



Utkarsh

VOL. - III, NO. I, DECEMBER, 2015

A PEER REVIEWED RESEARCH JOURNAL IN COMMERCE AND ALLIED SUBJECTS
D.H.S.K. COMMERCE COLLEGE, DIBRUGARH, ASSAM

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Editor : Joydev Gogoi

Utkarsh. Vol. III, No. 1 : A PEER REVIEWED RESERACH JOURNAL IN COMMERCE AND ALLIED
SUBJECTS PUBLISHED ANNUALLY BY D.H.S.K COMMERCE COLLEGE, DIBRUGARH, ASSAM, INDIA.

ISSN 2347 - 8381

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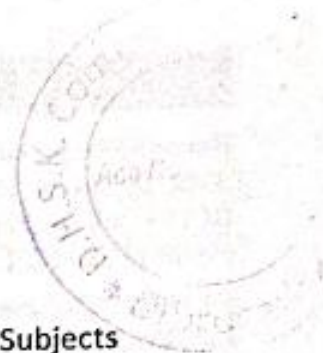


Utkarsh

Vol. III, No. 1, December '15

ISSN 2347-8381

A Peer Reviewed Research Journal In Commerce and Allied Subjects
D.H.S.K. Commerce College, Dibrugarh, Assam, India



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AN ANALYSIS OF THE STATUS OF CHILD HEALTH IN ASSAM

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Abstract

Child health can be determined by examining the mortality and morbidity rate of the children. Despite India's rapid economic growth slow rate of decline in infant mortality rate (IMR), undernutrition continues to be one of the great challenges. The main determinants of child health are nutritional status, immunization and health care facilities. The infant mortality rate of Assam is 55 per 1000 live births which is the second highest state all over India. Madhya Pradesh has the highest infant mortality rate i.e., 56 per 1000 live births. Malnutrition is another contributory factor in about one third to half of the child deaths under 5 years of age in India. Child malnutrition is generally caused by inappropriate or inadequate food intake, gastrointestinal parasites and other childhood diseases and improper care during illness. This paper attempts to identify the major health indicators of children in Assam.

Key words: Infant Mortality Rate; Morbidity Rate; Child Health; Malnutrition; Health Care Facility.

Introduction

For a human being good health is important not only as an end in itself, but also for allowing an individual to enjoy a high quality life and contribute productively to a country's economic and social progress. According to Dreze and Sen Report, as a share of GDP and as a share of total health expenditure, public health spending in India is below the world average. The govt. of India hardly spent 4.4% of total expenditure on healthcare service.

India is the home to the largest number of children in the world. It is estimated that there are about 43 crore children in the age group of 0-18 years. In the report of Save the children, 2013 has formulated that 3,09,000 children die on the day of their birth in India. The importance of child health is derived from the fact that poor health of infant (0-1yr) children, if not corrected in the early days, tends to persist into the adulthood. The two features of child health in India that deserve special attention are: (a) India has recorded one of the worst performances on undernourishment and child health and (b) India's failure to delink maternal health from that of her children that results in transmission of ill health from the

mother to her children. In India the Infant Mortality Rate (IMR) was 48 per 1000 live births and Child Mortality Rate (CMR) was 63 per 1000 live births in 2010, as against the target 30 and 31 respectively. These indicators (IMR and CMR) for the neighbouring countries were much better (China IMR:16, CMR:18 and Sri Lanka IMR:14, CMR:17). In India the status of children's health is characterized by high infant mortality rate and under 5 mortality rates, malnutrition and under nutrition. Adding to the problem are low female literacy rates, food insecurity and lack of inadequate health services. Many studies have shown that large numbers of children are deprived of good health and therefore they become more vulnerable to diseases (Zurbrigg, 1984; Pandey, et al,2005; Dreze, 2006). Most of the childhood diseases are preventable, if timely action has been taken. The IMR and U5MR have been used as measures of child's well-being for many years. But in India progress is very slow.

In the regional level the health status of children specially in Assam is very poor. In Assam the IMR was 55 which was the second highest in all over India in 2012.. Madhaya Pradesh has the highest IMR i.e. 56 per 1000 live births. The main determinants of child health are nutritional status, immunization and health care facilities. Malnutrition is another contributory factor in about one third to half of the child deaths under 5 years of age in India. Almost half of children under age five years (48 percent) are chronically malnourished (NFHS-3). Child malnutrition is generally caused by inappropriate or inadequate food intake, gastrointestinal parasites and other childhood diseases and improper care during illness.

Review of Literature

A.K. Jain identifies that general and infant mortality rates in rural areas have been substantially higher than in urban areas. Both rates differ substantially between regions and states. To improve the chances of child survival many factors are responsible i.e. women literacy, medical care, household amenities such as drinking water facility, electricity, transportation etc.

Dyson and Moore in their study on regional variation in infant mortality in India found that 'in contrast to the north, states in the south and the east are characterized by lower infant and child mortality. The authors attributed these regional differences to lower autonomy of women in the northern kinship system and suggested that 'even... in the absence of modern health education and services - differences in kinship structure and female autonomy between north and south may influence the patterns of child care, and hence child mortality.

A study by Gokhle et. al reveals that female literacy is strongly associated with infant mortality rate. Influence of female literacy is highly related with the Maternal and

Child Health (MCH) services. They found that influence of female illiteracy on infant mortality rate and on the use of MCH services was more detrimental in rural areas than in urban areas especially in the worst group of states where female illiteracy was high. Thus effort to disseminate necessary information for creating health awareness among rural females may be beneficial.

Mari Bhat, in his study on socio economic differentials in maternal mortality in India estimates maternal mortality for India from two indirect procedures, the sisterhood method and a regression method involving sex differentials in adult mortality and compares them with estimates available from other sources. He found that the level of maternal mortality for the early 1980s implied by the sisterhood method, about 15 percent lower than the estimate for the same period derived from the method that uses the data on sex differentials in adult mortality. The second estimates for the 1990s is consistent, however, with the direct estimates available from the National Family Health Survey and Sample Registration System. Maternal mortality levels were high among schedule tribe and schedule castes and surprisingly low among Muslims. The level of maternal mortality is strongly related to amenities and infrastructure available in the village.

Nag, on the other hand, attributed the lower mortality in Kerala mostly to its higher social development and partly to its favorable environmental and hygienic conditions. Development of social services, such as education, health and transport, through public policy measures was designated as social development.

Objectives

The main objectives of this paper are:

1. To study the health status of children in Assam and
2. To analyze the various determinants of child health .

Methodology

The methodology of this paper is descriptive in nature. All the data are collected from the secondary sources. The data are collected from NFHS-2 and 3, Assam Economic Journal Vol-xiii and xvi, various govt. publications, govt. reports, articles, books etc.

Child Health Status in Assam

Prior to examining the status of child health it is worthwhile to have a glance at the current health status in the state. This section reviews the current health status in Assam by

looking at three indicators viz. crude birth rate (CBR), crude death rate (CDR) and infant mortality rate (IMR) from 2001- 2012.

Looking at the improvement in the health status between 2001- 12 in table 1: it is observed that CBR has declined from 26.8 to 22.5 (4.3%) and CDR has declined from 9.5 to 7.9(1.6%) which is 1.5% in rural and 1.0% in urban areas. In case of IMR the condition has worsened in 2001 which was 76 in rural and 33 in urban areas. In 2012 it was decreased to 58 in rural and 33 in urban areas which is stagnant. Moreover, the health condition in the rural areas is worse compared to the urban areas in State. In view of this rural health care should be an area of utmost precedence of any government social sector policy, especially health policy.

Table :1
Estimated Birth Rate, Death Rate and Infant Mortality Rate of Assam

Year	Birth Rate			Death Rate			Infant Mortality Rate		
	Total	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban
2001	26.8	27.8	18.5	9.5	9.8	6.6	73	76	33
2003	26.3	27.2	18	9.1	9.5	5.9	67	70	35
2005	25	26.6	15.3	8.7	9.2	5.6	68	71	39
2006	24.6	26.1	15.4	8.7	9.2	5.8	67	70	42
2007	24.3	25.7	15.5	8.6	9.1	5.7	66	68	41
2008	23.9	25.3	15.7	8.6	9	5.6	64	66	39
2010	23.2	24.4	15.8	8.2	8.6	5.8	58	60	36
2011	22.8	24	15.5	8	8.4	5.6	55	58	34
2012	22.5	23.7	15.6	7.9	8.3	5.6	55	58	33

Source: compiled by the author from SRS Bulletins (2001, 03, 06, 07, 08, 09, 10, 11, 12, 13) Sample Registration System, Office of Registrar General, India.

In 2012 from Table: 2 it reveals that the IMR was second highest in Assam which was 55. Madhaya Pradesh has the highest IMR (56) and Manipur and Goa has the lowest IMR i.e. 10 in 2012

Table : 2

State wise Status of Infant Mortality Rate in 2012

Sl. No.	State	IMR	Sl. No.	State	IMR
1	Madhaya Pradesh	56	15	Mizoram	35
2	Assam	55	16	Uttaranchal	34
3	Odisha	53	17	Karnataka	32
4	Uttar Pradesh	53	18	West Bengal	32
5	Rajasthan	49	19	Tripura	28
6	Meghalaya	49	20	Punjab	28
7	Chhattisgarh	47	21	Maharashtra	25
8	Bihar	43	22	Sikkim	24
9	Haryana	42	23	Tamil Nadu	21
10	Andhara Pradesh	41	24	Nagaland	18
11	Jammu Kashmir	39	25	Kerala	12
12	Jharkhand	38	26	Manipur	10
13	Gujrat	38	27	Goa	10
14	Himachal Pradesh	36		India	42

Table : 3

District wise Crude Death Rate, Infant Mortality Rate, Neo-natal Mortality Rate and Under 5 Mortality Rate in Assam (2010-11)

Sl. No.	Dist.	CDR	IMR	NMR	U5MR
1	Kokrajhar	7.7	76	41	103
2	Dhubri	7.1	72	50	91
3	Goalpara	6.9	56	39	74
4	Bongaigaon	6.2	53	31	68
5	Barpeta	6.7	48	33	55
6	Kamrup	5.9	46	30	57
7	Nalbari	7.4	64	48	88
8	Darrang	8.3	69	39	90
9	Morigaon	8.5	72	44	93
10	Nagaon	8.1	66	41	86
11	Sonitpur	6.5	68	46	80
12	Lakhimpur	6.9	56	41	68
13	Dhemaji	4.5	44	27	62
14	Tinsukia	7.5	55	39	74
15	Dibrugarh	7.5	55	37	71
16	Sibsagar	8.1	58	37	79
17	Jorhat	8.2	57	43	71
18	Golaghat	8	62	47	82
19	Karbi Anglong	6.9	59	36	77
20	N.C.Hills	5.5	58	35	78
21	Cachar	7.5	57	36	79
22	Karimganj	6.6	69	46	83
23	Hailakandi	7	55	36	91
	Assam	7.2	60	39	78

Source : Annual Health Survey 2010-11, RGI

From table:3 it shows that in 2010-11 district wise highest infant mortality rate was in Kokrajhar (76), Morigaon (72) and Darrang and Karimganj (69). Neo- natal mortality rate was highest in Dhubri (50), Nalbari (48) and Golaghat (47). U5MR was highest in Kokrajhar (103), Morigaon (93) and Hailakandi and Dhubri (91). Assam IMR (60), NMR (39) and U5MR (78). On the other hand Dhemaji has the lowest IMR (44) and NMR (27) in 2010-11.

According to the Annual Health Survey Report 2013-14 IMR in Assam was 54, whereas it was 37 in Dhemaji district.

Undernutrition directly affects many aspects of children's development. It is one of the important causes of child deaths: Undernutrition in children is largely due to a range of factors that are often related to insufficient food intake, poor quality of food and severe infectious diseases. Inadequate or imbalanced diets and chronic illness are associated with poor nutrition among children. Improving the Childs nutrition can reduce infant mortality.

Child Immunization

Immunization has been one of the most effective and significant public health interventions. Immunization will help every child and also benefits the society by preventing the spread of disease to those who are not immunized. Across India, the NFHS- II data reveals that only 42% of Children between 12-23 months had received all six of their primary immunization. Poorer immunization rates leads to higher child mortality rates.

Table : 4

Percentage of children 12-23 months who received specific vaccinations

	BCG	Polio	DPT			Polio			Measles	All vaccinations	No vaccinations
			1	2	3	1	2	3			
India	72	13	71	65	55	84	78	63	51	42	14
Assam	53	3	57	48	37	62	54	38	25	17	33

Source: NFHS-II, 1998-99

The above table shows that immunization rate is lower in Assam as compared to the nation. Of deaths among children less than five years of age, significant portion dies of vaccine preventable diseases. These include pneumonia, measles and neo-natal tetanus, diptheria, whooping cough, tetanus and poliomyelitis.

Table : 5

Percentage of children age 12-23 months who received specific vaccinations (NFHS-III, 2005-06)

	BCG	DPT			Polio 1				Measles	All basic vacc.	No vacc.
		1	2	3	0	1	2	3			
India	78	76	67	55	48	93	89	78	59	43	5
Assam	62	67	56	45	27	82	73	59	37	31	15

Source: NFHS III, 2005-06

There is an improvement in vaccination coverage but still Assam is lower in percentage than national coverage. These shows that the Universal Immunization Programme in India which is now a part of Reproductive and Child Health project are still far from achieving its goal in the North Eastern part.

Child Nutritional Status

According to the Planning Commission (Niti Aayog) estimates 40.1% of rural and 28.1% of urban population are below poverty line. National Nutrition Monitoring Bureau findings reveal, that, on an average, 50% of rural people consume daily <2400 calories and children from age 1-5 years are undernourished in calories, iron, Vitamin A and riboflavin. Nutrition is an important factor which helps in child development. Inadequate or inappropriate feeding practices, repeated episodes of acute infections, poor access to health care cause a substantial proportion of children to become moderate or severely malnourished by the age of 6-18 months. Therefore, it is clear that improving the child's nutrition can reduce infant mortality. The three most commonly used measures of child health are height for age, weight for height and weight for age. Low values of these variables define, respectively, stunting, wasting and underweight. According to the report of NFHS II and III, the nutritional status of north eastern states specially in Assam children were found to be 'stunted', 'wasted' and underweight as compared to the national level. Here in Assam levels of under nutrition are very high.

Table : 6

Nutritional status of children under age 3

	Stunted		Wasted		Underweight	
	NFHS II	NFHS III	NFHS II	NFHS III	NFHS II	NFHS III
India	45	38	15	19	47	46
Assam	50	35	13	13	36	40

Source: NFHS II: 1998-99 and NFHS III 2005-06

The NFHS II shows India with 45% stunted, 47% underweight and 15% wasted children under age 3. The situation is slightly improving during NFHS III with 38% stunted, 46% underweight children were found. The above table shows that Assam has the highest percentage (50%) of stunted children as compared to the nation during NFHS II.

Anaemia

Anemia is a serious concern for younger children, because it can result in impaired cognitive performance, behavioural and motor development, coordination, language development as well as increase infectious diseases. One of the most vulnerable groups in children between ages 6-59 months. In the report of NFHS III it is interesting to find that the percentage of anemic children is highest in Assam as compared to all over India. Children between ages 6-59 months with anemia are highest in Assam with 69.6 percent.

Table : 7

Percentage of children age 6-59 months having anaemia

	Percentage of children age 6-59 months having anaemia			
	% of child with Anaemia	Mild Anaemia	Moderate Anaemia	Severe Anaemia
India	69.5	26.3	40.2	2.9
Assam	69.6	28.7	38.7	2.2

Source: NFHS III, 2005-06

Breastfeeding

The WHO recommends that the child should be exclusively breastfed for six months and then it should be supplemented to other supplementary food. Infant feeding practice have significant effects on both mother and child. In the report of WHO, 2003, reveals that prolonged breastfeeding helps to extend period of postpartum infertility and hence on fertility levels and length of birth intervals. In the report of NFHS III Assam shows very good practices of breast feeding within one hour and majority exclusively feeding and supplementing at the right age of six to nine months. Children between the age group of 0-5 months who are exclusively breastfed are highest in Assam with 63.1%.

Table: 8

Child Feeding practice

	Children under 3 yrs who are breastfeed within 1 hr of birth (%)	Children age 0-5 months exclusively breastfeed (%)	Children age 6-9 months receiving solid or semi-solid food and breast milk (%)
India	23.4	46.3	55.8
Assam	50.6	63.1	59.6

Source: NFHS III 2005-06

Vitamin A Supplementation

One of another nutritional deficiency disorder is caused by vitamin A deficiency. It affects more than 250 million children in the world. The national programme on prevention of blindness targets children age under 5 years and administers oral doses of vitamin A every six months starting at 9th months of age. According to the report of NFHS III the vitamin A supplementation coverage for children in the age group 12-35 months in India is 24.8%. in Assam the vitamin A dose coverage is less than all India level i.e. only 18.7%.

Other Determinants of Child Health

Acute Respiratory Infection (ARI), fever and diarrhea are another major important cause for childhood mortality throughout the world. Early diagnosis and treatment can prevent a large number of ARI deaths. In Assam has the highest rate of ARI with 35.4% which is more than national average of 19.3%. Diarrhea is the second highest killer of under age 5 in the world wide followed by ARI. Deaths from diarrhea are caused by dehydration due to

loss of water and electrolytes.

Conclusion

The health indicators of the children can be determined by the rates of mortality and morbidity of the children. It is also understood by looking at the coverage of the child immunization, nutritional status, and health care infrastructure. The importance of adequate, affordable and universal health care is recognized as essential for improving child health outcomes. It is also well understood that mother's education is a key determinant of the well-being of the children whether by reducing the level of fertility or by facilitating the adoption of good nutritional and hygienic practices. Infrastructural facility also affects on infant mortality via its impact on malnutrition. Since Assam follows all national programs that are centrally sponsored it should chalk out a strategy to implement these programs in a proper and effective way.

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GROUP SAVINGS, CREDIT UTILISATION AND LOAN REPAYMENT PATTERN OF WOMEN SHGS IN ASSAM

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Abstract

Self-Help Groups (SHGs) play a very significant role in economic life of rural people. The role and performance of SHGs in developing regular savings habits, effective utilisation of fund, repayment of bank loan, poverty alleviation and financial sustainability, women's participation in community development programmes and other monetary matters are very effective in rural areas of Assam. This study is an attempt to analyse the operating system of SHGs for better mobilisation of savings, delivery of credit to the needy members, management of group funds, repayment of loans, establishing linkage with training and implementing agencies, bankers, etc., livelihood activities and assessment of performance of the groups in different matters.

Key words: SHGs, poverty, sustainability, community, programmes, mobilisation, savings, credit, agencies, bankers, livelihood, performance

Introduction

The question of impact assessment of the SHGs is one that continues to plague micro credit practitioners. Some contend that existing impact assessment studies are meaningless, while others mentioned that they are absolutely necessary. The researcher supports the use of impact measurement tools that incorporate financial measures and indicate transformation—that is, deeply rooted change in the lives of women, individuals or communities—among group members. This research work acknowledges the problems with measuring impact, including issues of academic rigor, cost, and required expertise. An almost infinite array of variables can be identified to assess impacts on different units. Conventionally, economic indicators have dominated SHGs; impact assessment with assessors particularly keen to measure changes in income despite the enormous problems this presents. Other popular variables have been levels and patterns of expenditure, consumption and assets. Here, a strong case can be made that assets are a particularly useful indicator of impact because their level does not fluctuate as highly as other economic indicators and is not simply

based on an annual estimate. The social indicators that became popular in the early 1980s (e.g.; educational status, access to health services, nutritional levels, anthropometric measures and contraceptive use) have recently been extended into the socio-political arena in an attempt to assess whether microfinance can promote empowerment. This has led to the measurement of individual control over resources, involvement in household and community decision-making, levels of participation in community activities and social networks and electoral participation.

The bulk of this work has focused on evaluation of regularity in savings, loan repayment by the SHGs, credit utilisation pattern and training received by the groups on livelihood activities and assessments of performances of the groups in different matters. In addition, several studies suggest that impact assessors should always seek to keep the number of variables they measure to a manageable number and not be tempted to go for a comprehensive approach that will impact adversely on data quality and study relevance. The commonest methods used in impact assessment are sample surveys, rapid appraisal, participant observation, case studies and participatory learning and action. The major conceptual problems that confront the impact assessment of microfinance relate to attribution and fungibility.

Objectives of the study

The present study is an attempt to analyze the role and performance of SHGs in developing regular saving habits, effective utilisation of the credit amount and repayment of the bank loans in the state of Assam. The broad objective of the study is to analyse the operating system of SHGs for mobilization of saving, delivery of credit to the needy, management of group funds, repayment of loans, establishing linkage with training implementing agencies. The major objectives of the study are:

- i) To analyze the performance of SHGs in matters of credit utilization, loan and subsidy received and above all the repayment levels. The study is intended to explore the regularity in savings of the groups and differences in the average member contribution between the time of inception of the group and at the time of interview.
- ii) The study tries to evaluate the basic features of the groups like- average membership, savings, frequency of the group meetings and training received by the groups on livelihood activities.

Methodology of the study

According to the Statistical Handbook of Assam, 2007 there are 113467 SHGs functioning in Assam (from 1.04.99 to 2006). Sonitpur (18872) occupies the first and North Cachher Hills (720) last position, as far as numbers of SHGs are concerned. But, if we look at the number of women SHGs, the picture is a little different. Sonitpur, here also occupies the first position with 14783 SHGs and the percentage of women SHGs is 78. Whereas, the percentage of women SHGs are very much impressive in Sivasagar (95%), Karbi Aanlong (95%) and Dibrugarh (87%) districts though the total number of SHGs are not comparable with Sonitpur district, i.e. Dibrugarh (4703) that is only 4 percent, Sivasagar (5766) that is only 5 percent and Karbi Aanlong (2947) that is 3 percent as far as total number of SHGs in Assam is concerned. As the present study is intended to analyze the role of SHGs in economic empowerment of women folks in particular, that is why; Dibrugarh and Sivasagar districts are purposively selected for in depth investigation.

Selection of Study Area and Sample Units

There are seven development blocks in Dibrugarh and nine development blocks in Sivasagar. Barbaruah (869 SHGs) block in Dibrugarh district and Gaurisagar (996 SHGs) block in Sivasagar district have the largest number of SHGs, with Tingkhong (517 SHGs) and Lakwa (277 SHGs) have smallest number of SHGs in the districts. The block with the largest number and with the smallest number of SHGs from each district has been selected to represent the universe. Therefore, we have selected Barbaruah and Tingkhong block from Dibrugarh district and Gaurisagar and Lakwa block from Sivasagar district. Each selected development block is further stratified into gaon panchayats. There are 15 gaon panchayats in Gaurisagar development block and 4 gaon panchayats in Lakwa development block of Sivasagar district. Again, there are 13 gaon panchayats in Barbaruah development block and 14 gaon panchayats in Tingkhong development block of Dibrugarh district. 13 SHGs from each gaon panchayats are randomly selected for intensive study, keeping in view that 75 percent are women SHGs and 25 percent mixed SHGs. Altogether the sample size becomes 598 SHGs. The break up is- from Barbaruah block 169 (28.3%) SHGs are randomly selected for intensive study. In the same manner, 195 from Gaurisagar (32.6%), 52 from Lakwa (8.7%) and 182 from Tingkhong (30.4%) are selected for the study.

