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CONTROLS ON CONVECTIVE RAINFALL OF KERALA BY OROGRAPHY AND LOW LEVEL JET STREAM

Aype Thomas P.

Department of Physics

Bharata Mata College

Thrikkakara, Kochi-682 021

email: aypethomas@yahoo.com

ABSTRACT

The state of Kerala gets nearly 190 cm of rainfall during the south-west monsoon season of 1 June to 30 September. A good part of Kerala's rainfall is caused by the orography of the Western Ghat mountain, oriented north-south across the state. The orographic control is mainly decided by the strength of the low-level monsoon winds as they impinge on the Western Ghats. The position of the axis of the Low Level Jetstream (LLJ) is another important dynamic control on the southwest monsoon rainfall in the present study, the monsoon rainfall around the Anamalai and Cardamom hills is simulated using a numerical model with the orography of Western Ghats and with the LLJ axis to the south and north of Kerala. The experiment is conducted with the actual orography in all three domains and also with an orography of uniform height of 100m in the innermost domain the study domain.

Introduction

Kerala gets nearly 190cm of rainfall during the south-west monsoon season 1 June to 30 September. This is more than twice the monsoon rainfall of India. A good part of Kerala's rainfall is caused by the orography of the Western Ghat mountain ranges. Both convective (large cumulus and thunderstorm) and non-convective (nimbo-stratus) rain require vertical motion in the atmosphere and the slopes of the Western Ghats generate large vertical motion fields when winds impinge on them, particularly during the



south-west monsoon season with strong westerly winds. In addition to the orographic control there is a dynamic control by the Low Level Jetstream (LLJ) on the southwest monsoon rainfall of Kerala. When the LLJ axis is to the south of Kerala, cyclonic vorticity prevails over the state in the atmospheric boundary layer, which enhances rainfall. When LLJ axis is to the north, the relative vorticity in the boundary layer becomes anticyclonic which suppresses rainfall activity. The orographic control is mainly decided by the strength of the low-level westerlies (zonal component of monsoon winds) as Western Ghats is oriented north-south and the steepness of the orography, the conditional instability (CAPE) in the atmosphere generally being favourable for deep convection on almost all days. In the present study we have simulated the monsoon rainfall of Kerala using the PSU NCAR Mesoscale Model (MM5) for 6 days (in August 1990 and July 1995) with the LLJ axis passing south of Kerala and 6 days with the LLJ axis north of Kerala. The experiment has been conducted with the model orography and also with a modified orography of uniform height of 100m.

Motivation for the Study

The orographic features of the Western Ghats profoundly influence the meteorology of Kerala. Fig.1 gives the satellite-derived orography of the study area in the Western Ghat region. The Western Ghats comprises the mountain range that runs along the western coast of India, from Vindhya-Satpura ranges in north to the southern tip of India. This mountain range, which forms a natural wall separating Kerala from adjoining states has an average elevation of about 1 km with peaks rising over 2 km. The highest peak is Anamudi (2695km) at the crest of Anamalai (elephant hill) in Idukki district. The hill station of Munnar (1680m) is in the Anamalai hills. A southern off shoot from Anamalai is the Cardamom Hills of south Kerala on which is located the hill station Peer made. For the present study the domain chosen is the Anamalai and the Cardamom hills.

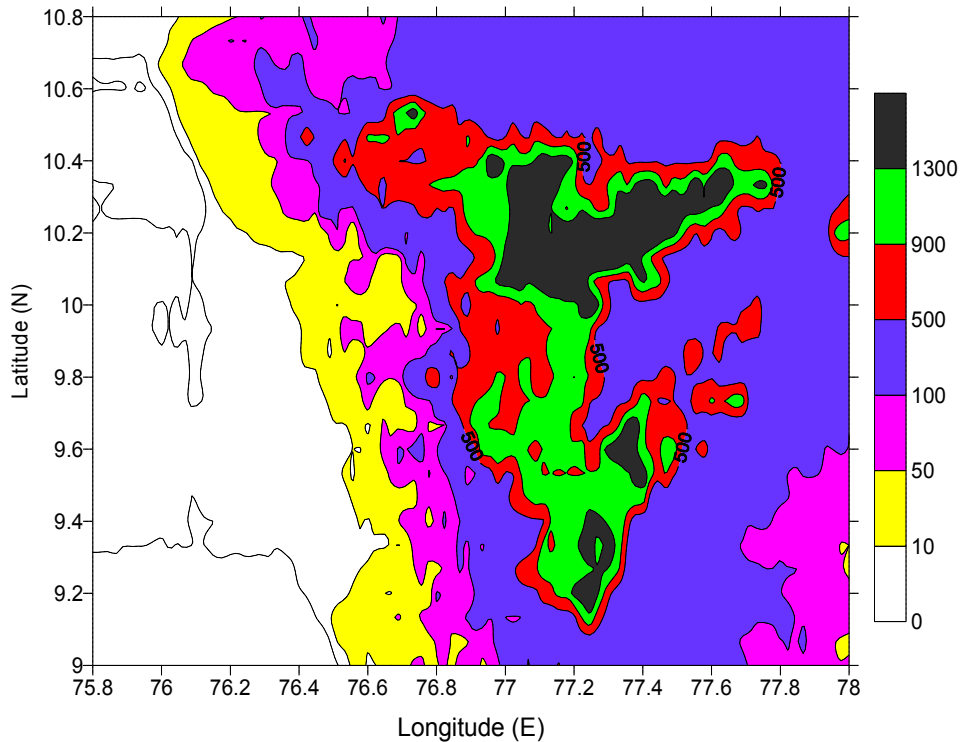


Fig. 1: The satellite measured terrain of the study domain- Anamalai and Cardamom hills of Western Ghats

Zubair, [1] (1999) studied the orographic control of the south-west monsoon rains in an east-west section through Colombo across the tall mountains in Sri Lanka whose peak Sita Eliya is at an altitude of more than 2000 metres. While the model rainfall intensity has a peak at a distance of 20 kms west from the crest of the mountain, the peak in the measured monsoon season rainfall is 30 kms to the west of the mountain crest. Fig. 2a gives the vertical section of the height contours along the section Colombo to Polluveil in Srilanka and the smoothed contours used in the modelling study. Fig. 2b below gives the variation along this section of the May to September rainfall. Rainfall begins to increase where the terrain begins to rise and has reached a maximum where the terrain is at an altitude of about 500m. Where



the terrain height is 1500m, rainfall has already decreased to about half the peak rainfall.

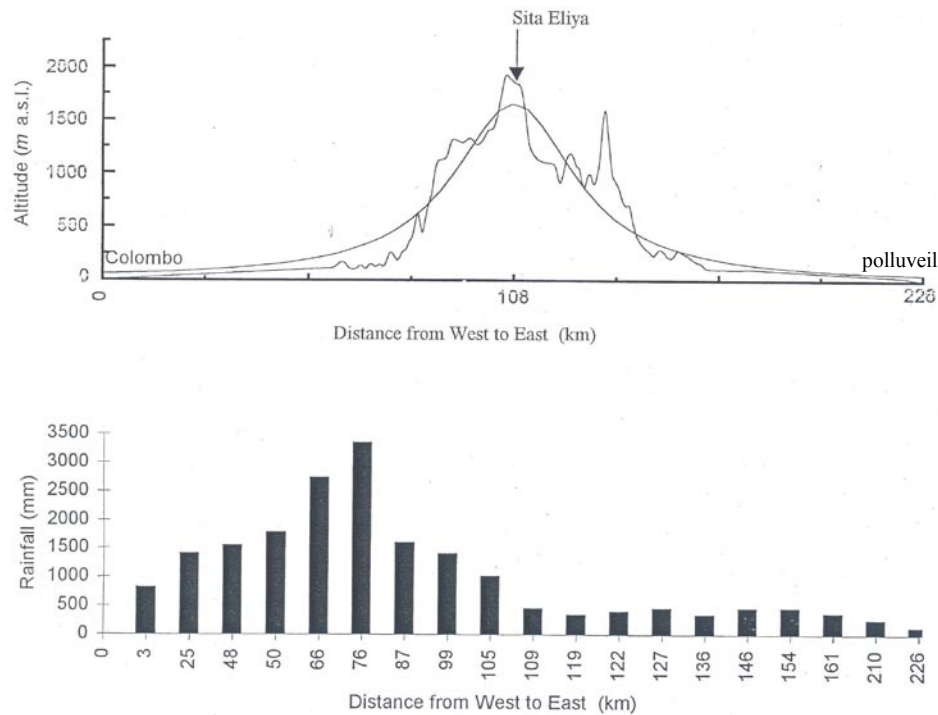


Fig. 2: (a) Vertical section of the height contours along the section Colombo to Polluveil in Srilanka and the smoothed contours used in the modelling study ; (b) Variation along this of the May to September rainfall. Figures taken from Zubair [1]

Fig. 3 gives the spatial distribution of the mean rainfall of the study domain for July for the period 1901-1950, data is taken from IMD publication. It can be seen that there are two pockets of large rainfall in July centred near 10°N and 9.5°N . Some of the stations in these regions with heavy July rainfall are Neriambangalam, Munnar, and Peermade. Fig. 4 give the east-west cross section of rainfall and satellite measured height of the terrain at latitudes averaged for $10^{\circ}\text{N} - 10.2^{\circ}\text{N}$ (Munnar section). Stations are marked with open circles. There are 16 rainfall stations in this latitude belt.

Neriamangalam, Munnar and Devikulam, (marked N,M and D respectively) which receive heavy rainfall during July, are located in this belt. In this cross-section the rainfall peak reaches before the sharp increase in orography begins and the peak in rainfall is reached at a terrain height of about 30m itself (Neriamangalam). The location of rainfall maximum is about 40km away from the peak in terrain height which is about 1830m. The rainfall variations across the mountains, in Munnar section is similar to the case of Srilankan mountains, with hills of oval contours. The present study is an attempt to study the effects of orography on the rainfall of Kerala with a numerical model.

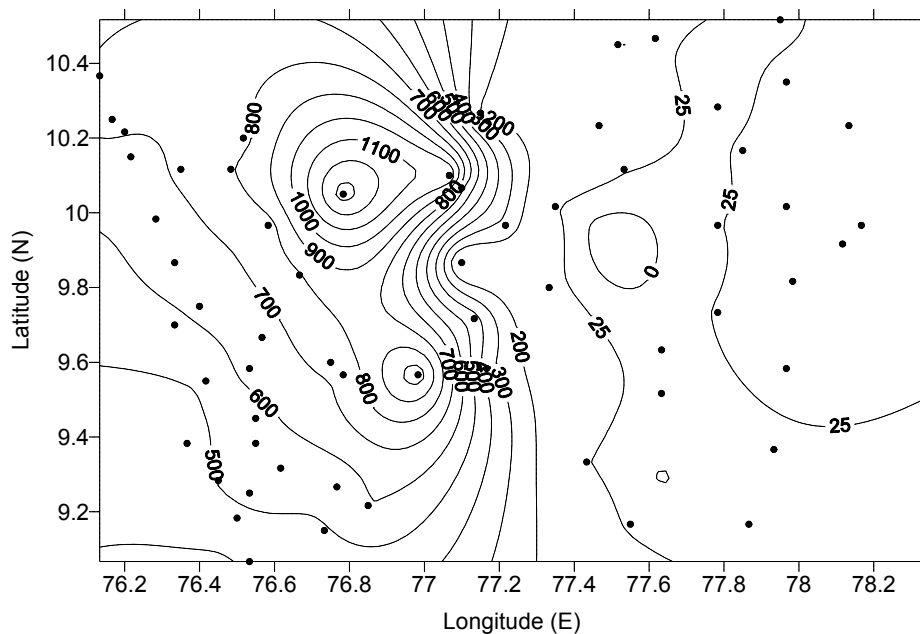


Fig. 3: Spatial distribution of the mean rainfall (mm) for July for the period 1901-1950. The black dots indicate the stations available.

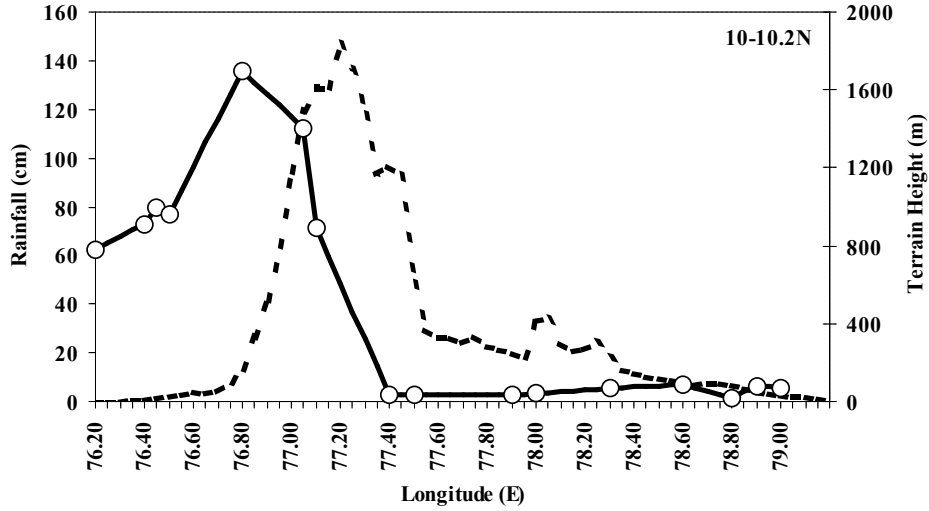


Fig. 4: Longitudinal cross section of rainfall (cm) and height (m) of the terrain of latitude averaged for 10-10.2°N. The stations are plotted as open circle.

Methodology

The PSU/NCAR Mesoscale Model (MM5) is utilised to simulate the monsoon rainfall of Kerala. We have selected three nested domains with grid resolutions 45 km, 15 km and 5 km for integration. The domain co-ordinates are *Domain 1*: 66-88°E, 2-28°N; *Domain 2*: 73.5 –79°E, 8-12.5°N and *Domain 3* : 75.8°E – 78, 9-10.8°N. These domains are shown in figure 5. Terrain height data with 10 min, 5 min and 2 min resolutions are used as input for these 3 domains. All these data are created from United States Geological Survey (USGS) elevation data at 30 sec resolution. Input for vegetation/Land-use is also taken from USGS. Overlapping parabolic interpolation with 2 pass smoother is used to construct mesoscale grid for orography and vegetation/ Land-use data. The Grell scheme for cumulus parameterization (Grell, [2]) is used in the present simulation. This scheme is chosen for the present study because it is most suited for grid sizes upto 5km as given by the designers of this scheme (<http://www.mmm.ucar.edu/mm5>).

Such a grid size is needed for studies of rainfall variations across mountains with steep orography. In this study, only the convective rainfall obtained from the Mesoscale model is analysed in relation to orography. The MRF PBL or Hong-Pan PBL scheme is used for the boundary layer parameterization and the moisture scheme is Simple Ice (Dudhia, [3]). In this scheme, cloud and rainwater fields are predicted explicitly with microphysical processes. The radiation effects due to cloud are considered and are sophisticated enough to account for longwave and shortwave interaction (Cloud-radiation scheme).

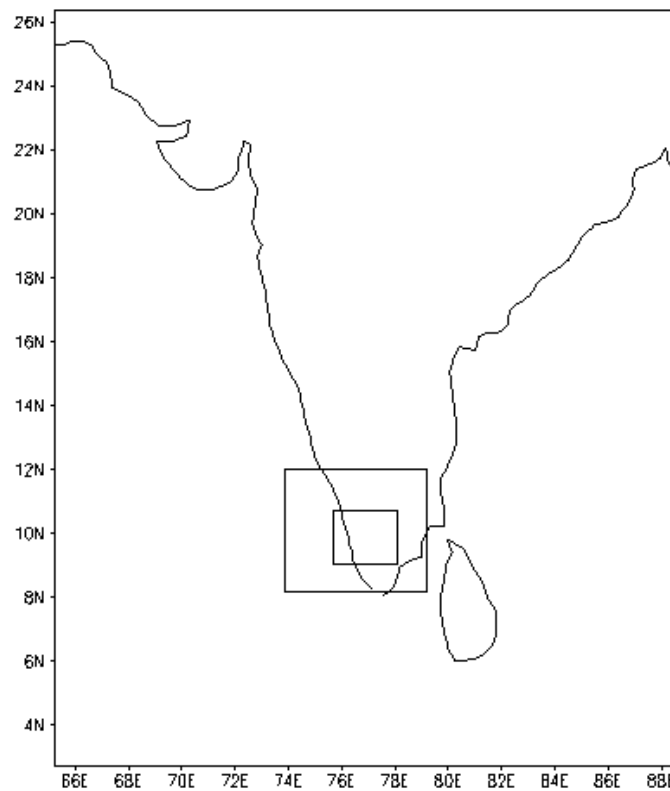


Fig. 5: The three nested domains chosen for the study.

The details are taken from the MM5 tutorial document.

<http://www.mmm.ucar.edu/mm5>



Results and Discussion

Twelve cases of rainfall events during July 1995 and August 1990 are analysed where 6 cases are days with LLJ axis south of Kerala and 6 cases with LLJ north of Kerala. The input data used for the simulation is from NCEP/NCAR Reanalysis Project (NNRP). These data are on 2.5-2.5 degree latitude longitude grid with 17 vertical levels. This data is interpolated by the MM5 model to the desired grid size for running the model. The simulation started 24 hours before the day of rainfall report (the rainfall reported on a day at 0300UT is for the period 0300UT of the previous day to 0300UT of that day) and model is run for the following 24 hours with time steps of 180 sec. The model output (convective rainfall) is taken every three hours. The integration has been performed with the model orography as given in Fig. 6.

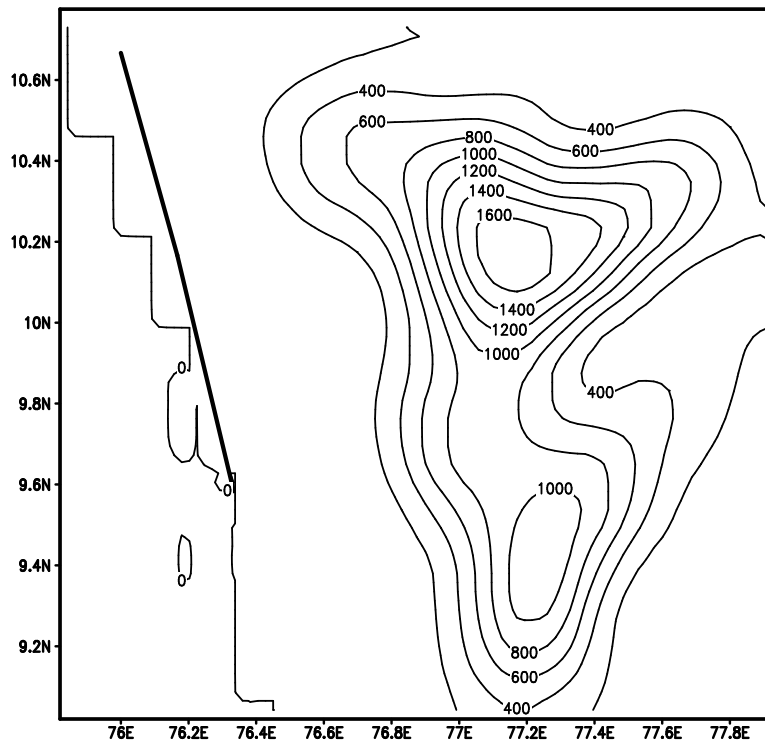


Fig. 6: The terrain output (m) of the innermost domain used in MM5 simulation.

Figure 7(a &b) shows the wind at 850hPa as an average for the 3 days (9 –11 July 1995) with LLJ axis south of Kerala in July 1995 and for 3 days (19 –21 July) with axis north of Kerala in the same year. For the three days with the LLJ axis south of Kerala, there is cyclonic vorticity north of the jet axis in the atmospheric boundary layer over Kerala. This will favour vertical upward motion and there is increased rainfall in Kerala as seen from Table 1. When the jet axis is north of Kerala (fig. 7b), the anticyclonic vorticity in the boundary layer will suppress the rainfall in Kerala.

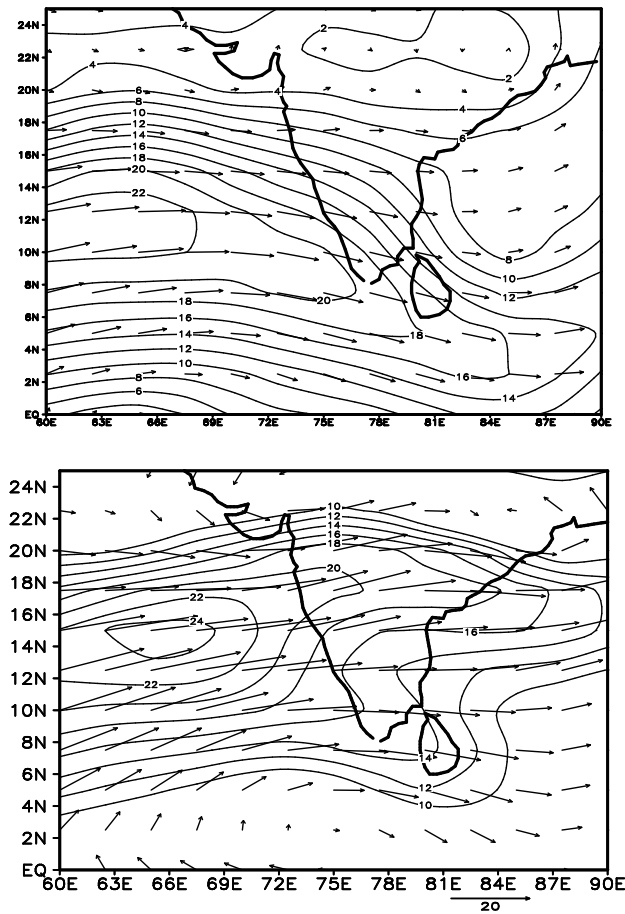


Fig. 7: (a) Wind at 850hPa as an average for the 3 days (9 July 1995 –11 July 1995) with LLJ axis south of Kerala; (b) for 3 days (19 July 1995 –21 July 1995) with axis north of Kerala.



