, very few studies are identified by relating knowledge sharing and Agriculture supply chain management[XI] [XII]. Even though some of the researcher made an attempt in correlating knowledge sharing and agriculture supply chain management but results are not adding any value to farmer community[XIII] [XIV]. In this context present study will support farmer community by providing inputs for knowledge management applications in agriculture supply chain practices[XV].

II.i. Nature and Scope of the Study

The nature of the study is descriptive as the study focused on finding perceptions of farmers on significance of knowledge management practices in effective execution of supply chain practices in the field of agriculture. The study was undertaken by investigating variables like Knowledge sharing practices, Expertise on suppliers and distributors and Knowledge on marketing quality standards. The study is executed by considering the opinions of farmers from Guntur and Prakasam districts.

III.ii Objectives of the Study

To analyse the impact of knowledge sharing practices on effectiveness of agriculture supply chain management among chilli and cotton crops.

To evaluate the perceptual differences among the cotton and chilli farmers on knowledge sharing and dissemination.
To offer feasible recommendation for improving effectiveness of agriculture supply chain management practices by the application of knowledge sharing and dissemination.

IV. Research Methodology

A brief outline of the methodology for the study is given below:

IV.i Data Sources

Data sources are primary and secondary. Data relating to opinions and perceptions of farmer are pooled by using primary data and primary data is collected by structured questionnaire method.

IV.ii. Sample Design

For the present study, purposeful sampling technique is adopted for selecting the respondents from the various villages. The respondents comprise the farmers of chilli and cotton crops in Guntur and Prakasam districts of Coastal Andhra Pradesh.

IV.iii. Data Analysis and Interpretation

Validity and Reliability Test

| Factors                          | Knowledge sharing practices | Expertise on suppliers and distributors | Knowledge on Marketing quality standards | Integrative technology for farmers |
|----------------------------------|-----------------------------|----------------------------------------|-----------------------------------------|----------------------------------|
| Expert consultation              | 14.597                      | 86.317                                 | -6.884                                  | 7.333                            |
| Usage of internet                | 14.262                      | 87.686                                 | 8.029                                   | 5.017                            |
| Size of suppliers and distributors | 6.241                      | 88.53                                 | 6.638                                   | 4.397                            |
| Specification for exports        | 13.452                      | 90.306                                 | 9.312                                   | -1.485                           |
| Application of communication technology | 89.134                 | 10.48                                 | 4.026                                   | -0.154                           |

Table 1. Exploratory Factor Analysis of Cotton farmers
Interpretation: In case of expertise on suppliers and distributors export specification has maximum correlative value; in case of knowledge sharing practices application of communication technology has highest correlative value. The items mentioned in above table are having strong correlation value and these factors can be considered.

| Factors                                      | Knowledge sharing practices | Expertise on suppliers and distributors | Knowledge on Marketing quality standards | Integrative technology for farmers |
|----------------------------------------------|-----------------------------|----------------------------------------|------------------------------------------|-----------------------------------|
| Expert consultation                          | -7.192                      | -15.29                                 | 81.58                                     | 4.189                             |
| Usage of internet                            | -9.487                      | -3.887                                 | 85                                       | -4.977                            |
| Size of suppliers and distributors           | -3.727                      | 89.741                                 | -0.713                                    | -9.343                            |
| Specification for exports                    | 88.686                      | -0.136                                 | -4.958                                    | -1.93                             |
| Application of communication technology      | -13.38                      | -6.149                                 | -6.466                                    | 87.71                             |

Table 2. Exploratory Factor Analysis of Chilli farmers

Interpretation: In case of knowledge sharing practices application of communication technology is having higher correlative value. In expertise on suppliers and distributors size of suppliers and distributors is having highest correlated value and in case of integrative technologies for farmers application of communication technology is having highest correlated value. The items mentioned in above table are having strong correlation value and these factors can be considered.

| Farmer views on variables relating to knowledge sharing and agriculture supply chain | Cotton farmers | Chilli farmers |
|-------------------------------------------------------------------------------------|----------------|---------------|
| Expert consultation                                                                 | 0.95           | 0.80          |
| Usage of internet                                                                   | 0.866          | 0.87          |
| Size of suppliers and distributors                                                  | 0.85           | 0.83          |
| Specification for exports                                                           | 0.914          | 0.915         |
| Application of communication technology                                            | 0.90           | 0.91          |