Table : 1

Sampling Frame of the Study

Districts	Blocks	SHGs	SHG Members
Dibrugarh	Barbaruah	169 (28.26)	2015 (31.08)
	Tingkhong	182 (30.43)	1603 (24)
Sivasagar	Lakwa	52 (8.7)	791 (12.20)
	Gaurisagor	195 (32.61)	2074 (32)
Total		598 (100)	6483 (100)

Note: Figures in the brackets indicate percentages.

Source: Compiled from the field survey

The researcher has used both primary and secondary data in this research work. The relevant secondary data are collected from various journals, books, internet, office of the project director, DRDA etc. The primary data and information required for the study have been collected through a structured questionnaire specially designed for SHGs and SHG members.

Data Collection and Analysis

In order to collect and gather primary data, field observation and structured questionnaire survey methods were employed. In addition, information was also collected through discussions and interviews with local NGOs and government's grass roots level workers. Secondary data gathered from the records of SHGs and NGOs and government offices were supplemented by the primary data collected from the group. A wide range of information such as composition of membership, savings mobilised, loan disbursed, interest rates, recovery procedures, assets created, external assistance received etc. were ascertained from the SHGs and their members. Besides, different books, newspapers, articles, journals, magazines and web sites were also referred for the purpose. The data collected from each block regarding the structure and profile of SHG members, savings and loans of SHGs, economic and social benefits derived by SHG members, etc. has been processed separately and averages of each block are being taken. The analyses obtained from different blocks are compiled and compared to draw the inferences about the performance of the SHGs in the study area.

Data Analysis

Structure of SHGs

It is noted that the average membership per SHG was 10.84. Most of the members agreed that their motives in joining SHGs were to save. Some said they joined the SHG to get credit to meet the unexpected cash demand for consumption and other purposes. Few opined that it led to social empowerment. The average savings per SHG was Rs. 10474.11. It varied from Rs. 9853.98 in Barbaruah to Rs. 11073.34 in Tingkhong block. The per member savings was around Rs. 966.14.

The frequency of group meeting by SHG indicated that monthly meetings were the most common followed by fortnightly and weekly. Meetings are arranged regularly by NGO and Groups. It is held in the middle of the street or any one of the members home. The absentee member has to pay no fine. The average amount of loans per SHG was Rs. 57706.75. The structure and characteristics of Self-Help Groups in the study area is presented in Table:2.

Table : 2

Structure of SHGs in the Study Area

Items	Dibrugarh District		Sivasagar District		Overall
	Barbaruah	Tingkhong	Lakwa	Gaurisagor	
Membership average (No.)	10.66	11	10.62	10.19	10.84
Savings per SHG (in Rs.)	9853.98	11073.34	10868.13	10347.19	10474.11
Loan (Avg.) (in Rs.)	43343.2	57013.74	63596.15	66874.5	57706.75
Frequency of group meetings:					
Weekly:	28	76	14	56	174
Fortnightly	58	64	31	49	202
Monthly	83	42	7	90	222

Source: Compiled from the field survey.

The main goal of SHGs is to compensate for the inadequacies of regular financial institutions by providing small loans in non traditional economic sectors. Flexible repayment procedures and reasonable interest rates are features of the program. A small amount of money can contribute significantly to poverty alleviation, as attested to by the many successes, particularly amongst women, in villages and in remote areas

Purpose of Credit Demanded and Utilised

Generally, after six months operation of savings account, the saving is pooled and used for internal lending among the members. The amount of loan and number of loans are

decided by the members themselves depending on their need and urgency. The purpose wise credit utilized by Self-Help Groups in the study areas are presented in Table : 3.

Table : 3

Purpose-wise credit utilized by SHGs

Purpose	Dibrugarh District		Sivasagar District		Overall
	Barbaruah	Tingkhong	Lakwa	Gaurisagar	
None	131	110	41	121	403
	-77.51	-60.44	-78.84	-62.05	-67%
Investment in Business	38	72	11	74	195
	-22.49	-39.56	-21.16	-37.95	-33%
Total	169	182	52	195	598
	-100	-100	-100	-100	-100

Note: Figures in the brackets indicate percentages.

Source: Compiled from the field survey.

It is observed that most of the members have not utilized the credit purpose. Reasonable proportion of SHG members has utilized the credit amount for investment in their respective economic activities. It was found that about 98 percent of the groups faced problems while procuring credit from bank. Only 2 percent have faced no problem in the process.

Repayment of Bank Loans

Micro-credit has found that the most effective means of appealing to collective effort is group lending. Lending to a single entrepreneur maximizes entrepreneurial effort, but unfortunately also maximizes the borrower's incentive to cheat and not repay the loan. Ideally, any single borrower would want to be responsible for only his loans and his new business ideas, but will accept the responsibilities of group borrowing if it opens access to previously unavailable credit. By making members of a group of borrowers equally liable for any loans to the group, the micro-credit effort creates a system that collectively solves the repayment, free-rider problem.

SHG members are getting both internal loans and external loans. So far as loan repayment is concerned, 82 percent of SHGs have repaid regularly. The repayment positions in all the blocks are encouraging. Table : 4 presents detail of the loan and subsidy received and repayment rates of the sample SHGs.

Table : 4

Loan & Subsidy received and Repayment by the SHGs

District	Block	SHGs	Loan received	Received Subsidy for the bank loan	Regular in repayment
Dibrugarh	Barbaruah	169 (100)	55 (32.54)	52 (94.55)	35 (63.64)
	Tingkhong	182 (100)	66 (36.26)	59 (89.39)	60 (90.9)
Sivasagor	Lakwa	52 (100)	16 (30.77)	14 (87.5)	11 (68.75)
	Gaurisagor	195 (100)	72 (36.92)	69 (95.83)	65 (90.28)
	Total	598 (100)	209(34.95)	194(92.82)	171(81.81)

Note: Figures in the brackets indicate percentages.

Source: Compiled from the field survey.

As far as the matter of receiving bank loan is concerned, there exist very less differences among the blocks. About 30 to 36 percent of the sample groups have received bank loans in the four sample blocks.

But, if go for a detail analysis of the loan repayment scenario, it is clear that only 23.44 percent of the SHGs have repaid the full amount, whereas, 18.18 percent have repaid no amount. Table No. 5 presents block wise repayment levels.

Table : 5

Loan Repayment Levels by the SHGs

District	Block	SHGs	Loan	Full Amount Repaid	Partially Repaid	No Repayment
			Received			at all
Dibrugarh	Barbaruah	169	55	5 (9.09)	30 (54.55)	20 (36.36)
	Tingkhong	182	66	23 (34.85)	37 (56.06)	6 (9.09)
Sivasagar	Lakwa	52	16	1 (6.25)	10 (62.5)	5 (31.25)
	Gaurisagor	195	72	20 (27.78)	45 (62.5)	7 (9.72)
	Total	598	209	49 (23.44)	122(58.38)	38 (18.18)

Note: Figures in the brackets indicate percentages.

Source: Compiled from the field survey.

There exist differences in the repayment levels among the sample blocks as shown in table : 5. Less divergence exists in matter of partial repayment of bank loans by sample groups. It ranged between 54 to 63 percent among the blocks. But, considerable variations are found in case of nil repayment levels among the blocks. When a question for irregularity in repayment of bank loans was asked to the respondents, the answers are member's non-cooperation (37%), inadequate income and savings (47%), lack of dedication and skill (13%), diversion of fund (3%). Financing through SHGs can effectively reduce the dependence on informal money-lenders. Comparatively higher repayment rates indicate the unambiguous superiority of the bank-SHG-client relationship. The repayment rates of group-based systems are especially good in relatively remote communities, and even in communities that are likely to have higher than average rates of poverty.

Savings and credit are normally used as entry points for formation of SHGs since it gives the members a chance to participate in decision-making and satisfies their short term credit needs. Realizing that they can be a promising tool in capacity building of rural poor especially women, central and state governments have vigorously supported the SHG-centric models of development in India. Culture of thrift and disciplined loan repayment through SHGs are thought to be potent routes of social change in impoverished settings where women lack access to resources. A primary function of offering women credit in this way is to enhance their economic status. Credit enables women to earn extra income through which they can gain greater financial autonomy. Lack of savings and capital make it difficult for

many poor people who want jobs in the farm and non farm sectors to become self-employed and to undertake productive employment-generating activities. Providing credit seems to be a way to generate self-employment opportunities for the poor. SHGs are able to reach the poor at affordable cost and can thus help the poor become self-employed through generating the habit of regular savings.

In the sample districts, it was found that the monthly contribution collected from the group members in the range within Rs. 10 to 300. All the SHGs circulated thrift and their period of circulation was monthly. 46 percent of the SHGs collected the monthly contribution in between Rs.41 to 60 at the initial stage and 43 percent of the SHGs collected the same amount at the time of interview.

The picture of the outstanding loan amount is also vivid. As we have already found that 23 percent of the SHGs have repaid the full amount and 18 percent have repaid no amount; the rest 58 percent have the liability to repay the outstanding amounts. The distressing part is that 30 percent of the SHGs have an outstanding amount higher than Rs. 40000 and 15 percent of the sample groups have an outstanding loan liability of less than Rs. 20000.

Table : 6 presents monthly contribution of sample SHGs at their initial stages, at the time of conducting interview and also outstanding loan amounts.

Table : 6

SHGs on the basis of their Monthly Contribution at their Initial stage and at present and Outstanding Loan

Monthly Contribution	At the Initial Stage (No. of SHGs)	At Present (no of SHGs)	Outstanding Loan Amount (in Rs.)	No of SHGs
Rs. up to 20	92 (15.38)	107 (17.89)	0	49 (23.44)
Rs. 21-40	172 (28.76)	194 (32.45)	Up to 20000	31 (14.83)
Rs. 41-60	276 (46.16)	259 (42.85)	20001 to 40000	29 (13.88)
Rs. 61-100	53 (8.86)	34 (5.69)	Above 40000	62 (29.67)
Rs.100-300	5 (.84)	4 (.67)	Full Amount of the Loan	38 (18.18)
Total	598 (100)	598 (100)	Total	209 (100)

Note: Figures in the brackets indicate percentages.

Source: Compiled from the field survey.

Further, questions were also asked on some other aspects of loan procedure like- the gap between the date of application for loan to the banks and date of receiving loan amount. It was found that about 65 percent of the SHGs, who received loan, there is a gap of six to eight months between the date of application and the date of receiving loan. But, here also, the researcher observes serious anomalies. 89 percent of the group members, in spite of having a good academic degree, are unable to fill up the loan application forms of the banks. They get it done by the high school teachers, educated youths and the groups which consisted of only women members filled up the forms by their husbands, sons and daughters. Again, all the 209 SHGs who received loan have got the full amount of the loan and another 31 groups have applied for loan and have not got it.

Individual or personal factors which appear to increase the likelihood of a woman controlling her loan and the income generated from it are: absence of a husband (due to death, abandonment or long-term migration); and use of the loan for a 'traditional' female activity, particularly where the woman is able to market her goods from home (such as paddy husking, sewing, selling milk or chicks). One of the key factors which constrain women in Bangladesh and India from taking control of loan use and profit is lack of access to the market for the purchase of inputs and for the sale of goods, particularly for non-traditional income-generating enterprises. However, some traditional female income-generating activities yield extremely poor returns for labour, particularly where there is no technical assistance provided to help women to increase their productivity. For example, unpublished research undertaken by Oxfam Community Aid Abroad in Sri Lanka shows that, at best, women gain very little for their labour for many traditional income-generation activities, particularly paddy husking. Very few agencies have evaluated their programmes from this critical perspective, despite the fact that some of them target 'traditional' women's activities as a way of encouraging higher levels of female control.

Membership in a credit program like SHGs can promote women's greater interaction with the outside world. The role of social interaction in promoting the diffusion of an innovative behavior such as awareness of conditions prevailing elsewhere, identifying own self- respect, use of contraception are well documented (Bongaarts and Watkins, 1996; Montgomery and Casterline, 1993). Social networks can promote access to new information as well as provide evaluative information about the consequences of behavior. Training Programmes organized by various promoting agencies can be the best facilitator of these types of interactions.

Table : 7 presents the number of SHGs who received any kind of training along with number of days of training and implementing agencies.

Table : 7

SHGs on the basis of training undertaken on livelihood activities and Implementing Agency

Period of Training (Days)	No of SHGs	Name of the Implementing Agency	No of SHGs
No training at all	204 (34.11)	NABARD	7 (1.78)
5-Jan	348 (88.32)	DRDA	350 (88.83)
15-Jun	24 (6.09)	NGO	12 (3.05)
16-30	5 (1.27)	SIRD	7 (1.78)
30-180	17 (4.32)	Others	18 (4.57)

Note: Figures in the brackets indicate percentages.

Source: Compiled from the field survey.

Total 394 (66%) SHGs have availed training programmes given by different agencies like NABARD, DRDA, NGOs, SIRD and others. Here the dominant agency is found to be DRDA (89%) whereas the role of NABARD is negligible (1.78%) in matter of conducting training programmes. Most of these programmes (88%) are found to be of short duration i.e. one to five days. 96 percent of the sample SHGs who have attended the training programmes are benefited from these types of programmes. 74 percent of the sample groups want to participate in further training programmes. They are found to be quite reinvigorated, energetic and interested to share their feelings and experience of the group activities with the fellow members of other groups whom they meet in these training programmes. The reasons for these are observed to be many folded, some of the are really interested to learn the procedures of more income generation through skilled operation while the other counterpart was simply happy as they can enjoy the local township, go for household shopping (as most of the trainings are organized in the district headquarters) but have to spend nothing for accommodation and food (as the training implementing agency finances all these).

Policy Prescriptions

It may, however be stressed that the sample groups are no doubt engaged in some profitable income generating business activities which is much better than their previous jobless situation. But, poverty targeting does not necessarily contribute to empowerment as poverty targeting may leave out many disadvantaged women who do not belong to very poor

households. It may also bypass women who have skills and experience to contribute as role models for other women. It is revealed that the emphasis on small savings and small consumption loans fails to enable women to graduate to higher income activities. The emphasis on 'self-help' here fails to recognize the costs to women of participation in terms of time and resources. It does not necessarily provide the opportunity for them to articulate and develop strategies for empowerment. The mix-up of gender and poverty concerns confines women to group based programmes with marginal contribution to incomes growth.

Group-based delivery of savings and credit is advocated to reduce the costs of service delivery and to provide the basis for women's participation in self-help community development. The foregoing analysis of the inherent features of the sample groups clarifies that the precise structure and function of groups varies considerably in the selected areas during the surveyed period.

This empowerment approach can increase financial sustainability and poverty alleviation as evidenced by many of the earlier studies. For example, a successful loan graduation programme would over time increase women's ability to take and repay larger loans which are cheaper to administer. But all these things are observed to be missing in the sample groups. Summing up, the overall picture drawn by the above discussion is not at all encouraging. Increasing market relevance of services through participatory assessment would both more fully address women's needs and increase repayment.

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ELECTRONIC DATA INTERCHANGE AND IT'S VARIOUS STANDARD FORMATS: A NEWLY DEVELOPED BUSINESS PARADIGM OF INFORMATION TECHNOLOGY

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Abstract

The original electronic commerce applications using networks are commonly referred to as Electronic data interchange (EDI). EDI is the use of computer and telecommunication technology to move data between or within the business organizations. It is the electronic transmission or movement of business data, information and documents from one business' computer system to another system in a standardized format known as EDI Standards, without manual intervention. This movement is in a structured data format that permits data to be transferred without rekeying from a computer-supported business application in one location to another such system elsewhere. Many large companies have implemented EDI, and they are routinely using it with their suppliers to simplify management of their supply chains and the handling of their financial transactions. This paper summarises the background and development of EDI on the traditional business process. Uncertain economic benefits and the costs of implementing ever-changing EDI standards are shown to be major reasons. In addition, it also focuses on the working principle of EDI process. This paper also tries to study the implementation of EDI in India with the help of some secondary resources. The information and data required for the study are collected from various secondary sources like internet, journals, books etc.

Key words : Electronic Commerce, Electronic Data Interchange, EDI Standards, Economic Benefits, Working Principle of EDI.

Introduction

Before the days of wide-spread EDI use, the need to exchange information was critical within the business community as the communication of business processes between companies was slow and error prone. Instead of electronically exchanging invoices, shipping notices, purchase orders, sales reports and other important business documents, trading partners had to send each other paper documents in order to fulfil their requests. Slow processes, delays and errors were an obstacle for companies who wanted fast shipments, fast payments, and who valued accurate information exchange with their business partners. The history of Electronic Data Interchange (EDI) is filled with overly optimistic predictions on how fast EDI will be adopted by organizations and its impact on organizations ¹.

EDI Basics

EDI is a subset of Electronic Commerce (EC) which is broadly defined by Kalakota and Whinston² as "a modern business methodology that addresses the needs of organizations, merchants, and consumers to cut costs while improving the quality of goods and services and increasing the speed of delivery." Electronic commerce is also described as the "paperless exchange of business information using Electronic Data Interchange (EDI), Electronic Mail (E-mail), computer bulletin boards, Fax, Electronic Fund Transfer and other technologies"³. EDI is one of the most important subsets of electronic commerce -the use of computer and telecommunication technology to facilitate the information exchange between two parties in a commercial transaction. The intent of all electronic commerce is to automate business processes. Some transactions can be completely paperless and move data from one computer application to another computer application. EDI was developed in the 1960's to help organizations interact more economically with their channel partners. This is done through the electronic transfer of documents from one company to another which would reduce transaction times, reduce errors, and reduce labour. Nearly 30 years later, less than 5% of businesses have implemented EDI with most of those occurring in the decade of the 90's⁴.

Definitions of EDI

"Electronic Data Interchange" (EDI) is a term that describes the means by which automatic, interorganizational computer-to-computer communication is facilitated. EDI, like EC, is both a business process and a technology⁵. Emmelhainz⁶ defines EDI as "the interorganizational exchange of business documentation in structured, machine-processable form." Sokol⁷ describes EDI as "the intercompany computer-to-computer communication of standard business transactions in a standard format that permits the receiver to perform the intended transaction." Both of these definitions include the concept that EDI is an Interorganizational System (IOS) and involves the exchange of business documents in an electronic format⁸. EDI is a subset of EC which includes other technologies such as E-mail and EFT and is only between businesses and does not involve consumers directly.

Review of Existing Literature

A large number of research paper have been done by various research scholars. Some selected literature specific to the present study are extracted from various research works to get a fair idea about the methodologies applied and the emerging issues. Some of such supportive literatures are reviewed in the next part of the study:

Electronic Data Interchange (EDI) refers to the structured transmission of data between organizations by electronic means. It is used to transfer electronic documents from one computer system to another from one trading partner to another trading partner. It is more than mere E-mail; for instance, organizations might replace bills of lading and even checks with appropriate EDI messages. It also refers specifically to a family of standards, including the X12 series. However, EDI also exhibits its pre-Internet roots, and the standards tend to focus on ASCII (American Standard Code for Information Interchange)-formatted single messages rather than the whole sequence of conditions and exchanges that make up an inter-organization business process. to both develop a better understanding of the adoption of EDI and to explore new approaches to EDI, some significant development has been made.

John R. O'malley, Jr. University Of North Carolina - Charlotte And Lance A. Matheson Virginia Polytechnic Institute And State University (2002)⁹ in their paper "New Directions For Research In Electronic Data Interchange (Edi)" states the Uncertain economic benefits and the costs of implementing ever-changing EDI standards as the major reasons as well as they proposed the new directions for future trends and research in EDI.

Juha-Miikka Nurmilaakso, BIT Research Centre, Helsinki University of Technology, in his survey paper, "EDI, XML and e-business frameworks: A survey"¹⁰, discusses a lock-in to the EDI formats and EDI-based e-business frameworks.

In the research paper completed by Jagannathan Iyengar, University of Nebraska at Kearney(1999)¹¹, titled, "Electronic data interchange (EDI): Application of EDI and its impact on information quality", addresses the applications of EDI and looks at possible impact on information quality.

In the working paper (1995)¹² titled "Electronic Data Interchange Concepts And Issues" researched by Ram6n O'Callaghan, Nijenrode University, The Netherlands and Jon A. Turner, Copenhagen Business School Denmark and New York University USA, focus on a typology of EDI, discuss some theoretical notions that underpin EDI, and describe the normative expectations about EDI benefits, before we conclude with some remarks on EDI message standards.

Objectives of the Study

1. To understand the technology of electronic data interchange in business process .

2. To analyse the effects of electronic data interchange on business process through the different benefits over traditional business process.
3. To understand the working concept of EDI and its various standard formats.

Methodology of the study

Nature of the research : The present study is descriptive in nature and an attempt was made throughout the survey to give a description regarding the process of Electronic Data Interchange and its various Standard formats with its different advantages over traditional business process which can be implemented to improve the state of the communication and transmission system in the E- Commerce with better quality of response.

Sources of data : The present study is based on secondary data which were collected from various journals, websites, books etc., for this study.

Significance of the study

Electronic Data Interchange was envisioned as the future for business with its ability to lower costs, improve productivity, and decrease transaction times. Therefore it was intended to handle all aspects of business transactions such as ordering, acknowledgements, pricing, status, scheduling, shipping, receiving, invoices, payments, and financial reporting with minimum human intervention as much as possible. One of the principal aims of EDI has been to develop electronic surrogates for the myriad of paper forms used in commercial transactions such as purchase orders, bills of lading, and invoices. Since the early 1970's, efforts have been underway to develop standardized data formats for business transactions. But the adoption of EDI has been very slow compared to other information technologies. Hence for the uproot of the implementation of EDI in business organization, it is necessitated a study on the Electronic Data Interchange with its various effects on the communication process of business documents of different kind on traditional business communication process.

A Technological View of EDI

Technically, EDI is the business-to-business transfer of documents. It can also be viewed as the business-to-business transfer of data or information. Essentially, instead of transferring paper documents using the mail or other transportation services, EDI transfers the documents in an electronic form using telecommunication links. The traditional paper transfer for a purchase order is when the buyer's computer information system prints a paper order which is manually transferred to the seller. The seller then manually enters the

buyer's order into the seller's computer information system.