Table 1: Observed Rainfall (mm) at 0300z for the previous 24 hours for south Kerala and the spell average for the six days selected for the study

Day And time	South Kerala rainfall (mm)	Spell average (mm)
09 July 1995 (03Z)	28.4	33.1
10 July 1990 (03Z)	27.5	
11 July 1995 (03Z)	43.5	
19 July 1995 (03Z)	7.2	10.9
20 July 1995 (03Z)	19.9	
21 July 1995 (03Z)	25.8	
10 August 1990 (03Z)	29.8	24.5
11 August 1990 (03Z)	27.5	
12 August 1990 (03Z)	16.9	
18 August 1990 (03Z)	0.8	1.9
9 August 1990 (03Z)	2.6	
20 August 1990 (03Z)	2.4	

The spatial distribution of convective rainfall obtained from the MM5 simulation for the inner domain for the 3 days 9th July, 10th July and 11th July are 1995 are given in fig.8 (a-c). It is seen that the model has given high convective rainfall fairly well in these days with maximum rainfall of the order of 5cm/day, when the LLJ axis passed just south of Kerala. The 24-hour convective rainfall cross sections through Munnar on these days are also very large. Fig. 9 (a&b) gives the model orography across Munnar section and the convective rainfall on 10th July 1995. In this latitude cross section, the rainfall has started to increase from 76.4°E, much before the orography has started to increase and the maximum rainfall (peak) is attained at 76.9°E which is about 25km away from the terrain peak. The peak rainfall values of 1.5, 5 and 4.5 cm/day on these days picked up by the model are large values compared to the simulation with LLJ axis to the north of Kerala.

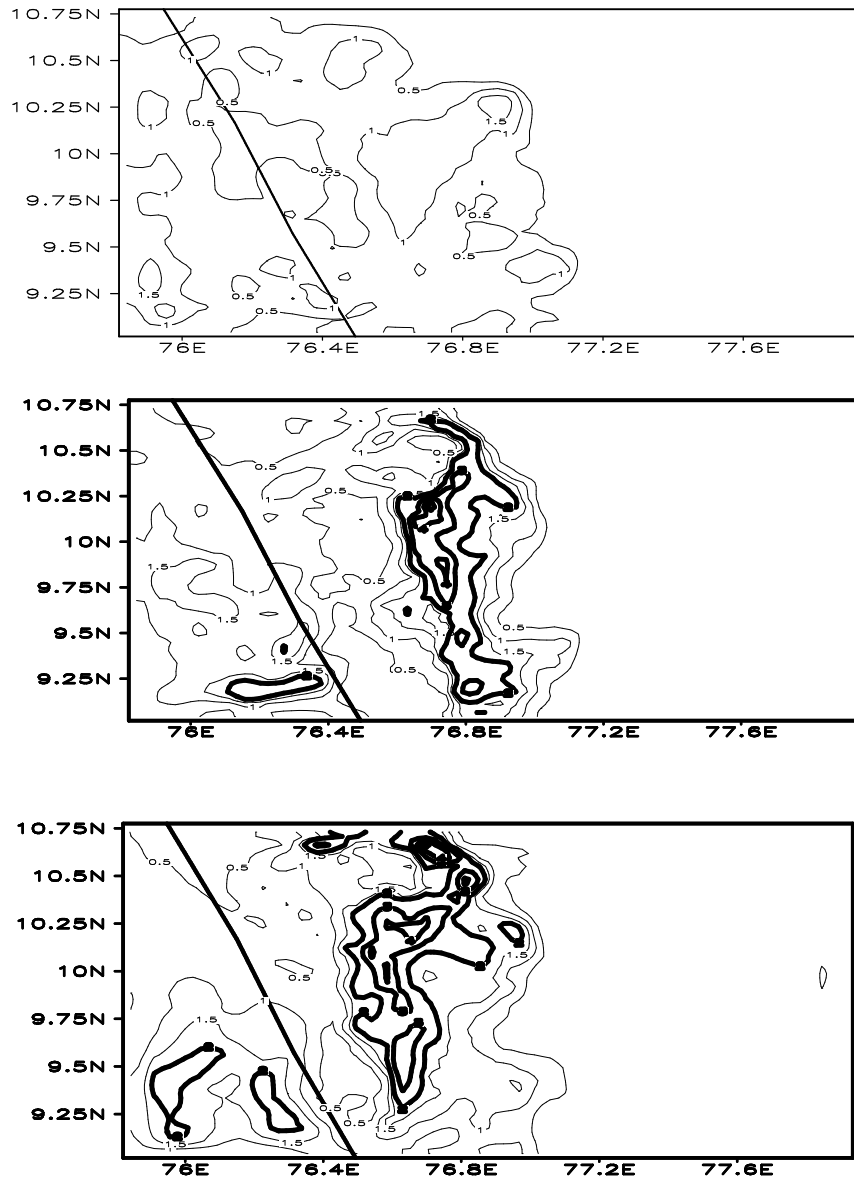


Fig. 8(a -c): Spatial distribution of convective rainfall (cm) in the innermost domain on (a) 9th July 1995 (b) 10th July 1995 and (c) 11th July 1995.

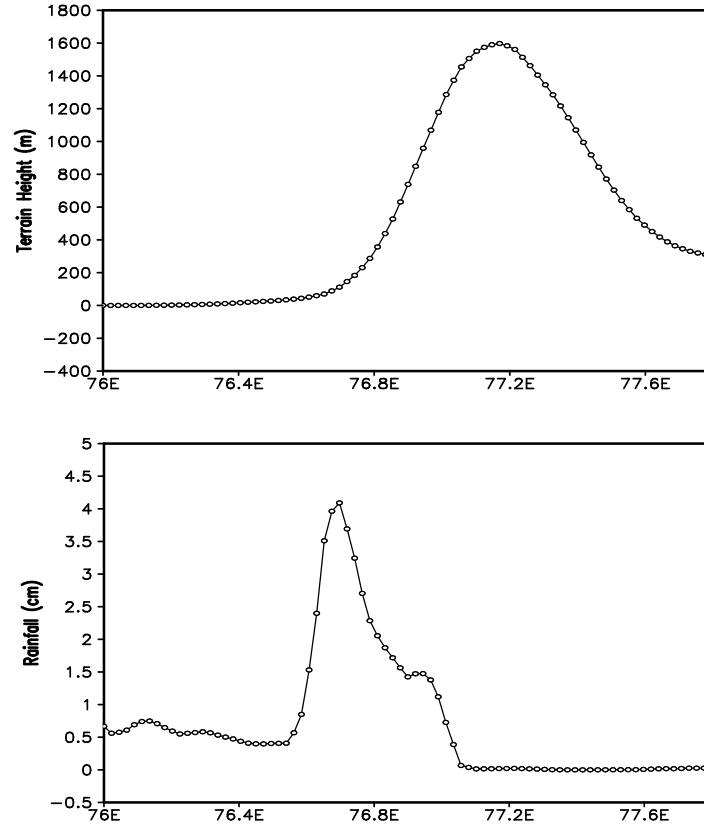


Fig. 9(a-b): (a) The terrain (m) of the Munnar cross-section (averaged for 10-10.2°N) obtained from MM5 simulation. (b) Convective rainfall (cm) in this cross-section on 10th July 1995

The observed peaks in rainfall are subject to the availability of raingauge station data. In the Munnar cross section (fig. 4) the observed rain peak is at Neriamangalam (marked N). If we have 2 stations in the large gap west of N and one station in the gap between N and M, the observed profile would have been more realistic.

A similar experiment is done for three days in July 1990 with the jet axis just south of Kerala. Fig. (10 a & b) shows the wind at 850hPa as an average for the 3 days with LLJ axis south of Kerala in August 1990 and for days with axis north of Kerala in the same year. It is seen that the model has

given high convective rainfall fairly well in these days (all figures are not shown) with maximum rainfall of the order of 4cm/day, when the LLJ axis passed just south of Kerala. Fig. 11 (a & b) gives the convective rainfall for 10th August 1990 and the rainfall through Munnar section.

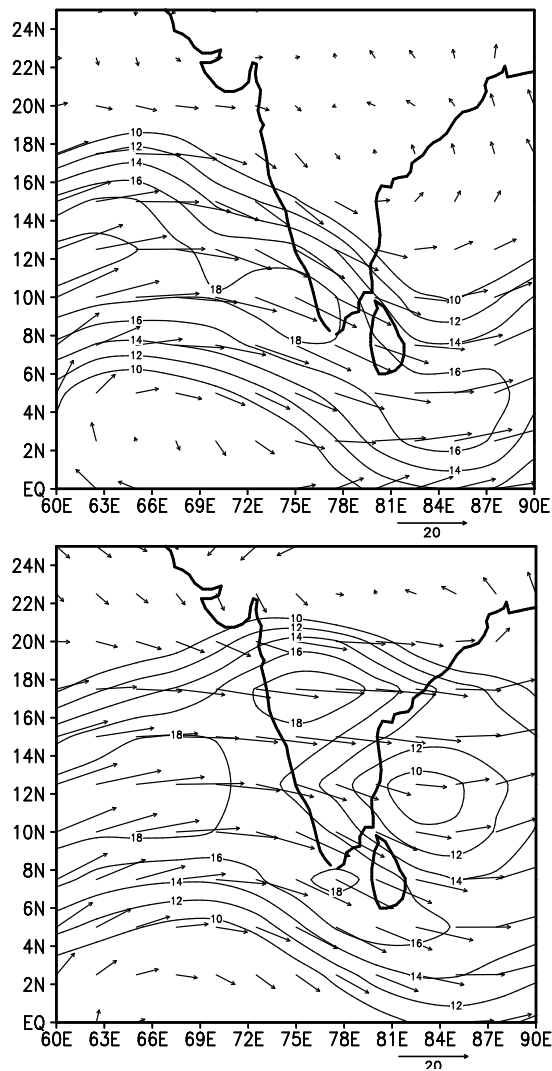


Fig. 10(a & b): (a) Wind at 850hPa as an average for the 3 days (9 August –11 August 1990) with LLJ axis south of Kerala and (b) for 3 days (17 August – 19 August 1990) with axis north of Kerala.

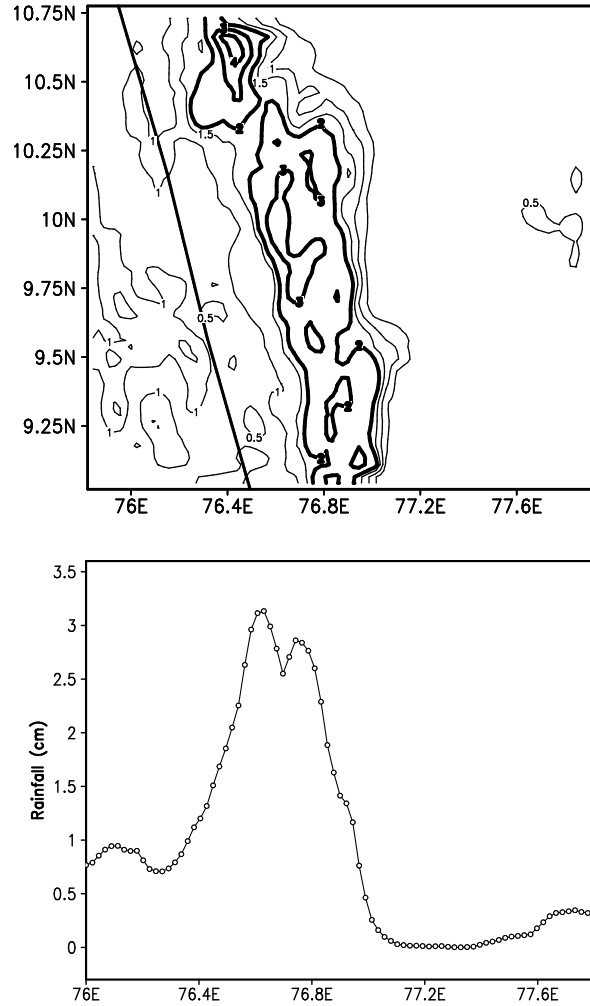


Fig. 11(a & b): (a) Spatial distribution of convective rainfall (cm) in the innermost domain on 10th August 1990 and (b) Convective rainfall (cm) in Munnar cross-section on 10th August 1990

The spatial distribution of convective rainfall obtained from the MM5 simulation for the innermost domain for the three days 19 July, 20 July and 21 July 1995 are given in fig.12 (a-c). It is seen that the model has given low convective rainfall with maximum of the order of 1cm/day only with the Low Level Jetstream north of Kerala (as compared to 5cm on 9-11 July,

showing the dynamic control by the Low Level Jetstream). The cross-sections of the 24-hour convective rainfall through Munnar on 19th July 1995 (fig.13) show peak in relation to the model orography as in fig.9a. It may be noted that sharp peak is not seen as on 10th July 1995. Similar results are also obtained in August 1990 (17th –20th August) when the LLJ axis passed north of Kerala. Fig. 14(a & b) show the convective rainfall for the innermost domain on 19th August 1990 and the rainfall cross-section through Munnar.

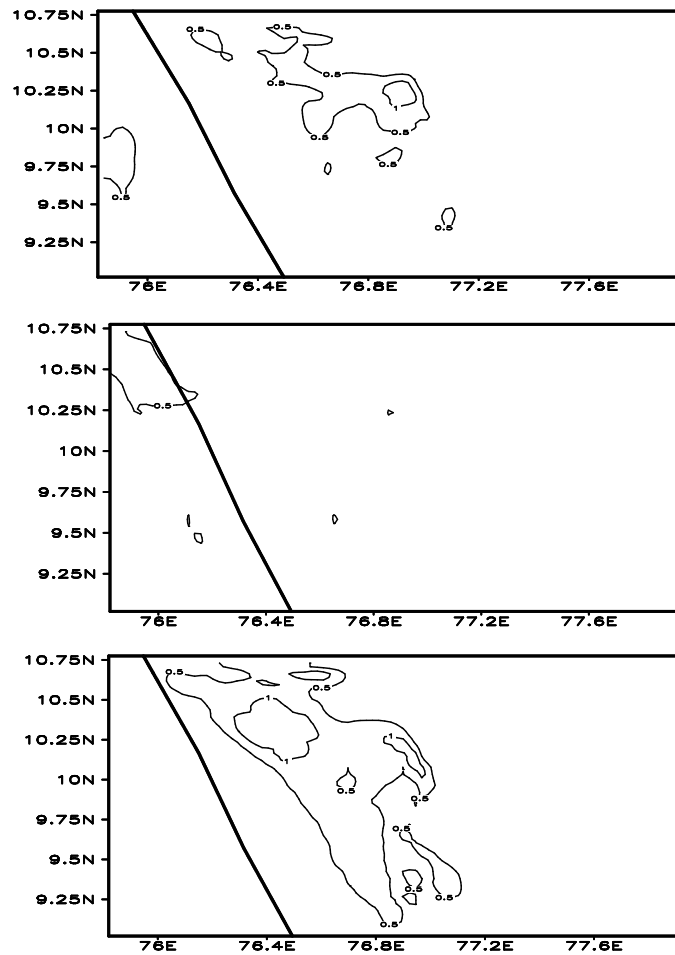


Fig. 12(a -c): Spatial distribution of convective rainfall (cm) in the innermost domain on (a) 19th July 1995 (b) 20th July 1995 and (c) 21st July 1995.

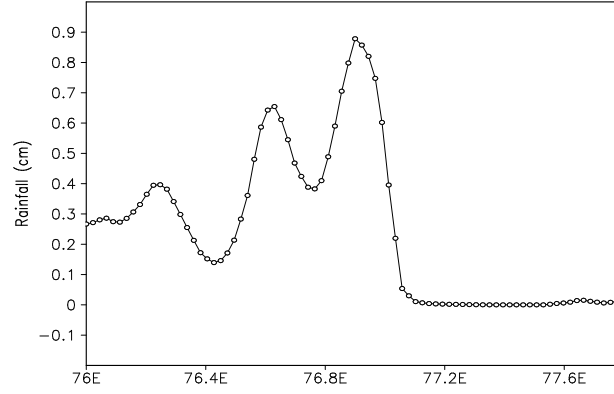


Fig. 13: Convective rainfall (cm) in Munnar cross-section on 19th July 1995.

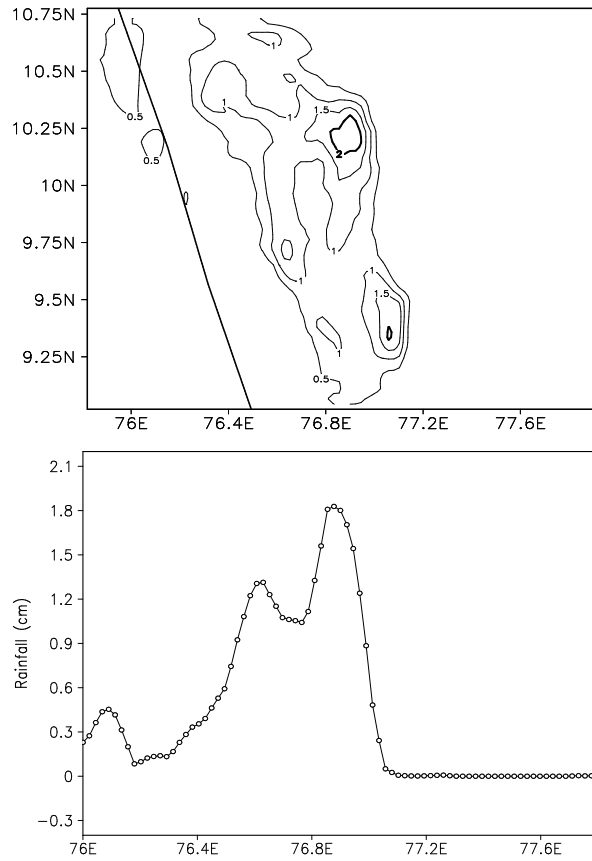


Fig. 14(a&b): (a) Spatial distribution of convective rainfall (cm) in the innermost domain on 19th August 1990 and (b) Convective rainfall (cm) in Munnar cross-section on 19th August 1990.

The same experiment is carried out with a modified orography of uniform elevation of 100m. Fig. 15(a&b) gives the rainfall distribution for 10th July 1995 and the rainfall through the Munnar cross-section. It is seen from the figure that with the modified orography the rainfall distribution is diffuse and rainfall is more in the coastal region and there is no prominent rainfall peaks unlike the observed rainfall peak away from the terrain height. However, when the LLJ axis is north of Kerala, as for 19th July the convective rainfall is much less (fig. 16(a&b)). This brings out the control of LLJ on the rainfall of Kerala.

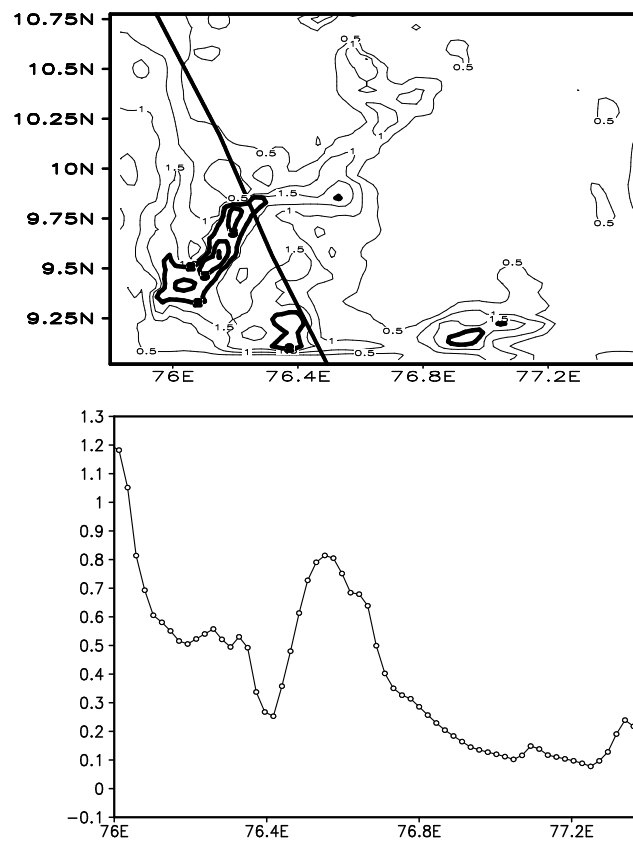


Fig. 15(a & b): (a) Spatial distribution of convective rainfall (cm) in the innermost domain on 10th July 1995 (modified orography) and (b) Convective rainfall (cm) in Munnar cross-section on 10th July 1995



Conclusion

We have used Mesoscale Model MM5 to simulate the convective monsoon rainfall to understand the controls on the rainfall. Two factors control the rainfall of Kerala. One is a dynamic control by the Low Level Jet stream. The other is the orographic control. Using a Mesoscale model which has the orography of central Kerala hills (Anamalai and Cardamom hills) we have simulated the convective rainfall around these hills for six days with Low Level Jet axis just south of Kerala and six days with Low Level Jet axis just north of Kerala. These simulations bring out the controls both by LLJ and the orography.