Table 3. Cronbach’s Alpha Results for Cotton and Chilli farmers perceptions
Interpretation: Cronbach’s Alpha values are compared among various variables relating to knowledge sharing and agriculture supply chain management. In case of cotton farmers, expert consultation has the highest Cronbach’s value, and in case of chilli farmers, specification for exports has the highest Cronbach’s value. The value for all the variables mentioned above is having more than 0.6 hence the variables considered for study are reliable.

| Geographical Region | N  | Mean Squares |
|---------------------|----|--------------|
| Guntur District     | 123| 3.92         |
| Prakasam District   | 200| 2.92         |

Table 4. Mean values of Farmers perception on Knowledge Sharing Practices

Interpretation: By undertaking opinions of farmers from Guntur and Prakasam districts on knowledge management practices, it is revealed that respondents of Guntur district are having the highest mean value. From this, it can be concluded that farmers from Guntur districts are having a strong perceptual difference on knowledge sharing practices.

| Geographical Region | N  | Mean Squares |
|---------------------|----|--------------|
| Guntur District     | 123| 3.790        |
| Prakasam District   | 200| 3.088        |

Table 5. Mean Values of Farmer Perceptions on Suppliers and Distributors expertise

Interpretation: By undertaking opinions of farmers from Guntur and Prakasam districts on distributors and supplier expertise, it is revealed that respondents of Guntur district are having the highest mean value. From this, it can be concluded that farmers from Guntur districts are having a strong perceptual difference on distributor and supplier expertise.
Farmer perceptions on Marketing quality standards

| Geographical Region | N   | Mean Squares |
|---------------------|-----|--------------|
| Guntur District     | 123 | 4.15         |
| Prakasam District   | 200 | 3.04         |

Table 6. Mean Values of Farmer perceptions on marketing quality standards

Interpretation: By undertaking opinions of farmers from Guntur and Prakasam districts on marketing quality standards it is revealed that respondents of Guntur district are having highest mean value. From this it can be concluded that farmers from Guntur districts are having strong perceptual difference on marketing quality standards.

Farmer perceptions on Integrative Technologies

| Geographical Region | N   | Mean Squares |
|---------------------|-----|--------------|
| Guntur District     | 123 | 3.85         |
| Prakasam District   | 200 | 3.24         |

Table 7. Mean Values of Farmer perceptions on Integrative Technologies

Interpretation: By undertaking opinions of farmers from Guntur and Prakasam districts on integrative technologies it is revealed that respondents of Guntur district are having highest mean value. From this it can be concluded that farmers from Guntur districts are having strong perceptual difference on integrative technologies.

V. Findings

The factors undertaken in study for analysis are having acceptable reliability and validity. (i.e: knowledge sharing practices, expertise on distribution, knowledge on marking quality standards and integrative technologies)

Strong perceptual difference is identified among farmers from Guntur region on knowledge sharing practices.

Results of study reveal that there are significant differences in the opinions of farmers on expertise on distributors and suppliers.

The study reveals that there are significant differences in the views of farmers on marketing standards related to geographical region, significant differences are also noticed in the views of respondents across Guntur and Prakasam districts.
The study reveals that there are significant differences in the views of farmers on integrative technologies to geographical region and significant differences are also identified in the views of farmers across Guntur and Prakasam districts.

V.i. Suggestions

Even though government is initiating rapid knowledge sharing practices farmers are unable to avail that sources in this context government should initiate accurate surveys for resolving this problem.

Most of the farmers are not able to reach international marketing standards in this connection agriculture departments need initiate agriculture training programs.

It is fact that most of the agriculture expertise and knowledge is not reaching to the final user in this context there is much significance for knowledge networks in agriculture supply chain management.

Agriculture supply chain can perform more effectively with the support of knowledge sharing practices so it is necessary to adopt contemporary knowledge sharing practices among farmer communities.

Farmers in most of the regions in prakasam district are experiencing cultivation problems due unavailability of water resources in this connection government should take initiative for resolving these problems by the support of integrative technologies.

VI. Conclusion

The study extracted results by pooling and analysing opinions of farmers in Guntur and prakasam districts on knowledge management practices. The study reveals that most of the farmers are not initiating knowledge management practices for improving agriculture supply chain. Even though state and central governments are focusing on agriculture sector by initiating significance of information and communication technology but at the ground level these results are not contributing expected value to agriculture. The respondents are having positive approach for application of knowledge sharing practices in agriculture but farmer are not well trained in using these technologies. In this context it is necessary for the government to initiate training interventions for adopting right skills and expertise for applying knowledge sharing practices in agriculture supply chain.
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