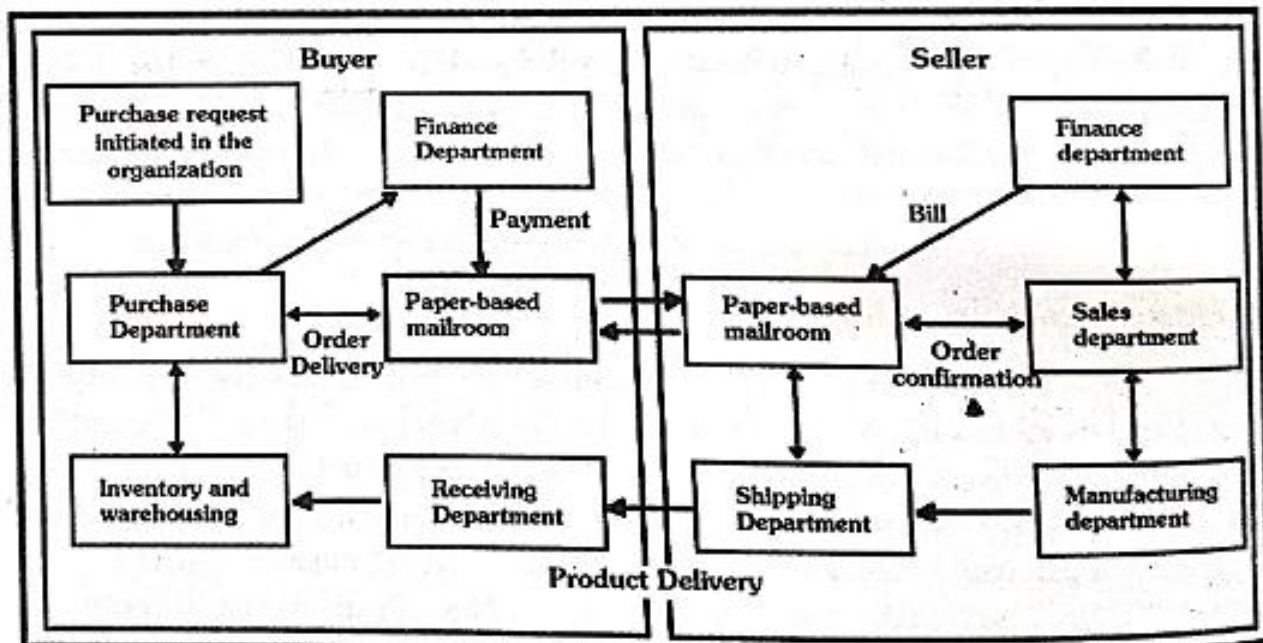
Process of Electronic Data Interchange

EDI provides a fruitful context for examining interoperability on both an immediate technological/data level as well as on a higher institutional level. Technologically, EDI allows a computer to make use of data that has been transferred over an existing communications line from another machine, often one managed by a separate organization from the first. The essential distinction between the EDI system and traditional computer data transfer methods is with EDI, the exchanged data is immediately readable by multiple computer systems. EDI introduced a solution to a problem experienced by many companies: Often, company computer systems use different document formats for their ordering and communication forms, and computers from one company lacked the ability to distinguish information contained within another company's document format.

Information flow without EDI

In a typical manual process, the communication and transmission of the documents as information looks like this, with lots of paper and people involvement in different concerned department of a business organization. The following figure will show the flow of information without the application of EDI.

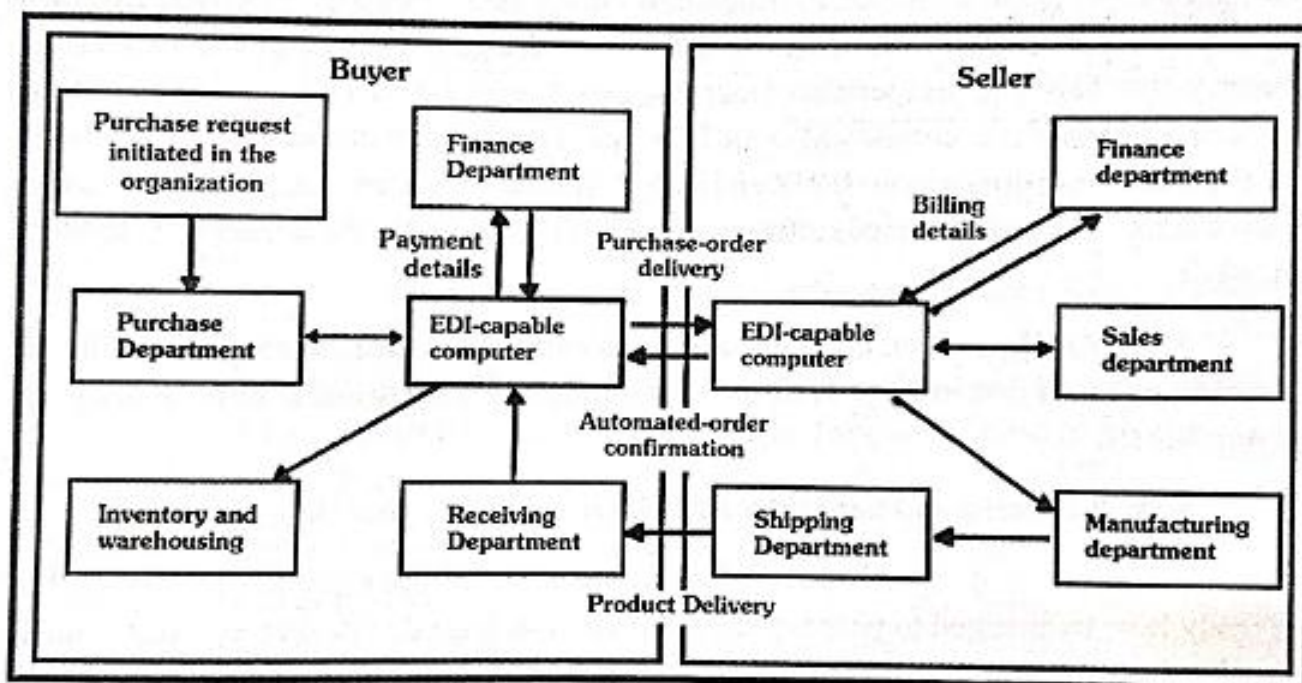
Fig: Information flow without EDI¹³



Information flow with EDI

EDI replaces postal mail, fax and email. While email is also an electronic approach, the documents exchanged via email must still be handled but people rather than computers. Having people involved slows down the processing of the documents and also introduces errors. Instead, EDI documents can flow straight through to the application on the receiver's computer and the processing can begin immediately with minimum human intervention comparison to that without using EDI application. The following figure will show how the business documents are transferred and communicated through using the application of EDI.

Fig: Information flow with EDI¹⁴



Working Principle of EDI¹⁵

There are 3 steps to sending EDI documents - Prepare the documents, Translate the documents into EDI format, Transmit the EDI documents to your partner.

Step 1: Prepare the documents to be sent

The first step is to collect and organize the data. For example, instead of printing a purchase order, your system creates an electronic file with the necessary information to build an EDI document. The sources of data and the methods available to generate the electronic documents can include:

- Human data entry via screens
- Exporting PC-based data from spreadsheets or databases
- Reformatted electronic reports into data files
- Enhancing existing applications to automatically create output files that are ready for translation into an EDI standard
- Purchasing application software that has built-in interfaces for EDI files

Step 2: Translate the documents into EDI format

The next step is to feed your electronic data through translator software to convert your internal data format into the EDI standard format using the appropriate segments and data elements. You can purchase EDI translation software that you manage and maintain on your premises. This requires specialized mapping expertise in order to define how your internal data is to be mapped (i.e. correlated) to the EDI data. Translation software is available to suit just about any computing environment and budget, from large systems that handle thousands of transactions daily to PC-based software that need only process a few hundred transactions per week.

Alternatively, you can use the translation services of an EDI service provider. In that case, you send your data to the provider, who handles translation to and from the EDI format on your behalf.

Step 3: Connect and transmit your EDI documents to your business partner

Once your business documents are translated to the appropriate EDI format they are ready to be transmitted to your business partner. You must decide how you will connect to each of your partners to perform that transmission. There are several ways, the most common of which include 1) to connect directly using AS2 or another secure internet protocol, 2) connect to an EDI Network provider (also referred to as a VAN provider, an EDI service provider maintains a VAN, with mailboxes for each business partner. The provide stores then forwards EDI messages between partners.) using your preferred communications protocol and rely on the network provider to connect to your business partners using whatever communications protocol your partners prefer, or 3) a combination of both, depending on the particular partner and the volume of transactions you expect to exchange.

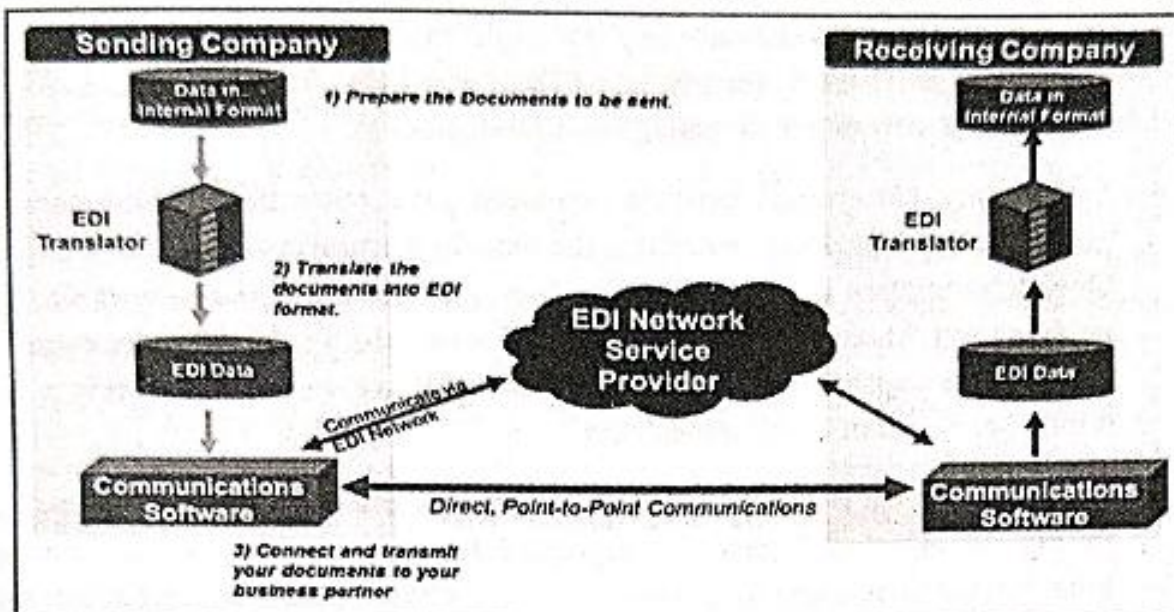


Fig: Working principle of EDI

Benefits of EDI over traditional business process

EDI was developed to solve the problems inherent in paper-based transaction processing and in other forms of electronic communication. In solving these problems, EDI is a tool that enables organizations to reengineer information flows and business processes. Problems with the paper-based transaction system and as well as the benefits over traditional business process can be summarized as:

- **Time delays:** Delays are caused primarily by two factors. Paper documents may take days to transport from one location to another. In addition, manual processing delays are caused by the need to key, file, retrieve, and compare data. But in EDI system, a lot of time is saved as the data travels electronically from source to the destination.
- **Labour costs:** In non-EDI systems, manual processing is required for data keying, document storing and retrieving, sorting, matching, reconciling, envelope stuffing, stamping, signing, etc. While automated equipment can help with some of these processes, most managers will agree that labour costs for document processing represents a significant proportion of their overhead. In general, labour-based processes are much more expensive than non-labour-intensive operations involving computers and telecommunications. In an EDI system, the processing cost is much less in comparison to the processing cost of the same document if prepared manually as the data in an EDI system is transferred electronically.

- **Errors:** Because information is keyed multiple times and documents are transported, stored, and retrieved by people, non-EDI systems tend to be error prone. But in an EDI system, it is easier to manage an EDI document.
- **Uncertainty:** Uncertainty exists in two areas. First, paper transportation and other manual processing delays mean that the time the document is received is uncertain. Once a transaction is sent, the sender does not know when the transaction will be received nor when it will be processed. Second, the sender does not even know whether the transaction has been received at all nor whether the receiver agrees with what was sent in the transaction.
- **High Inventories:** Because of time delays and uncertainties in non EDI processing, inventories are often higher than necessary. Lead times with paper processing are long. In a manufacturing firm, it may be virtually impossible to achieve a just-in-time inventory system with the time delays inherent in non-EDI processing systems.
- **Information Access:** EDI permits user access to a vast amount of detailed transaction data-in a non-EDI environment this is possible only with great effort and time delay. Because EDI data is already in computer-retrievable form, it is subject to automated processing and analysis. Such information helps one retailer, for example, monitor sales of toys by model, colour, and customer zip code. This enables the retailer to respond very quickly to changes in consumer taste.

EDI Standards

EDI is an internal organizational systems (IOS) by definition. It is a system of electronic communication of business documents between two organizations. There is an inherent difficulty in electronically linking two systems. Typically, internal organizational systems are designed around the needs of the organization; not its trading partners¹⁶. Since each business' system is designed separately, they are likely to be different and not directly compatible. Thus, there is a need for an IOS to enable the two dissimilar computer systems to communicate. This is the role of EDI standards. EDI involves the transmission of data in electronic format all around the world. Thus it is imperative to have some standards to be followed by the business organizations, which are involved in EDI. If these standards are not followed then probably all may start using their own protocols for the representation of data electronically and this will make the exchange of data and transaction very difficult.

The first attempt to develop standards occurred in the late sixties in the transportation industry in the United States. In 1968, a group of companies formed the Transportation Data Coordinating Committee (TDCC) for the US. The purpose of this committee was to develop a common language, or standards, for use in the exchange of transportation documents. TDCC published its first standard in 1975 and has since developed and published standards used in the air, motor, rail, and water industries. The grocery and warehousing industries followed and developed their own EDI standards: UCS (Uniform Communication Standards) and WINS (Warehouse Information Network Standard).

In 1978, the American National Standards Institute (ANSI) realized that EDI standards could be used across industries and chartered a committee (the so called X. 12 committee) to 'develop standards to facilitate electronic interchange relating to order placement and processing, shipping and receiving information, invoicing, payment, and cash application data.' The ANSI X.12 committee, using the basic structure and syntax established by TDCC, developed and continues to develop EDI standards.

In Europe, the development of EDI standards followed a pattern similar to the United States and different industry-specific standards proliferated. For examples: TDI, used primarily in the UK for warehousing and distribution; ODETTE, used in the European automobile-industry; DISH, used in the shipping industry; CEFIC, used in the chemical industry; EANCOM, used by manufacturers, distributors and retailers of bar-coded consumer goods; and others.

In 1987, efforts to create an international standard were started by EDIFACT (EDI for Administration, Commerce, and Transport). EDIFACT is the responsibility of two International organizations: ISO (the International Standards Organization), which is responsible for developing syntax rules and the data dictionary, and the United Nations Economic Commission for Europe, this is responsible for the development of the document standards. Europe and North America have representatives participating in the development of EDIFACT. The international groups used ANSI XI2 standards and the TDI standards as a basis for the EDIFACT standard.

EDI in India¹⁷

- The government of India has established an EDI council under the Ministry of Commerce as the nodal agency for implementation of EDI in India.
- It is the apex body with representation from several key government departments

and representatives from trade and industry.

- The chairman of EC/EDI council is Secretary, Department of Commerce.
- The council is responsible for laying down policy framework and directions.
- Organisations like All India Management Association (AIMA), Federation of Indian Export Organisation (FIEO), Indian Institute of Foreign Trade (IIFT) and National Informatics Centre (NIC) conduct training programs for bringing out awareness about EDI.
- Besides two government networks i.e. VSNL of DoT and NICENET of NIC, there are also a number of private sector EDI service provider in the country such as Mahindra Network Services, Global Telecom Services Ltd., Satyam Infoway Network, Manipal Control Data, IBM Global Network Services, GE Information Services.

India EDIFACT Committee¹⁸

- The India EDIFACT (EDI For Administration, Commerce and Transport) Committee and the EDI Working Group were created by Ministry of Commerce for directing the task of promoting EDI in the country.
- The council formally adopted UN/EDIFACT message as the standard of conducting EDI in country.
- India EDIFACT committee is chairman my Additional Secretary at Department of Commerce.
- The India EDIFACT Committee (IEC) is responsible for formulating standards, streamlining the procedures in line with UN/EDIFACT and maintain liaison with UN/EDIFACT bodies.
- The working group is responsible for motivating various functionaries in the government and ensure scheduled implementation of program.
- To address all the information needed on different sectors and its interface with UN/EDIFACT standards following Message Development Groups are working :-
- Ports Message Development Group under Indian Ports Association (IPA)
- Airports Message Development Group under Airports Authority of India (AAI)

- Financial Message Development Group under Indian Banks Association (FIBA)
- Customs Message Development Group under Central Board of Excise & Customs (CBEC)
- Private Sector Message Development Group under Federation of Indian Export Organisations (FIEO)

Conclusion

EDI has existed for 30 years yet it has not been widely adopted. There are various reasons for the slow adoption rate for EDI when compared to other information technology innovations including unrealistic financial expectations and difficulty in implementation. Several companies now market EDI packages that utilize the Internet for the telecommunication link. As more and more firms utilize the Internet instead of VANs, the costs for EDI should decrease. However, the effectiveness of EDI over the Internet has not been well researched.

As with all research there are limitations to this paper. There is an ample scope of future research works in the area of Electronic Data Interchange as because a very limited number of researches have been done in this study area. Such types of research work will help in creating awareness among the different business organizations, industries as well as it will help them to develop their business process with a greater response. At the same time, this paper will also help to acquire knowledge about the benefits that they would must get throughout the EDI based business process.

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ROLE OF E-CRM TOWARDS LOYALTY AND RETENTION OF ONLINE CUSTOMERS IN URBAN AREAS WITH SPECIAL REFERENCE TO DIBRUGARH TOWN

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Abstract

In recent years, it can be seen that Online shopping is becoming more and more popular in our daily life. In order to improve performance of online business, many companies equip their websites with CRM as it has made significant progress as an effective effort to serve customers. Now-a-days customers are more demanding, more knowledgeable and require more attention. Many organizations are therefore shifting their attention to customers and hence CRM emerges as a technology, known as E-CRM which brings customers more closer to organization to retrieve information through online. When CRM is implemented efficiently it will help in achieving its main objective i.e., customer satisfaction and at the same time it will also help in retaining and gaining loyalty from valuable customers. Therefore in this paper an attempt has been made to study the role of E-CRM towards loyalty and retention of online customers. The study is a micro level study where 50 customers are selected who are basically online buyers and has been asked as respondents in this research.

Key words : CRM, E-CRM, Loyalty, Retention, Online buyers

Introduction

A few years back most the organizations concentrated only on production. Their main aim was to sell off their products. But in the present scenario things have changed to a great extent. Now-a-days organizations are more concentrated to build relationship with the customers. This is because of the growing importance of customers. Hence the importance of Customer Relationship Management (CRM) rises. Again with the increasing growth of electronic business crm emerges as technology which is known as Electronic Customer Relationship Management (E-CRM). Both CRM and E-CRM is nothing but it is a practice that companies use to manage, record and evaluate customer interactions in order to drive sales growth by deepening and enriching relationships with their customers. With the help of E-CRM, the two important factors of business i.e. loyalty and retention of customers can be achieved. Thus this study is an attempt to study the role of E-CRM towards loyalty and retention of online customers.

Review of Literature

A large number of research works have been done by various research scholars in India so far. Some selected literature specific to the present study are extracted from various research works to get a fair idea about the methodologies applied and the emerging issues. The literature are reviewed in this part of the study.

A work was done by Mohamed Khalifa and Ning Shen¹ (2005) on "Effects of Electronic Customer Relationship Management on Customer Satisfaction: A Temporal Model". In this study the researchers has develop, operationalize and empirically test a temporal model explaining the relationship between three categories of eCRM (i.e., pre-purchase, at-purchase and post-purchase eCRM) and online customer satisfaction at two phases of the customer lifecycle, i.e., attraction and retention. The results of a longitudinal survey of the online customers of hardware retailers provided strong support for the model and revealed the dominant role of pre-purchase eCRM in satisfaction formation at the attraction phase and the prevalence of post-purchase eCRM at the retention phase.

Peter Oppong² et.al. (2014) conducted a work on "The Role Of Information Technology In Building Customer Loyalty In Banking: (A Case Study Of Agricultural Development Bank Ltd., Sunyani)". The study was made to investigate the role of information technology in the development of loyalty in banking. The results of the study indicate that despite the introduction of IT in service delivery by the Agricultural Development Bank Ltd. in Sunyani, service quality is still low. However, IT has played the role of enhancing customer loyalty by making banking services more personalized, convenient and time-saving.

Alireza Abdolhosseini Khaligh³ et.al. (2012) observed in his study entitled "The Impact of eCRM on Loyalty and Retention of Customers in Iranian Telecommunication Sector" the relationship between eCRM effective factors and loyalty and retention factors. The results of the research shows which factors are effective and which factors are not in Iranian mobile telecom sector.

Daminni Grover⁴ (2011) in her paper on "Effective Customer Relationship Management through e-CRM" attempted to review developments in e-CRM that facilitates online service to customers. Apart from review of technology related developments, the study focuses on identification of thrust areas resulting benefits and implementation strategies. The paper concluded by showing how e-CRM can add to traditional marketing concepts.

Another work was done by Nicholas c. Romano, jr. And jerry fjermetad⁵ (2003) on "Electronic Commerce Customer Relationship Management: A Research Agenda". In the

study they have approached electronic commerce Customer Relationship Management (e-CRM) from the perspective of five research areas. In this paper, they propose a research framework for eCRM composed of five underlying research areas and a model of how these five areas influence one another and both the process and outcomes of e-CRM.

Dr. M. Sree Sakthivelan⁶ (2014) has done a research on "A Study on The Impact of eCRM on E-Commerce". The study was made to gain a better understanding of eCRM to customers and organization in online industry. The study also investigates the impact of eCRM on e-business website service quality. The researcher concludes by saying that all the websites are supposed to set up big plans and strategies for their survival and customer retention. To remedy, they can employ, technologies, techniques and strategies which focus on customer-orientation.

Objectives of the Study

The study has been undertaken with the following objectives:

1. To find out the role played by eCRM in order to make the online customers loyal.
2. To examine the role of eCRM in retaining the customers.
3. To examine the significance of eCRM.

Rationale of the Study

In this competitive environment, retention of loyal customers and increasing the number of customers is important. This practice indeed raises a question on the role of eCRM. If a online retailer wants to increase his business then definitely he has to make his customers loyal as well as retain his existing customers and this can be done by way of eCRM. So the present research is based on role of eCRM towards loyalty and retention of online customers. This area has been chosen as it would be helpful for further research and exploration of new ideas in this field. It will also provide an insight on the performance of eCRM.

Scope of the Study

The role of eCRM in present scenario looks very bright. Though some improvisation needs to be done in order to make it more effective. In the present work, the role played by eCRM has been studied on the customers of chiring chapori area of Dibrugarh town. This study will help to some extent the online retailers to know more deeply what are the changes that they need to make in the eCRM practice in order to make it more efficient and effective.

Research Methodology

Sampling Design

This study is confined to the online customers that are present in chiring chapori area of Dibrugarh town and the area has been selected as per the convenience. In this regard the study has considered only chiring chapori area for the universe of the study. As the present study is particularly based on online users and the exact size of the population cannot be defined so both judgemental and systematic sampling technique has been used to collect the required data. A total of 50 respondents are taken for the study.

Tools/ Methods of data collection

This study involves both descriptive and analytical type of work. Both primary data and secondary data is collected for the study. The primary data was collected first with the help judgemental sampling. A total of 15 households were selected. Again out of these 15 households a total of 50 respondents are selected who are basically online customers by way of systematic sampling. From these 50 respondents data/information was collected with the help of a questionnaire. So the primary data is based on field study and personal interview. The secondary data is collected from various internet sources along with data from books and journals.

Framework of analysis

In order to study the overall role of e-crm towards loyalty and retention, the data/information so collected is tabulated and analyzed by using simple arithmetic tools like percentage.