It is seen that the peak of the models' convective rainfall is about 40-60km west of the mountain peak for the simulations. The convective rainfall is much larger in the cases of LLJ axis south of Kerala than with LLJ axis north of Kerala. With modified orography of uniform terrain of 100m the rainfall distribution is more diffused without any peak in rainfall, unlike the actual rainfall peak which is 25-30Km away from the mountain peak. The observed peaks in rainfall are subject to the availability of raingauge stations. In the Munnar cross section, the observed rain peak is at Nerianmangalam. If we have 2 stations in the large gap west of Neriamangalam and one station in the gap between Nerianmangalam and Munnar the observed rainfall profile would have been more realistic.

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DETERMINANTS OF CUSTOMERS' ONLINE PURCHASE INTENTION: A CONCEPTUAL STUDY

Anton Joseph

Assistant Professor
Research and Postgraduate Department of Commerce
Bharata Mata College

Dr. Manoj Edward

Associate Professor
Scholl of Management Studies, CUSAT

ABSTRACT

Online shopping has been shown to a good potential market. The electronic equipment takes a high percent of the individuals shopping. Buying products through online gives customers an opportunity to find a great variety of product online, and customers can review a wide selection of products and find special offers and discount with the best deals online. In the coming years, the development of online retailers is improving and promises a bright future. However, the tangible and intangible problems of electronic product online shopping still exist and the online store retailers lack the customer knowledge in some extent. Therefore, our intention is to explore customer behaviour when purchasing products through investigating the factors that can affect online shoppers, intention and actual buying behaviour.

Key words: online shopping, trust, customer buying behaviour, factors

Introduction

Online shopping is considered to be a very helpful way of buying products through the internet especially during the holidays and clearance seasons. It allows customers to enjoy a wide variety of products and items not only from a specific store, but from a diverse storage that includes all kinds of items. Online shopping also provides customers with a good customer service that also occurs online.

Many people around the world prefer to shop online and buy products from several brands and companies that they cannot find or are not available



for purchase in their home countries. Nowadays, and with the help of the new technology and the support of the internet, people from all around the world started to purchase items online by simply sitting in their homes.

Purchasing items and products through the Web is a very easy task to do. It is now playing a very important role in everybody's life especially elderly people, as well as people with a very busy life schedule. It provides a very comfortable service for its customers, by being able to save the item in the personal shopping bag, and buy it later on.

Shopping through the Web simply works for people with a valid credit card or a debit card. First, an online shopper needs to create a personal account which includes a username and a password. It is very important for the customer to save the account information in a safe place in order not to lose it, or allow other people to use it under their personal name. After creating an online account for the specific site, the customer will start enjoying the wide variety of products and items that are available online. The customer will then click on the wanted item in order to add it to the personal shopping bag or basket.

After doing all the previous steps, the customer should take into consideration the safety of the specific site. To be sure if the website is a safe place to share your credit card information, the customer should look at the link in the browser. For a safe purchase, the customer should find the beginning of the link starting with https, and not http. Having the website starting with https, means that this specific webpage will safely secure the customer's credit card information.

After checking the safety of the webpage, the customer should then be ready to enter the credit card information. For most online shopping websites, security is considered a very important factor, and several safety questions should be answered by the customer. After the person is done with

completing the credit card information, he/ she is asked to make sure that the purchase is complete and ready to be ordered. After ordering the item or the product, the customer needs to wait for ten to twenty days to receive the specific order. The delivery time depends on the location of the item, as well as the provided home address of the customer. If someone has not tried online shopping yet, it is worth experiencing it. Most probably, the experience will be highly enjoyed.

Thus, objectives of our study are:

- 1) To review the past literature on the constructs taken for the study;
- 2) To understand the role of shopping orientation, prior online purchase experience, Online trust, online review, Product Perception, web quality on the customer online purchase intention

Literature Review

In this section, the literature concerning the key construct of the study namely customer online purchase intention is discussed first, followed by the literature on the other determinants of purchase intention leading to the development of hypotheses.

Online trust and customer online purchase intention

Online trust is a necessity when it comes to online shopping (McCole and Palmer, 2001). Due to the risky nature of online shopping, trust and risk play significant roles in effecting online transactions (Pavlou, 2003). Kim and Benbasat (2003) identified four categories of trust related issues: “personal information, product quality and price, customer service, and store presence”. Trust contributes positively towards the success of online transactions (Jarvenpaa and Tractinsky, 1999). Online trust needs to be there when personal financial information and personal data is shared while making a purchase online (Egger, 2006). Online trust is based on the



perception of the risks or benefits of the online transaction (Teo and Liu, 2007). In the Indian context, the influence of the online trust as of mediating effect has been studied on customer online purchase intention (Ganguly et al., 2009). Numerous studies have concluded that the higher consumer online trust will result in higher customer online purchase intention (Verhagen et al., 2006; McKnight et al., 2002; Lim et al., 2006; Ling et al., 2010).

Prior online purchase experience and customer online purchase intention

Future behaviour is determined by prior experiences. Online purchases are still considered to be risky compared to offline retail purchases (Laroche et al., 2005). Miyazaki and Fernandez (2001) states that “ higher Internet experience and the use of other remote purchasing methods are related to lower levels of perceived risk toward online shopping, which in turns results in higher online purchase rates. In an online shopping environment, prior online purchase experience leads to the reduction of uncertainties and eventually leads to an increase in the customer purchase intention (Shim and Drake, 1990). Online shoppers who have bought products online are more open and inclined to shop online than others (Lee and Tan, 2003). Shim et al. (2001a, b) found that past satisfactory online purchase will lead to future online purchase while past negative experience will decrease online purchase intention

Web quality and customer online Purchase intention

For the web quality factor, we used four previous researches to describe the elements which are related to web quality and how they affect the consumers’ buying attitude and intention. Ranganathan and Ganapathy (2002) claimed that the principles of designing a B2C web site highlight three important issues: ease of navigation of the web site, time taken for navigation and page download, and use of multimedia to improve its visual appeal. B2C web sites provide electronic means of interactivity to consumers,

meanwhile, B2C web sites should incorporate appropriate security measures and adopt privacy practices in order to develop consumer trust, thus, an effective B2C web site should be qualified with three factors: easy to navigate, consumer less time in searching, and have an aesthetic appeal. According to the survey conducted by Ranganathan and Ganapathy (2002), the result revealed security as the most important factor. Providing non-online modes with provision of individual accounts with logon-ID and password for consumers can attract more consumers to their web sites. Privacy is the second highest discriminate, which is a key factor discriminate between high and low purchase intents of online shoppers. Thus, more attention should be paid to guard consumers' privacy when designing website. The third one is information content which represents another predictor of online purchase intention and differentiates competing ones. The various dimension of Web quality are

- 1) Easy to Navigate
- 2) Useful Web content
- 3) Fun experience
- 4) Multimedia
- 5) Web appearance

Shopping orientations and customer online purchase orientation

Shopping orientations are defined as a general disposition toward the acts of shopping (Brown et al., 2001). Swaminathan et al. (1999) asserted that shopping orientation is one of the prime indicators of making online purchases. The concept of shopping orientation refers to a specific segment of lifestyle that is operational zed by various activities, interests and opinion statements relevant to shopping (Li et al., 1999). Being regarded as a multi-dimensional construct, shopping orientation comprises of many constructs referring to different attitudes and opinions. Vijayasathya and Jones (2000) segmented the shoppers into seven distinct varieties namely: in-home shoppers, economic



shoppers, mall shoppers, personalized shoppers, ethical shoppers and convenience shoppers. They found in-home shoppers more inclined to online purchase and having higher purchase intention than the rest of the classes. Seven shopping orientation types identified by Gehrt et al. (2007) are recreation, novelty, impulse purchase, quality, brand, price and convenience. Of all the seven shopping orientations, impulse purchase orientation, quality orientation and brand orientation were perceived as more important from the web retailer perspective and often investigated together (Ling et al., 2010).

Online user reviews and customer online purchase intention:

The impact of online customer reviews has been extensively studied and it is widely accepted that online customer reviews can help boost the sales of experience goods. However, there are still some inconsistencies about which aspect of the online user review works. For example, by comparing the sales data and customer reviews from Amazon.com and Barnesandnoble.com and using a differential model to focus on relative sales and the difference in customer reviews, Chevalier and Mayzlin (2006) found that both the average online user review rating and the number of online reviews have a significant influence on sales. They also found that negative reviews (one-star reviews) have a greater impact on book sales than positive reviews (five-star reviews). Clemons et al. (2006) demonstrated that the quantity of customer reviews is a good predictor for beer sales, while the average rating is not. Their research extended to hotel business is found that the average online customer review rating and the variance of the ratings both influence hotel bookings. Most of these studies assume that the online user review is the precursor of sales.

Online shopping attitude

Attitude is defined as a kind of individual's overall impression and evaluation for electronic product online shopping, which could be expressed

in positive or negative way, or even more emotional feeling like favourable or unfavourable way. In a previous research, the researchers defined that there are three ways to measure consumers' attitude, firstly, "regarding the hedonic aspect that could be measured by items of fun/frustrating, enjoyable/not enjoyable and, interesting/boring, while for the utilitarian aspect could be measured by items such as safe/risk, ordered/chaotic, wise/foolish, and reliable/unreliable and the overall aspect could be measured by items such as useful/ useless, pleasant unpleasant, entertaining/ weary, and nice/ awful" (Huang, 2005, p.841-847).

According to previous researches, there are many different categories for the determinates of attitude toward online shopping, take the researches of Limayem (2000) and Shergill and Chen (2005) as examples, which illustrate trust, shopping experience, perceived usefulness, ease of use, perceived risk, customer service and website design, all these factors are commonly used in surveys to investigate their relationship with the online shopping attitudes.

Customer online purchase intention

According to the theory of reasoned action, consumer behaviour could be predicted from its corresponding intentions (Ajzen and Fishbein, 1980). Intentional measures are more effective than behavioural measures in drawing new customers as customers tend to skip real preferences because of their constraints (Day, 1969). Customer online purchase intention is defined as the construct that gives the strength of a customer's intention to purchase online (Salisbury et al., 2001). Pavlou (2003) observed online purchase intention to be a more appropriate measure of intention to use a web site when assessing online consumer behavior. Since online transaction involves information sharing and purchase action, purchase intention will depend on many factors (Pavlou, 2003). In order to trigger online purchase intention among consumers, web retailers often need to focus on these factors

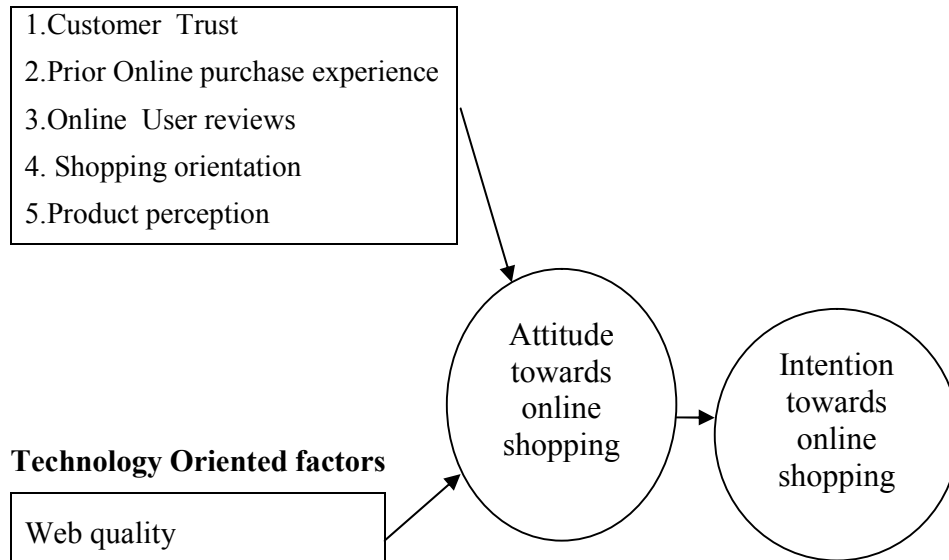


to enhance the chance of purchase by customers. While developing a reference model for summarizing the antecedents of customer purchase intention from 45 research studies on online shopping, Chang et al. (2005) categorized the antecedents into three categories namely, perceived characteristics of the web as a sales channel, web site and product characteristics and consumer characteristics, thus identifying more than 80 variables as antecedents. Knowing that it is not possible to explore them all, the study confines itself in studying the effect of shopping orientations, prior online purchase experience, online trust and demographics on online purchase intention .

The framework of online shopping behaviour

With the blooming of online shopping, more relevant researches are increasing and intent to investigate how to gain more new potential consumers and still keep the existing ones, consumer-oriented and technology-oriented are two important considerations involve in many researches. For the consumer-oriented, it concentrates on consumers' salient beliefs towards online shopping, which could affect consumers' attitude and buying intention. For the technology-oriented, it concerns how to develop specific technology aspects to improve the online shopping function and service. The technology aspects cover many factors related to web quality, such as ease of navigation, web appearance, use of multi-media. As we see from the statement above, it is easy to see that customer-oriented and technology oriented enhances to each other. Apply to our research, we adopt both technology-oriented and consumer-oriented view of online shopping in this study. Online retailers should get to know more about how to utilize these factors to increase the consumers' online buying intention, and how to develop effective business and marketing strategy to reach the goal of retaining old consumers, and attract more potential new consumers.

Customer Oriented factors



Conclusion

With the blooming of online shopping activities, the electronic product online market takes a high percent of individuals shopping on it. Understand the customer's online shopping behaviour for electronic product field, improving the important specific factors influencing the electronic product online shopping and overcoming the potential drawbacks will help the online retailers become more competitive. Therefore, our study is to investigate the specific factors affecting customers online shopping attitude to electronic product and figure out the relationship between the buying attitude and intention among the experienced and inexperienced shoppers. I believe that this research can offer the online electronic product retailers a detailed picture about how to make effective efforts on specific factors to lead the customers to have positive attitudes toward electronic product online shopping and form strong buying intention toward electronic product.



This study was undertaken with the purpose of identifying and getting insight into what main specific factors influence customers attitudes toward electronic product online shopping, and how the customers attitude affect their online buying intention towards electronic product. Through the test of the research model we created, we gained the findings that in the customer-oriented factors transaction security, product quality, product price are the main specific factors influence customers attitudes toward electronic product online shopping; while in the technology-oriented factors ease of return and refund, delivery channel ,useful web content, and website appearance are the main specific factors influence customer attitudes toward electronic product online shopping.

Concerning with the relationship between attitude and buying intention, firstly, our findings showed that for inexperienced shoppers, their attitudes cannot decide their buying intention and to bring out the final actual buying behaviour. In contrast, the experienced shoppers attitudes towards online shopping electronic product significantly affect the buying intention and final actual buying behaviour, furthermore, a positive attitude lead to a strong willingness to continue to buy electronic product online.

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A STUDY ON CARBON CREDIT AWARENESS AMONG FARMERS IN IDUKKI DISTRICT

Ajay Joseph

Assistant Professor,
Research and Postgraduate
Department of Commerce
Bharata Mata College,
Thrikkakara

Dr. Gimson D Parambil

Associate Professor,
PG Department of Commerce
St. Xaviers College Vikkom

Telsa Tom

Assistant Professor,
Research and Postgraduate
Department of Commerce
St. Teresa's College,
Ernakulam

ABSTRACT

Environmental degradation and climate change is one of the greatest challenges of this era. The major goal of Kyoto protocol is to reduce GHGs emission. To reduce emission of GHGs the environmental carbon trading practices are done. Carbon Credits are a tradable permit scheme under United Nations Framework Convention for Climate Change which gives the owner the right to emit one metric tonne of carbon-di-oxide equivalent. This study found that the level of education has greater effect on awareness of farmers in Idukki district in Kerala about the carbon credit, followed by proximity to the information, innovative nature and knowledge level. Complicated rules and regulations of Kyoto Protocol make the investors difficult to cash their investment and therefore it has a negative effect on awareness level of farmers. The agriculture and tree plantations will help the farmers to be strategic sellers of carbon credits in response to global demand. India is gaining 32% shares on carbon emission in the world. Hence, an Indian farmer has a tremendous potential to earn carbon credits and therefore, more awareness about the carbon credit should be created.

Keywords: Carbon Credit, Kyoto Protocol, Awareness and Farmers.

Introduction

Many of the traditional air pollutants and greenhouse gases have common sources and these gases either separately or jointly lead to a variety of environmental effects on local, regional and global scales. The Kyoto Protocol allowed several methods to reduce air pollutants and green house



gases such as emissions trading; clean development mechanism (CDM) or joint implementation of both to meet GHG emission limitations and this gave way to the concept of carbon credits. Carbon credits (often called a carbon offset) are certificates issued to countries that have successfully reduced emissions of GHG which causes global warming. Carbon credits (or) certified emission reductions are a certificate just like a stock. This can be used by governments, industry or private individuals to offset damaging carbon emissions that they are generating. Carbon credits create market for reducing green house emissions by giving a monetary value to the cost of polluting the air.

Each carbon credit represents one tonne of CO_2 either removed from the atmospheres or saved from being emitted. Carbon credits can be created in many ways but there are 2 broad types.

- 1) Sequestration (retaining or capturing CO_2 from the atmosphere) such as afforestation & reforestation activities.
- 2) CO_2 saving projects such as the use of renewable energies (wind power, solar energy, biomass power, hydel power).

Carbon credits can be viewed as a means of empowering the market to care for the Environment.

Carbon credits can be bought and sold in international markets at prevailing market price.

“One credit = 1 tonne of CO_2 (or CO_2 equivalent) reduced”

Carbon credit is an authorization that allows the holder to emanate one ton of CO_2 . Credits are conferred to countries or groups that have reduced their Green house gases below their emission quota. Carbon credits do not have an underlying asset or instrument and therefore they are not true

derivatives like stock options or any other commodity derivatives. Its goal is to stop the increase of carbon dioxide emissions.

The Kyoto Protocol was initially adopted on 11 December 1997 in Kyoto, Japan and entered into force on 16 February 2005. It is a protocol to the United Nations Framework Convention on Climate Change (UNFCCC or FCCC), aimed at fighting global warming.

But protective environmental policies are often seen as a constraint on economic growth, “growth pessimists” argue that investing in a clean environment is a luxury which leads to reduced rate of economic growth. On the contrary “growth optimists” feel that environmental quality is a necessary prerequisite to sustain economic growth in the long run. (Reichert,2004). There is empirical evidence for an inverted- U shaped economic growth pollution relationship. Countries with per capita GDP below 4000\$ have a positive regression coefficient whereas countries like US with per capita GDP of approx 14000\$ exhibit a transition towards a negative regression coefficient. (Reichert, 2007).

Review of Literature

Meenu Maheshwari and Nidhi Goyal: The major goal of Kyoto protocol is to reduce GHGs emission by minimizing threats of climate change in order to achieve global targets. Carbon credit represents the allowance to emit one metric tonne of carbon dioxide equivalent. Carbon credits are the certificates which are issued for certifying emission reduction. These certificates are traded in the market and purchased by the companies of developed countries. But no proper accounting procedure has been followed by the commercial entities due to lack of proper guidelines. Accounting guidelines on carbon credits came into force on July 2009. Carbon credits are intangible assets and they need to be treated as inventory in the balance sheet till they are sold. The objective of this research paper is to discuss about the carbon credit and



its accounting aspects. In this context a case study of Delhi Metro Rail Corporation (India) is considered. DMRC has become the first rail project in the world to earn carbon credits by using regenerative braking system in its trains which reduces the electricity consumption by 30%.

Arun Jyoti Nath, Rattan Lal, Ashesh Kumar Das: Carbon farming allows farmers and investors to generate tradable carbon offsets from farmlands and forestry projects through carbon trading. Carbon trading is pertinent to climate negotiations by decelerating the climate change phenomenon. Thus, the objective of this article is to describe the potential of woody bamboos in biomass carbon storage and as an option for carbon farming and carbon trading. There is an urgent need to recognize ecosystem services that woody bamboo provides for well-being of rural communities and nature conservancy. Present synthesis suggests that bamboo offers tremendous opportunity for carbon farming and carbon trading.

Rohit Jindal, John Kerr and Shailesh Nagar: Voluntary carbon markets, such as the Chicago Climate Exchange (CCX), were worth \$90 million in 2006. This paper finds that community forestry interventions of three organizations in India are eligible to sell carbon sequestration credits on CCX. Their combined annual sequestration potential is 104,427 tons of carbon dioxide (tCO₂), worth \$417,708 at 2007 prices. Although this value will be difficult to realize immediately, it indicates the potential for carbon sequestration to raise rural incomes in India. These benefits can be actualized by first linking small pilot projects with CCX and then scaling up operations. Projects will also need to reduce transaction costs to raise the shares of carbon revenue that farmers receive. The diversion of land to raise tree crops needs to be balanced with food security concerns. A potentially viable approach would be to take up carbon plantations on common lands with concerned agencies acting as a liaison between farmer groups and the market.