Analysis of the Study

It has been observed from the analysis of the views of the respondents that 66% of the respondents often shops online, 14% shops very often while 20% shops online less often. The second segment of the analysis has been carried out to know the overall viewpoints of online users related to their likes and dislikes about the online site. Starting with their likes, the analysis proceeds to know that most of the respondents i.e. 70% of them like to shop online because of special offers, 20% like the ambience of the online store while a few of them i.e. 10% like the free delivery facility. Again the analysis has been made to know the reasons of dislikes, where it has found out that their reasons of dislikes are poor customer service facility and lack of problem solving facility. The respondents were also asked some of the

closed ended questions, which are shown in table 1. From table 1, it can be observed that most of the respondents prefer to shop online, they would further make purchases online,

Table :1

Measurement of preferences of respondents

Statement of assertion	YES (in %)	NO (in %)
I like to shop online	95	5
I would make further purchases online	90	10
I would make referrals to a friend	77	23
I find the feedback/enquiry system efficient	68	32
I would continue to shop online even if service charged is increased	55	45
I have strong preference for online shopping than traditional shopping	60	40
Use of IT makes it possible to receive personal service	88	12

Source: Field study

From table 2 it has been observed that most of the respondents receives response within a hour if they contact the online retailer by email. While some others receives response within 6 hours and a few of them has received response between 12-24 hours.

Table : 2

Time taken to receive a response by e-mail

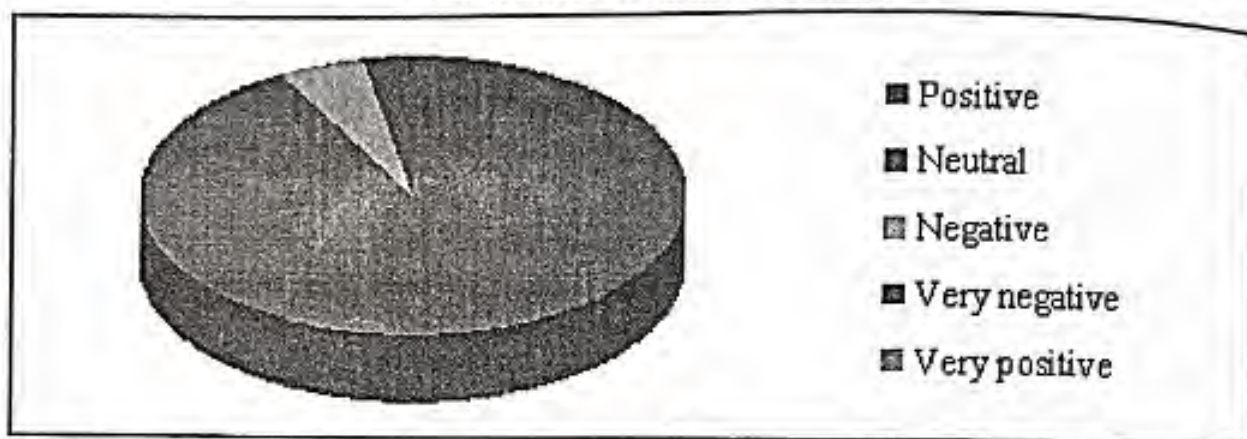
Time taken	Percentage
Within an hour	77
6 hours	0
6-12 hours	18
12-24 hours	5
Over 24 hours	0

Source: Field survey

Regarding the viewpoints of the respondents in terms of the influence of convenience on loyalty towards a particular site, it has been observed that 72% of them are positively influenced, 20% are neutral about it, while 5% are negatively influenced and 3% are very negatively influenced.

Fig : 1

Influence of convenience on loyalty



Note: Drawn from primary data

It has been observed from table 3 that 85% of the respondents are satisfied with the overall customer service. While 15% of them are neutral about it and none of the respondents are dissatisfied with the service.

Table : 3

Satisfaction of the respondents

Types	Percentage
Very dissatisfied	0
Dissatisfied	0
Neutral	15
Satisfied	85
Very satisfied	0

Source: Field survey

Discussion

In the forgone analysis it has been depicted that in general, the respondents were of the view that they prefer to shop online. It can be assumed that this is a good sign for the online retailers and they should give prudent consideration to it by making the e-crm practice more efficient. With the help of e-crm customer retention and loyalty can be achieved to a great extent. The main purpose of e-crm is to serve the customers in better way and retain valuable customers. It has been observed that convenience also plays a major role in influencing the loyalty of customers. In the study most of the respondents are positively influenced to remain loyal to a particular site. However certain inputs of the study also highlight that there are few respondents who are not fully satisfied or are neutral about the overall service. At this point the retailers need to improve their e-crm practice if they want to fully capture the whole market because if the customers are satisfied then definitely they will be able to retain them as well as make them loyal towards them forever. All this are possible only with help of good e-crm because with e-crm, companies can use Internet technologies to retain existing customers, track their preferences and online behaviors, and customize the support and services. It will act as a tool to maintain its customer relations by use the Internet. So the findings of the study reveal that the role e-crm cannot be ignored in the present scenario.

Conclusion

In the present research the role of e-crm has been investigated. More specifically the research demonstrates the necessity of e-crm. E-crm expands the traditional crm techniques by integrating new electronic channels that makes impact on the customers and bring in consistent profit through customers retainability and continual support. Thus it can be concluded that with the changing situations organizations should not ignore the role played by e-crm which ultimately brings customers more closer to the organizations.

Recommendations

Based on the findings and the conclusion of the study it can be recommended that, the management should make its electronic services more accessible by improving the efficiency of the electronic facilities through regular maintenance to enable customers have access to its services, 24 hours, 7 days. Moreover for the successful implementation of the system, vision and commitment from the management is also needed. Thus by doing all this, it would definitely go a long way to raise the customer satisfaction levels and hence customer loyalty as well as customer retention.

Limitations of the study

1. The first limitation is that this study is restricted to a limited area, so the results may not be applicable to other areas.
2. The second limitation is the time factor. The time and efforts that are put in the study are not sufficient enough to find out the exact role played by e-crm.

Scope for future research

The present study is limited to a particular geographical area i.e. chiring chapori area of Dibrugarh town. There exists a scope for such studies, by incorporating other geographical regions. There is again a scope of studying the factors, loyalty and retention separately in order to make the study more efficient.

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CONSUMER RIGHTS IN INDIA

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Abstract

The consumer is the sole and end purpose of all production, and the interest of the producers ought to be attended to only so far as it may be necessary for promoting that of the consumer. But today reality is different the producers trying to gain money by manufacturing poor quality of goods and by unfair trade practices. Therefore consumer needs protection of their rights. The need of hour is active involvement and participation from the Central Government and state government, educational institutions, the NGO's, Medias and adoption and observation of a voluntary code of conduct by the Trade and Industry and the Citizen's Charter by the Service provider is necessary to see that the consumers get their due. The government has a primary responsibility to protect the consumers right through appropriate policy measures, legal structure and administrative frame work. It is also to be noted that the court in India are responsive and have widened the scope of Consumer Protection Act 1986 through their decisions on consumer disputes related matters.

Key words : Right, Consumer, need, awareness, unfair trade practices, citizen's charter.

Introduction

"A customer is the most important visitor in our premises. He is not dependent on us, we are dependent on him. He is not an interruption in our work; he is the purpose of it. He is not an outsider to our business, he is part of it. We are not doing any favour by serving him, he is doing us a favour by giving us an opportunity to do so."

~ Mahatma Gandhi

Consumption is as old as man and is older than production. In ancient time man was dependent on nature and was in that sense self-sufficient and independent. Now we may look back at those days but cannot go back and live like that. In a continuous effort to improve the quality of life, man has built many institutions, systems and developed knowledge in Social, Cultural, Religious, Scientific, Economic and in many such other field. Economic activities that are production, distribution and consumption have an important part of human

activities. Consumer wants can control all economic activities. According to Adam Smith, "the consumer is the sole and end purpose of all production, and the interest of the producers ought to be attended to only so far as it may be necessary for promoting that of the consumer".¹ But today reality is different the producers trying to gain money by manufacturing poor quality of goods and by unfair trade practices. Therefore consumer needs protection of their rights. Gradually awareness has increased amongst them in different ways in different countries to improve the quality of life.

Origin and Development

The crusade for the consumer's right started in U.S.A. in 1927. In 19th and 20th century in the history of U.S.A. the very first consumer protection law was enacted to regulate the sale of food and drugs and to protect consumers from the growing power of large business enterprise. St. Thomas Aquinas, Martin Luther, John Calvin and other reformers represented a kind of consumerism by attacking deceptive selling practices of business and advancing the concept of a just price rather than what market would bear.² A lot of work has been done by western thinker, activists, economist and legal experts in the field of consumer protection.

In India as always the law reach late. Many research and writing work has been published in the field of consumer protection. Noted economist and thinker Mr. Gangadhar Gadgil's article titled 'Consumers Right to Information', mentioned that the consumer should be informed about production, service and other matters of his interest and in the book by Jay Prवेश Chandra titled 'Right of Consumers', deals with consumer protection in India it puts across the disappointments and frustrations of the dissatisfied consumer. It is an attempt to create better understanding between the merchant and consumer.³

The consumer protection in India had its beginning in the early part of this century. The first known collective body of consumers in India set up in 1951 with the "Passengers and traffic Relief Act", in Bombay.⁴ After that "Women Graduate Union", in 1945 and "Women's Indian Association" in 1917 by Dr. Anne Besant and Mrs. Margaret Cousins. At present a large number of voluntary consumer organisation are working for the protection of consumer interest throughout the country. Consumer movement in India started since 1960 which travelled a long distance to reach to the middle class consumers in 1980.⁵ After a long time of fighting for the protection of consumer right the Indian Parliament enacted Consumer Protection Act in 1986.

Need for Consumer Protection

Consumers are largely denied their due rights, especially in developing countries such as India. In India a large number of consumers are poor, illiterate and are generally not aware of their rights. The manufacturers and suppliers of goods or services often exploit consumers by adopting a number of unfair and restrictive trade practices.

For instance, the purpose of advertisement is to inform the consumers about their products and services. But in some cases the advertisement mislead and ill-informed consumers about the quality and contents of their products and services. Such advertisements serve no useful social purpose and lead to deception of consumers.

The other highly injurious practice by the suppliers is widespread practice of adulteration of commodities. The adulteration can take place right from the manufacturing point to the ultimate supplies of the products to the consumers.

It is due to these malpractices of the manufacturers and suppliers which have resulted in consumer protection movement and have forced the governments to enact legislations to protect the consumers.

Consumer Rights in India

On 15th March 1962 the history of protection of consumer rights by law has been recognised by U.S. president J.F. Kennedy with an approval of consumer bill of rights and every year the 15th March is observed as World Consumer Rights Day. In India we have started celebrating 24th December every year as National Consumer Rights Day.

Due to increase in the income our purchasing power has been increased. We purchased various goods and use the different services, which are essential for our life. Therefore we are consumer. Everybody is a consumer to the goods or services. A person who buys goods and services is a consumer.

The section 6 of Consumer Protection Act 1986 recognised six rights for the promotion and protection of consumer rights.

Right to Safety

Section 6 (a) Consumer Protection Act 1986, provides that the right to be protected against marketing of goods and services which are hazardous to life and property. Specifically significant in areas such as healthcare, food processing and pharmaceuticals, this right spans

across any domain that could have a serious impact on the consumers' health or well-being such as Automobiles, Travel, Domestic Appliances, Housing etc. Violation of this right is almost always the cause of medical malpractice lawsuits in India. Every year, it is estimated that thousands, if not, millions of Indian citizens are killed or severely hurt by unscrupulous practices by hospitals, doctors, pharmacies and the automobile industry. Yet the Indian government, renowned for its callousness, fails to acknowledge this fact or to make a feeble attempt at maintaining statistics of these mishaps. Indian government is required to have world class product testing facilities to test drugs, cars, food, and any other consumable that could potentially be life threatening. By the Consumer Protection (Amendment) Act 2002 the safety aspects of the consumer goods has been given effective emphasis, with the view to strengthen the safety standard of consumer goods.

Right to Information

Section 6 (b) provides that the right to be informed about the quality, quantity, potency, purity, standard and price of goods or services, as the case may be so as to protect the consumer against unfair trade practices in the Consumer Protection Act of 1986. In the Indian market place, consumers get consumer information through two popular, yet unreliable means, namely advertising and word of mouth. Due to this, the consumers in India seldom have accurate and complete information to assess the true value, suitability, safety or reliability of any product. Mostly we find out hidden costs, lack of suitability, safety hazards and quality problems only after we have purchased the product. Another right again trumpeted by our government on paper, this right should ideally ensure that all consumable products are labelled in a standard manner which contains the cost, the ingredients, quantity, and instructions on how to safely consume the product. Unfortunately, even the medicines in India do not follow a standard labelling convention. Unit price publishing standards need to be established for consumer market places where costs are shown in standard units such as per kilogram, or per liter.

Right to Choose

Section 6 (c) of the Consumer Protection Act 1986 provides that the right to be assured, wherever possible, to have access to a variety of goods and services at competitive prices. These enactments intended to provide and to restrain monopoly, concentration of economic power and to regulate restrictive trade practices. However we are yet to achieve defined result through this legislation.

Right to be Heard

Section 6 (d) Consumer Protection Act 1986 provides that the right to be heard and to be assured that consumers interests will receive due consideration at appropriate forums. This right is supposed to empower Indian consumers to fearlessly voice their complaints and concerns against products and companies to ensure their issues are handled efficiently and expeditiously.

Right to Redressal

Section 6 (e) of the Consumer Protection Act 1986 provides that the right to seek redressal against unfair trade practices or restrictive trade practices or unscrupulous exploitation of consumers. The Indian Government has been slightly more successful with respect to this right. Consumer courts such as District Consumer Disputes Redressal Forums at the district level, State Consumer Disputes Redressal Commissions and National Consumer Disputes Redressal Commissions have been established through the Consumer Protection Act. Each of these consumer grievance redressal agencies has fiduciary and geographical jurisdictions to address consumer cases between consumers and businesses. Consumer cases less than 20 lakhs are heard in the district consumer forum, between 20 lakhs and one crore are heard in the state consumer court and cases more than one crore are heard in the national consumer court. Once started as the guardians of consumer protection and consumer rights in India, these courts have today been rendered ineffective due to bureaucratic sabotages, callousness of the government, clogged cases and decadent infrastructure.

Right to Consumer Education

The right of each Indian citizen to be educated on matters related to consumer protection and about his/her rights is the last right given by the Consumer Protection Act 1986. This right simply ensures that the consumers in India have access to informational programs and materials that would enable them to make better purchasing decisions. Consumer education may mean both formal education through school and college curriculums and also consumer awareness campaigns run by both governmental and non-governmental agencies (NGO). Consumer NGOs, with little support from the Indian government, primarily undertake the ardent task of ensuring this consumer right around the country.

Judicial Approach

A new era of consumer justice appears to have finally dawned in India in 1990 when the three tier qualify Judicial Consumer Disputes Redressal Forums (CDRFS) popularly

known as Consumer Court was established to promote and protect the consumer movement. The Constitution of India itself include different provisions namely equality (Article 14), Consumer Policy (Article 39, 39 (6), 39 (C), 39(7), 43 and 47) and Freedom of Trade Article 19(1), 19(6), 301, 304 to protect the interest of consumer. MRTP Commission (under MRTP Act 1969), Bureau of Indian Standards (Under Bureau of Indian Standard Act., 1986).

Under section 9 (a) of Consumer Protection Act the State Government has been empowered to establish District Forum in each District, it has pecuniary jurisdiction up to Rupees twenty lakhs.

Under section 9 (b) of Consumer Protection Act the State Government has been empowered to established State Commission at State Level and complaint can be filed if value exceeds rupees twenty lakhs but does not exceed rupees one crore.

Under section 9 (c) of the Consumer Protection Act the Central Government has been empowered to established National Commission jurisdiction above 1 crore. But the complaint must be filed within two years from the date of cause of action. There is exception in case of reasonable delay in eye of court.

The Consumer Protection (Amendment) Act, 2002 makes it mandatory for the Central Government to establish Central Consumer Protection Council to promote and protect the rights of the consumer.

In India various rules and regulations intended to protect consumers against different form of exploitations were enacted such as Consumer Protection Rules 1987, Consumer protection Regulation 2005, Consumer Welfare Fund Rule 1992, Assam State Consumer Protection Rule 1989, Recognition of Consumers Association Rules 1991 and United Nations Guidelines for Consumer Protection.

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On the basis of appraisal of the current scenario we have priorities the targets as under:

1. Promote a socio economic movement which seeks to protect the consumer rights.
2. Create an administrative and legal Mechanism including ADR (Alternative Dispute Resolution) which would be fast and efficient and within the reach of consumers.

3. Engage media, civil society, organisation and business houses in enhancing awareness.
4. Use of information technology tools for improved governance.
5. Streamlining the legal provisions through appropriate changes in the Consumer Protection Act.
6. Building a climate for quality culture and consciousness and great participation of consumers in formulation and implementation of National Standards.
7. Setting up of State Consumer Helplines and Consumer Advice Centers and linking them to a Mediation centre in all states.

The basic principle that is recommended for adoption is "continuity with change" these are:

1. Strengthen of the existing redressal Mechanism to make it more efficient for delivering speedier justice.
2. Supplement the existing redressal system with an active ADR Mechanism.
3. Building a strong consumer information advisory system.
4. Information Technology tool for better delivery of services.

Thus the Sub-ground Report of Government of India, Department of Consumer Affairs Ministry of Consumer Affairs, Food and Public Distribution has tried to improve and protect consumers right in India.

In a recent case *Chinnadurai Vs. Air India*,⁷ in this case complainant has not been allowed to travel in a flight after issuing boarding pass by the authority showing the ground that the complainant being a frequent flyer, should be aware that the door of the aircraft are closed 15 minutes before the scheduled departure time. The District Consumer Disputes Redressal Forum, Chennai (South) decided that the opposite party's act in not allowing him to Board and travel in the flight even after issuing a boarding pass amounts to unfair trade practice and deficiency in service. The court ordered Air India to pay a compensation of Rs. 50,000/ to the passenger.

Therefore it is to be noted that the court in India are responsive and have widened the scope of Consumer Protection Act 1986 through their decisions on consumer disputes related matters.

Awareness for Consumer Protection

The government, voluntary consumer groups or councils can play an important role for consumer awareness by following ways:

- Publish widely on mass media like newspapers, TV channels about consumer rights.
- Issue leaflets providing information so as to educate consumers on matters affecting them.
- Government can make regulations for proper labelling of the products with maximum price to be charged, the contents of the product, side effects if any, manufacturing and expiry dates of the product etc.
- Government and voluntary consumer groups can organise seminars, conferences, awareness camps by inviting resource persons to educate consumers about their rights.
- Organising movements against the malpractices of manufacturers and traders of the products.

Concluding Observation

The consumers in India have a very low position in the overall economic process due to lack of educational awareness of rights of consumer. The need of hour is active involvement and participation from the Central Government and state government, educational institutions, the NGO's, Medias and adoption and observation of a voluntary code of conduct by the Trade and Industry and the Citizen's Charter by the Service provider is necessary to see that the consumers got their due. The government has a primary responsibility to protect the consumer's right through appropriate policy measures, legal structure and administrative frame work. It is clear that we need to launch campaign in respect of consumer awareness at grassroots level by way of consumer movement. Educating and informing consumers about their rights responsibilities and the consumer movement is the need of hour. However the consumer in any circumstances should not pay more than MRP and the Government should order the producers to indicate the wholesale price besides the MRP on the product. The United Nations guidelines for consumer protection induce satisfaction of basic needs, safety, information, choice, representation, redressal, consumer education and healthy environment. Consumer education has been given an important attention. Right to information Act 2005 plays important role in this regard. It provides that every person can access to information

and has right to request information from the government and private bodies. Emphasising the importance of consumer protection the former Vice-President of India Mr. Hidayatullah said:-"Why have milk price gone up so much? In the olden days the mothers milked the cows. The daughters set it out in pans to separate the Cream, one of the sons sold it in the market. Today, the agricultural department is mobilised, the cow sheds are immunised, the milk is homogenised, the supplies are motorised, the dairies are organised, the milkman are subsidised, the political leaders are energised. The result is the Indian consumer is victimised".⁸

From the above discussion we have come to a conclusion that our poor consumers deserved to be protected against unfair trade practises. Though the Consumer Protection Act 1986 has added new dimension to the legal system relating to consumers protection, but it has been accepted that the old doctrine of "Caveat Emptor" and "Laissez Faire" are no longer applicable in modern times.

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ASSESSMENT OF THE PERFORMANCE OF CROP INSURANCE AS EX-POST RISK MANAGEMENT STRATEGY OF AGRICULTURE IN ASSAM

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Abstract

The food and nutritional security providing macroeconomic sector agriculture is subjected to several kinds of risks from the very beginning stage of production to the stage of consumption like production risk, market risk, financial risk etc. The severity of those types of risk not only converts the cultivation to an unprofitable occupation but increases the vulnerability of farmers being poor in the future cropping seasons also. No doubt, in order to cope up with various risks farmers and rural societies have developed a number of risk management strategies which can be classified as ex-ante or risk reducing and ex-post or risk coping strategies. Crop diversification, mixed cropping, share cropping etc. and sale of assets, stored produce, increase labour participation, crop insurance etc. are some of the popular ex-ante and ex-post risk management strategies respectively. The government of India started the National Agricultural Insurance Scheme (NAIS) in the Rabi season 1999-2000 to enable the farmers to stabilize their farm income against damages caused by various natural disasters, pests attack and diseases. The government of Assam had also started its implementation in the same year which assumes to be a very vital risk mitigating tool for the farmers due to the occurrence of frequent and devastating floods. But analysis confirmed that the growth performance of this scheme is not satisfactory in the state due to several demand and supply side hindrances. Therefore it should get the central place in the agricultural policy of Assam so that farmers can enjoy the right to seek compensation rather than requesting for gratis from the government in the event of crop failures to maintain the dignity of their life.

Key words : production risk, vulnerability, ex-ante strategy, ex-post strategy, NAIS.

Introduction

"I may well hesitate to erect a building out of my own resources if I have to stand the risk of its burning down; but I would build if the building can be insured against fire"

(Arrow 1971)"

Agriculture being a predominantly nature based economic activity several kinds of risks are associated with it from the production to the consumption. The types of risks are production risk, market risk, financial risk, resource risk, health risk and asset risk (Bhende, 2005). Definitely the profit level of the cultivators depends on how successfully they are able to mitigate those risks which are fairly under their control and the support of the government. No doubt, in order to cope up with various risks farmers and rural societies have developed a number of risk management strategies which can be classified as ex-ante or risk reducing and ex-post or risk coping strategies. Crop diversification, mixed cropping, share cropping etc. and sale of assets, stored produce, increase labour participation, crop insurance etc. are some of the popular ex-ante and ex-post risk management strategies respectively (Hazella, Parthasarathy & Pomareda, 1983). Although crop insurance has been a major ex-post production risk mitigating strategy since 1899 in the agriculture sector its growth has not been satisfactory throughout the world. Because it was Realty Guarantee Company of Minneapolis, USA which introduced the first multi-peril crop insurance for the first time in the year 1899. India has also been making several institutional efforts to provide this facility under public sector initiatives since 1970s but problem like moral hazard, inadequate statistics, backwardness of infrastructure etc. have been retarding its growth.

The agriculture sector dominates the economy of Assam like the national economy because it is not only a major contributor to the state's gross domestic product but also the provider of livelihood to a significant portion of the population even after decades of economic planning failing to accelerate the industrialization process. Although the contribution of the agricultural sector has been declining continuously since 1951 it is the highest contributor to the occupational structure of the population. Because, while the share of agriculture sector in gross state domestic product (GSDP) has declined from 60.29% in 1950-51 to 26.39% in 2013-14, it still provides more than 75% of employment opportunity to the working population (Economic Survey, Assam, 2013-14). The rapid growth of population, inadequate expansion of the industry and jobless growth of the service sector have been deepening the problem of disguised and seasonal unemployment in the state.

One of the most striking feature of the agriculture sector of the state is that it is still of subsistence nature and there exists limited farm mechanization although green revolution strategy initiated several decades ago as compared to the advanced states of the country like Punjab, Maharashtra etc. The net cultivated area is 28.11 lakhs hectares which covers 88% of the cultivable land in the state. Out of this only 11.87 lakhs hectares of land area was under double or multiple cropping (Agricultural Census, Assam, 2010-11). More importantly

cultivation in Assam is still a gamble of monsoon because only 19% of net cropped area is under assured irrigation in 2013-14 as against 50% to 90% in other states of the country although there is huge potential for it. Fortunately Assam receives adequate rainfall at an average due to the advent of South-West monsoon starting from the month of March-April. But unfortunately the heavy rainfall in the summer season and scanty in the winter season along with the recent changes in climate have been affecting the agriculture of the state negatively. About 23% of the net cropped area of the state is either drought prone or flood prone area. Between the two, recurrent floods have been the major natural risk of the farmers. Assam has a vast network of 48 major and 128 small rivers along with mighty Brahmaputra and Barak. So it is one of the major problems of agricultural development in Assam (Goyari, 2005). This has not only been negatively affecting the production and productivity of this sector but pushing the farmers to a vulnerable position of poverty in the future. Therefore agriculture or specifically the crop insurance is only tool available to safeguard the farmers against such kind of production risk more economically (Raju & Chand, 2008).

In this context it is very essential to assess the performance the National Agricultural Insurance Scheme (NAIS) initiated by the government of India in the Rabi season of 1999-2000 as a mechanism to secure the livelihood of the farmers from the devastating impacts of such kind of natural risks.

Review of Literature

Agricultural insurance in a general or crop insurance in particular has been a major thrust area of agricultural policy both in developed and developing countries of the world. It was USA who introduced the first crop insurance scheme under public sector in the year 1938 through US Department of Agriculture. Therefore it has been a major debate concern among the academicians as well as policymakers and hence several earlier studies have already been made to assess several theoretical issues and the performance of the same.

Singh (2004) opined that due to the limited risk bearing capacity of Indian small and marginal farmers crop failure not only means the loss of present farm income but scarcity of investment for the next crop season also. This results in farmers' indebtedness. He concluded that the Comprehensive Crop Insurance Scheme and following crop insurance scheme thereafter have not been covering the social aspects in its implement. According to him indemnities and premium rates should not be determined only by taking technical criterion but ability of the targeted group of farmers must be given adequate consideration.

According to Raju et.al (2008) the degree of risk in cultivation particularly in the developing countries like India has been increasing due to commercialization and climatic changes where crop insurance is the only available viable tool to safeguard the farmers against such kind of production risks. But unfortunately the NAIS has not been performing as anticipated during the 13 crop season from Rabi 1999-2000 to Rabi 2005-06. It means an increase in its coverage from 0.50% to 14.48 during the period. The factors like moral hazard and adverse selection etc. have been limiting its growth against which strategies like reduction of insurance unit to village panchayat level, coverage of post harvest losses and service expansion to non-loanee farmers should be undertaken by the government.

In another study on the impact of Nigerian Agriculture Insurance Scheme, 1987 So et. al (2009) show that insurance scheme has not made the farmers better managers and organizers of available resources for increasing productivity. On the basis of primary data they confirmed that the sample farmers differ in their use of farm resources and the level of output produced. A higher proportion of the insured farmers applied improved farming practices and was more commercially oriented. But on the contrary to that the uninsured farmers were found to be more productive and efficient in their resource use because they don't have safeguarding means i.e. crop insurance if they face any kind of crop damage or failure. They advocated that this problem could be removed by reducing the present level of resources available in the hands of insured farmers.

The central region for the failure of multi-peril crop insurance schemes like NAIS in India, worldwide is the sheer complexity of risk and lack of adequate risk modeling technology to understand these risks. Nair (2010) reported it in her study on the changes and challenges of insurance in India. She also revealed that the NAIS has been doing considerably well on equity grounds because more than 60% of farmers benefitted under food crops and oil seeds belong to small and marginal category. But interestingly they accounted for only 1/3 of the total claims because of their smaller landholding. Unfortunately the coverage and indemnity payments are biased to certain states like Rajasthan, Gujarat, Tamil Nadu etc. and certain crops like food crops, groundnuts, oilseeds etc. Therefore, she suggest that weather based insurance would create anticipated result if it is implemented as a complementary to already existing area based NAIS.

Boyd et. al (2011) studied about the factors affecting the demand for crop insurance by the farmers in the two country regions of inner Mongolia, China. They used the variables like knowledge and behavioral information, risk level, crop insurance premium level to run

the probit regression model and concluded that they have profound impact on the willingness of the farmers to buy crop insurance.

The working paper (2011) of Food and Agriculture Organization portrayed that the agriculture insurance system in the Asia Pacific Region ranges from major public sector programmes of India, Phillipines to public private partnerships in China, Republic of Korea and finally to purely private market encountered in Australia, Newzland. In its primary study of four countries i.e China, India, Indonesia and Thailand they recommended that the premium subsidy should be used selectively where a clear social need is identified. Under certain circumstances where small and marginal farmers are unable to afford crop insurance, there may be justification for offering limited premium subsidies. But these should be phased out over a period of three to five years, otherwise it will be a huge fiscal burden of the government.

Sundar et.al (2013) studied about farmers' awareness perception and willingness to join and pay for it using data collected from 140 sample farmers of Kunichampel village, Pondicherry. They found that mostly the farmers perceive that the crop insurance is mainly suits for large farm size and its extent of risk sharing was very low. Most importantly the premium rate was not affordable for small and marginal farmers. Therefore the service provider insurance companies have to look on the product innovations and distribution channels to cover them more effectively.

The loanee farmers are the major beneficiaries of the NAIS in India and hence the institutional credit agencies like primary agricultural credit societies can play pivotal role in the expansion of the scheme. Prabhudas et.al (2014) in their study covering primary agricultural cooperative credit societies in Sirkali Block of Nagapattinam district found its role has not been recorded as anticipated because the credit societies have been suffering from poor financial health and chronic overdue. So it is need of the hour to strengthening these institutional sources of credit to increase the coverage of NAIS also.

Objectives of the study

The objectives of the paper are -

- a) To discuss about some of the probable factors which have been establishing the need of expansion of NAIS in Assam.
- b) To assess the performance of NAIS in the state.
- c) To identify some growth retarding factors of NAIS in the state and suggesting remedial measures.

Methodology

The methodology of the paper is descriptive and analytical. Only secondary data have been used to explore the objectives and research question set. The NAIS is selected because it is only the most comprehensive crop insurance scheme operating in the state since 1999-2000. In fact the Modified National Crop Insurance Scheme (MNAIS) has also been being implemented in two districts namely Kamrup and Dhubri on a pilot basis. That is why the MNAIS has been purposively excluded from the present study.

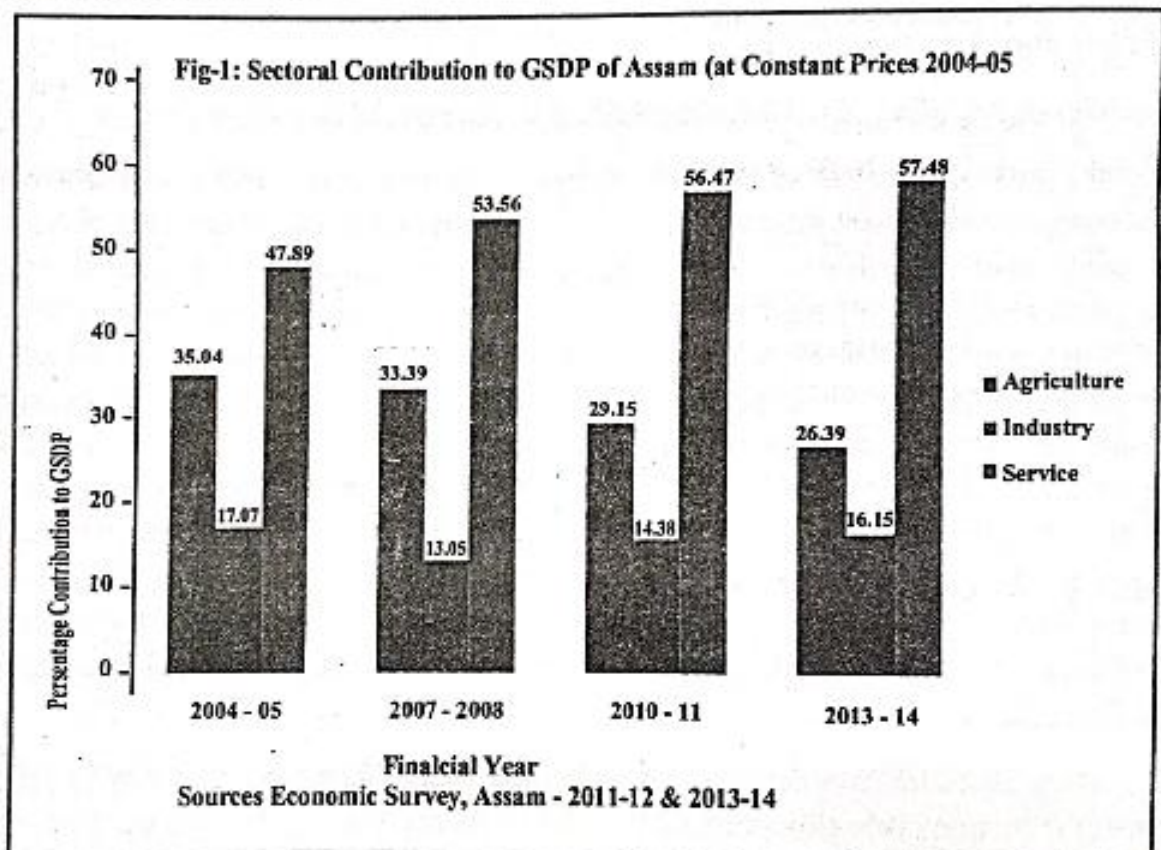
Discussion and Analysis

i. Marginalization and Climatic Risk of Agricultural Sector in Assam

Marginalisation process and climatic risk in the form of frequent floods have been transforming the cultivation into an unsustainable occupation in some of the areas of Assam. Frequent but devastating floods every year in Assam have been destroying standing crops, creating water logging, soil erosion and affecting large crop areas and thus threatening the drive towards sustainable increase in production and productivity in the state (Goyari, 2005). It is a well known fact that the small and marginal farmers in the developing countries are the most vulnerable sections of the society in their economic dimension. Their level of vulnerability as expected poverty goes up when they face any kind of external negative shocks such as flood, drought, falls in the market price etc. resulting in either crop failure or reduction in the profit margin (Singh, 2013). The tragic story of farmers' suicide in some parts of India reveals some important aspects of this issue. Therefore, the ongoing marginalisation process of cultivation should either be checked or the farmers should be provided some tools to safeguard themselves against such kind of vulnerability risk.

Marginalisation in agriculture can be defined from different angles. It may be defined in terms of reduction of contribution of this sector to the national GDP while bearing a heavy burden of the working population as compared to the industry and tertiary sector of the economy (Rao & Hanumappa, 1999). This has been a quite familiar indicator of marginalization of agriculture not only for India but for Assam also. Because, the contribution of this sector to the gross state domestic product (GSDP) has been declining continuously since 1950s. For example in 1950-51 its contribution to GSDP was 60.29% but it has declined to 26.39% in the year 2013-14 (Economic Survey, Assam, 2013-14). The Figure 1 represents the declining contribution of this sector and increasing contribution of the service sector with limited industrial development. The increasing share of industrial and service sector to national or state income is regarded as a healthy sign of development. But this trend should be

accompanied by equal changes in the occupational structure. For example in developed countries of the world say UK, USA the share of the agri-sector to nations GDP is about 1% and it also provides employment to 1% of the working population also (Datt & Sundharam, 2009). But the economy of Assam has not been experiencing this trend and hence the sustainability of the growth process is often questioned. Because, about 75% of the total working population is engaged in this sector of Assam, out of which 53% is of direct employment nature (Economic Survey, Assam, 2012-13).



The data reveals mounting demographic pressure on farmlands. The consequence is the fragmentation of landholdings and decline in the average size. More importantly it leads to several socio-economic problems for the small and marginal farmers (FAO, 2009).

The Table-1 shows the increasing number of small and marginal farmers in Assam which is another indicator of marginalization. So it is clear indication of the Table-1 that the percentage growth of marginal farmers in Assam has been increasing during the decade 2000-2011 along with steady increase in absolute quantity of total landholding. The compound annual growth rate of number of marginal landholding has increased from 0.62% in 2000-

2005 to 0.88% in 20005-2010. But as opposite to that the growth rate of the number of area operated by marginal farmers has declined from 2.78% to 0.38% during the same time period. This may be transforming the cultivation in Assam for marginal farmers into an economically unprofitable occupation. But they are compelled to stick with cultivation because there exists entry barrier for them resulting from illiteracy, lack of technical skills required for getting employment in the industry or service sector.

Although the small and marginal farmers cover more than 85% of total landholding they cover only 44% of area operated at an average. For which the average size of landholding has become just 1.10 hectare in the state (Economic Survey, 2012-013). Therefore it can be assumed very easily that most of the marginal farmers in the state have been living below the poverty line. They can't spread risk over time and space like the large farm household or a wealthy farmer because they generally don't have adequate stored grains or savings during bad years. Again they also can't diversify their crop production across different plots due to small holding of land and limited farm inputs. Consequently, their vulnerability as expected poverty remains to be significantly high due to recurrent flood risk. In this context crop insurance is expected to play a pivotal role as anti-vulnerability role for those affected farmers.

Table : 1

Marginalisation of Landholdings in Assam

Class/ Size (in Hectares)	% of Landholdings			% of Area Operated		
	2000-01	2005-06	2010-11	2000-01	2005-06	2010-11
Marginal(< 1.0 H)	62.64	63.74	67.31	21.28	24.93	25.83
Small(1.0-2.0 H)	20.68	21.5	18.25	23.46	23.56	22.91
Semi Medium(2.0-4.0)	12.96	11.55	11.15	30.76	27.75	27.72
Medium(4.0-10.0H)	3.52	3.01	3.11	16.02	13.95	14.58
Large (>10.0 H)	0.2	0.2	0.18	8.48	9.81	8.96

Source: Author's calculation based on the data of Economic Survey, Assam-2012-13

The problem of flood and its consequent damages has been menacing and one of the most acute in the country. The heavy monsoon rain over catchments of the Himalayan and Patkai ranges of Hills has made Assam a water adequate state in one hand but threatened the gently sloping narrow valley of the rivers coupled with high seismic activities in the easily erodible hill slopes along with certain anthropogenic activities create heavy floods on the

other. The recurrence of flood and added with unabated soil erosion too caused loss of thousand hectares of farmlands and life of people as well as livestock. It will not be wrong to say that it has virtually destroyed the socio-economic development of some of the districts. The Table 2 represents some major facts of flood damages in Assam during the last decade.

Table : 2

Flood damages in Assam during 2000-2011

Year	Area affected (In lakh Hectares)	Crop area Affected (Lakh Hectares)	Population Affected (in '000)	Value of Crop Lost (in Rs Crores)
2000-2001	9.66	3.22	38.88	173.51
2001-2002	2.03	0.36	5.42	518.35
2002-2003	11.87	2.98	75.5	145.59
2003-2004	7.01	2.13	52.75	124.74
2004-2005	5.22	2.36	12.64	374.7
2005-2006	2.22	0.98	10.25	234.72
2006-2007	411.4	57	555.36	8111.04
2007-2008	16.64	6.7	108.67	-
2009-2010	NA	-	-	-
2010-2011	NA	1.47	254.6	367.8

Source: Compiled from Statistical Handbook of Assam-2010 & 2011

So flood is continuous problem of Assam and a common climatic risk of cultivation for the farmers. 16.82% of total area affected due to flood was crop area generating huge financial and livelihood insecurity to the farmers during this period. The most affected districts have been Lakhimpur, Dhemaji, Golaghat, Jorhat, Sivasagar, Dibrugarh, Karimganj, Sonitpur, Darrang etc. Significantly, small and marginal are the worst affected sections of the society in this case. For instance 2,24,980 farmer families were affected during the year 2009-2010 due to flood damage out of which 85.38% families were small and marginal farmers.

Under these circumstances it can be easily understood that production risk due to flood and marginal landholding has been a major problem of the farmers in Assam. So, crop insurance is the only viable alternative available to safeguard the affected farmers not only from the present crop failure but from the increasing probability of becoming poor in the future also. Therefore it is very important to study the performance of the NAIS implemented in the state.

ii. Crop Insurance in India: A Historical Overview

As elsewhere in the world, policymakers in India were also concerned about the risks and uncertainty prevalent in agriculture. The credit for pioneering work on crop insurance in India goes to J.S Chakravarti who in 1920 proposed an agricultural insurance scheme based mainly on rainfall approach. Although the scheme suggested by him was based on the data pertained to Mysore state but he had an all India perspective and was consisted of package that included insurance on buildings, granaries and agricultural implements, cattle insurance and insurance on crops (Bhende, 2005). However a concrete step was initiated by the government in the post independence period in October, 1965. The draft bill for a model scheme crop insurance was prepared and referred to an expert committee chaired by Dr. Dharam Narain but it nullified the implementation of the scheme even on a pilot basis. However the first ever scheme operationalized in the state Gujarat during 1972-78 covering H-4 cotton initially. The scheme based on individual approach was extended to other crops also subsequently. The Table-3 is the bird's eye view representation of different crop insurance in India.

Table : 3

Comparative Presentation of Crop Insurance Schemes in India

Insurance schemes	Period	Approach	Crops covered	Farmers covered (lakhs)	Amount (Rs. In crores)		Salient features
					Premium	Claims	
Crop Insurance Scheme	1972-78	Individual	Cotton, Groundnut, wheat, potato	0.03	0.05	0.38	Implemented in Gujarat on voluntary basis
Pilot Crop Insurance Scheme	1979-85	Area	Cereals, millet oilseeds, cotton, potato and chickpea	6.23	1.95	1.56	Loanee farmers on compulsory and non-loanee on voluntary, 50% subsidy on premium for small and marginal farmers
Comprehensive Crop Insurance Scheme	1985-99	Area	Foodgrains and oilseeds	763	404	2303	Loanee farmers on compulsory
Experimental Crop Insurance Scheme	1997-98	Area	Cereals, pulses and oilseeds	4.78	2.86	39.78	For covering non-loanee small and marginal farmers also in addition to loanee farmers
National* Agricultural Insurance Scheme	1999-Continuing	Area	Food grains, oilseeds, annual commercial and horticultural crops	2084.78 (till Rabi 2012-13)	867.12	2537.55	Loanee farmers on compulsory basis and non-loanee on voluntary, subsidy on premium for small and marginal farmers
Farm Income Insurance Scheme	2003-04	Area	Wheat and rice	2.22	15.68	1.5	Loanee farmers on compulsory basis
Weather Based Insurance Scheme	2007-08 Continuing	Individual	Food Grains oilseeds annual commercial	469.39	751.92 (till 2012-13)	528.60	Available to all Farmers. On rainfall received at the

Source: 1. Adopted from Deshmukh and Khatri, 2012

2. * & **Figures from Annual Report, 2013-14, Department of Agriculture and Cooperation, India, pp.89-90.

iii. The NAIS in some selected States of India

The NAIS is the largest scheme of this kind not in India but in the world providing insurance facility to more than 20 million farmers throughout the country till 2012-13. It was started from 22nd June of 1999 replacing the existing Comprehensive Crop Insurance Scheme. The main objectives of the scheme are-

- a) To provide insurance coverage and financial support to farmers in the event of failure of any of the notified crop as a result of natural calamities, pests and diseases so as to ensure their credit worthiness for the ensuing season.
- b) To encourage farmers to adopt progressive farming practices, high value inputs and modern technology in agriculture.
- c) To enable the farmers to stabilize farm incomes particularly in disaster years.

Both loanee farmers (on compulsory basis) and non-loanee (on voluntary basis) cultivating food crops (like paddy, wheat, jowar, bajra, maize, ragi etc.), oilseeds (e.g. groundnut, sunflower, soya bean, castor, sesamum etc.) and annual commercial crops (like sugarcane, cotton, potato, onion, ginger, jute, banana etc.) are provided claims if their actual yield in a particular year falls below the threshold yield estimated. The scheme is implemented in 25 (not in Arunachal Pradesh, Nagaland and Chandigarh) states and 2 Union territories (Andaman & Nicobar and Puducherry) of India. The Table-4 portrays the comparative performance of this scheme in some selected states of the country.

Table : 4

NAIS in some selected states of India (1999-2013)

(Rs. In Lakhs)

States/UTs	Farmers insured	Area Insured(H)	Sum Insured	Premium Collected	Claims paid	Farmers Benefitted
Maharashtra	3,27,51,138	2,84,01,545	20,54,414	81,370	2,25,068	95,33,989
Andhra Pradesh	2,85,78,464	4,37,62,477	56,06,783	1,60,399	4,41,990	65,81,020
Madhya Pradesh	2,80,38,152	6,86,84,709	43,68,005	1,24,207	1,72,917	46,77,499
Assam	3,38,936	2,52,864	62,238	1,756	1,329	61,056
A&N Island	3,38,937	4,049	734	17	8	438
Sikkim	3,38,938	1,324	254	4	1	86
Mizoram	3,38,939	134	23	1	11	119
All India	3,38,940	31,37,69,515	2,93,52,675	8,67,121	25,37,558	5,45,49,758

Source: Compiled from Annual Report, 2013-14, Department of Agriculture and Cooperation, India, pp.89-90.

So it can be easily advocated that the coverage of NAIS has been very limited although it assumes paramount importance in India agriculture. Only 20 million farmers have been insured under this scheme during about 15 years of implementation. More importantly, only 26% of farmers have got benefit ultimately through the scheme. Delayed payments, lack of awareness among the farmers etc. have been generating such a low coverage of the scheme. Again the farmers' claim ratio (i.e., Total Claims/Farmers Total Premium) is very high i.e. about 2.92. It means the value of claims paid by the implementing agency is almost triple of the actual value of premium collected from the farmers. This is a heavy fiscal burden for the governments as 50% of the premium amount is contributed as subsidy to small and marginal farmers which is equally shared by central and concerned state governments (Nair, 2010). Assam position will fall in the medium category as displayed in Table-4. The first 3 are the states having highest number of farmers' coverage and below 3 are the states with lowest record of implementation.

iv. Performance of NAIS in Assam

The NAIS was also started in Assam in the year 1999-2000 along with other states of India. The scheme is very important for the farmers because about 4.75 lakhs hectares of land is chronically flood prone (Economic Survey, Assam, 2013-14) and 0.94 lakhs hectares are drought prone. The scheme covers 3 kharif crops viz. autumn paddy, winter paddy and jute and 5 rabi crops namely rape & mustard, wheat, potato, sugarcane and summer paddy.

So several other important horticultural crops, such as ginger are not covered under this scheme. The Table-5 represents the operation of NAIS in Assam.