U. Kalpagam and Karimullah: This article examines business opportunities for India in the global emissions market. It acknowledges that while many have been critical of outsourcing emissions reduction to developing countries, it nevertheless provides scope to introduce environmentally conducive technologies in industrial processes; thereby reducing greenhouse gas (GHG) emissions, and in adopting sustainable development practices through developing carbon sink projects. It suggests the scope and role of business managers to stimulate projects under Clean Development Mechanism (CDMs) as part of the Kyoto Protocol, as also projects under joint initiatives for the voluntary carbon market.

B.V. Babu, Abhishek Humbad and Smita Kumar: Carbon Credits are a tradable permit scheme under UNFCCC (United Nations Framework Convention for Climate Change) which give the owner the right to emit one metric tonne of carbon-di-oxide equivalent. Rural India has a tremendous potential to earn carbon credits by setting up household based energy substitution or fuel switching projects like biogas plants, solar cookers and solar cells, etc. In this study, we propose a generalised mathematical model that will estimate the economic viability and feasibility of a Programmatic CDM (Clean Development Mechanism) based household biogas plant project for energy self sufficiency in rural India. The design variables are rank ordered using statistical analysis. This model can be applied to any village in India, to calculate the number of years the household based biogas plant project, earning income through carbon credits, should be sustainable for economic viability.

Leo Peskett, Jessica Brown and Kate Schreckenber: Concerns about climate change have been a key driver in the rapid evolution of carbon markets over the last five years, as a potentially efficient and cost-effective way to reduce greenhouse gas concentration in the atmosphere. Carbon offset projects implemented in developing countries are one of the approaches that



have been developed as a way to achieve emissions reductions or removals that generate credits that can be traded in carbon markets. They include a wide range of technologies for which emissions reductions or removals can be quantified, from tree planting and avoided deforestation, to energy efficiency, renewable energy and capture of industrial gases.

Dr. Bhawana Bhardwaj: Controls are imposed on Green House Gas (GHG) emissions under the Kyoto Protocol, and the pre-decided emission limits are then allocated across countries, which have to control the greenhouse gas emissions from the various industries and commercial units operating within them. The objective of the paper is to discuss the business of carbon in international market with special reference to opportunities for the emissions market in Indian context. The author has made an attempt to throw some light on the future prospects of carbon trading business.

Deepanshi Chaudhary: With the advent of the Kyoto Protocol the world witnessed a dramatic intensification of interest in Climate Change Mitigation. Currently the Voluntary Carbon Market is estimated at \$330 million, trading volumes of 65 million tonnes of CO₂ with a growth rate of 240% in just one year. Experts predict this to grow exponentially to volumes of up to 1400 million tonnes of CO₂ being traded by 2020. (Hamilton May 2008) This report deals with issues pertaining to the Voluntary Carbon Market and its potential in the coming years.

Benjamin J. Richardson: Climate finance is becoming an important feature of the emerging legal and policy regimes to address global warming. However, the current approach largely confines the financial sector to a transactional agent to mobilize capital for clean energy and to broker emission allowance trading. The sector's potential to leverage more sweeping positive changes in the economy as sought historically through the movement for socially responsible investment (SRI) has been insufficiently acknowledged.

Indirectly, by regulating greenhouse gases the legal system is helping to create a business case for investors to respond to climate change threats. However, the potential contribution of SRI to address climate change problems more comprehensively is presently limited owing to inadequate governance frameworks, as well the sector's increasing abandonment of its traditional ethical agenda.

Allwardt, Jennifer: The potential of using carbon offset credits from agro forestry projects for farmers in developing areas has become more prevalent in both Clean Development Mechanism and voluntary carbon markets. Since the implementation of the Kyoto Protocol, many international development organizations have been interested in using the Clean Development Mechanism (CDM) to help both mitigate CO₂ emissions through agro forestry projects offsets and as a poverty reduction tool. Few organizations that have begun talking with farmers about planting trees for carbon offset credits have been able to tell the farmers how much money they would receive from their new tree growth or the costs they will incur in doing so.

Manish Sachdev: In 1997, Kyoto Protocol, a voluntary treaty was signed by 141 countries to reduce the emissions of Global House Gases by 5.2% below 1990 levels by 2012. Certified Emissions Reductions (CER) or Carbon credits are certificates issued certifying reduction in emissions. The developing countries have been exempted from any such restrictions. These certificates can be traded in the market and purchased by firms which find purchasing emission credits to offset its emissions lower in cost. Thus an opportunity has emerged for firms in developing countries like India, Brazil and China to boost their earnings by complying with norms. These additional cash flows from sales of credits result in an incremental Internal rate of Return by 27%. This has opened up a new source of cash flow in project financing making unviable projects viable by exceeding the hurdle rate for investment returns.



It will be pragmatic on part of firms to consider this mode of cash flows in project financing.

Mr. Dhaval Sharma: In 1996 the Kyoto Protocol established a global policy aimed at reducing green house gas (GHG) emissions. In response, slow steady steps are being taken to implement carbon emission limits. Markets are being established so that companies can exchange carbon allowances. Turning the environment, a public good, into private property presents many economic challenges. India comes under the third category of signatories to UNFCCC. India signed and ratified the Protocol in August, 2002 and has emerged as a world leader in reduction of greenhouse gases by adopting Clean Development Mechanisms (CDMs) in the past few years.

Vivek Birla, Gunjan Singhal, Rashi Birla, Vaishali Gauri Gupta: In their study “carbon trading—the future money venture for India” says that Carbon trading is a advances format, where firms or countries buy and sell carbon permits as part of a program to trim out carbon emission. Though we are potentially the largest market for carbon credits on the MCX, we still need to implement proper policies to allow trading of certified emission reductions (CERs), carbon credit. So, in this paper we have reviewed and put forward the technologies and market standards that we can set so that the concept of carbon trading can have its roots in India too.

Lynne Chester and Stuart Rosewarne: The study “What is the relationship between derivative markets and carbon prices?” suggest that the vast majority of mainstream economists, policymakers, the media and politicians regard market-based approaches, and particularly cap-and-trade systems, as the preferred policy response for meeting the challenge of climate change. Privileging of the cap-and-trade system is premised on the notion that this will engender a carbon price that provides the most efficient and cost-effective means for containing greenhouse gas emissions. This paper explores

the intersections between carbon, energy and derivatives markets to consider the character of price formation, and the forces that shape and benefit from this.

Ajay K. Garg and Satyendra Arya: The study “the Future of Carbon Market and its impact on Business” says that a global carbon market could be a system where all major emitters and industrialized countries are carbon constrained domestically and developing countries provide offsets on a large scale through efficient market mechanisms. So, this research is basically used to show the future of carbon credit trading in the developing countries and its impact on the business of various organizations.

Statement of the Problem

Though there are plenty of literature that are explored in the area of carbon credit and the Indian agriculture, a study on the awareness level of farmers about carbon credit is not found to have been undertaken. Carbon credit has become a new source of fund. India is an agriculture country and over 58 per cent of the rural households depend on agriculture as their principal means of livelihood. The agriculture and tree plantations will help the farmers to be strategic sellers of carbon credits in response to global demand. India is gaining 32% shares on carbon emission in the world. Hence India has a large potential to earn carbon credits in this context. This study thus aims to fill the void in the literature and hence the study is quite relevant and timely from the view of governments, academics, business industries and farmers. In this context, the present study attempts to find answers to the following questions:

- What is the level of awareness of planters in Idukki district about carbon credit?
- What are the factors influencing the level of awareness of planters?



- Is there any relationship between the factors influencing the level of awareness and the level of awareness about carbon credit?

Objectives of the study:

The study on “*carbon credit awareness among farmers in Idukki district*” is carried out with the specific following objectives:

- 1) To identify is the level of awareness of planters in Idukki district about carbon credit.
- 2) To identify the factors influencing the level of awareness of planters.
- 3) To evaluate the relationship between the factors influencing the level of awareness and the level of awareness about carbon credit.

Hypothesis:

H₀1: Knowledge has no effect on awareness about carbon credit.

H₀2: Proximity to information has no effect on awareness about carbon credit.

H₀3: Education has no effect on awareness about carbon credit.

H₀4: Innovation has no effect on awareness about carbon credit.

H₀5: Rules and regulations has no effect on awareness about carbon credit

Methodology

The Idukki district of Kerala was selected for the study where a lot of planters with huge acres of land lives in. Therefore, convenient sampling has been used. To evaluate the objectives of the study 100 planters were selected randomly from different villages in Idukki and also necessary data were obtained from the selected planters with the help of questionnaires. So, both primary data and secondary data were used in the study. The tools used are percentage, simple mean and regression. Five level likert scale was used to

measure the level of awareness of farmers about the carbon credit as highly aware, aware, neutral, somewhat aware and highly ignorant.

Result and Discussion

Demographic profile of respondents

In this section, it deals with analysis of data collected and coded from 100 respondents from Idukki district.

Table 1 shows demographic profile of respondents.

Table 1: Demographic profile of respondents

Demographic Factor	Sub Factors	Frequency	Percentage (%)
Gender	Male	90	90
	Female	10	10
Educational Qualification	Below SSLC	39	39
	SSLC	34	36
	Higher Secondary	15	15
	UG	8	8
	PG	2	2
Land Holding	Below 1 Acres	9	9
	1-5 Acres	36	36
	5- 10 Acres	27	27
	10- 15 Acres	10	10
	Above 15 Acres	18	18

Source: Primary Data

The above table shows that 90% of the respondents are male and 10% are female. The educational qualification of the respondents shows the 39% are below SSLC, 34% have SSLC, 15% have higher secondary education, 8% are under graduates and 2% are post graduates. The land holdings of the respondents shows that 9% of the respondents have below one acres of land, 36% of the respondents have land holdings between 1-5 acres, 27% of the respondents have land holdings between 5-10 acres, 10% of the respondents



have land holdings between 10-15 acres, 18% of the respondents have land holdings above 15 acres.

Reliability Analysis

Reliability test was carried out using cronbach's alpha, which measures the internal consistency of research constructs and the result is exhibited in table 2. The alpha value of all the factors are above 0.70, threshold suggested by Nunnally (1978). Thus it can be concluded that the scale have internal consistency and reliability.

Table 2: Reliability Test

Factor (Construct)	Number of Items	Cronbach's Alpha
1) Awareness	3	0.712
2) Factors affecting awareness	5	0.752

Source: Computed by author

Level of Awareness of Carbon Credit

India has become one of the largest distributors of carbon credit to companies in developed countries. Indian farmers can be potential suppliers of carbon credit, where the benefit can be availed only if the farmers are aware. So it is important to measure the level of awareness of farmers about the carbon credit.

Table 3: Measuring the Level of Awareness of Carbon Credit

Measure	Item Acronym	Mean	Mode	Standard Deviation (SD)
1. I know about carbon credit	AW1	2.54	2	0.98
2. I believe it is a product which can be marketed	AW2	2.03	2	0.99
3. I predict that I will use this carbon credit in future	AW3	2.52	3	0.32

Source: Primary data

From the above table, mean of the measures used in the construct awareness has the highest mean at AW1 with standard deviation 0.98. The lowest mean was at AW2 with standard deviation 0.99. AW3 shows a mean of 2.52 with standard deviation 0.32. As all the mean value is below 3, it means the farmers in Idukki district are having only a minimal awareness about carbon credit which is close to the scale “Somewhat aware”.

Factors influencing Awareness

Awareness is affected by many different factors. The list of factors and their mean are given below.

Table 4: Factors influencing Awareness

Factors	Item Acronym	Mean	Mode	Standard Deviation (SD)
1. Knowledge Level	FA1	2.8	3	0.657
2. Proximity to the information	FA2	2.02	2	0.89
3. Level of Education	FA3	3.23	3	0.772
4. Innovative Nature	FA4	2.32	3	1.07
5. Complicated Rules and Regulation	FA5	3.89	4	0.352

Source: Primary data

Regression Analysis and Hypothesis Testing

Regression analysis was conducted to measure the influence of knowledge level (FA1), proximity to the information (FA2), level of education (FA3), innovative nature (FA4) and complicated rules and regulations (FA5) on awareness (AW). The independent variables are FA1, FA2, FA3, FA4 and FA5 the dependent variable is AW. The main objective of regression analysis is to explain the variation in one variable (called the dependent variable) based on the variation in one or more other variables (called independent variables). If multiple independent variables are used to



explain the variation in a dependent variable, it is called a multiple regression model. The output of multiple regression analysis was used to test the hypotheses.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.510 ^a	.360	.334	.45518

R square is the percent of the variance in the dependent explained uniquely or jointly by the independents. The R square and adjusted R square will be same when used for the case of few independents. The R square and adjusted R square shown in Table 5 is almost the same. Gujarati (2006) recommends that it is a good practice to find the adjusted R square value because it explicitly takes into account the number of variables included in the model. Hence adjusted R square value is used for interpreting the results. Table 6 shows that 45 percent of the variation in AW is explained by FA1, FA2, FA3, FA4 and FA5.

Table 6: ANOVA of regression model

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	88.599	2	44.300	47.793	.000 ^{**}
	Residual	52.834	97	.927		
	Total	141.433	99			

^{**}denotes significant at 1% level.

ANOVA table showing the regression model fit presented in Table 6 shows that the model is statistically significant at 1 percent significance level.

Table 7: Beta Coefficients of the Regression Model

Model	Unstandardized Coefficients		Standardized Coefficients	T Value	Sig.
	B	Std. Error	Beta		
(Constant)	4.284	.594		7.215	.000**
FA1	.673	.072	.053	9.326	.000**
FA2	.139	.299	.291	4.133	.009**
FA3	.025	.701	.459	2.856	.006**
FA4	.359	.673	.242	3.298	.008**
FA5	.238	.253	-.124	2.352	.000**

**denotes significant at 1% level.

Table 7 presents the beta values, t values and significant values of independent variables knowledge level (FA1), proximity to the information (FA2), level of education (FA3), innovative nature (FA4) and complicated rules and regulations (FA5). The independent variables FA1 ($t = 9.326$, $p = 0.000$), FA2 ($t = 4.133$, $p = 0.000$), FA3 ($t = 2.856$, $p = 0.009$), FA4 ($t = 3.298$, $p = 0.008$) and FA5 ($t = 2.352$, $p = 0.000$) are statistically significant at 1 percent significance level. It means that these five independent variables have significant effect on AW. Hence **H₀₁, H₀₂, H₀₃, H₀₄ and H₀₅ are rejected**. The beta coefficients give a measure of the contribution of each variable to the model. Higher the beta value, the greater is the effect of independent variable on the dependent variable. Among the independent variables level of education (FA3) has greater effect followed by proximity to the information (FA2), innovative nature (FA4) and knowledge level (FA1). All these four variables have positive effect on AW. Complicated rules and regulations (FA5) had a negative effect on awareness (AW), as beta coefficient is negative.



So it can be concluded that knowledge level (FA1), proximity to the information (FA2), level of education (FA3) and innovative nature (FA4) have positive influence on awareness (AW) and complicated rules and regulations (FA5) have a negative impact on awareness (AW).

The major findings of the study are summarised here under:

- 1) The educational qualification of majority of the respondents (39%) is below SSLC and also the majority of the respondents (36%) have land holdings between 1-5 acres.
- 2) Farmers in Idukki district are having only a minimal awareness about carbon credit which is close to the scale “Somewhat aware”.
- 3) Regression analysis was conducted to measure the influence of knowledge level (FA1), proximity to the information (FA2), level of education (FA3), innovative nature (FA4) and complicated rules and regulations (FA5) on awareness (AW). The independent variables are FA1, FA2, FA3, FA4 and FA5 and the dependent variable is AW. It is found from the analysis that FA1, FA2, FA3 and FA4 have significant positive effect on AW and FA3 is the strongest predictor of AW followed by FA2, FA4 and FA1. But FA5 was found to have negative effect on AW.

Theoretical Contributions:

The study on “*carbon credit awareness among farmers in Idukki district*” is carried out as a first time study to fill the void in the literature. This will be a contribution to the academicians, governments, organisations and individuals. There is scope for the further research to analyze the various economic factors which influence the carbon credit awareness. The farmers who are well aware about the carbon credit can think of innovative ideas for generating new sources of income. Therefore, the government and the concerned authorities

should take necessary steps to create awareness among Indian farmers which will help in increasing the income and reducing the carbon.

Concluding Remarks

Each carbon credit represents one tonne of co₂ either removed from the atmospheres or saved from being emitted. Carbon credits (often called a carbon offset) are certificates issued to countries that have successfully reduced emissions of GHG which causes global warming. Carbon credits (or) certified emission reductions are a certificate just like a stock. Carbon credits create market for reducing green house emissions by giving a monetary value to the cost of polluting the air. India is an agriculture country. The agriculture and tree plantations will help the farmers to be strategic sellers of carbon credits in response to global demand. India is gaining 32% shares on carbon emission in the world. Hence India has a large potential to earn carbon credits in this context. The study on “*carbon credit awareness among farmers in Idukki district*” is an attempt to find the level of awareness and the factors affecting the awareness of farmers in Idukki district in Kerala about the carbon credit. The independent variables are knowledge level, proximity to the information, level of education, innovative nature and complicated rules and regulations and the dependent variable is awareness. The study concludes that level of education has greater effect on awareness followed by proximity to the information, innovative nature and knowledge level. Complicated rules and regulations had a negative effect on awareness.

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CHECK-INS VERSUS PERFORMANCE APPRAISAL – A CASE OF INTEGRATION OR SUBSTITUTION

Dr. Manoj Varghese

Dean – Academics

XIME-Kochi

ABSTRACT

In an employee lifecycle, performance reviews are events that very few look forward to. Many organizations are moving out of the traditional appraisal process and stack ranking/forced ranking to a system of more frequent check-ins. Performance appraisal process is done to increase performance as the idea is that if something can be measured it can be improved. Performance appraisal process is challenging both for employees and managers due to a number of factors. The question is check-ins solve the challenges of the traditional performance appraisal process? What are some of the shifts that are forcing these changes on the organizations? Can the performance appraisal process co-exist with check-ins or not? Even if the appraisal process is going well what is the need to have more frequent check-ins with employees and how does that complement and complete the performance appraisal process? In a check-in process employee need for more frequent feedback and the industry need in the new business environment of having a flexibility to adjust goals and manage targets more dynamically is addressed. The performance appraisal process of the future will definitely need to be a continuous one, using check-ins as the glue that holds all the elements of an effective appraisal process together.

Introduction

In 2012 Adobe abolished its performance appraisal system and instead used a system which was more frequent, ‘in’ formal check-ins. This was followed by a number of companies like Microsoft and more recently Accenture has moved to more frequent check-ins to manage performance of

their employees compared to the more traditional performance management system. The implications of these changes are seen as the traditional performance appraisal process will be scrapped and a process of check-ins will replace them in the long run. Is that so? Or are the check-ins a new and better way to do performance appraisals in the changing business scenario? Performance appraisal time is a stressful time for managers and employees in organizations, when everything else stops. Managers are stressed, as they need to consider the whole period of performance – a year or even six months, which is too long in this world where things change very fast. Also they are distracted during the performance appraisal period from the purpose they exist in organizations and take their time away from meaningful work (Mishra 2014). The process becomes an exercise where both the parties – managers and employees are both holding on to too many open issues and questions and the completion of the process exhausts and demotivates people when the whole purpose of the same is to motivate, rejuvenate and energize people.

Also, after the review time there is a spike in attritions, and the teams in charge of climate surveys do not want to do a survey immediately. They want to wait long enough for the ‘wounds to heal’ before they roll out the annual survey. These days, the product life cycle has become much shorter and the constituent teams had a lot of people coming from the new generations where employees want much more frequent discussions about how they are doing on the job.

In the traditional performance appraisal process there is always a small set of employees who earn the title of being a superman or superwomen and a small portion in the ‘did not meet expectation’ category. Also, there is a stack rank prepared which forces people into a rank – many times arbitrary and not closely looked at unless you are an outlayer or someone the manager has an interest to see. Between managers, the badge of honour many times is



how many super performers you have in your team which makes it a competition between managers and hence a need among managers to be parading your best employees. This can inflate the rating (Lawler, George & McDermott, 2012). This can result in dysfunctional behaviours well where you do not want to give your good employees to other open roles which may be impactful at the organizational level more than what they are doing currently.

In an employee lifecycle, Performance reviews are one that very few look forward to. Even if a few look forward to the same, once the discussion is done, employees many times do not feel the love. If one thinks that the employees have all the problems, the managers are actually the worst affected. In a Society for Human Resource Management research survey in the US, they reported that that nine out of ten companies reported using annual or semi-annual performance reviews—but just three out of 10 believed they did them well. If Glassdoor reviews are looked at, most of the bad blood is due to bad performance reviews, either the employees not performing well and in case of employees who did well, they feeling that justice was not done to them.

Literature Review

The history of performance appraisal dates back to Taylor's time and motion studies and the need for managers to differentiate the rewards to people. In the 1950's the role of performance appraisal for motivation of employees, by using the work output to classify the employees was started. Performance appraisal has been described as "the process of identifying, observing, measuring, and developing human performance in organization" (Carrol & Scheider, 1982). The process of identifying the performance related criteria has become more frequent and managers need to more frequently observe the performance characteristics once they are identified.