Table : 5

Coverage of NAIS in Assam during 2004-05 to 2012-13

(Rs in Lakhs)

Year	Farmers Covered	Area Covered (H)	Sum Insured	Premium Collected	Claims Paid	Farmers Benefitted
2004-05	21,191	15,007.15	1599.01	37.55	63.94	1998
2005-06	22,486(6.1)	16,738.68(11.5)	2257.51(41.1)	58.25	131.69	4737
2006-07	14,618(-34.9)	13,062.20(-21.9)	10,198.85(351)	41.9	39.57	4373
2007-08	19,718(34.8)	13,396.71(2.5)	2,531.87(-75.1)	70.85	70.94	3034
2008-09	35,817(81.6)	27,459.16(104)	4,997.94(97.4)	141.58	39.57	NA
2009-10	51,907(44.9)	43,103.06(56.9)	10,540.00(110)	NA	70.94	NA
2010-11	36,108(30.4)	27,742.02(35.6)	7,729.00(-26.6)	NA	NA	NA
2011-12	56,317(55.9)	38,598.40(39.1)	13,594.00(75.8)	1334.2	1171.7	20862
2012-13	56,065(0.44)	38,207.24(-1.01)	15,337.00(12.8)	NA	NA	NA

Source: 1. Compiled from Economic Survey, Assam, 2011-12 & 2012-13

2. Figures in the parenthesis represent the simple annual growth rates.

The growth of NAIS does not show any steady path in Assam. Because the number of farmers benefitted under this scheme has increased from 21,121 to 51,907 in 2009-10. It has declined in the following year and again has increased to 56,065 in 2012-13. Although there is almost threefold increase in its coverage it still covers a very small proportion of both total farmers and flood affected farmers more importantly. For instance during the year 200-10 the number of farmers families affected by flood was recorded to be 2,24,980 , but out of that only 51,907 i.e. only 23.07% were covered under this scheme(Statistical Handbook of Assam, 2011). This mainly because of three reasons- firstly the state government has not been taking proper initiatives for generating awareness among the farmers regarding the NAIS. Secondly, expansion of the institutional credit facilities to farmers through agencies like Primary Agricultural Credit Societies (PACS) is not satisfactory in Assam. Because, the loanee farmers are bound to use the crop insurance facilities under NAIS, whereas it is voluntary for the farmers who are not availing the credit facilities. Thirdly, the poor economic status of farmers, lack of education and information, high propensity to consume have been

weakening the demand side of crop insurance also. Because the demand and willingness to pay for insurance is the key determinant of the scalability of such schemes particularly when it is voluntary of nature (Sinha & Tripathi). Therefore strong government initiatives, proper development of the institutional agricultural credit market are very important to increase the coverage of the same.

Again, as represented by the Table-5 the area coverage in terms hectares is always less than the number of farmers covered. For example 56,065 farmers were covered under this scheme but area coverage was only 38,207.24 hectares. That means only 0.68 hectares of farmland per farmer has been insured. This is due to the predominant existence of small and marginal farmers in the state. On the contrary it is resulting in low amount of premium collection as against the sum insured. It may create a heavy fiscal burden on the government during the payment of claims. So, for the long run sustainability of the scheme, government needs to check the factors creating fragmentation of landholding and marginalization.

But fortunately the farmers' claim ratio is not very high is case of Assam as compared to other states except in the initial few years. From 2006-07 onwards, on the basis of available data it can be easily advocated that this ratio is quite manageable and not fiscal burden creating for the government. For example it was only 1.03 in the year 2011-12, which is quite less than the states like Maharashtra, Madhya Pradesh etc. So, more or less, Assam government can pay the claims from the premium value collected from the farmers. In this way there can be justified scope of private sector entry in crop insurance in Assam although risk in the form of floods is almost certain every year.

Therefore the performance of the NAIS can't be said as satisfactory as an ex-post production risk management strategy of farmers in Assam.

Findings

On the basis the above analysis the following findings can be cited-

- a) There is increasing trend of marginalization of agriculture sector in Assam. The compound annual growth rate of marginal landholding in the state has increased from 0.62% during 2000-2005 to 0.88% during 2005-2010. It has virtually transformed the agriculture sector to an unsustainable occupation. This should be checked through rapid industrialization and emphasizing more employment generation in the service sector.

- b) Flood risk or production risk in cultivation is considerably very high in the state due to its natural existence. It is not only an water adequate state for agriculture but around 4.75 lakhs hectares of area chronically flood prone almost every year due to a network 48 major and 128 small rivers.
- c) Marginal farmers are the most vulnerable sections of the society during the flood. For example during 2009-10 more than 85% of affected farmers were small and marginal farmers. Therefore crop insurance can be very important mechanism to reduce the ex-post risk of cultivation.
- d) The crop coverage of NAIS in the state is very less. Only 8 crops have been covered under this scheme till now. Some important horticultural crops like ginger are not covered under the scheme.
- e) Growth of coverage of NAIS is not steady. The annual growth rate of farmers and area covered has been fluctuating.
- f) The demand for crop insurance may low due to lack of awareness about the crop insurance and high incidence of poverty. So government needs to take initiatives to spread information about it among the farmers.
- g) The farmers' claim ratio is quite low as compared to other states which means less fiscal burden for the government. Moreover the supply is limited for slow response of banks in issuance of credit to the farmers. Therefore government should strengthen the credit chain through the institutional procedures.

Conclusion

Crop insurance as an ex-post or risk reducing strategy needs to be a central focus of agricultural policy of India in general or Assam in particular. But unfortunately limited progress is made in this important area although the NAIS was started almost fifteen years ago due to several demand and supply side hindrances. Therefore, it should be expanded through the serious initiatives of public and private sector because the climatic risk in the form of acute flood has been a major threat to the sustainability of production and productivity of agriculture in Assam. So successful implementation of such schemes will not only reduce consequent current reduction in farmers' income but safeguard themselves from the vulnerability as expected poverty in future also. On the contrary particularly the small and marginal farmers should increase the demand for crop insurance because it provides themselves the right to

seek compensation rather than requesting for gratis from the government in the event of crop failures to maintain the dignity of their life.

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According to Samuel Gempers, "Trade Union were born of the necessity of workers to protect and defend themselves from encroachment, injustice, and protect the workers in their inalienable right to higher and better life; to protect them, and to protect their health and safety etc as a worker or as well as citizens. 6

ASSAM POWER DISTRIBUTION COMPANY LIMITED

On 13th may, 2009, Government of Assam vide notification No. PEL.41/2006/199 transferred, vested the functions properties, interests, rights, obligations and liabilities of UAEDCL and CAEDCL along with the personnel of the said companies into LAEDCL w.e.f 1st April 2009.

The name lower Assam Distribution Company Ltd,' changed to' Assam Power Distribution Company Ltd.' Vide notification SRN A71221971 dated 23/10/2009 of Registrar of Companies, Assam, Tripura, Manipur, Nagaland, Meghalaya, Arunachal Pradesh and Mizoram.

Assam Power Distribution Company Ltd is the sole authority to look after all the distribution function of entire State. Presently APDCL has a total manpower of 10,000 employs in different categories.

However as per the recent announcement made by the Government of Assam in the month of March 2013 paved the way for a complete dismantle of the Assam State Electricity Board and APDCL was identified as a separate entity having more autonomy in its operations.

Table : 1

Existing field level establishment under APDCL as on 31st March 2014

Under	Zone	Circle				Division						Subdivision						BG SK	Total
		Elect	Elect	Civil	Store	TI	Elect	T&C	MTI	IRCA	Civil	Store	Elect	T&C	MTI	IRCA	Civil	Store	
LAZ	1	7	1	1	1	16	3	2	3	1	1	59	1	1	3	2	2	8	113
CAZ	2	5	0	0	0	17	2	3	2	1	2	30	0	2	0	0	0	3	99
UAZ	1	4	0	1	1	11	3	1	4	0	1	66	0	1	0	1	1	13	79
Total	4	16	1	2	2	44	8	6	9	2	4	155	1	4	3	3	3	24	291

Source: APDCL brochure May 2012 APDCL website www.apdcl.co.in 2015

Table : 1 shows the different field level establishments under APDCL. There are total 4 (Four) Electrical zone, namely Lower Assam Zone (LAZ) (01), Central Assam Zone (CAZ) (02), Upper Assam Zone (UAZ) (01). Total Circle was Electrical 16, Civil Circle 01, Store Circle 02, and Technical Inspection Circle 01. Total Division was Electrical 44, Testing and Commissioning Division 8, Meter Testing and Inspection Division 6, Industrial Revenue Collection Area 9, Civil Division 02, Store Division 4. Total Subdivision was Electrical 155, Testing and Commissioning Subdivision 01, Meter Testing and Inspection Subdivision 01, Industrial Revenue Collection Area 03, Civil Subdivision 03, Store Subdivision 03. Total Bidyut Grahak Sewa Kendra was 24 Nos.

However on March 2014, some more new Zones and Circles were created for operational efficiency of the Company these were Dibrugarh Electrical Zone, Nagaon Electrical Zone, Golaghat Electrical Circle and North Lakhimpur Circle etc. Now the total Electrical Zones were 7 (seven) namely Guwahati Electrical Zone, Bongaigaon Electrical Zone, Tezpur Electrical Zone, Nagaon Electrical Zone, Silchar Electrical Zone, Dibrugarh Electrical Zone and Jorhat Electrical Zone.

Table : 2

Manpower Position as on 31st March 2014

Number of Employees				
Class I	Class II	Class III	Class IV	Total
622 (CGM: 08, GM: 10, DGM: 28, AGM: 157, M/DM/AM: 427)	979	4130	5230	10,969

Source: APDCL broucher May 2012 and Annual Audit Report March 2015

Table : 2 shows the total manpower position of APDCL consisting of class I, class II, class III and class IV grade employees (gradation as per according to R.O.P 10 of the sixth pay commission of APDCL).

Table : 3Assets as on 31st March 2014

33 KV Line (Ckt. KM)	5,150.05	
11 KV Line (Ckt. KM)	36,107.93	
LT Line(Ckt. KM)	64,694.44	
Substations	Nos.	Capacity (M.V.A)
11/ 0.4 KV (Ex Dedicated DTRs)	43229	2795
33/11 KV (Ex Dedicated S/S)	240	2036.34

Source: www.APDCL.Gov.in

Table : 3 shows the total assets (Electrical) possessed by the APDCL as on 31st March 2014.

Table : 4Consumer profile of APDCL as on 31st March 2014

Category of Consumers	Nos.	Types of Consumers	Percentage (%)
LT Consumers	22,66,617	Domestic	89.99
HT consumers	11237	Commercial	7.61
Total Consumers	22,77,854	Industrial	0.56
		Other	1.84

Source: www.APDCL.Gov.in

Table : 4 describes the consumer pattern of APDCL. It indicates that majority of APDCL consumers were of domestic type, commercial and Industrial consumers were very less.

Rationale of the Study

With a vast consumer base and nearly about 10,000 of employees in different categories the APDCL is a giant corporation. The business activity, customer relationship and HR practices in APDCL are very challenging. The management of APDCL try to acquaint them with the modern and latest technologies for better organisational performance. Apart from this the business performance of APDCL more or less related with the prevailing organizational environment and work culture. The cordial relationship between the management

and the employees are the urgent requirement in order to fulfil the expectation of both the parties.

Objectives of the study

The objective of the study interalia discusses the following:

1. To study the membership and organization structure of Assam State Power Workers Union in Sivasagar district with special reference to APDCL Sivasagar Electrical Division.
2. To analyse the steps taken by Assam State Power Workers Union for promotion of Industrial Relation in Sivasagar Electrical Division.

Research methodology

The present study is basically a descriptive one. The data required for this study are collected from primary as well as secondary sources. The APDCL is a very large organisation consisting of three (3) regions, six (6) zones and total 19 electrical circles. For the convenience of the study the related information are only collected from the Sivasagar electrical Divisional office. Furthermore there are altogether five or more recognised trade unions in APDCL but the researcher confined the study only in Assam State Power Workers Union due to its large numbers of membership and coverage. The primary data are collected from the respondent employees by serving survey questionnaires. The secondary sources consist of various publications done by Assam State Electricity Board, research journals, books, and statistical report of various Govt. Department, newspapers and websites of APDCL of related search.

Sample design of the study

Population or Universe of the study

The total numbers of employees in the Sivasagar electrical Division in all categories are 244 numbers that may or may not include the members of Assam State Power Workers Union constitutes the total universe of the study.

Table : 5

Manpower Position of the Sivasagar Electrical Division as on 31st March 2014

Designation /Post	Name of the office/Establishment				
	Sivasagar Elect. Div.	Sivasagar ESD-I	Sivasagar ESD-II	Gaurisagar ESD	Total
AGM	1	-	-	-	1
SDE	-	1	1	1	3
DM	1	-	-	-	1
AM(Accounts)/AM(Civil)/ AM(Electrical)	3	-	-	-	3
SMR	-	1	1	1	3
AE(PP)	-	-	-	-	-
JM	1	-	-	-	1
Feeder Manager	-	4	1	2	7
A.O/D.A.O/A.A.O	2	1	1	1	5
Office superintendent/ U.D.A /L.D.A/Steno/Typist/Draftee/ ASK/Telephone Attendant/ Blue Printer/Complain Receiver	6	7	3	3	19
Bill Clerk/Meter Reader	-	13	5	6	24
Peon/Chowkidar/Handimen /Mali	2	3	3	5	13
LVD	1	3	3	2	9
Blacksmith/Masson/Carpenter/Welder/ Pump Operator/Engine Operator	#VALUE!	1	-	-	1
Electrician/SBO/Sahayak/ Linemen	1	55	48	43	147
Contractual (Computer operator Peon/ Sweeper/cleaner/ Other)	1	2	3	1	7
Outsource (Meter Reader/ Bill Clerk/other)	-	-	-	-	-
Total	19	91	69	65	244

Source: Field Survey

The total manpower of Sivasagar Electrical Division including the Sivasagar ESD-I, Sivasagar ESD-II, and Gaurisagar ESD was 244 Nos. The total Nos. of officer category post including Grade A and Grade B (R.O.P -10) are 24 numbers. Others include 56 Nos.

ministerial staff, 157 Nos. technical staff including driver. There were total 07 Nos. of contractual appointee in the Sivasagar Electrical Division.

Hence for the study the total population is 244 numbers of employees of different grades and classes of APDCL, Sivasagar Electrical Division.

Sampling Technique

The researcher selected the sample respondent on the basis of stratified random sampling through proportional allocation method from the total employees of the APDCL Sivasagar Electrical Division. The sample stratification of respondent is made on the parameter based on classification of services according to the administrative hierarchy of APDCL.

Sample size

There are altogether 36 number of questionnaires distributed among the employees of APDCL Sivasagar Electrical Division (i.e. 15% of the total universe) as according to the proportional allocation method of stratified random sampling. Questionnaires are served both in vernacular as well as in English language to facilitate the employees in understanding the real objectives of the study. However among of the 36 numbers of respondent 06 numbers of questionnaires are found incomplete and unsuitable for processing hence rejected.

Table : 6

Sample frame of the study

Sample strata	No. of employees from where 2 nd stage sampling is done	Total questionnaires served	Total Nos. of Responses found valid
Technical	176	26	22
Non-Technical	56	8	6
Accounts	5	1	1
Contractual/ outsource	7	1	1
Total	244	36	30

Source: Field Survey and compilation of Data

The above 30 numbers of sample respondent constitute the sample size of the study

The data collected through the questionnaires from the sample employees have been analyzed with the help of simple descriptive statistics.

ABOUT THE A.P.D.C.L SIVASAGAR ELECTRICAL DIVISION

The Sivasagar Electrical Division of APDCL is situated in kalibari region covering 10 bighs of area, under Sivasagar district. It was established in the year 1958 and from that date it is working as division of ASEB but after unbundling of the ASEB it comes under the control of the Assam Power Distribution Company limited.

The Division is headed by AGM and altogether has 244 permanent employees out of which 150 employees are the members of Assam State power Workers Union. The employees can broadly be categorised as Technical, Non-technical and contractual staff. There are altogether 25 employees in Non-technical section including Meter Reader, Bill Clerk, Assistant Store Keeper, Head Assistant, LDA, Accountant etc. The technical cadre employees included SDE, DM, SMR, Assistant Manager (Electrical/Mechanical/Tele-communication), Junior Manager (Electrical/Mechanical/Tele-communication), Electrician, Sahayak, etc.

The peak demand of the electricity for the division is 8 MW to 9MW but the supply of electricity is only 4 MW to 5MW. Therefore the electricity supply is not adequate for the division. The customer of the division can be categorised as domestic and commercial customer. Nowadays the billing procedures are totally computerized.

ASSAM STATE POWER WORKERS UNION

Assam state power workers union was established in Chandrapur conference in 1992. It includes the employees of APDCL, AEGCL, and APGCL. Assam state power workers union is a non-political organisation and registered trade union according to Trade Union Act 1926 and also recognised by the APDCL and as well government of Assam.

Member and membership, subscription, annual executives and general meeting

- a) **Member and Membership:** In the entire Assam there were minimum 6, 000 members of Assam State Power Workers Union. Employees of APDCL, AEGCL and APGCL are eligible for membership in ASPWU.
- b) **Subscription:-** Subscription fees of any union member is Rs. 10 in every month. Every registered members of the union must have to pay the subscription fees in due time

- c) Annual executives and general meeting:- The annual executives is held in every 2 years and the general meeting is held in once in every 3-6 months.

Organisation structure of the Assam State Power Workers Union

The ASPWU in the entire Assam divided in to various units, circles and central body. There are six (6) circles of ASPWU and altogether eighty four (84) units in the entire Assam. The central president of the union is assisted by the six vice presidents of the six circles. The central secretary is assisted by the six assistant general secretaries of the respective circles. The unit's president and secretary is the member of the central body.

Table : 7

The central executive body consist of 52 executive members namely;

Advisor	10-May
President	1
Working president	1
Vice- president	6
General Secretary	1
Assistant General Secretary	6
Treasurer	1
Publicity Secretary	1
Organising Secretary	3-Jan
Members	No-limit

Source: Field Survey

Assam State Power Workers Union in Sivasagar Electrical Circle

The Sivasagar unit of Assam State Power Workers Union was established in the year 1992. Sivasagar unit is the prominent unit among 84 units of Assam State Power Workers Union. Sivasagar unit is divided in to seven (7) sub-units. The total number of employees in the seven (7) sub-units is five hundred eighty (580).

Table : 8

Total number of members in the ASPWU, Sivasagar Unit

SLNo.	Sub-Units	No. of members
1	Sivasagar	150
2	Gaurisagar	45
3	Gargaoan	120
4	Amguri	50
5	Demow	45
6	Sonari	60
7	Moran	80

Source: Field Survey

Every registered member must have to pay the subscription fee and has the right to got elected for the unit executive committee or the central executive committee. The unit executive committee comprising the total 19-21 executive member as follows:

Table : 9

The executive body and the executive members of ASPWU, Sivasagar Unit

Advisor	3
President	1
Vice- president	3
General Secretary	1
Assistant General Secretary	2
Treasurer	1
Publicity Secretary	1
Organising Secretary	1
Executive Members	9-Apr

Source: Field Survey

Assam State Power Workers Union in Sivasagar Electrical Division

The Assam State power Workers Union has a sub-unit in Sivasagar Electrical Division comprising 150 general members and all members have genuine membership rights in the respective Sivasagar unit of the Assam State power Workers Union.

Table : 10

Total members of ASPWU in Sivasagar Electrical Division

Sl No	Workers in the Sivasagar Electrical Division	Numbers
1	Total workers	244
2	Total Union members	150

Source: Field Survey

Table shows that majority of employees of the Sivasagar Electrical Division are the members of the Assam State Power Workers Union.

Table : 11

The numbers of registered members of the Respondent Employees according to Class of employees

Categories	Total Respondent	Registered members
Technical	22	21
Non-technical	6	4
Accounts	1	1
Contractual	1	-
Total	30	26

Source: Field Survey

Table shows that out of 30 respondent employees of Sivasagar Electrical Division 26 numbers are the members of the ASPWU and it consist of different class of employees including technical, nontechnical and accounts.

Function of Assam State Power Workers Union

The basic function of ASPWU is to safeguard the rights and interest of the employees of APDCL through promotion of cordial industrial relationship in the industry,

However ASPWU Sivasagar Division unit discharges various functions in different times for its stakeholders as follows:

(a) Functions relating to Members

- 1) Assam State Power Workers Union organise different types of strikes, gheraos and dharnas in demand of employee job-security and in oppose of privatisation move of the state power sector industries.
- 2) ASPWU demanded the setting of the 7th pay commission and urges the management to settle the anomalies regarding pay fixation of different cadre employees.
- 3) The ASPWU members demanded the release of revised arrears of the employees of sixth pay commission.
- 4) The ASPWU demanded the management of APDCL and government of Assam that the workers working on contractual basis should be made permanent employees of the APDCL, APGCL, and AEGCL and in case it is not possible, than increased the monthly remuneration of workers up-to Rs 10,000/- per month.
- 5) To reject the NPS (New Pension Scheme) adopted by the management.

b, Function relating to organisation:

- 1) ASPWU demanded creation of new power projects and more electricity generation to make the state self sufficient in the power sector.
- 2) The union demands for the recruitment of new employees in the cadre of 2nd, 3rd, and 4th grade posts.
- 3) To stop corruption in the organisation and to offer strict punishment to guilty workers and officers in this regard.
- 4) To help the APDCL to arrange various services and welfare activities for the employees.

c) Functions relating to Trade Union activities:

- 1) Employees demand may be fulfilled and major working problems of employees should be solved by the central committee.

- 2) Local problems and demands of the employees should be address by the local unit of the ASPWU.
 - 3) Mandatory and voluntary payment of the subscription fees by the members
 - 4) To maintain the records of various activities, funds, and their utilisation.
 - 5) New membership drive and their orientation.
- d) Functions relating to society:
- 1) Uninterrupted power supply at affordable rate to the customer.
 - 2) The workers demanded strengthening the agricultural sector using power to develop the irrigation sector.
 - 3) Taking steps for environmental protection and preservation etc.

Moreover, performance of the above mention functions tries to make equilibrium among the individual stakeholder's objectives and interest such as among the APDCL, Assam State Power Workers Union and individual employees respectively. The synchronised and co-ordinated effort of the ASPWU main-intention is to promote a better industrial relation atmosphere in the industry. The working of Assam State Power Workers Union in Sivasagar electrical Division is no exception in this regard.

Table : 12

Status of Annual Executive Conference and General Meeting of ASPWU Held on Time

Total Respondent	Class of Employees	Annual Executive conference held on time		General meeting held on time	
		Yes	No	Yes	No
22	Technical	-	21	-	21
6	Non-technical	0	4	-	4
1	Accounts	-	1	-	1
1	Contractual				
30			26	-	26

Source: Field Survey

From the above table it is cleared that though the Assam State Power Workers Union is a large organisation and working for the betterment of the life and employment of

the workers of the APDCL but it lacks timely conduct of its Annual executive conference and General meeting, which is not a good sign for the democratic set up of the trade union like ASPWU.

Table : 13

Status of Employee critical issues and demand discussed in the Annual Executive and General Meeting

Total Respondent	Categories/Grades	Critical Issues and demand discussed in the Annual Executive and general meeting	
		Yes	No
22	Technical	21	-
6	Non-technical	4	-
1	Accounts	1	-
1	Contractual		
30	-	26	-

Source: Field Survey

From the table : 13 there is the evidence that the critical issues relating to employee interest and the genuine demand of the employees are discussed in detail in the Annual Executive Conferences and General Meetings of the Assam State power Workers Union.

Table : 14

Status of employees demand and aspiration fulfilled by the ASPWU

Total Respondent	Categories/Grades	Employees demand and aspiration fulfilled by the ASPWU			
		Yes	Percentage	No	Percentage
22	Technical	20	76.94	1	3.84
6	Non-technical	2	7.69	2	7.69
1	Accounts	0	0	1	3.84
1	Contractual				
30	-	22	84.63	4	15.37

Source: Field Survey

Table : 14 refers that the employees demand and future aspiration are fulfilled by the ASPWU positively up to a great extent irrespective of all grades.

Table : 15

Numbers of Strikes and Gheraos and Dharnas carried out by the ASPWU in the period 1st April 2013 to 31st March 2014.

Particulars	Numbers of incidence in 1 st April, 2013 to March, 2014	Remarks
Strikes	0	NA
Gheraos	0	NA
Dharnas	1	In protest to the privatisation of different sub-functions of APDCL

Source: Field Survey

Table - 15 shows that the incidence of occurrence of different protest mechanisms carried out by ASPWU, Sivasagar Electrical Divisional unit is very less and counted as only one number in the period 1st April, 2013 to 31st March, 2014.

Research Observation

The organisation set up of the Assam State Power Workers Union is very democratic and the office bearers and executive members are selected in Annual Executive Conference and in General meetings. The total numbers of employees in APDCL irrespective of all grades is almost 10,969 as per the field survey report as on 31st March 2014 and out of which 6,000 employees are the members of ASPWU. Hence the membership strength of the ASPWU is very impressive and sound for a Trade Union health. However some employees of different grades still not accepting the membership of ASPWU because of various reasons. The ASPWU should initiate the steps for more extensive coverage of membership and should try to convince the employees those are aligning themselves from the ASPWU in this regard. It is further noticed that the annual conference and the general meeting are not organised in the stipulated time frame, which may hamper the credibility of the organisation and hence it should be arranged and organised in time.

The ASPWU in Sivasagar Electrical Division tries to incorporate the functions, objectives and ideologies of the central committee in their functions and affairs. It is noticed that the ASPWU prime focus is to protect the employee's interest and rights upto maximum extent. Therefore it resorts to different mechanisms such as organises dharnas, gheraos, and strikes at different times. But the speciality of the workings of ASPWU is that as far as

possible it tries to settle the disputes by bilateral settlements and adopt the ultimate means of showing their dissatisfaction and disagreement in major issues only that too making minimum disturbance to the normal working of the Company. However the ASPWU should try to orient and educate their members about the companies' values and ethics and to work for the better organisational performance in coming days. The cordial environment and congenial work culture is must for the growth and development of APDCL as well as for the ASPWU and their members for better financial health and greater job satisfaction.

Conclusion

The employees of APDCL take membership of Assam State Power Workers Union since their joining in the organisation for many purposes and for their future aspiration and expectation. It may be concluded that Trade Union prime focus should be to safeguard the employees benefit, and rights in the organisational context and ASPWU by and large fulfilling this objectives upto a great extent, that is about 84.63 % in the research area. At the same time organisation should take proper care of employee's genuine demand and expectation for promotion of better and cordial work atmosphere.

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EFFECTIVENESS OF KISAN CREDIT CARD SCHEME IN DIBRUGARH DISTRICT WITH SPECIAL REFERENCE TO ASSAM GRAMIN VIKASH BANK

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Abstract

The Kisan Credit Card (KCC) is a scheme which gives the farmer to adequate and timely Credit. The NABARD has taken the initiative with objective of enhancing the flow of Credit to the rural area and reduced the dependency of farmer to Non institutional sources. The KCC provide the loan to the farmer a low interest rate 8.5 %. There are many features and advantages of KCC which include Revolving Cash Credit facility, 5 year validity of card subject to annual review, freedom of repayment, timely and adequate Credit, crop insurance and personal accident insurance. The cardholders do not aware about most features and advantage. This is the main reason that cardholders do not able to utilize the card properly. The present study has taken to find out the awareness of features and advantages of Kisan Credit Card among its beneficiaries. The basic objectives of the study are to find out the awareness of cardholders regarding features and advantages of Kisan Credit Card and problem faced by the cardholders while utilizing the card.

Key words : Kishan Credit Card, Scheme, Farmers, NABARD.

Industrial Relation

Agriculture credit played a very important role in development of agriculture production. Agriculture credit dispensation system for agriculture in India has only a brief history starting with setting up of co-operative credit society in 1904 almost entire credit requirement of the farming community was met by informal money lending sources till 1950s. The recommendation of All India Rural Credit survey Committee (1951-54) has laid the foundation of the institutional framework which include rebuilding of co-operatives at all level, co-operative marketing and multipurpose societies at larger level etc. in 1969 the nationalization of commercial Banks and emergence of Regional Rural Banks in 1975 gave a wider reach to the short -term credit delivery system in the country. In 1982 the government of India set up NABARD with the objectives of providing credit for promotion of agriculture. It is played a central role in providing financial assistance facilitating institutional development

encouraging promotional efforts in area of rural credit. In 1998, R. V. Gupta committee recommended for rural credit delivery system to strengthen the productivity and efficiency. In his Budget Speech for the year 1998-99, the Union Minister of Finance had announced the scheme for issuing Kisan Credit Cards (KCC) to farmers by the banks on the basis of their land holdings so that the farmers may use them readily to purchase agricultural inputs such as seeds, fertilizers, pesticides etc. and also to draw cash for their production needs including the credit requirements for the ancillary activities related to crop production such as maintenance of agricultural machinery/implements, electricity charges etc.

The Kisan Credit Card allows the farmer a very minimum interest rate 8.5 % (3% central government+2%state government+3.5 % cardholders). The KCC provide minimum amount of loan Rs 25,000 and no limit for the maximum. As per the Assam Gramin Vikash Bank concern Rs 5 Lakh has given till now. The cardholders has to pay Rs 45 premium under the personal accident insurance policy may be shared between KCC issuing Bank and KCC holder in the ratio of 2:1.

Salient features of the Kisan credit card scheme³

- All eligible farmers to be provide with a Kisan Credit Card and a pass book.
- Revolving cash credit facility involving any number of drawls and repayments within the Limit.
- Limit to be fixed on the basis of operational land holding, cropping pattern and scale of Finance. Entire production credit needs for full year plus ancillary activities related to crop production to be considered while fixing limit.
- Sub-limits to cover short term, medium term as well as term credit are fixed at the Discretion of banks.
- Card valid for 5 years subject to annual review for enhancement /reduction
- Card can be used as cash credit, any drawls and repayment within the limit.
- Each drawls to be repaid within a maximum period of 12 months.
- Conversion/resettlement of loans also permissible in case of damage to crops due to natural calamities.
- Security, margin, rate of interest, etc. as per RBI norms.

- Operations may be through issuing branch (and also PACS in the case of Cooperative Banks) or through other designated branches at the discretion of Bank.
- Withdrawals through slips/cheques accompanied by card and passbook.

As per the report published in potential credit linked plan, 1104, 2569, 3017, 3423, 2906, 3505, 3760, 13,163 & 13,910 number of card were issued by the various Bank branches during the year 2002-03, 2003-04, 2004-05, 2005-06, 2006-07, 2007-08, 2008-09, 2009-10, 2010-11 respectively against the total 1,51,342 from families in Dibrugarh district. In the financial year 2012-13 the Assam Gramin Vikash Bank has the target of 4300 cardholders whereas they have sponsored 3530 cardholders. Among them 2159 cardholders has sanctioned the amount of Rs 607.39 crore.

Review of Literatures

Balaji (2010) made a study on role of Kisan Credit Cards in the benefit of small farmers with the objective of analysis of state wise performance of co- operative and commercial Bank in term of issuing Kisan Credit Card .The researcher revealed that only Andhra Pradesh has covered more than 50% of its farmers. The performance of the state like Gujrat, Haryana, Orissa, Maharashtra, Rajasthan and Punjab may be regarded as moderate. The study also revealed that the RRB had issued 4.05 Lakh card and achieving 81.2% of the annual target whereas the commercial and co-operative Banks targets was very high compared to RRB respectively 56%,46.1%.

Diwas et al (2012) made a case study on Progress and Performance of Kisan Credit Card scheme in Bihar with the objective of progress and impact of KCC scheme on the farm economy .The researcher collected 60 KCC beneficiaries and 60 Non-beneficiaries farmers in Samastipur. The study resulted that the Performance in Bihar has been good as is revealed from the growth rate for number of card issued 11.4% and amount advanced 31.7% and amount per KCC account has increased by more than four times from Rs 12,917 Lakh in Rs 58,060 Lakh.

Thakur and Barman (2013) made a study on Reason for poor performance of disbursement of KCC and recovery of loan under the scheme in Assam. They collected 25 KCC beneficiaries and 25 Non-beneficiaries randomly in three District Jorhat, Sibsagar and Golaghat. The study revealed that most of the farmers who apply for KCC loans from the bank are either tenant farmers or sharecropper or lessee. They cannot produce relevant document for availing a higher loan amount. The study also found that due to recovery of

disbursement of KCC loan many banks avoid to disburse fresh KCC loans. Due to avoid the paper works and formalities of banks and to get the credit at the time of need, many farmers in rural areas depend upon the money lenders irrespective of their higher interest charge.

Areendam (2012) in his study Evaluating the kisan credit card in Bihar and India. They had taken a period of 2005-06 to 2009-10 from Reserve Bank of India annual trend and progress of Banking in India. The study revealed that the growth rate in GDP is considerable variation ranging from 3.3% (Jammu and Kashmir) to 11.8% (Uttarakhand). Bihar has average growth during this period is half a percentage point higher than India. However, the state like Maharastra grew at 10% while Bihar, it seems that the growth miracle happened despite of zero agriculture growth.

Objectives of the Study

The study was conducted with the following objectives

- a) To study about awareness of features and advantages of Kisan Credit Card among its beneficiaries.
- b) To study about the practical problem faced while utilization of Kisan Credit Card holder.

Statement of the Problem

The Kisan Credit Card is introduced with the objective of adequate and timely credit to rural area and reduced the involvement of Non-institution sources. The card has launched to enhance the farmer production but it has not brought out the positive result due awareness problem. The farmer does not know the usefulness/benefit of the Kisan Credit Card. Due to lack of awareness about features advantages of KCC include Revolving cash credit facility involving any number of drawl and repayment within limit, crop insurance (Notified crop by National Agriculture Insurance Company of India LTD), benefit of personal accident insurance scheme, they are not able to utilized the card properly.

Research Methodology

For the Research Methodology, the researcher has taken both primary data and secondary data. The primary data include list of 79 Kisan Credit Cardholder which has collected from the Assam Gramin Vikash Bank because the Braches comes under the Borbaruah Block and direct personal interview of the Cardholder with the help of schedule.

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The secondary data has collected from various Research journals, Books, internet etc. The field survey has been done during the month of September and October 2013.

Sample Design

Convenience sampling method is used for the survey of this project. It is very difficult to search every respondent by the list which collected by the Bank because the address of the cardholder in the list collected is resides in remote villages. So the researcher has seen his convenience by using the village which nearest to them. However, the researcher has been careful to ensure that sample covers the entire area of the study.

Area of the Study

The researcher has taken the Borbaruah Block of Dibrugarh District for the study which includes both the branches AGVB chowkidingee and Borbaruah. It comprises gaon like Harok Pathar, konwar kherani gaon, kamakhya gaon, Khanikar Gaon, Lakai gaon, Mohmari village Bogibill, Behating Tinali, Kapow Gaon, mattock Gaon, Patra gaon.

Sample Size

The researcher has taken 73 respondents out of 730 cardholders who are residing in Borbaruah Block of Dibrugarh District. Due to time and economic constraint it couldn't possible for the researcher to go further.

Table : 1
Number of KCC holders

Sl. No.	Gender	Number of respondents	Percentage of respondent
1	Male	71	97%
2	Female	2	3%

Source: - field survey

Interpretation: From the above table : 1 it is found that the total number of male cardholders is 97% and female cardholders is 3%. It shows that the female cardholders are very low as compare to male cardholders as per the list given by the Bank.

Table : 2

Medium of awareness about KCC

Sl.No.	Medium	Number of respondents	Percentage of respondent
1	Friends	3	4%
2	Relatives	5	7%
3	Agriculture Officer	NIL	NIL
4	Bank Employee	65	89%
5	Television	NIL	NIL
6	Radio	NIL	NIL
7	Others	NIL	NIL

Source: - field survey

Interpretation: From the above table : 2 it is found that 89 % come to know about the KCC by Bank employee, 4% respondents know from friends and 7% respondents know about the KCC through relatives. No respondents know thorough agriculture officer, television, Radio and other medium of communication. It shows that most of the respondents know through Bank employee but agriculture department has not taken effective initiative regarding awareness of KCC.

Table : 3

Awareness about KCC

Factors	Yes	% of respondents	No	% of respondent
revolving credit facility	6	8%	67	92%
issuing KCC for 5 years	73	100%	NIL	NIL
provides crop insurance	5	7%	68	93%
personal accident insurance	73	100%	NIL	NIL

Source: field survey

Interpretation: From the above table : 3 it is found that 8% of the respondents aware about the Revolving Credit facility but 92 % does not aware about the features. all the respondents aware that the Kisan Credit Card issue for 5 years. only 7 % of the respondents know the crop insurance and 97 % of respondents do not know about the features. It shows

that most of the respondents have not known about the feature because only one crop notified in Dibrugarh. The table shows that 100% respondents know the personal accident insurance.

Table : 4

Getting Adequate Credit from Bank

Sl.No.	Adequate credit	Number of respondents	Percentage of respondent
1	Yes	61	84%
2	No	12	16%

Source: - field survey

Interpretation: From the above table : 4 it is found that 84% of the respondent got the adequate Credit by Bank and 16 % respondent did not get the adequate credit. It shows that most of them got their capital adequately but some of them did not get the adequate credit because the middlemen involved in the KCC loan.

Table : 5

Getting Timely Credit from Bank

Sl.No.	Timely credit	Number of respondents	Percentage of respondent
1	Yes	62	85%
2	No	11	15%

Source: - field survey

Interpretation: From the above table : 5 it is found that 85 % of the respondents got the loan timely and rest 15 % did not get loan timely. It shows that most of them got their capital timely but some of them did not get the timely credit because management of liquidity is poor in the Bank and middlemen involved in the KCC loan.

Findings of the Study

It is observed from table : 1 that the total number of male cardholder is 97% and female cardholder is 3 %. It means that the female cardholder is very low as compare to male cardholder as per the list given by the Bank.

- It is observed from table : 2 that 89 % come to know about the KCC by Bank employee, 4% respondents know from friends and 7% respondents know about the KCC through relatives. No respondents know through agriculture officer, television, Radio and other medium of communication. Most of the respondents know through Bank employee but agriculture department has not taken effective initiative regarding awareness of KCC.
- It is observed from table : 3 that 8% of the respondents aware about the Revolving Credit facility but 92 % does not aware about the features. Only few respondents used the feature properly but a large number of respondents do not know about the important feature. It means that the respondents not used the card as per their requirement of credit.
- It is observed from table : 3 that all the respondents aware that the Kisan Credit Card issue for 5 years. The respondents know this feature and it will help the respondents to apply the next loan with their past performances of repayment of loan.
- It is observed from table : 3 that only 7 % of the respondents knows the crop insurance and 97 % of respondent does not know about the features. Most of the respondents have not known about the feature because it is not mandatory in the card and only one crop notified in Dibrugarh.
- It is observed from table : 3 that the 100 % respondents know the personal accident insurance. All the respondents are aware about this features and it will help them to cover against the accident death if anything happened in future their family will get the accident insurance benefit.
- It is observed from table : 4 that 84% of the respondents got the adequate Credit by Bank and 16 % respondents did not get the adequate credit. Most of them got their capital adequately but some of them did not get the adequate credit because the middlemen involved in the KCC loan.
- It is observed from table : 5 that 85 % of the respondents got the loan timely and rest 15 % did not get loan timely. Most of them got their capital timely but some of them did not get the timely credit because management of liquidity is poor in the Bank and middlemen involved in the KCC loan.

Conclusion

The Kisan Credit Card is an important initiative taken by the Government of India and NABARD to provide the financial support. The aim of the KCC is to reduce the Non-institutional sources. The card provides the KCC holder to a low interest loan for their cultivation. The KCC play an important role to provide adequate and timely credit to the farmer. It is concluded that the farmer of the Borbaruah block have not aware about the important features of the Kisan Credit Card. They are not able to utilize the Kisan Credit Card properly due to lack of awareness. If the Bank effectively implements the financial literacy program then the problem of awareness can be minimized.

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VOLATILITY IN THE PRICES OF ONION AND POTATO IN DIBRUGARH DISTRICT: ITS IMPLICATIONS

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Abstract

Recent years have witnessed a sharp increase in many commodity prices. This paper outlines the volatility in prices of onion and potato, two most widely demanded agricultural products with special reference to Dibrugarh district. To study the price variations in these agricultural products, data has been collected on the retail and average wholesale market prices of Onion and potato for the years 2014 and 2015. Statistical calculations such as standard deviation, variance and range are put forth to highlight the volatility in the prices. Three months moving average calculations are done to bring out the possible future variations in the prices of onion and potato. Further correlation between 2014 and 2015 prices give us an idea of whether or not relationship is positive or negative.

Key words : Price Volatility, Correlation, Wholesale Price, Retail Price etc.

Industrial Relation

Volatility in agricultural commodity prices has become an ongoing phenomenon. Recent years, agricultural prices have raised a doubt in the minds of all the policymakers and all the participants in the food chain whether or not the volatility is increasing and leading to more frequent price swings. Onion and potato are the part and parcel of almost every household kitchen. Recent years witnessed frequent price variations in these agricultural commodities. Frequent price swings or price uncertainty can affect the consumption pattern of household with respect to these commodities. It is thus important to know the evolution of price Volatility

and its trend to help in the design of appropriate policies and to help market participants to better accommodate this phenomenon. Movement in prices may have important implications for resource allocation as well as consumer and producer welfare. Volatility may have a negative impact at the macroeconomic level on growth and poverty, which are damaging in poor countries.

Review of Literature

Agricultural commodities are subject to price changes. Some of these commodities are more frequent to price variations. Previous analyses (Cashin and McDermott (2002), Deaton and Laroque (1992) for instance) have tended to focus on the behavior of commodity prices. A number of studies have discussed the factors which may explain the evolution of recent price changes (Abbott and Borot de Battisti, 2009; Gilbert; 2010; Gilbert and Morgan, 2010). The most often involved are changes in supply/demand factors. On the demand side, the fast economic growth in Asian economies and particularly in China is often emphasized. On the supply side, the underinvestment in agriculture as well as low commodity inventory levels of recent years are often cited as contributory factors. Global Agricultural supply and demand: factors contributing to recent increase in food commodity prices. Ronald Trostle : World market prices for major food commodities such as grains and vegetable oils have risen sharply to historic highs of more than 60 percent above levels just 2 years ago. Many factors have contributed to the run up in food commodity prices. Some authors have already tried to measure agricultural price volatility. Gilbert (2006) showed that agricultural price volatility was low in the 1960s, higher in the 1970s and although it fell back in the second half of the 1980s and the 1990s, it remained above the level of the sixties. Gilbert and Morgan (2010), studying 19 products over the period 1970-2009, conclude that volatility has generally been lower over the two last decades than previously, except for rice. They also find that volatilities over the three year period 2006-08 are rather in line with historical experience.

Definition of volatility and its measures

Volatility in this study is concerned with the variability of the price series around its Central value i.e. the tendency for individual price observations to vary far from its mean Value. Factors contributing to recent increase in agricultural commodity prices:

- 1) Rapid economic growth
- 2) Increasing population

- 3) Monsoon
- 4) Escalating crude oil prices
- 5) Increasing farm production costs
- 6) Slow growth of agricultural products

There are different statistical tools of measuring volatility:

- Standard deviation: A measure of the dispersion of a set of data from its mean. The more spread apart the data, the higher the deviation. Standard deviation is calculated as the square root of variance.

$$s = \sqrt{\frac{1}{N-1} \sum_{i=1}^N (x_i - \bar{x})^2} \text{ — Equation 1}$$

- Range: The difference between the highest and the lowest values. Formula for range is =

$$\text{Highest Value} - \text{Lowest Value} \text{ — Equation 2}$$

- Variance: The variance is a numerical value used to indicate how widely individuals in a group vary. If individual observations vary greatly from the group mean, the variance is big; and vice versa. The square root of standard deviation gives us the variance.

$$S^2 = S (x_i - x)^2 / (n - 1) \text{ — Equation 3}$$

Where s^2 is the sample variance, x is the sample mean, x_i is the i th element from the sample, and n is the number of elements in the sample

- Co-efficient of variation: A statistical measure of the dispersion of data points in a data series around the mean. It is calculated as follows:

$$\text{Coefficient of Variation} = \frac{\text{Standard Deviation}}{\text{Expected Return}} \text{ — Equation 4}$$

Objectives of the Study

The paper is intended to fulfill the following objectives:

1. To capture the current state of volatility in the prices of onion and potato.
2. To bring out the trend in variations of the prices of onion and potato.
3. To make possible the forecasting of prices in future.

Methodology of the Study

Coverage

The research work is primarily based on the prices of onion and potato in the Dibrugarh District.

Data source

The collected data is based on secondary data sources. The secondary data have collected from the Dibrugarh District Agriculture office and several websites, journals etc. have been for relevant information.

Framework of analysis

In order to find out the volatility in the prices of onion and potato (with special reference to Dibrugarh district) and make possible forecasting of their likely future prices, various statistical tools such as standard deviation, variances, range, moving average, tables etc are employed. all calculations are done in Microsoft Excel.

Limitations of the Study

The following are the limitations of the study:

- 1) First limitation is that the study is restricted to a limited area, so results in other areas may vary.
- 2) Second limitation is the time factor. The time and effort put in are not sufficient in demonstrating the actual scenario.

Major findings of the Study

Table : 1

Retail and wholesale market prices of potato and onion in the year 2014

Months	Avg. wholesale market price of potato qtls	Avg wholesale market price of onions	Retail market price of potato	Retail market price of onions
Jan	940	1700	14	21.8
Feb	500	1500	10	20
Mar	775	1500	12.5	20
April	1075	1500	14.5	20
May	1460	1660	19.2	21.2
June	1500	2000	20	24
July	1500	2400	20	32
Aug	2100	2660	26	33.6
Sept	2250	2850	26.5	33.25
Oct	2000	2460	27.75	33.25
Nov	2400	2500	28	30
Dec	1150	2050	16.75	31.5

Source: District Agriculture Office, Dibrugarh

In the year 2014, the average wholesale market prices of potato vary between the range Rs. 500-2400 and incase of onions it is between Rs. 1500-2850. The variances in the Avg. wholesale market price of potato (374203) turns out to be higher than onion (244281.8). The degree of variation in the Avg. Wholesale price of these two commodities, measured by coefficient of variation is 2.404 approx for potato and 4.178 approx for onion. Data relating to the retail prices of these commodities show that variations in the prices of potato (39.46) are higher than the prices of onion (35.6047). Also the degree of variation in the retail price of these two commodities, measured by coefficient of variation are 3.120 approx for potato and 4.477 approx for onion.