Measure needs have become more immediate – as the manager needs to provide ongoing feedback as well as the trainees demand the same. Also, measurements have become more real-time systems delivering the same and employees need not wait till end of the year to get them, as it is transparent to everyone. The measurements can no longer be compared across a wide-audience as geographical spread has increased and having one benchmark across the organization may be difficult compared to earlier times. The development part points to the fact that performance appraisals should have a component that constantly raised the bar in terms of performance and implies an ongoing effort rather than periodic interventions (Armstrong, 2014). Also, performance management should increase the capability of teams as well evidenced by this definition. Performance management represents a strategic and integrated approach to delivering organizational success by improving the performance capabilities of both individuals and teams (Armstrong and Baron, 2005).

According to Malcolm and Jackson (2003) there are three main groups of purposes for the performance appraisal process:

- a) Performance reviews – managers discuss with employees the progress in their current positions, their strengths and areas requiring further development.
- b) Potential reviews – the discussion is about employees' opportunities for progression, and the type of work they will be fitted for in the future and how this can be achieved.
- c) Reward reviews – usually separate discussion but linked to the appraisal system. The manager communicates decisions on rewards such as pay, benefits or promotion and provides feedback.

Performance appraisals deliver benefits for the organization, manager and the employee. When all these benefits are delivered then only the



performance appraisal process becomes a valued added experienced for all the constituents – organization, manager and the employee.

a) Benefits for the Organization

Malcolm and Jackson (2002) outline four different benefits that performance appraisals deliver for the organization. These are targeted training approach based on identified needs, future employee promotion decisions, effective bases for reward decisions and improved retention of employees. Derven (1990) believes that there is a straight connection between the job of an individual and the company. For example if customer satisfaction is a goal of an organization a performance appraisal process can align it if that is a goal on which the employee is assessed on.

b) Benefits for the Manager:

The annual meeting gives an opportunity to the manager to formally recognize good performance and this would lead to more motivation from the workers (Derven 1990). Modern systems for performance appraisal depersonalize issues. Management benefits of Performance Appraisal are the identification of high performers and poor performers as well as the identification of strengths and development areas (Jackson & Schuller 2002).

c) Benefits for the Employee:

Performance appraisal gives the employee the opportunity to express their ideas and expectations for the strategic goals of the company (Mullins 1999). Employees can find what is expected from them and what the consequences of their performance are. Appraisal is a motivation for the employee, who performs well in the present to go on doing so and in the future (Derven 1990).

Challenges of the Performance Appraisal Process:

Over time the Performance appraisal process has been optimized for the benefit of the organization, many times forgetting the manager and the employee benefits of the same. Even in the best of the organizations, the employee benefits are not emphasized hence it becomes a process for the organization. There is a considerable gap between theory and practice and human resources specialists do not make full use of the psychometric tools available in a performance appraisal process (Maroney & Buckley, 1992). The counter point by line managers is that the process needs to be simple and easy to use as otherwise it becomes time consuming and cost ineffective. Another portion of criticism comes with the fact that performance appraisal increases the dependency of the employees on their managers. When managers who are often not trained to be appraisers conduct the appraisal process it is problematic as genuine feedback is obstructed. Any subjectivity and bias of the raters, which leads to incorrect and unreliable data regarding the performance of the employee created a permanent impression on the employee and mistrust on the process is created. Also performance appraisal process can be a bitter process that can create emotional pressures, stress and sometimes can adversely affect the morale and lead to demotivation of employees. Performance appraisals are often time consuming and use incorrect methods to measure performances. They are generating false results and the decisions taken can be politically influenced.

Walters (1995) outlines the main Performance Appraisal challenges in the performance appraisal process as the following:

- a) Determining the evaluation criteria: One of the biggest problems faced by the management is to accurately identify the performance appraisal criteria. The need is to make the criteria in quantifiable or measurable terms.



- b) Lack of competence: Many times the appraisers do not have the required expertise/knowledge and skills to decide the criteria accurately. The appraisers should have the experience and the training necessary to carry out the appraisal process objectively.
- c) Errors in rating and evaluation: A number of errors based on personal bias like stereotyping, halo effect, central tendency may creep in the appraisal process.
- d) Resistance: Due to fear of negative ratings and the repercussions of being rated badly employees may resist the appraisal process. Also, the trust between managers and employees is tested in an appraisal process.

Reasons for the Need to Relook at Performance Appraisal:

In addition to the above challenges of the performance appraisal process, there are the following five reasons why there is a need to move to an appraisal process that is continuous, real-time and more frequent.

Reason 1: Fast pace of economy making the once in a year/ once in six month inadequate.

Today, everyone is expecting things at real time. There is also no set job – the job itself is evolving and in a six-month period the goals could look very arbitrary even if they were set very carefully in the first place. A periodic review does not allow for a fair assessment of the employees job performance as also the performance expectations can also vary significantly due to external pressures – competitors, legal framework, automation (technology changes) etc. Any feedback which has a time lag becomes useless for the feedback receiver and hence, in a progressive work place the expectation is that people get real-time or near real-time feedback.

Reason 2: Specificity/ Personalization

Traditional rating scales, or buckets that one may be put into mean little to the employee and he/she needs specific, personalized feedback to improve performance. Traditional feedback tend to be generic and employees today demand specific feedback and a one time exercise will dilute the feedback due to the sheer work load on a manager to complete written employee assessments.

Gap, has moved into what they call GPS – Grow, Perform, Succeed- which is a coaching session between employees and management. GE allows personalization of the performance document by allowing employees to attach notes, texts or even audio notes. Facebook allows employee recognitions from peers or anyone in the company to be part of the performance tool, which allows feedback on the employee to be added any time during the appraisal cycle. Companies are hence moving from standard, traditional systems to systems which are much more social and community friendly.

Reason 3: Jobs are becoming more collaborative

Unlike, earlier times, the job delivery is becoming more collaborative. Different pieces of the job done by a number of folks need to come together to make the product/service stand out. This means that the cost of failure is huge and needs to be managed better. Also, regular check-ins will help to make adequate correction as flexible and agile technologies is making the jobs very interdependent. Success is more defined by what the team achieves rather than what the individual does.

Reason 4: Young and inexperienced Managers

With a large number of management graduates, your typical manager age has come down. Also, it is common to see people take on management



responsibilities much earlier in the career compared to earlier times. This means that the manager is also learning on the job hence, more frequent conversations will make sure that the goals and path towards those goals are clarified and reaffirmed.

Reason 5: Traditional rating systems are a passe

The traditional systems involve some kind of scale – numerical or qualitative while as jobs have become more specialized and unique using generic competencies for performance reviews makes the performance measure less sharp and misses the outliers. What matters to companies is what you have done and not who you are and what education/experience you came with. Focus has now moved to what impact you had on the company goals through your efforts. The value the employee adds to the organization is the most important aspect.

Reason 6: Peer feedback and changing employee demographics

The people you work with can accurately call out the contribution that you make. This is because they work with you day in day out as well as the collaborative aspect of the job makes it important for you to do your job well, so that they can also meaningful impact. Hence the feedback that is required to you when you actually do the job need not be given to you once in six months or once in a year, but you need to make a system that excellence and effectiveness is demanded from one another every day. Peer to peer kudos, bonus etc. is used by Google as well as Zappos for a job well done. Being valued at work has come across as one of the reasons for people to engage at work and the core of that is to know how well you are doing more frequently that once a year or once in six months. For the new generation that is entering the workforce acceptance by the peers and immediate feedback is an important aspect to motivate and engage them at the work place.

Hence even with everything going good, there is a need to consider a more frequent light checks in to be augmenting the performance appraisal process. What we see in companies with a reasonably good performance appraisal process is

- Employees are given an opportunity to present their case, communicate their aspirations, evaluate their managers and raise any other issues that they faced during the period under review.
- Business heads are given the liberty to allocate the budget for performance related rewards.
- There is a provision for more frequent reviews if teams feel the need to, to ensure continuous feedback.
- Goals are set and employees are evaluated against task performance and competencies at the appraisal.

What can one do to make the appraisal process in line with industry trends and to address the challenges associated with the current performance appraisal process.

Integrating Check-Ins to Performance Appraisal Process:

Implementing the following steps will help to create an environment of continuous regular touch points that will make the process of appraisal much smoother.

1. Create avenues to acknowledge good performance on a weekly basis

This could be as simple as creating a message board could be put up in each department where managers (and co-workers) can put up a handwritten note or a post-it to thank/congratulate an employee who went out of his/her way to get a task done. This will create a personal touch and the effort may take a few minutes only but the high of seeing



your name up will motivate the employee for many days. Employees making it to the board for more than a certain number of times during a review period should be acknowledged in the review

2. Weekly meetings with the team

The manager could meet the reports once a week to evaluate the progress on the task they are working on. Also these discussions should serve as the check-ins that will make the appraisal process more frequent and regular.

3. Build a culture of ongoing feedback

A culture of continuous feedback where employees are empowered to get their own feedback that is more immediate. Such an on going feedback discussion is the need of the hour due to the various reasons outlined earlier and is the check-in process. At Facebook in partnership with Salesforce to design and customize a highly social performance management tool is used that brings in the power of social (immediate feedback, collaboration aspects as well as two way communications). Tools that enable weekly/monthly discussions could happen wherein the status of the goals can be updated dynamically and all discussions can be documented with minimum effort.

4. Introduce peer-feedback option for teams

Introducing peer-feedback, across all the team will increase accountability of team members and cooperation among them. This could also become a part of the promotion decision. In a world where you spend most of your working hours and work with peers, peers feedback becomes the most important component to look into to get insights to an employee's performance.

5. Goal setting and stretch goals

Goals should challenge employees to go beyond their comfort zone. Setting expectations with an employee that meeting one's goals get a normal rating and normal rewards and achieving stretch goals quality for better rewards and recognition is important. The challenge is to ensure that employees are not too comfortable to slack and not stretch when there is the bandwidth from a personal as well as a target point of view to do that.

6. Tagging employees to performance ratings

Labeling employees as high/average/underperformers or providing them numerical ratings reduce the morale of employees, especially those who achieved a lower rating. Even if the rewards associated with each rating do not differ considerably, the tag of "average performer" could be a hit to their morale. This is especially true in case of a forced-ranking method and an employee could have missed a higher rating simply due to the ranking process or he was in a team full of super achievers.

Conclusion

A drastic change in the industry was brought forward by Adobe when they abolished performance appraisals altogether and introduced check-ins. Adobe made it a culture where check-ins revolve around clear expectations and frequent feedback. It is argued that appraisal feedback that is constructive/positive and without ratings or rankings will liberate employees as well as managers and create an environment of trust between them. Adobe reports that these changes resulted in voluntary attrition reducing significantly. Also, managers felt more empowered to take decisions around pay and increases than the previous system. What we see in a check-in process is strengthening the employee need for more frequent feedback and the



industry need in the new business environment of having a flexibility to adjust goals and manage targets more dynamically. Hence, the way forward should not be to scrap the traditional performance appraisal with check-ins but to use the check-ins to augment the effectiveness of the traditional performance appraisal process and to address the challenges. Hence the check-in process by itself may not be able to replace the benefits at an organizational level, and needs to be done in tandem for an effective performance appraisal. The performance appraisal process of the future will definitely need to be a continuous one using check-ins as the glue that holds all the elements of an effective appraisal process together. Future of performance appraisal are tools that help to list out employee goals, track the progress, provide appreciation and real-time feedback and calibrate ratings, all at one place. It also serves to see all the performance-related information of an employee at one place, as well as to quickly obtain a consolidated performance summary of the person over the period of review. In any system, the maturity and capability of managers to serve as effective and fair sources of evaluation, feedback and counseling, is the key factor that will determine the success of performance management process.

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REJUVENATING THE INDIAN CORPORATE DEBT SEGMENT

Rajani B. Bhat

Assistant Professor

P G & Research Department of Commerce

The Cochin College, Kochi 2

Dr. Suresh V. N.

Associate Professor

P G Department of Commerce

Maharajas College, Ernakulam

ABSTRACT

Vibrant, deep and robust corporate bond markets are essential to enhance stability of financial system of a country, mitigate financial crises and support the credit needs of corporate sector, which is vital for the growth of an economy. The Indian corporate bond market, at its nascent stage exhibits a few peculiarities that might not be found in a matured market. A review of statistics reveal some unusual market behaviour and patterns from available statistics. In particular, primary and secondary market activity clusters around a small number of issuers and issues, with some resulting distortions. Some of the unusual patterns can be explained by market factors, and others remain puzzling. The robustness of Indian Corporate Debt Market, notwithstanding some of major initiatives taken recently, leaves much to be desired. But recently, it is witnessed that due to much appreciated strategic initiatives taken by SEBI, the last few years have provided the desired momentum to the corporate bond market. The present paper is an attempt to analytically study the Indian Corporate Debt market using the statistics available through secondary data sources.

Key Words: Corporate Bonds, Debt Market, Indian Corporate Debt Segment

Introduction

Financial Markets have several facets and are segregated into Capital and Money markets. Product based classification gives rise to segmentation of market into equity, debt, foreign exchange and futures. In many countries, debt market (both sovereign and corporate) is larger than equity markets. In fact, in matured economies debt market is three times the size of the equity

market. Investment in equity being riskier, certain class of investors choose to invest in debt, based on their risk appetite and liquidity requirements. In fact, most investors like to spread their investments into equity, debt and other classes of assets for reasons of optimal combination of return, liquidity and safety.

A vibrant debt market enables investors to shuffle, reshuffle their portfolio depending upon the expected changes. Debt market, in particular, provides financial resources for the development of infrastructure. Hence, a well- functioning debt market becomes significant for all the market participants.

In any economy, equity and debt are two useful sources of financing for corporates. It caters to investors having different risk appetites and requirements. When a firm cannot finance its activities solely through equity, it must look at debt financing to support its activities and support development and growth (Allen, Kraakman and Subramaniam, 2009). Equity investors have generally a smaller time frame of investment but debt investors are long term investors in a firm. This debt is funded through bank loans and bond issuances. A liquid bond market helps an economic entity to raise funds at cheaper cost vis-à-vis syndicated loan from banks (Mishkin, 2006).

The liquid bond market helps the investor to convert their holdings into cash as there are others who would like to take the risk of investing in bonds if the return is appropriate for them to assume such risk. The tradability of bonds issued by an issuer helps the market in getting required information on the firm (Mishkin, 2006). Further, development of Credit Default Swap (CDS) market globally also helped in unbundling the risk and reselling the same at appropriate rate. In India, CDS market has been introduced but lacks liquidity.



In India, most of the financial markets like equity, equity derivatives, currency derivatives, commodity derivatives, Government bonds, money and currency market including OTC currency derivatives, OTC interest rate derivatives are relatively well developed, while corporate bond market is not well-developed. This is in contrast to other developed and emerging markets in the world. India's corporate bond market, about 30 percent the size of China's, is failing to expand at the rate analysts say is needed for the government to meet its target of building infrastructure. India has about \$200 billion of corporate bonds outstanding (Bloomberg) compared with China's corporate bond market of \$614 billion, according to Asian Development Bank figures (2011). The corporate bond market has been wary of the large government borrowing program crowding out the market and a new SEBI law on rollover of limits, limiting FII participation.

India presents a huge potential market for corporate financial services paralleling its corporate sector's growing contribution to the global economy as an increasingly effective provider of both primary and higher value added products and services. In this role India provides a complementary role to China which is becoming the manufacturing and assembly workshop for the world. India, with its well-educated workforce, has made a particular impact by its focus in providing high technology products and business services.

Indian Debt Market

The debt market in India consists of mainly two categories—the government securities or the g-sec markets comprising central government and state government securities, and the corporate bond market. In order to finance its fiscal deficit, the government floats fixed income instruments and borrows money by issuing g-sec that are sovereign securities issued by the Reserve Bank of India (RBI) on behalf of the Government of India.

The corporate bond market (also known as the non- g-sec market) consists of financial institutions (FI) bonds, public sector units (PSU) bonds, and corporate bonds/ debentures. The G-secs are the most dominant category of debt markets and form a major part of the market in terms of outstanding issues, market capitalization, and trading value. It sets a benchmark for the rest of the market. The market for debt derivatives have not yet developed appreciably, although a market for OTC derivatives in interest rate products exists.

The market for government securities is the oldest and has the most outstanding securities, trading volume and number of participants. Over the years, there have been new products introduced by the RBI like zero coupon bonds, floating rate bonds, inflation indexed bonds, etc. The trading platforms for government securities are the “Negotiated Dealing System” and the Wholesale Debt Market (WDM) segment of National Stock Exchange (NSE) and Bombay Stock Exchange (BSE).

National Stock Exchange started its trading operations in June 1994 by enabling the Wholesale Debt Market (WDM) segment of the Exchange. This segment provides a trading platform for a wide range of fixed income securities that includes Central government securities, treasury bills (T-bills), state development loans (SDLs), bonds issued by public sector undertakings (PSUs), floating rate bonds (FRBs), zero coupon bonds (ZCBs), index bonds, commercial papers (CPs), certificates of deposit (CDs), corporate debentures, SLR and non-SLR bonds issued by financial institutions (FIs), bonds issued by foreign institutions and units of mutual funds (MFs). To further encourage wider participation of all classes of investors, including the retail investors, the Retail Debt Market segment (RDM) was launched on January 16, 2003. This segment provides for a nation wide, anonymous, order driven, screen based trading system in government securities.



Whilst the Indian capital market has developed rapidly over the last two decades, the corporate debt market remains small, restricted and illiquid. While the rest of India's capital market has forged ahead and now offers a world class market, its corporate debt market has not flourished. India has successfully developed some of the critical infrastructure requirements, such as a risk-free yield curve and credit rating agencies (linked to global agencies), but the market remains underdeveloped. But due to the continuous effort by SEBI where by SEBI has injected a few procedural and strategic initiatives in the last few years that have provided the desired momentum to the corporate bond market. It can be clearly said that due to these initiatives taken by SEBI, the corporate bond market issuances have increased seven fold. There has been an increase in the issuer base of these instruments, primarily driven by private sector issuers. There is also found to be significant growth of investments by FIIs and mutual funds.

The present paper is an attempt to analytically study the Indian Corporate Debt market using the statistics available through secondary data sources. The secondary sources referred for this study are the official websites of SEBI, RBI, NSE, ISMR, NSE Fact Books etc.

Results and Discussions

Capital market reforms in India involved the creation of the Securities and Exchange Board of India in 1992 and National Stock Exchange of India in mid 1990s. Other reforms include auction methods for government securities, introduction of primary dealers to support the auction, introduction of interest rate futures and introduction of Real Time Gross Settlement system to facilitate wider participation in the government securities market. Several committees such as the High powered expert committee on the corporate bond market (Patil) committee and CSFR have made recommendations to improve the corporate bond market. SEBI and

Reserve Bank of India have implemented many of the reforms suggested, such as, reduction in cost and length of bond issuance process, improving the transparency in secondary market trades and introduction of corporate repos.

The results of the implementation of these reforms have been encouraging, with resource mobilization from the primary debt markets increasing over the years, and standing at ₹ 14,242 Billions in 2014-15.

In the first stage, the Indian Debt markets are analysed using variables like resources raised from the debt markets through primary market, resources mobilised through private placement by both institutional and corporate, issuer-wise and sectoral distribution of private placement of debt , resources raised by corporate sectors, growth in issuances of corporate bonds. The selected variables are presented in the tables given below.

Table 1: Resources Raised from Debt Markets through Primary Markets (₹ Billions')

Issuer	2010-11	2011-12	2012-13	2013-14	2014-15
Corporate	2,017	2,882	3,688	3,135	4,421
Public Issues	95	356	170	424	94
Private Placement	1,922	2,526	3,518	2,711	4,327
Government	5,835	7,590	8,658	8,971	9,820
Central	4,795	6,004	6,885	7,005	7,412
State	1,040	1,586	1,773	1,967	2,408
Total	7,852	10,472	12,346	12,106	14,242

Source: ISMR Various Issues

From the above Table, it is evident that the government and the corporate sector collectively raised a total of ` 14,242 billion (US\$ 233 billion) from the primary market in 2014–2015. Corporates continued their preference for raising capital through private placement as compared to public issues, at an even higher pace than in the previous year. In 2014–



2015, private placement accounted for 98% of the total resources raised by corporates from the debt markets. Its share in the total resources mobilised also increased from 22.4% in 2013–2014 to 30.3% in 2014–2015

Table 2: Private Placement – Institutional and Corporate Debt

Year	No. of Issues	No. of Privately Placed Issues	Resource Mobilisation through Private Placement of Debt (₹ Billions)
2010-11	186	858	1990
2011-12	170	1424	2590
2012-13	267	1833	3521
2013-14	247	1475	2711
2014-15	344	1765	4327

Source: ISMR Various Issues

Table 2 reveals that a total of 344 issuers (institutional and corporate) raised `4,327 billion (US\$ 71 billion) through 1,765 privately placed issues in 2014–2015. The response to most of the issues was good. As many as 304 of the 1,765 issues—i.e., around 17% of the total issues—were made by government sector units, which mobilised 63% of the total resources. Although the resources raised from the debt markets were dominated by government issues (accounting for 63% of the total resources), the resources raised by corporates from the debt market in the form of public issues and private placement saw an increase of 41% in 2014–2015 compared to the previous year. The amount raised through the private placement of debt issues has been on an increasing trend over the past few years, barring the year 2013–2014.