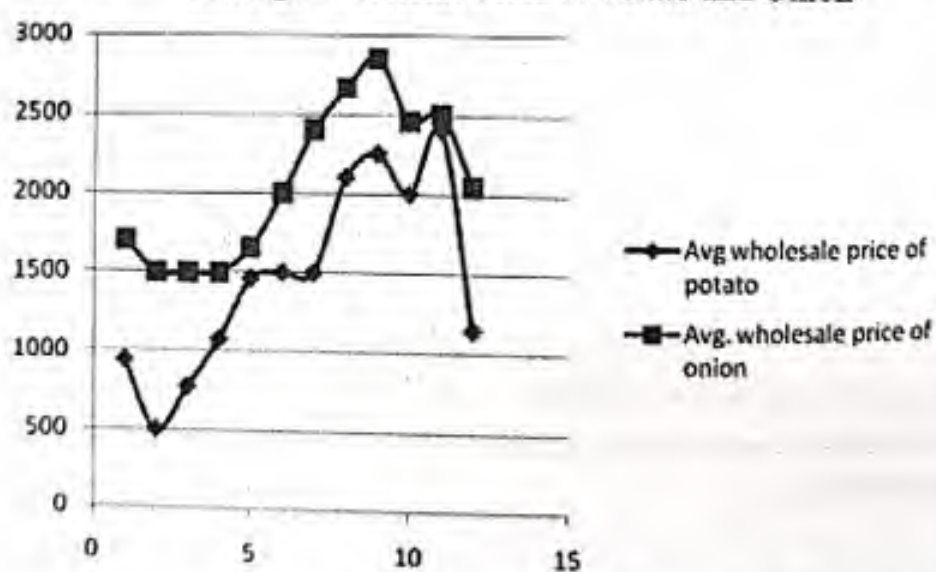
Table : 2

3 months moving average data

Months	3 months moving avg. for avg. wholesale price of potato	3 months moving avg. for retail price of potato	3 months moving avg. for avg. wholesale price of onion	3 months moving avg. for retail price of onion
Jan	-	-	-	-
Feb	738.3333	12.1667	1566.667	20.6
March	783.3333	12.3333	1500	20
April	1103.333	15.4	1553.33	20.4
May	1345	17.9	1720	21.7333
June	1486.667	19.7333	2020	25.7333
July	1700	22	2353.33	29.8667
Aug	1950	24.1667	2636.667	32.95
Sept	2116.667	26.75	2656.667	33.3667
Oct	2216.667	27.4167	2603.333	32.1667
Nov	1850	24.1667	2336.667	31.5833
Dec	-	-	-	-

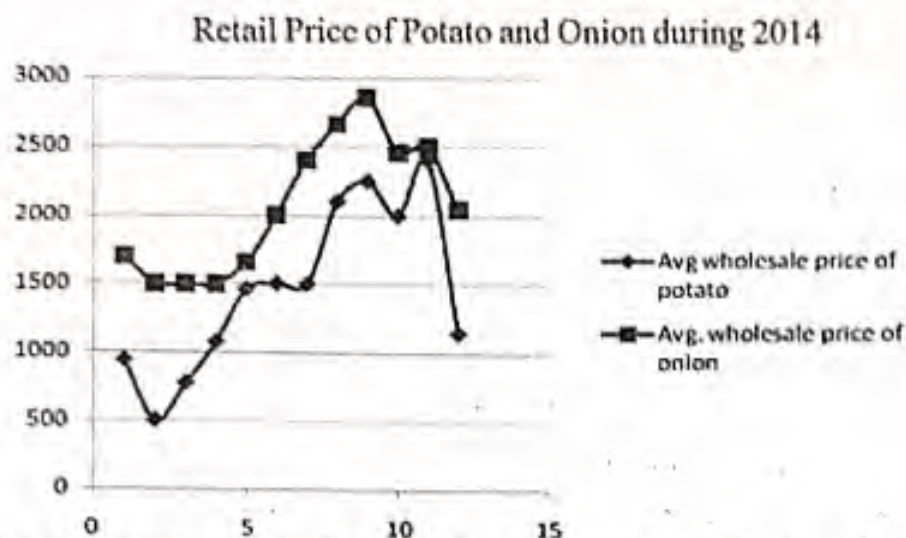
Figure : 1

Average Wholesale Price of Potato and Onion



In the figure : 1, the comparison of the average wholesale market price of potato and onion during the year 2014 is demonstrated with the help of a scatter diagram. The average wholesale price variations of onion turn out to be higher than that of the potato.

Figure : 2



Similarly, the comparison is shown with regard to the retail price of onion and potato during the year 2014. The result turns out to be the same.

Table : 2

Average Wholesale Market Price and Retail Price of Onion and Potato during the year 2015

Months	Avg. wholesale market price of potato Qtls.	Avg. wholesale market price of onion Qtls.	Retail market price of potato	Retail market price of onion
Jan	600	2175	10	25
Feb	425	2000	8	25
Mar	400	2000	8	25
April	400	1875	8	21.75
May	520	3220	8.4	27.6
June	875	2600	12	30
July	942	2700	12	30
Aug	950	4500	12	50
Sept	950	5500	12	60

Source: District Agriculture Office, Dibrugarh

The correlation between the average wholesale market price of onion and potato in the year 2014 is 0.89963. This shows that the price of onion and potato demonstrates a high degree of positive correlation. Similarly, the degree of relationship between the retail market price of onion and potato also shows a high degree of positive correlation of 0.80886.

In the year 2015, the average wholesale market prices of potato vary between the range Rs. 400-950 and incase of onion it is between Rs. 1875-5500. The variances in the Avg. wholesale market price of potato (63240) turn out to be lower than onion (1590513.19). The degree of variation in the Avg. Wholesale price of these two commodities, measured by coefficient of variation is 2.678 approx for potato and 2.34088 approx for onion. Data relating to the retail prices of these commodities show that variations in the prices of potato are lower than the prices of onion (172.87). The degree of variation in the retail price of these two commodities, measured by coefficient of variation are 5.140 approx for potato and 2.4875 approx for onion.

Table : 3

Moving Average Data for the year 2015

Months	3 months moving avg. for avg. wholesale price of potato	3 months moving avg. for retail price of potato	3 months moving avg. for avg. wholesale price of onion	3 months moving avg. for retail price of onion
Jan	-	-	-	-
Feb	475	8.667	2058.33	25
March	408.33	8	1958.33	23.9167
April	440	8.1333	2365	24.7833
May	598.333	9.4667	2565	26.45
June	779	10.8	2840	29.2
July	922.33	12	3266.667	36.667
Aug	947.333	28	4233.33	46.667
Sept	-	-	-	-

In the figure below, the comparison of the average wholesale market price of potato and onion during the year 2015 is demonstrated with the help of a scatter diagram. The average

wholesale price variations of onion turn out to be higher than that of the potato. Similarly for retail price variation comparison, the result is same .

Figure : 3

Comparison of Average Wholesale Prices of Onion and Potato in 2014

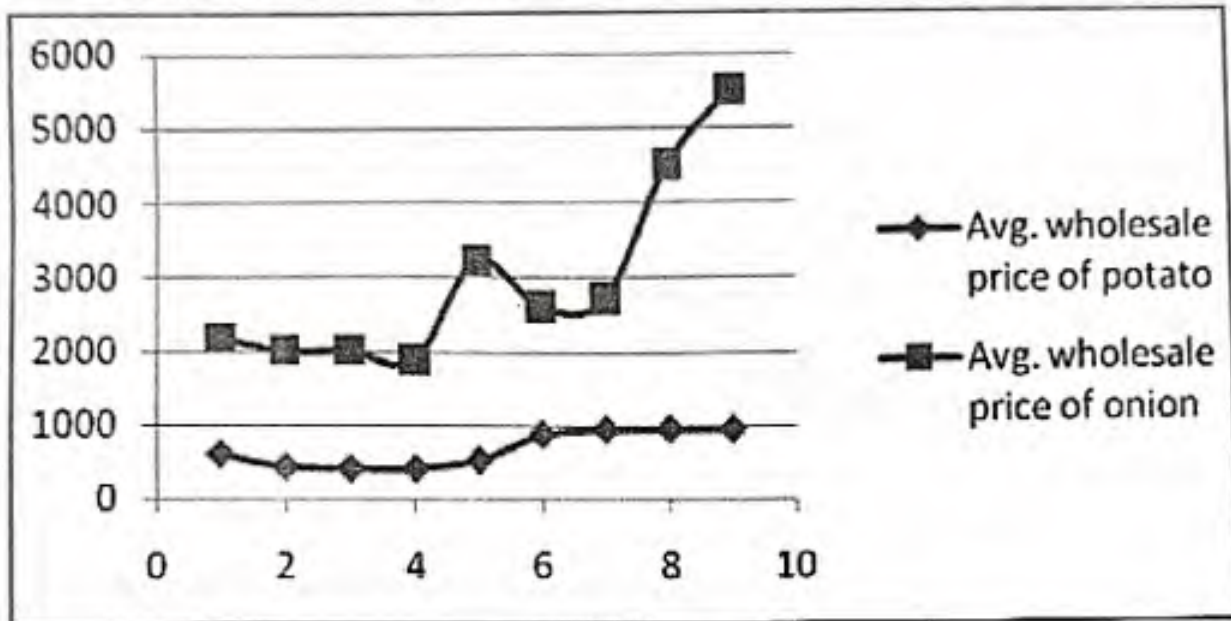
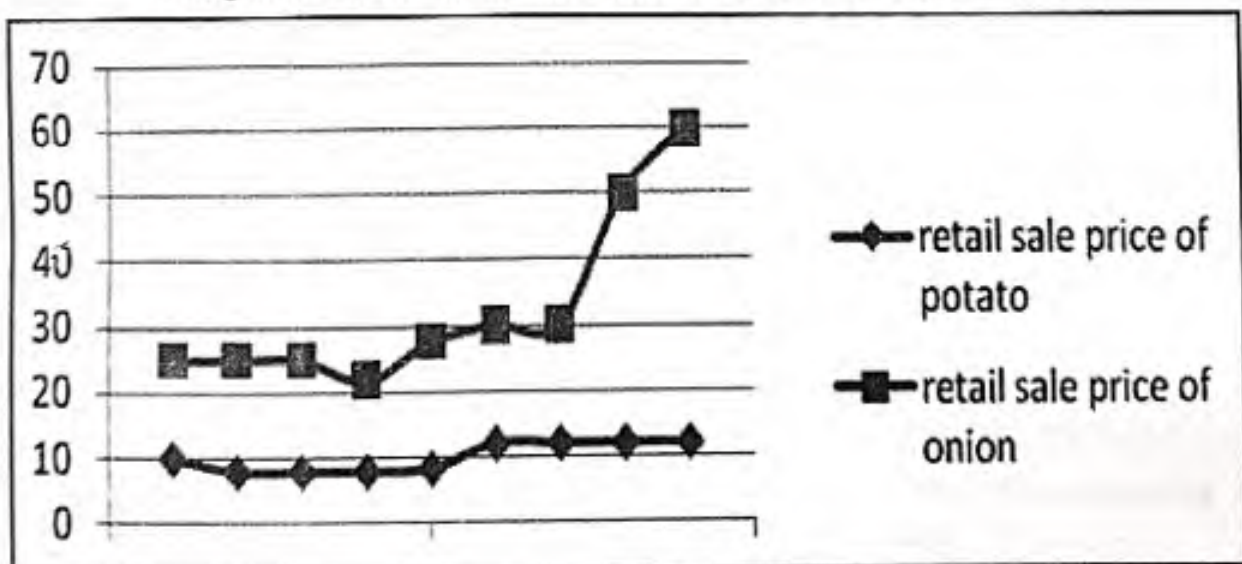


Figure : 4

Comparison of Retail Market Prices of Onion and Potato in 2014

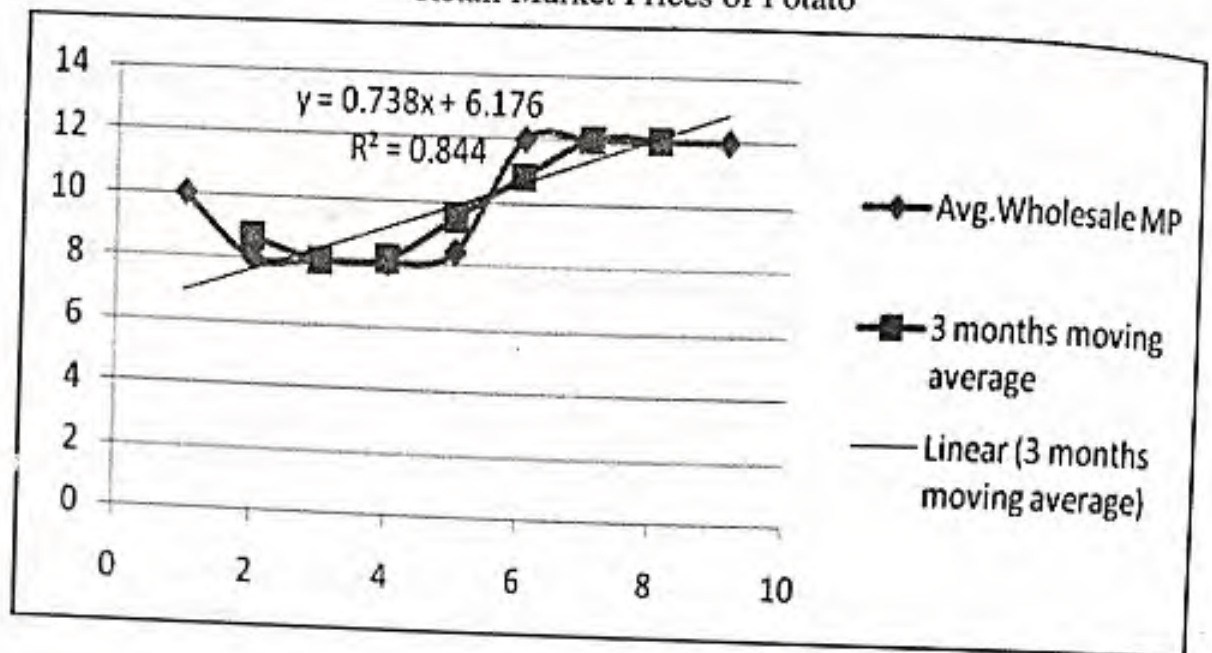


For forecasting future price variations in the Average wholesale price and retail price of potato and onion, following trend lines with respect to 3 months moving average data and linear equations are demonstrated.

Following is the trend line set for retail market price for potato and the linear equation is $Y = 0.738X + 6.176$. The proportion of variations explained by the independent variable is 0.844.

Figure : 5

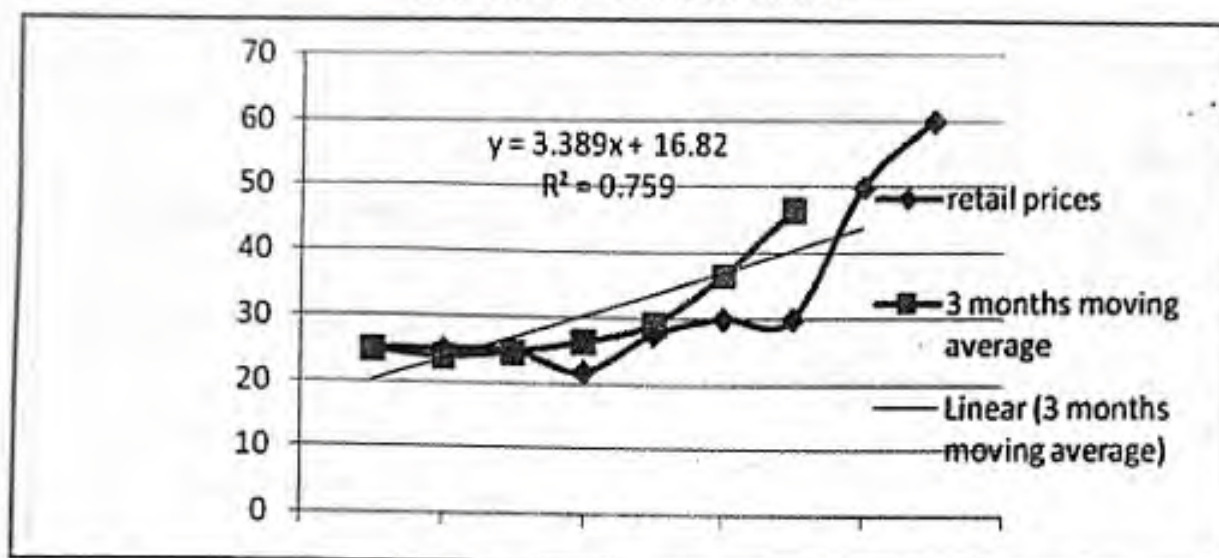
Retail Market Prices of Potato



Following is the trend line set for retail price for onion and the linear equation is $Y = 3.389X + 16.82$. The proportion of variations explained by the independent variable is 0.759.

Figure : 6

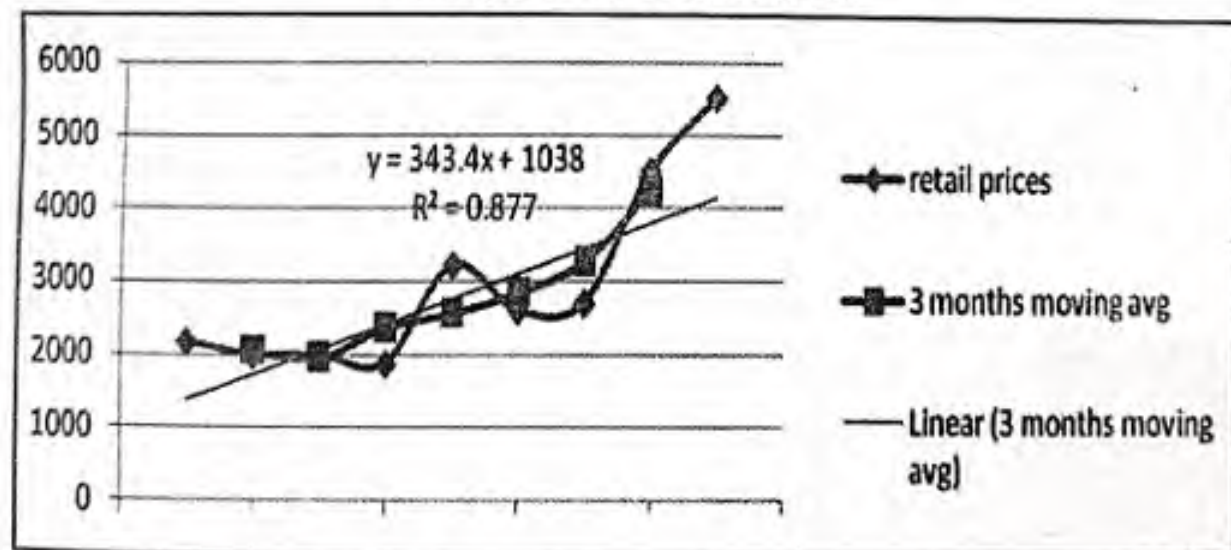
Retail Market Prices of Onion



Following is the trend line set for Average market price for onion and the linear equation is $Y = 343.4X + 1038$. The proportion of variations explained by the independent variable is 0.877.

Figure : 7

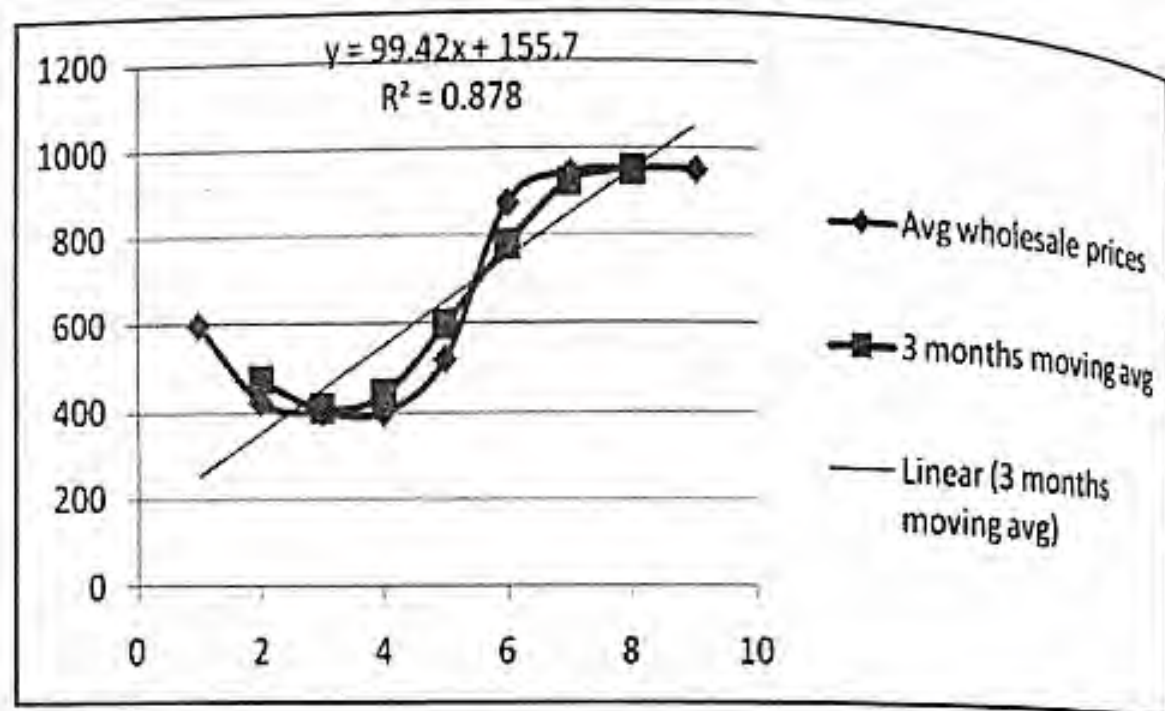
Average Market Price for Onion



Following is the trend line set for average wholesale market price for potato and the linear equation is $Y = 99.42X + 155.7$. The proportion of variations explained by the independent variable is 0.878.

Figure : 8

Average Market Price for Potato



Conclusion

The price variations in onion and potato for the years 2014 and 2015 show that prices vary quite frequently and the range between which the prices vary is sizable. There is also a positive relation between the prices of onions and potato as shown with the help of statistical tools. Further it is found out that price variations in case of potato with respect to average wholesale price and retail market price is higher than onion in the year 2014. In the year 2015 (till september), the average wholesale price of onion bypassed the average wholesale price of potato. Since the price variations have a great impact on the consumption pattern of people, these variations need to be considered and necessary actions in these regard is the need of the hour.

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Name of the Journal : Utkarsh
Language : English
Time of Publication : 2015
Name of the Publisher : Principal
D.H.S.K. Commerce College
Dibrugarh, Assam, India
Nationality : Indian
Address : D.H.S.K. Commerce College, Dibrugarh
Post. & Dist. : Dibrugarh-786 001, Assam, India
Place of Publication : Dibrugarh
Name of the Printer : Designer Graphics
Nationality : Indian
Address : H.S. Road, Dibrugarh, Assam, India
Name of the Press : Designer Graphics
Address : H.S. Road, Dibrugarh, Assam, India
Name of the Editor : Dr. Joydev Gogoi
Nationality : Indian
Address : D.H.S.K. Commerce College
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