Table 3: Issuer-wise Distribution of Private Placement of Debt

Issuer	Issue Amount (in ₹ Mn) (% of Issue Amount)				
	2010-11	2011-12	2012-13	2013-14	2014-15
All India Financial Institutions/ Banks	1,162,309 (60.5)	1,603,688 (63.8)	1,845,818 (52.5)	1,449,263 (53.5)	23,421,253 (54)
State Financial Institutions	14,255 (0.7)	15,747 (0.6)	53,940 (1.5)	4,821 (0.5)	88,323 (0.0)
Public Sector Undertakings	1,24,499 (6.5)	2,71,755 (10.8)	395,508 (11.2)	312,479 (11.5)	3,121,937 (7.0)
State Level Undertakings	19,814 (1.0)	41,835 (1.7)	85,840 (2.4)	36,864 (1.4)	605,730 (1.0)
Private Sector	600,393 (31.2)	5,81,341 (23.1)	1,137,373 (32.3)	8,97,824 (33.2)	16,031,911 (37.0)
Total	1,921,270 (100)	2,514,367 (100)	3,518,480 (100)	2,711,251 (100)	43,269,154 (100)

Source: ISMR Various Issues

The issuer-wise distribution indicates that during 2014–2015, pan-Indian financial institutions/banks accounted for 83% (1,469) of the year's offers; they mobilised 74% of the total amount mobilised through the private placement of debt.

Table 4: Sectoral Distribution of resources mobilised through Private Placement (in %)

Sector	2010-11	2011-12	2012-13	2013-14	2014-15
Banking	47.9	50.2	39.5	36.3	41.0
Financial Services	23.1	27.1	30.1	35.1	33.0
Power	9.9	9.2	6.1	7.7	8.0
Housing/Civil construction/Real estate	2.0	1.0	2.8	2.7	4.0
Travel/Transportation	0.4	2.7	3.0	0.3	-
Others	18.3	9.7	18.6	17.8	14.0
Total	100	100	100	100	100

Source: ISMR Various Issues



The sectoral distribution shows that the banking and financial services sectors continued to dominate the private placement market, accounting for a combined 74% in 2014–2015,

Table 5: Resources Raised by Corporate Sector (In ₹ Millions)

Year	Public Equity Issues	Rights Issues	Debt Public Issues	Debt Private Placement	Total Resource Mobilised
2010-11	486,540 (18.3)	95030 (3.6)	94510 (3.5)	1,989,549 (74.6)	2,665,629 (100)
2011-12	104820 (3.4)	23700 (0.8)	35610 (11.6)	2,589,690 (84.2)	3,074,370 (100)
2012-13	65280 (1.7)	89450 (2.3)	169820 (4.4)	3,521,300 (91.6)	3,845,850 (100)
2013-14	86920 (2.7)	45760 (1.4)	423830 (13.0)	2,711,251 (83.0)	3,267,761 (100)
2014-15	30390 (0.7)	67500 (1.5)	94220 (2.1)	4,326,915 (95.7)	4,519,025 (100)

Source: ISMR Various Issues

There was a preference for raising resources in the primary market through debt instruments, and the private placement of debt emerged as the major route for raising resources. The Table 5 shows that in 2014–2015, the total resources raised by the corporate sector rose by 38% to ₹ 4,519 billion, compared to the gross mobilisation of ₹ 3,268 billion in 2013–2014. The equity route was used to raise 0.7% of the total resources through public equity shares in 2014–2015, down from 2.7% in 2013–2014. The share of rights issues was 1.5% in 2014–2015. The resources raised through debt issues (debt public issues and debt private placements) accounted for 98%, which reflects the preference of borrowers for debt capital over equity capital. Among the debt issues, the share of debt public issues fell from 13% in 2013–2014 to 2% in 2014–2015. However, the share of debt private placements rose from 83% in 2013–2014 to 96% in 2014–2015.

Table 6: Growth in Issuance of Corporate Bonds

Year	No. of Public Issues	Amount Raised through Public Issue (in ₹ crore)	No. of Private Placement	Amount Raised through Private Placement (in ₹ crore)	Total Amount Raised through Public issue and Private Placement (in ₹ crore)
2007-08	0	0	744	118485	118485
2008-09	1	1500	1041	173281	174281
2009-10	3	2500	1278	211635	215135
2010-11	10	9451	1404	218785	228236
2011-12	20	35611	1953	261283	296894
2012-13	20	16982	2489	361462	378444
2013-14	35	42383	1924	276054	318437
2014-15	24	9422	2611	404136	413558
CAGR			16.29%		19.5%

Source: SEBI Annual Report, 2014-15

Corporate bonds account for about 2% of GDP (Khanna & Varottil, 2012) and equity market is many notches ahead of corporate bond market in this regard. Total issuances have been far lower than Government securities issuances in India.

In the primary market, the total issuance amount increased from ₹ 1,18,485 crore in 2007-08 to ₹ 4,13,558 crore in 2014-15 implying a CAGR of 19.5 percent. There was a gradual rise in the total number of issues from 744 to 2,611 during the same period. In the public issue market, the issuance amount increased from ₹ 1,500 crore during 2008-09 to ₹ 42,383 crore during 2013-14 and decreased to ₹ 9,422 crore during 2014-15. The sudden increase in the amount raised through public issues during 2011-12 to 2013-14 was due to the issuance of tax free bonds by infrastructure companies.



Conclusion

The corporate debt market is anomalous among Indian financial markets in that it has not developed as rapidly, or to the same extent, as other parts of the Indian financial system, or comparable markets elsewhere. There is a huge potential for development of the market for corporate debt in India,

The reason for Indian Corporate Debt market not taking off seems to be the reason that unlike other countries, a large chunk of corporate funding in India is done through banking, retained earnings and capital through equity offerings. Corporate bonds contribute fairly little in terms of long term funding. Most of the studies on Indian bond market centered on issues pertaining to the market microstructure issues and other bottlenecks in the market specifically cost related ones.

To provide a boost to the corporate bond market, the Government introduced specialized regimes for a corporate bond market in the infra sector. Government allowed tax benefits (Budget, 2010) on infra investment upto a limit for tax payers. Key motivation for investing in debt market is tax saving for tax payers.

Developing corporate debt markets is essential for India's infrastructural financing needs and for the development of an alternative financing mechanism for corporates. Through various policy measures, SEBI endeavours to spur and nurture the market and encourage issuers and investors. A regulatory framework on 'Security based Crowdfunding' in India was proposed by SEBI in 2014-15 through a consultation paper. The paper provides for access to capital markets for start-ups and SMEs for their early stage funding needs and intends to balance this with investor protection. The potential of the market can be realised on the back of policy and regulatory reforms accompanied by initiatives to increase retail investor participation.

The study reveals that corporate bond markets in India remain modest in scale in comparison with corporate bond markets in the most developed countries. India has had a bank-dominated financial system with the corporate sector served relatively poorly by the domestic capital market, more effectively by borrowings from domestic banks and financial institutions but with a sharply rising share of loans raised from abroad.

But ultimately, it can be said that the corporate Bond market in India has received constant and improved policy impetus in the last few years and from being in the nascent stage it has now turned into a vibrant market. However, scope of the corporate bond market is still vast. A well-developed corporate bond market not only supports economic development but also balances excessive reliance on the bank finance sector for raising money.

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**CAPITAL MARKET INVESTMENT AND ITS RELEVANCE
IN RURAL AREA – AN EXPLORATORY STUDY ON
RURAL INVESTMENT WITH REFERENCE TO
ARAKULAM IN IDUKKI**

Mary Sruthy Melbin

Assistant Professor

Dept. of Commerce, St. Teresa's College (Autonomous), Ernakulam

sruthymelbin@gmail.com

ABSTRACT

The perception of investors about India is changing. Measures taken by government in fast tracking investment decisions have prepared the pitch for higher growth. India can offer a variety of investment opportunities like government securities, corporate bonds, mutual funds and infrastructure development funds to channelise the maximum savings from different areas into the financial system which in turn increases the market depth. As a growing economy India has many investment options and great potential to raise investments from widespread areas. An increase in income and consumption level in turn increases the investment also. In many developing countries the rural population is still in an untapped condition. The objective is to get wider penetration into the state as the exposure of Keralites to stock market is low. The focus will be more on the rural side of the state where there is lot of potential investors. Wide distribution of networks in rural area increases their participation in financial products. The access to capital market products can be increased by channelising savings into appropriate product schemes.

Introduction

The perception of investors about India is changing. Measures taken by government in fast tracking investment decisions have prepared the pitch for higher growth. India can offer a variety of investment opportunities like government securities, corporate bonds, mutual funds and infrastructure development funds to channelise the maximum savings from different areas into the financial system which in turn increases the market depth.

The economic survey of 2012-13 highlights that savings are on decline and investments are moving to physical assets. Another aspect of concern is the decreasing flow of savings in capital market. The survey points out that shares and debentures accounted for 8.3% of total financial savings in 1980s; their share increased to nearly 13% in 1990s and decline to 4.8% in 2000s. As per the survey the reason for this decline is high volatility in the equity market. It also highlights the increasing trend in movement of money towards gold. Thus a combination of lower return and higher volatility has contributed to reduced share of debentures and shares in total financial savings. Acquisition of gold by households in the country tends to have a negative impact on savings and on financial investment.

India is basically a rural agricultural country where 72.18% of the total population is living in rural area. It is very important to uplift the economic life of rural people to make India a developed country. Rural sector plays an important role in the development of Indian economy which cannot be ignored. Rural finance comprises of providing financial services like credit, savings and insurance in rural area through formal and informal mechanisms.

Relevance of the Study

As a growing economy India has many investment options and great potential to raise investments from widespread areas. An increase in income



and consumption level in turn increases the investment also. In many developing countries the rural population is still in an untapped condition.

The state of Kerala constitutes one of the most advanced society of the country with the highest literacy rate among Indian states. The state has pro-active administrative setup, simple and transparent procedures for investment, rich natural resource base, educated and hardworking manpower including high density of science and technology, personnel etc. This study is an attempt made by the investigator to find out the investor perception towards the capital market for their investment and to understand the awareness of respondents of Arakulam Grama Panchayat which is a rural area in Idukki district towards capital market investment.

Objectives of the Study

The present study was undertaken to understand the dynamics in investment opportunities in the rural segments.

- To understand the awareness of respondents towards capital market investment.
- To bringout the investors' perception towards capital market for their investment.
- To examine the saving and investment pattern of respondents.

The objective is to get wider penetration into the state as the exposure of Keralites to stock market is only 3% against 40% in Hyderabad and Mumbai. The focus will be more on the rural side of the state where there is lot of potential investors. Wide distribution of networks in rural area increases their participation in financial products. The access to capital market products can be increased by channelising savings into appropriate product schemes.

Review of Recent Literature

In an economy, capital market provides an important alternative source of long term finance for long term productive investment. Through equity capital and infrastructure development capital socio economic status could be strengthened. Different avenues in capital market for investment opportunities encourage a thrift culture critical in increasing the domestic savings and investment ratios that are inevitable in rapid industrialisation process. Equitable wealth distribution which indicates poverty reduction is possible by encouraging the participation of small savers in capital market.

Suresh (2004) in an analysis of popular perceptions said that retail investors swarmed back to the stock markets in the year 2003-04. The investments of households in shares and debentures rose by 8.6 percent of ₹ 5,847 crore in 2003-04. Households had deposited ₹ 1,69,000 crore in bank deposits while investments in small savings rose to 19 percent. The data suggests that in 2003-04 the household investor had turned extremely conservative.

ASSOCHAM, Rising incomes coupled with increase in savings and investment rates in the domestic economy have led to a higher investment demand in the economy. There is a need to channelise these investment flows into capital markets to yield returns. Concerted efforts need to be made to drive the agenda of inclusive growth, encouraging more investors to access capital markets. Regulators and other industry stakeholders are driving this single-point agenda to tap the potential in smaller towns and cities.

Dr. Elangbam Nixon Singh, India lack knowledge of the financial markets and fail to understand them. Studies, such as that conducted by SEBI (Security Exchange Board of India), reveal that gold, either in primary or in jewellery form, still remain the second most preferred option among the



Indian public after deposits in the banks. Rural households saved their income in both monetized as well as non-monetized forms. Moreover, some of the monetized savings are held in the form of physical assets. Thus, only those monetized savings which are invested in financial assets of the informal rural financial market (RFM) can be considered as potentially mobilisable by the financial agencies. To identify appropriate policies, further literature may be developed by promoting and researching programmes with better rates of return on financial savings, besides those with opportunities to transact other businesses.

Methodology

In this study, the respondents' perception towards capital market investment has been studied and the method of primary data collection was by way of questionnaire distributed to the respondents and through interview method. The study also makes an attempt to understand the capital market awareness of respondents who belong to diverse occupation.

Both primary and secondary data were used for the study. Secondary data were collected from census report 2011, journals and other periodicals. The primary data collection was made using stratified sampling method. In Kerala, which has a rural population of 52.3 percent, Idukki district was considered for the sample collection keeping in view the various features that may effect the study. In consultation with district and panchayat officials Idukki block was selected. From that, the data collection was narrowed down to Arakulam grama panchayat which is considered as a representative rural area with a total population of 17877 which comprises 8845 male and 9032 female. Out of 15 wards in Arakulam, one representative ward, ie. ward 12 with the highest population is being selected. During the course of survey, responses of 397 households were collected and tabulated.

Data Analysis and Interpretation:

Table 1: Distribution of Population

Gender	No. of Respondents	Percentage
Male	805	50
Female	805	50
Total	1610	100

Source: Primary Data

Table 2: Distribution & ratio - APL – BPL:

Basis	No. of Households	Percentage
APL	208	52.40
BPL	189	47.60
Total	397	100

Source: Primary Data

Table 3: Distribution of Population according to Education:

Level of Education	No. of Respondents	Percentage
Illiterate	51	3.17
Up to X	975	60.56
Plus 2	323	20.06
Graduate	220	13.66
PG	41	2.55
Total	1610	100

Source: Primary Data

Table 4: Distribution of Families according to Socio Group:

Socio Group	No. of Households	Percentage
Mala Arayan	16	4.03
SC	20	5.04
Others	361	90.93
Total	397	100

Source: Primary Data



Table 5: Distribution of Families according to Main Source of Income:

Source of Income	No. of Households	Percentage
Daily Wages	176	44.33
Agriculture	107	26.95
Trading	8	2.02
Self Employment	15	3.78
Government	70	17.63
Private	11	2.77
Others	10	2.52
Total	397	100

Source: Primary Data

Table 6: Distribution of Families according to Secondary Source of Income:

Source of Income	No. of Households	Percentage
Daily Wages	25	31.64
Agriculture	20	25.32
Trading	3	3.80
Self Employment	14	17.72
Government	5	6.33
Private	9	11.39
Others	3	3.80
Total	79	100

Source : Primary Data

Table 7: Savings on the basis of occupation:

Occupation	% saved					Total
	5%	10%	20%	35%	above 35%	
Daily Wages	156	45	0	0	0	201
Agriculture	46	31	26	16	8	127
Trading	0	0	6	3	2	11
Self-Employment	12	5	7	2	3	29
Government	6	7	13	18	31	75
Private	3	5	7	2	3	20
Others	2	5	2	2	2	13
Total	225	98	61	43	49	476

Source: Primary Data

Table 8: Purpose of Savings

Purpose	No. of Households	Percentage
Education of children	76	19.14
Marriage of children	25	6.3
Buy gold	23	5.8
Construct House	59	14.86
Retirement safety	46	11.59
Tax benefit	23	5.8
Extension of household	18	4.53
Future safety	78	19.65
Higher studies	15	3.78
Emergency	26	6.55
Business expansion	8	2.01
Total	397	100

Source: Primary Data

Table 9: Investment Pattern of respondents:

Avenues	Daily Wages	Agriculture	Trading	Self employ	Govt	Pvt	Others	Total
Savings bank deposit	88	59	2	12	12	6	2	181
Recurring Bank deposit	2	0	0	0	5	0	0	7
Fixed Bank deposit	12	5	0	0	3	0	3	23
Insurance	13	12	0	3	12	5	1	46
Post Office Savings Scheme	56	23	0	5	10	2	1	97
Chit Funds	29	12	0	5	3	0	1	50
Equity	0	0	2	0	4	5	0	11
Bond	0	4	1	0	0	0	0	5
Mutual Fund	0	1	1	0	4	1	0	7
Land	0	5	0	0	5	0	0	10
Business	0	0	5	4	0	1	1	11
Gold	1	6	0	0	17	0	4	28
Total	201	127	11	29	75	20	13	476

Source: Primary Data



Table 10: Awareness of respondents towards stock market:

Awareness level	No. of respondents	Percentage
Not aware	218	45.80
Aware but not invested	235	49.37
Aware and invested	23	4.83
Total	476	100

Source: Primary Data

Table 11: Reasons for choosing stock market investment opportunities

Reasons	No. of respondents	Percentage
Confidence	4	17.39
High return	11	47.83
Diversification	8	34.78
Total	23	100

Source: Primary Data

Table 12: Reasons for not choosing stock market investment opportunities

Reasons	No. of respondents	Percentage
Complex Procedure	86	36.6
No easy access	36	15.32
Non-availability of agents	23	9.79
Return not guaranteed	34	14.47
No safety	18	7.66
No suitable product options	9	3.83
Need huge capital	29	12.34
Total	235	100

Source: Primary Data

Table 13: Readiness to invest in capital market instruments:

Readiness	No. of Respondents	Percentage
Yes	59	27.06
Not sure	53	24.31
No	106	48.63
Total	218	100

Source: Primary Data

Findings & Recommendations

- NREG programmes in rural area provide a major source of income for the rural people. This improves their livelihood and increases their savings and investments.
- The majority of earning respondents prefer investment in the form of savings bank deposit.
- Post office savings schemes and chit funds also play a major role in channelising the savings of rural people into investment.
- Land and gold also form part of their investment avenues but not in a major position as it needs a huge amount as capital investment.
- The investment of savings of rural people is very less in equity, mutual funds, bonds etc and the reason is pointed to be the unawareness about capital market instruments, its innovative products and new opportunities which needs only less investment.
- Even though the respondents are aware about capital market only a few percentage has chosen stock market for their investment purpose
- Majority of the rural respondents who are aware of capital market are of the opinion that the procedure is very complex and it is not safe. One reason to be noted is the non availability of stock brokers in rural area.

Recommendations

- New concept aimed at imparting investment awareness programmes throughout Kerala has to be developed.
- Provide proper financial education thereby improving the market participation.



- Focus more on the rural area of the state where there is a lot of potential investors.
- Tailor made investment solutions for each client based on their savings and risk taking capacity has to be developed to utilize the untapped rural segment effectively
- Through a wider penetration into the state the potential investors in rural area can be utilised.

Conclusion

The flow of investment in rural area is higher in the traditional modes like bank accounts, land and gold. The preference of investors is in less risky and safe investment avenues like savings bank account. It was observed that the preference of investors varies according to the source of income. The occupation wise investment pattern of the respondents shows that daily wagers and agriculturists are more inclined towards savings bank accounts, post office Savings scheme and chit funds whereas the traders and self employees prefer investment that needs more capital amount.

The trend shows that rural Keralites have an intention to save in terms of both physical and financial assets for various purposes. This intension acts as a major indicator for economic growth in rural area. But the participation of rural investors in capital market investment avenues is very poor. The survey suggests that more awareness programmes should be organised by focusing the rural side of the state where there is lot of potential. It makes the wider penetration into the state possible. By educating and empowering the rural potential investors and by providing tailor made investment solutions based on their risk taking and savings capacity the largely untapped segment of rural population can be utilised effectively.

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Bharata Mata College, Thrikkakara

ECONOMIC WAY OF THINKING AND EMOTIONAL INTELLIGENCE: A STUDY AMONG UNDERGRADUATE STUDENTS

Dr. Manju Joseph

Assistant Professor (M.Ed Department)

St. Thomas College of Teacher Education

Pala, Kottayam, Kerala-686575

Mobile: 9495080655

Email:mjmanjuseph@gmail.com

ABSTRACT

Education is the hope and dream of every person. Education has to prepare man to face the unknown, unpredictable and uncertain tomorrow. Husain and Idris (2010), state that education is the only means by which the personality of people and society can be developed. Education is responsible for the holistic health of an individual in terms of physical, social, mental, emotional and spiritual development. The knowledge and skills developed by our system of education should meet the real and the changing needs of our society, and the productive sectors in the economy. This reinforces the formation of proper economic habits with Economic Way of Thinking among the citizens. The present study is intended to find out the extent of Economic Way of Thinking among Undergraduate Students and also find out the relationship between Economic Way of Thinking and Emotional Intelligence of Undergraduate Students. Normative survey method was used for the study and the sample includes 300 Undergraduate Students studying in different colleges in Kerala. The tools used for this study include Economic Way of Thinking Test and Emotional Intelligence Scale. The study revealed that there exist significant positive relationship between Economic Way of Thinking and Emotional Intelligence of Undergraduate Students.

Key words: Economic Way of Thinking, Emotional Intelligence, Undergraduate Students

Introduction

Education is the hope and dream of every person. It has to prepare man to face the unknown, unpredictable and uncertain tomorrow. Daptardar (2014) stated that education permeates every aspect of life. It must be such that it brings the best out of our past, takes the best of the present but keeps in mind the future direction that the country wants in terms of political, economic and cultural development. The objectives of education basically are freedom of an individual, fulfilment in life, equality among people, excellence, individual and collective self reliance and most of all, national cohesion. Three important institutions play a crucial roles in shaping the outlook and future prospects of a child - family, school and society.

Today's world is rapidly changing, with technological advance and globalization increasingly impacting consumer and producer decisions (Salemi, 2002). The key question has become: What does it take to be an educated and literate person in the 21st century? In other words, how can we prepare our children to participate in and contribute to a profoundly-changing, global economic environment? People must be able to read, communicate, and financially assess the choices available to them through the Internet and other sources. From kindergarten to higher education, Economic Way of Thinking programs can prepare students to make informed decisions about all of life's challenges: What goods and services should I buy? Should I use my current income, savings, or borrow to pay for my purchases? Should I become an entrepreneur, or for whom will I work? How will I invest my savings? Should I support higher taxes in my community in exchange for the promise of more government services?

Economic Way of Thinking is special because it contributes to two classes of knowledge. First, it serves as a means of communication among people, incorporating a basic vocabulary or logic that is so frequently



encountered that the knowledge should be possessed by everyone. Second, it is a type of knowledge frequently needed and yet not susceptible to economical purchase from experts (Stigler, 1970).

Economic Way of Thinking certainly contributes to the first class of knowledge. People like to think and talk about the economic issues that affect them as consumers, workers, producers, investors, citizens and in other roles they assume over a lifetime. Economic Way of Thinking also gives people the tools for understanding their economic world and how to interpret events that will either directly or indirectly affect them (Brooke, 2007). Nation's benefit from having an economically literate population because it improves the public's ability to comprehend and evaluate critical issues. This understanding is especially important in democracies that rely on the active support and involvement of its citizens.

Economic Way of Thinking contributes to a second class of knowledge. For some economic decisions, such as buying a home or investing in the stock market, it is possible to hire professional or technical help when making a choice, but in most cases it is neither economical nor practical for an individual to hire a skilled professional every time an economic decision needs to be made. Even when such advice is given, the final choice must be made by the individual, not the adviser. What this means is that each person must ultimately serve as his or her own economist in making many economic choices, whether those choices involve buying a product, getting a loan, voting on candidates and economic issues, or something else. Economic Way of Thinking improves the competence of each individual for making personal and social decisions about the multitude of economic issues that will be encountered over a lifetime.

Emotional Intelligence is the ability to identify, assess and control the emotions of oneself, of others, and of groups. Thorndike & Stein (1937)

described the concept of social intelligence as the ability to get along with other people. Wechsler (1940) suggested that affective components of intelligence may be essential to get success in life. Maslow (1950) describes how people can build emotional strength. Gardner (1975) introduced the concept of multiple intelligences. Payne (1985) coined the term emotional intelligence. Mayer & Salovey (1993) coined the term 'emotional intelligence' they defined emotional intelligence as, "the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and action. Emotionally Intelligent people know the real reason for their emotions and thus they don't confuse them with other factors nor do they get their past involved in the decision they take.

Need and Significance of the Study

People make a lot of economic choices every day. Identifying and systematically comparing alternative enables people to make more informed decisions and to avoid unforeseen consequences of choices they or others make. In all these economic activities Economic Way of Thinking plays a major role. National Council on Economic Education (2004) defines that Economic Way of Thinking involves applying fundamental economic ideas in situations relevant to their lives. Economic Way of Thinking- the ability to use basic economic concepts to make decisions about earning, saving, spending and sharing money- is a skill. Economically literate citizens will be life-long learners, capable of incorporating new economic knowledge into their existing knowledge (Lucas, 2002). In day to day life an individual has to perform various roles like buyer, seller, organizer, employer, employee, renter, tenant, creditor, debtor, contributor and investor etc. An individual has to perform their roles with proper Economic Way of Thinking which will lead towards a good economic decision. Economic Way of Thinking involves



knowing and applying fundamental economic ideas to make rational decisions about the use of limited resources.

A current national concern is the low Economic Way of Thinking of college students. College students are not receiving the economical knowledge necessary to be successful in today's fast paced economy. Due to an increasingly complex marketplace, college students need greater knowledge about their personal finances and the economy. The financial decisions made early in life create habits difficult to break and affect students' ability to become financially secure adults.

Many parts of the world are now in the midst of clutches of economic evils, anti-economic activities, corruption, poverty, unemployment and depression. To prevent these kinds of crises of the world, the educated and learning community should gain the momentum of developing good economic habits, skills with the dual support of Economic Way of Thinking and emotional intelligence. Persons who are engaged in taking economic decision need emotional balance for taking rational decisions. Thus from the review of the theories and literature about Economic Way of Thinking and Emotional Intelligence, the investigator decided to find out the relation between the above mentioned variables among undergraduate level students.

Definition of Key Terms

- **Economic Way of Thinking**

Economic Way of Thinking involves applying fundamental economic ideas in situations relevant to their lives. (National Council on Economic Education, 2004)

- **Emotional Intelligence**

Emotional Intelligence is the ability to monitor one's own and other's feelings and emotions to discriminate among them, and to use this information to guide one's thinking and action. (Mayer and Salovey, 1993)

- **Undergraduate Students**

Pupils enrolled in a college program leading to a bachelor degree.
(Comprehensive Dictionary of Education, 2008)

Objectives of the Study

- 1) To assess the extent of Economic Way of Thinking of Undergraduate Students
- 2) To compare the Economic Way of Thinking of Undergraduate Students based on Subsamples-Gender and Locale of the Institution
- 3) To assess the extent of Emotional Intelligence of Undergraduate Students
- 4) To compare the Emotional intelligence of Undergraduate Students based on Subsamples-Gender and Locale of the Institution
- 5) To find the relationship between Economic Way of Thinking and Emotional intelligence of Undergraduate Students for the total sample and relevant subsamples

Hypotheses

- 1) There will be significant difference in the Economic Way of Thinking of Undergraduate Students based on Subsamples-Gender and Locale of the Institution
- 2) There will be significant difference in the Emotional Intelligence of Undergraduate Students based on Subsamples- Gender and Locale of the Institution
- 3) There will be significant relationship between Economic Way of Thinking and Emotional Intelligence of Undergraduate Students for the total sample and relevant subsamples.



Method of the Study

Normative survey method is used for the study. The sample consists of 300 Undergraduate Students. The relevant data were collected using Economic Way of Thinking Test given in Appendix I and Emotional Intelligence Scale (Standardized Tool).

Statistical Techniques Used

The data collected was analyzed using Percentages, Mean, Standard Deviation, Test of significance of difference between Means and Karl Pearson's Product Moment Coefficient of Correlation.

Analysis and Interpretation

1. To assess the extent of Economic Way of Thinking among Undergraduate Students

The investigator administered Economic Way of Thinking Test to obtain a view about the extent of Economic Way of Thinking of Undergraduate Students. The mean and standard deviation of scores on Economic Way of Thinking of Undergraduate Students were calculated. The obtained scores above $m+\sigma$ were taken as high, $m-\sigma$ were taken as low and the obtained scores in between these values were taken as average. The percentage of Undergraduate Students under each group was found. The details of the analysis is presented in Table 1.

Extent of Economic Way of Thinking among Undergraduate Students

Variable	N	Extent of Economic Way of Thinking in Percentage		
		Low	Average	High
Economic Way of Thinking	300	36%	40%	24%

Table-1 shows that 24 percentage of Undergraduate Students have high, 40 percentage have average and 36 percentage have low level of

Economic Way of Thinking. It reveals that most of the Undergraduate Students have average Economic Way of Thinking.

The extent of Economic Way of Thinking among Undergraduate Students is diagrammatically presented in Figure 1.

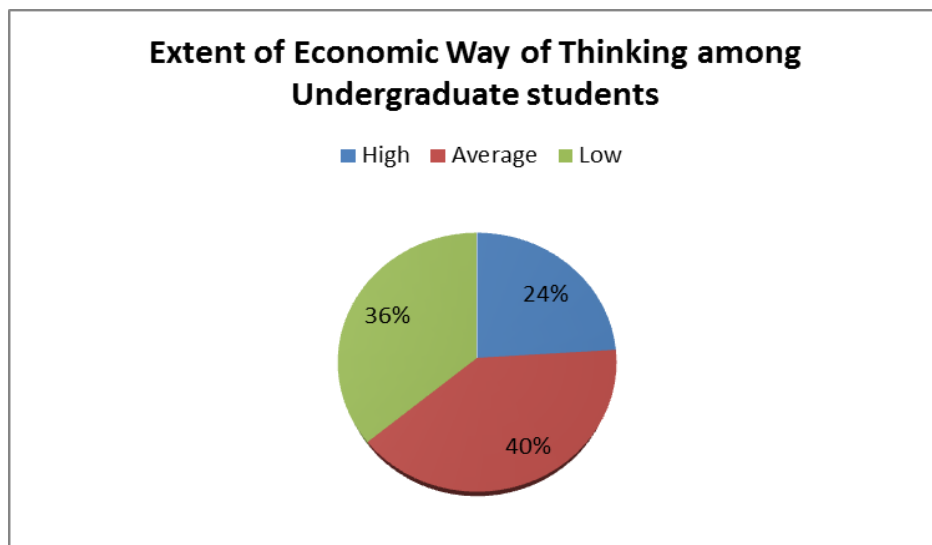


Fig. 1. Extent of Economic Way of Thinking among Undergraduate Students

From Figure 1, it is clear that majority of the Undergraduate Students have average level of Economic Way of Thinking (40%). 36% students have low and 24% have high level of Economic Way of Thinking.

2. To compare the Economic Way of Thinking of Undergraduate Students based on Subsamples - Gender and Locale of the Institution

Undergraduate Students were compared for their Economic Way of Thinking based on Gender and Locale of the Institution. For this comparison, significance of difference between the mean values of these two groups were found out. The details of the analysis shown in Table 2.



Table 2: Test of significance of difference in mean scores on Economic Way of Thinking of Undergraduate Students based on Gender and Locale of the Institution

Discipline	Subsamples	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	Level of Significance
Undergraduate Students	Male	150	31.12	13.56	9.26	P<.01
	Female	150	26.05	7.83		
	Urban	150	28.96	11.86	0.06	P>.05
	Rural	150	26.46	11.05		

Table 2 shows that the obtained *t* value is 9.26, which is significant at .01 level. This shows that there is significant difference in Economic Way of Thinking of Male Undergraduate Students and Female Undergraduate Students. Therefore the mean scores on Economic Way of Thinking of Male Undergraduate Students are higher than that of Female Undergraduate Students. This explains that Male undergraduate students have better Economic Way of Thinking than Female Undergraduate Students.

It is also clear from Table 2 that there is no significant difference in Economic Way of Thinking of Undergraduate Students from urban and rural area institutions. The obtained *t* value is not significant at .05 level (*t* = 0.06, *p*>.05). This indicates that there is no significant difference between the mean scores on Economic Way of Thinking of Undergraduate Students based on Locale of the Institution. The mean scores on Economic Way of Thinking of Undergraduate Students from urban area institutions are higher than that of from rural area institutions.

3. To assess the extent of Emotional Intelligence among Undergraduate Students

The investigator administered Emotional Intelligence Test to Undergraduate Students and mean and standard deviation of scores on

Emotional Intelligence were calculated. The obtained scores above $m+\sigma$ were taken as high, $m-\sigma$ were taken as low and the obtained scores in between these values were taken as average. The percentage of Undergraduate Students under each group was found. The details of the analysis is presented in Table 3.

Table 3: Extent of Emotional Intelligence among Undergraduate Students

Variable	No. of Students	Extent of Emotional Intelligence in Percentage		
		Low	Average	High
Emotional Intelligence	300	29	47	24

From the above table it is clear that 24 percentage of Undergraduate Students have high, 47 percentage have average and 29 percentage have low level of Emotional Intelligence. It reveals that most of the Undergraduate Students have average Emotional Intelligence.

The extent of Emotional Intelligence among Undergraduate Students is diagrammatically presented in Figure 2

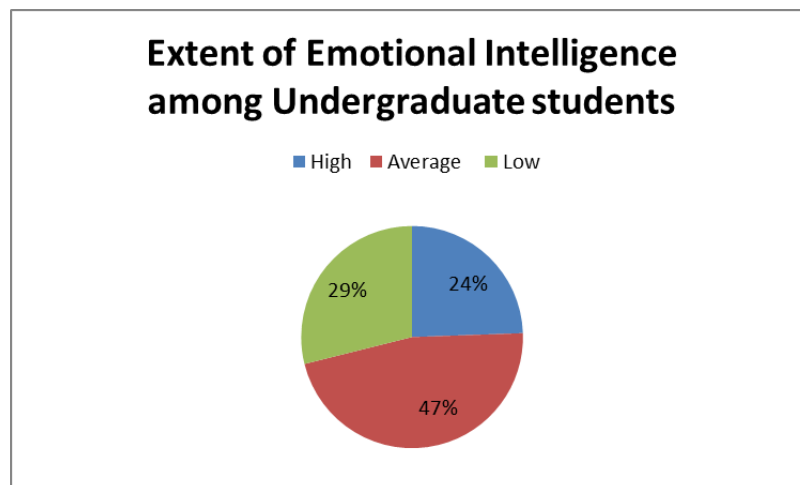


Fig. 2: Extent of Emotional Intelligence among Undergraduate Students



Figure 2, shows that majority of the Undergraduate Students have average level of Emotional Intelligence (47%). 29% students have low and 24% have high level of Emotional Intelligence.

4. To compare the Emotional Intelligence of Undergraduate Students based on Subsamples- Gender and Locale of the Institution

For the comparison of Emotional Intelligence of Undergraduate Students based on subsamples- Gender and Locale of the Institution , scores on Emotional Intelligence were analyzed by using mean, standard deviation and test of significance of difference between means. The details of the analysis shown in Table 4.

Table 4: Test of significance of difference in mean scores on Emotional Intelligence of Undergraduate Students based on Gender and Locale of the Institution

Discipline	Subsamples	N	M	SD	t	Level of Significance
Undergraduate Students	Male	150	54.80	11.44	0.01	P>.05
	Female	150	51.74	9.34		
	Urban	150	55.82	8.02	0.85	P>.05
	Rural	150	56	9.25		

Table-4 shows that the obtained *t* values are not significant at .05 level. This reveals that there is no significant difference in the mean scores on Emotional Intelligence of Undergraduate Students based on subsamples- Gender and Locale of the Institution.

5. To find the relationship between Economic Way of Thinking and Emotional intelligence of Undergraduate Students for the Total Sample and relevant subsamples

To find the relationship between Economic Way of Thinking and Emotional Intelligence of Undergraduate Students, the investigator analyzed

obtained data using Karl Pearson's product-moment coefficient of correlation. The details of the analysis are summarized in Table 5.

Table 5: Relationship between Economic Way of Thinking and Emotional Intelligence of Undergraduate Students for the Total Sample and the relevant subsamples

Variables	Sample	<i>n</i>	<i>r</i>	<i>t</i>
Economic Way of Thinking & Emotional Intelligence	Total	300	0.032	0.55
	Male	150	0.38	5.38
	Female	150	0.034	0.41
	Urban	150	-0.072	-0.88
	Rural	150	-0.047	-0.57

Table-5 shows there is a positive correlation between Economic Way of Thinking and Emotional Intelligence for the total sample and in the case of Male and Female Undergraduate Students. It also reveals that there is no significant correlation observed in the case of Undergraduate Students from urban and rural area institutions.

Findings and Suggestions of the Study

- The findings of the study indicates that majority of the Undergraduate Students have average Economic Way of Thinking.
- The study reveals that there is significant difference in Economic Way of Thinking of Male Undergraduate Students and Female Undergraduate Students.
- The study also indicates that there is no significant difference in Economic Way of Thinking of Undergraduate Students based on Locale of the institution.



- The study reveals that there is a positive correlation between Economic Way of Thinking and Emotional Intelligence of Undergraduate Students for the total sample.
- The study also explains that there is a positive relation between Economic Way of Thinking and Emotional Intelligence of Male and Female Undergraduate Students.
- The study would give the insight on need for developing Economic Way of Thinking and Emotional Intelligence of Undergraduate Students which enables them to cope with manifold economic challenges in their later lives.
- More research is needed to develop teaching strategies that lead to a high level of Economic Way of Thinking and Emotional Intelligence.
- Teachers, Educators and Policy makers take steps to develop new teaching strategies for developing Economic Way of Thinking of undergraduate students especially for female undergraduate students.
- The study revealed that Female Undergraduate Students have lower Economic Way of Thinking than Male Undergraduate Students, so they need special programmes for developing Economic Way of Thinking because Women are the backbone of the future family and cornerstone of the entire society.

Conclusion

The existing market economy of India is characterized by liberalization, privatization and globalization which have influenced all aspects of human life. Educational system is no exception in this regard. Market forces are becoming more powerful than the state due to the changes in the new policy

of globalization, information technology revolution, free flow of capital and population migration across the borders. Every nation is performing in an increasingly competitive international environment. To prepare our youth for meeting these challenges, our higher education system should impart key economic skills. Students should have a thorough understanding of economic situations wherein the same can be suitably applied. These skills enable the learners to transfer the knowledge acquired through oral and written communication either individually or as a group (Walsh & Mitchell, 2005). These skills enable them to take meaningful and logical decisions in the midst of economic problems. Economic Way of Thinking is the platform for solving many economic problems of an individual, a society and thereby the nation. Economically literate citizens will be life-long learners, capable of incorporating new economic knowledge into their existing knowledge. So Economic Way of Thinking is essential for everyone to lead a successful life in future. Students should have a thorough understanding of economic situations wherein the same can be suitably applied.

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APPENDIX – I

ECONOMIC WAY OF THINKING TEST

Prepared By: **Dr. Sajna Jaleel & Manju Joseph**

Instructions

The instructions given below are used to measure your Economic Way of Thinking. Each question is given four distracters- a, b, c and d. only one among them is correct. Kindly read the questions carefully and put a tick mark (✓) against your choice in the response sheet.

1. Based on state budget 2012 – 2013 government demanded suitable land for launching new techno park in Karuoor, Kottayam district. During this situation, which type of land would government prefer?
 - a. Unpopulated area which need infrastructure cost
 - b. Populated area which needn't infrastructure cost
 - c. Unpopulated area which needn't infrastructure cost
 - d. None of the above
2. Government take which of the following approaches to control pollution that makes the best use of a country's economic resources
 - a. Abolishing the use of toxic chemicals
 - b. Using resources to reduce all pollution damage
 - c. Controlling pollution as long as the extra benefits are greater than the extra cost.
 - d. Prohibiting economic activities that cause pollution or harm the environment
 - a. None of the above
3. Your college is 1 Km away from your house. Which mode of transportation do you prefer to control pollution?
 - a. Bus
 - b. Bike
 - c. Walk
 - d. Bicycle
4. Suppose you are the leader for the class as the part of the annual day celebration your teacher imposed the duty to conduct a party in your class with least cost and maximum satisfaction. Which item do you prefer?
 - a. Meals with fish curry
 - b. Fried rice with chicken curry
 - c. Thali meals
 - d. None of the above



5. The professional sports players generally earn more than farmers, because of
 - a. Team owners are monopolists
 - b. Sports players are really entertainers rather than producers
 - c. There are fewer professional sports players than farmers
 - d. Good sports players are more scarce, given the demand for this services.
6. Manual labour earn more income than a last grade servant What is the reason behind
 - a. High demand for manual labour.
 - b. High demand for last grade servant
 - c. Low supply of last grade servant
 - d. None of the above
7. Sand is an essential ingredient for making building. Now a day's majority of construction companies use M-sand instead of sand for building construction. What is the reason behind?
 - a. Higher Quality
 - b. Stronger than sand
 - c. Minimize cost
 - d. Scarcity of the sand
8. During the summer season people prefer more mangoes than other fruits because of
 - a. Low price
 - b. High Price
 - c. High Quality
 - d. All the above
9. During Seasonal months tourists paid more rent for the hotel rooms in Munnar, because of
 - a. Less number of tourists
 - b. Scarcity of rooms
 - c. Good facilities provide
 - d. None of the above

10. You have purchased a personal computer for ₹ 40,000/- with one year warranty. The following week the manufacturer announces a new computer with twice the power for ₹ 30,000/with two year warranty-. You can trade in your old computer for a new one by paying an additional ₹ 2000/- What should you do in this situation.
 - a. Reject the trade
 - b. Accept the trade
 - c. Remain the same position
 - d. Take service warranty
11. Students from Kerala prefer Engineering courses in TamilNadu than Karnataka because of
 - a. Low fees
 - b. Job opportunity
 - c. Higher Quality
 - d. Simple syllabus
12. Nowadays the lifestyle of malayalees changed. It caused the arrival of so many diseases in their life. For avoiding this, they should prefer
 - a. Take fast food
 - b. More health practices
 - c. Take medicine to avoid disease
 - d. Practice Fasting
13. As a result of Lorry strike, the price of tomato increased and there is no change in the price of vegetarian meals because of
 - a. Tomato is not an essential ingredient of vegetarian curries
 - b. Reduced quantity of tomato in curries
 - c. Tamarind is used as a substitute for tomato
 - d. Both b and c
14. If the price of wood increases, the price of artificial wood remains the same, people would buy:
 - a. More artificial wood
 - b. Less artificial wood
 - c. Remain the same position
 - d. Use other materials instead of wood



15. In the 2012 – 2013 academic year, demand for arts subjects increases than the demand of Nursing courses, because of
 - a. Job opportunity
 - b. Easy for learning
 - c. High remuneration
 - d. All the above
16. There is a new trend in Kerala to make vegetable garden in each house for their own use because of
 - a. Continuous increase in price
 - b. To avoid large use of pesticides
 - c. For promote agriculture
 - d. All the above
17. Majority of the people prefer their mode of conveyance as train than bus for long journey because of
 - a. Less time consumption
 - b. Less train fair
 - b. Avoid fatigue
 - d. Security
18. Last year electricity board supplied CFL bulbs in a subsidized price because
 - a. For reducing use of ordinary bulbs
 - b. For easy use
 - c. Of lower price
 - d. Of higher quality
19. Which is the rational decision to buy a car
 - a. New car with bank loan 10.50% interest
 - b. More than 10 years old car with maintenance cost ₹ 2000/- per month
 - c. 5 years old car with maintenance cost ₹ 1000/- per month
 - d. Company certified second hand car with no maintenance cost for one year.
20. Government imposed ₹ 2500/- as additional tax on automobiles with metallic colour. As a result people's demand for these automobiles will
 - a. Increase
 - b. Decrease
 - c. No change
 - d. None of the above

21. In recent years, for lowering the over all cost of goods and services, the developed countries increased the services of BPOs in the developing countries especially in the I.T sector. As a result
 - a. It improves the quality of workers
 - b. It helps to avoid mistakes in the work
 - c. It helps to increase national income of developing countries
 - d. It helps to finish work within the time limit
22. Suppose a vaccine for the common cold is discovered and it has higher demand. To meet this demand the government begins to produce this vaccine as large volume as possible. As a result
 - a. The price of vaccine increases
 - b. The price of vaccine decreases
 - c. No change in the price of vaccine
 - d. The demand for vaccine decreases
23. Suppose medical research from U.S.A indicates that vitamin A may be useful in treating Heart disease. It results
 - a. Increase the supply of Vitamin A medicine
 - b. Decrease the supply of Vitamin A medicine
 - c. Increase the demand for Vitamin A medicine
 - d. Decrease the demand for Vitamin A medicine
24. In the 2012 – 2013 state budget, the finance minister reduced VAT on various cereals, grams and flour from existing 4% to 1%. It will tend to
 - a. Increase the consumption of these items
 - b. Decrease the consumption of these items
 - c. Remain the same position
 - d. Decrease the production of these items
25. Furniture manufacturer has found a new mechanised way of polishing furniture by which costs are reduced. This will lead to ----- of furniture.
 - a. An increase in the quantity supplied
 - b. Decrease in the quantity supplied
 - c. An increase in the sale
 - d. Both a and c



26. Based on 2012 – 2013 state budgets, road tax on vehicles increased. It will lead to increase in the price of cars. The income of the consumer remain constant, it will result in
- Rise in the price of petrol and other oil based products.
 - A change in consumer's taste in cars
 - Increase use of other modes of transportation
 - Decrease in the number of cars available for purchase
27. The cost of fruits and vegetables should be subsidized by the govt. to encourage healthy eating. It will tend to ----- in the consumption of fruits and vegetables.
- Increase
 - Decrease
 - Remain the same position
 - Higher price
28. A massive flood reduces supplies of essentials like edible oil and onions to a particular region. Other things remain the same, then how would this affect the price of onions?
- Price Increase
 - Price Decrease
 - Price Remains the same
 - Price increase and supply decrease
29. Which news paper head line might be best illustrated to increase the cost of Apple
- Hailstorm wipes out Apple trees
 - Apple price drop due to increased imports
 - Medical doctors advise eating Apple for longer life
 - President's dislike of Apple has no effect on sales.
30. Suppose that a severe summer-rain destroys one half of paddy crops in Kerala. As a result
- An increase in the demand for rice
 - A rise in the price of rice
 - A decline in the price of rice
 - Decrease in the demand for rice

A STUDY ON MICRO FINANCE THROUGH 'KUDUMBASHREE' UNITS IN ERNAKULAM DISTRICT

Dr. Anu L.

Assistant Professor

Post Graduate & Research Dept. of Commerce

The Cochin College, Kochi 682002

Email id: anukchal@gmail.com

Mobile No: 9633000949

ABSTRACT

Today, world is changing at startling pace, political and economic transformations seem to occurring –as countries convert from command to demand economics, dictatorships move toward democracy, and monarchies build new civil institutions. These changes have created economic opportunities for women who want to own and operate business. Women in India are not confined to the four walls of a house. They are participating well in all spheres of activities such as academic, politics, administration and industry. Providing access to micro finance is considered as a precondition for poverty alleviation, but also for women's empowerment. Questions are often asked whether micro-credit is the most effective approach to economic empowerment of the poorest and among them, women in particular. Development practitioners often argue that the exaggerated focus on micro-credit as a solution for the poor has led to neglect by the state and public institutions in addressing employment and livelihood needs of the poor. Women in micro and small enterprises need to be assisted by holistic strategies and comprehensive programmes that address not only women's lack of access to productive resources, but also their difficulties in accessing labour opportunities and their low skill levels. In this scenario of globalization, for the raise of per capita income and standard of life of family, women contribution is very essential, so it is urgent necessity to utilize the micro finance for economic empowerment of women .The purpose of this paper is to analyze the impact of micro finance through 'Kudumbashree' – the flagship poverty alleviation project sponsored by Government of Kerala.

Keywords: Micro Finance, Women Empowerment, Kudmbashree, Poverty



Introduction

Professor Mohammed Yunus, the originator of the concept of Microfinance, won the Nobel Prize for introducing Microfinance in Bangladesh. Microfinance is a financial service of small quantity provided by Financial Institutions to the poor. These financial services may include savings, credit, insurance, leasing, money transfer, etc, that is any type of financial services, provided to customers to meet their normal financial needs: life cycle, economic opportunity and emergency with the only qualification that transaction value is small and customers are poor.

As pointed out by the former UN Secretary General Kofi Annan during the launch of the International Year of Micro Credit (2005), “sustainable access to Microfinance helps alleviate poverty by generating income, creating jobs, allowing children to go to school, enabling families to obtain health care, and empowering people to make the choices that best serve their needs.”

The Microfinance was promoted in India to overcome poverty, increase income and enhance well being of the poor. But most of the Indian Microfinance Institutions only focus on microcredit and their high lending rate and loan shark type behavior created problems.

An alternative to the commercial model of Microfinance is the Kudumbashree program initiated in 1998 by the Government of Kerala. It focuses for overall development of the family.

Review of Literature

The significance of women empowerment and the role of micro finance in the empowerment of women has been the focus of a number of studies carried out in recent times. A brief review of some of these studies has been made here.

Sri. V. P. Ragavan (2009) in his article stated that the poor women of the State have become active participants in the planning and implementation process of various ant-poverty programmes. By participating in various income generating –cum-developmental activities, the morale and confidence of women became very high. Capacity of the poor women of the State in several areas has gone up considerably. Status of women in families and community has also improved. Kudumbashree has gained national and international claim as an ideal and workable model of participatory development for eradicating poverty. He further stated that women empowerment is the best strategy for poverty eradication.

Chandrasekhar and Siva Prakash (2010) pointed out that the promotion of income generation activities for the poor rural women is perceived as a powerful medium to resolve several socio economic problems such as reduction in poverty, provision of goods and services which are appropriate to local needs, redistribution of income and opportunities in the community etc.

Kenneth Kalyani and Seena P. C. (2012) observed that economic development of women leads to better living status in the family, educational, Nutritional, and the health needs of the children were well satisfied. Economic independence through kudumbashree improved the social participation of its members and the kudumbashree NHG movement is supporting for social empowerment of poor women flock.

Minimol M. C and Makesh K. G (2012) in their study identified that Intellectual empowerment is considered more important, or at least equally important to social, economic or financial empowerment. The concept of personal empowerment often fails to encompass intellectual empowerment. The objective intended to be achieved is that the members become more capacitated to think and act better from blunt in thinking to sharp; and from



thick in action to fine. According to them the concept of SHGs for rural women empowerment has not yet run its full course in attaining its objective.

Dr. T. Dhanalakshmi (2014) notes that the employment opportunities in city like Kochi for urban poor are very limited because they lack education or employable occupational skills. Most of these Kudumbashree undertook different kinds of petty income earning activities before they joined in Kudumbashree for composting. Door to door waste collection enhancing reuse and recycling activities, especially in developing countries.

Now it is apparent that a number of studies are conducted on SHG groups and Kudumbashree and its role on empowerment of women. The researcher is intended to study the impact of Microfinance through Kudumbashree programme in Ernakulam District.

Statement of the Problem

Empowerment of women is considered as one of the most important means of poverty eradication. The government of Kerala launched Kudumbashree with the active support of the Government of India and NABARD for wiping out absolute poverty from state within a period of 10 years through microfinance, Kudumbashree aims at the empowerment of women, giving them the central place in the programmes meant for their benefit. This project implemented through the Local Self Governments formed and empowered by the 73rd and 74th constitutional amendments. At present all the poverty alleviation schemes in Kerala-both centrally sponsored and state schemes are implemented has the potential to achieve empowerment of women in Kerala in a big way. As the project has been in operation in the state since 1999, it is necessary to analyse the performance of the project and to understand how far the project has succeeded in economically empowering women through micro financing.

Importance of the Study

Micro Finance (MF) is the most grassroots level activity of Kudumbashree, the binding force of the NHG. Each NHG has operational flexibility in respect of its MF operations, within a broad framework. This innovation helped the poor especially women to gain the better access to credit facilities and ultimately in promoting micro level savings and credit to self-help groups. A study on Kudumbashree project will enable us to know the role of this project in women empowerment through micro financing. Though there are a large number of studies related to micro finance and women empowerment, empowerment of women through Kudumbashree has not received much attention so far. Hence this study assumes great importance.

Scope of the Study

This paper evaluates the Kudumbashree activities in Ernakulam district which are spread in 89 panchyats, 8 municipalities and one municipal corporation. Ernakulam is the commercial capital of Kerala. It has a geographical area of 3068 sq.k.m and a population of 32.79 lakhs of which 16.17 lakhs are males and 16.62lakhs are females (2011 census). Sex ratio (number of females per thousand males) of the district is 1028. The female literacy rate is 94.27 per cent. The population density per sq. kilo meter is 1069. The office of the district Kudumbashree mission coordinator started functioning in the district collectorate building in 24th May 1999.

The study has covered about 50 Kudumbasree women who are working in micro enterprise units for more than one year. It may be pointed out that the study has not included the recently placed Kudumbasree workers, as they lack the adequate level of field experience. The district of Ernakulam was purposively chosen as the study area as it was the most active among the fourteen districts in the formation of micro enterprises in both rural and urban areas.



Objectives of the Study

The objectives of this paper are as follows:

- 1) To understand the structure, working and progress of “Kudumbashree” – the poverty alleviation Programme of Government of Kerala.
- 2) To understand the impact of microfinance through members in Kudumbashree Units.

Hypotheses of the Study

The following research hypotheses are framed on the basis of the objectives set for the study:

- 1) There is no significant improvement in the indebtedness of members from money lenders through the intervention of microfinance programme.
- 2) There is no significant improvement in the indebtedness of members from friend and relatives through the intervention of microfinance programme.
- 3) There is no significant difference between the mean values of the two variables Monthly income before the intervention of Kudumbashree and Monthly income after the intervention of Kudumbashree units.
- 4) There is no significant difference between the mean values of the two variables namely Asset creation before the intervention of Kudumbashree and Asset creation after the intervention of Kudumbashree units.

Methodology of the Study

The study is descriptive and analytical in nature, and uses both primary and secondary data. The overall progress of the Kudumbashree project is being assessed with the help of secondary data which are collected from published sources like Annual Reports, and records of SPEM (State Poverty Eradication Mission) and Economic Review, Books, Periodicals, Newspapers and Internet etc. Primary data is collected from a sample of 10 micro enterprises representing 50 women members of “Kudumbashree”, five members in each of the micro enterprises from Ernakulam District. From the 50 women members as above, the relevant information is collected using a carefully designed Questionnaire. The sample selection was on systematic random sampling method. Statistical tools are used for data analysis. The Tools applied for data analysis are: Simple Arithmetic mean, Standard Deviation, Percentages, T test and Z test.

“Kudumbashree” in Kerala: An Overview

Kudumbasree is a poverty eradication project officially launched by the Government of Kerala with the active support of the Centre and NABARD for wiping out absolute poverty from the State within 10 years. The project was inaugurated by the Prime Minister, Shri Atal Bihari Vajpayee, on May 17, 1998 at Malapuram.

The project is implemented by the State Poverty Eradication Mission of the State government through local self-governing bodies. It aims at eradicating absolute poverty in ten years through concerted community action under the leadership of local self government bodies. This mission is the transformation of earlier Urban Poverty Alleviation Programmes (UPAP) like Urban Basic Services (UBS) and Urban Basic Services for the Poor (UBSP) which had been successfully implemented for improving the livelihood of the poor in urban areas with community participation.



The success of UBS/UBSP projects prompted the State Government to extend this project to all urban local bodies in the State. The local bodies in urban areas were directed to set up poverty alleviation cells and to implement poverty alleviation programmes as was done in Alappuzha and Malappuram districts. The project started by Alappuzha Municipality came to be known later as "Alappuzha Model". In this model, the poor were identified based on non-economic criteria. The implementation of Poverty Alleviation Programme with community participation in Alappuzha won laurels from the United Nations. Alappuzha received "We the Peoples: 50 Communities" Award initiated in commemoration of the 50th anniversary of the United Nations.

In 1994 the Community Based Nutrition Programme and Poverty Alleviation Project (CBNP & PAP) started functioning with UNICEF assistance and participation of local community in the entire area of Malappuram, considered as the most backward district of Kerala. Over 4000 neighbourhood groups of poor women were formed under this project and they started mobilising savings which touched over ₹ 2.50 crore in August last year. They were also able to channelise financial assistance amounting to ₹ 2 crore from NABARD and other agencies. Around 700 neighbourhood groups were linked to various commercial banks under the Linkage Banking Programme of NABARD. The implementation of Government-sponsored programmes for improving health and sanitation in Malappuram District was channelled through neighbourhood groups.

With the announcement of CBNP, 100 percent immunization could also be achieved in the district through the Pulse Polio Campaign. The distribution of applications for old age pension and other social security measures which routed through CBNP resulted in effective transfer process. Special programmes for the development of SC & ST were also successful. The implementation of District Primary Education Programmes (DPEP) and

the convergence of various entrepreneurial activities undertaken by the District Industries Centre promoted more than 15,000 micro enterprises in Malappuram district. For effective implementation of Kudumbasree a three-tier community-based organisation is in action. The bottom tier constitutes the Neighbourhood Group (NG) consisting of 20-40 women selected from poor families. Meetings are convened on a weekly basis in the house of NG members. Problems faced by group members are discussed in such meetings and suggestions for improving the situation are implemented. Government officials also attend these meetings for explaining schemes implemented by them. During such weekly meetings, all members bring their savings which are collected and recycled to the system by way of sanctioning loans. Women are encouraged to start small enterprises as a group. To co-ordinate activities of each NG, five volunteers from among members of the group are selected.

Besides empowering women through community-based organisation, Kudumbasree encourages and guides them to start small enterprises. Products manufactured by such enterprises are sold through rural marketing network.

Kudumbasree has identified five primitive tribal groups in the State. Through concerted efforts and many rounds of training programmes around 400 NG be formed exclusively for them. They have also started mobilising savings and in Wyanad district of the State, the tribal NGs have so far collected ₹ 16 lakh since January 2000. By December 2001, the savings are estimated to reach ₹ 1 crore. Members of Kudumbasree Neighbourhood Groups can now get a loan of ₹ 30,000 to 50,000 from the NG itself. This saves them from all difficulties in getting a loan sanctioned by a bank. In Wyanad district Kudumbasree NGs could successfully repay 100 per cent loans taken from Banks and other financial institutions. Many small enterprises like printing press, soap manufacturing unit, food processing



units and canteens are successfully run by NG members in various parts of the district. These units are doing business profitably ensuring a regular income for all members. The Kudumbashree Community Organisation network is present in all the 999 Gram Panchayats, 53 Municipalities and five Corporations in Kerala.

Table 1: Profile of “Kudumbashree” units in Kerala

Number of NHGs	2.03 lakh
Total families covered	37.37 lakh
Number of ADS	17486
Number of CDS	1061

Source: Secondary Data

Table 2: Profile of Kudumbashree units in Ernakulam district

Area	No. of NHGs	No. of ADS	No. of CDS
Urban	1943	236	10
Rural	13820	1352	88
Total	15763	1588	98

Source: Kudumbashree Report.

Kudumashree Programme in Kerala: The Structure

Kudumbashree has developed an innovative methodology to identify the poor using non-economic parameters and organized the poor under a well networked Community Based Organization (CBO). The non-economic parameters are transparent and simple that can be used by the community.

Neighbourhood Group (NHG): “Kudumbashree” has got a three-tier Community Based Organisation (CBO) is in action. The lowest tier constitutes the NHG, consisting of 20-40 women members selected from economically backward families. Meetings are convened on a weekly basis in the houses of NHG members. In the weekly meeting all members bring their thrift, which will be collected and recycled, to the system by way of sanctioning loans. Micro plans for addressing poverty issues are also prepared after taking stock

of the situation (Figure 1). In each NHG from among the poor women, five volunteers are selected for undertaking various functional activities viz. (i) Community Health Volunteer, (ii) Income generation activities volunteer (IGA), (iii) Infrastructure Volunteer, (iv) Secretary, and (v) President

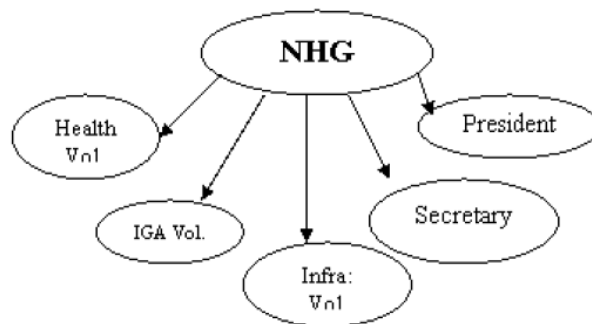


Fig. 1: Structure of NHG– the lowest Tier in the 3-Tier “Kudumbashree” Set up.

Area Development Society (ADS): The second tier is the Area Development Society, which is formed at ward level by federating all the NHGs in the ward. The activities and the decision in the ADS are decided by the representatives of the women elected from various NHGs. The Area Development Society function through the following bodies viz. (1) General Body - consisting of all President/Chairpersons, Secretaries, and 3 sectoral volunteers such as Health, Income Generation and Infrastructure volunteers of federated NHGs; (2) Governing Body - constituted by electing a President, Secretary and five member Committee from among the General Body. (Figure 2)

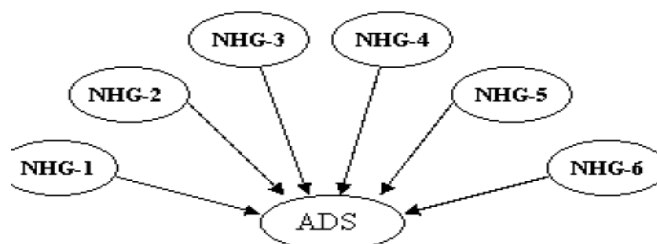


Fig. 2: Structure of ADS– the Second Tier in the 3-Tier “Kudumbashree” Setup



Community Development Society (CDS): CDS is the top tier in the 3-Tier structure. At the Panchayat/Municipal level a Community Development Society (CDS), a registered body under the Charitable Societies Act is formed by federating various ADSs. The CDS functions through the following bodies viz. (1) General Body - It consists of all ADS Chairpersons and ADS Governing Body members along with representatives of Resource Persons, Officers of the Local Body who are involved in implementing various Poverty Alleviation and Women Empowerment Programmes; (2) Governing Body - The Governing Body consists of President, Vice President, Member Secretary and selected Committee Members.

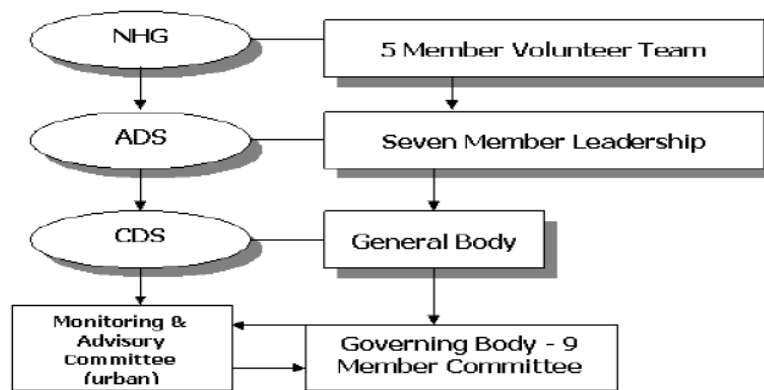


Fig. 3: The Three-Tier Structure of “Kudumbashree” in Kerala

“Kudumbashree” Programme in Kerala: The Strategy

- 1) Identification of poor families using a non-monitory poverty index
- 2) Organizing the poor to a 3-tier Community Based Organization (CBO)
- 3) Empowerment of women through Community Based Organizations.
- 4) Formation of Informal Bank of Poor women operating round the clock throughout the year, starting from thrift & credit operations
- 5) Formation of micro-enterprises.

- 6) Convergent Community Action.
- 7) Intervention in Anti Poverty Sub Plan, Women Component Plan, Local Economic Development of local self governments
- 8) Community monitoring mechanism for local development

Economic Development Activities of “Kudumbashree”: An Overview

The Kudumbashree model of Micro finance largely different from the Bangladesh model. To reach out to families through women and to reach out community through the family is the working slogan of the mission.

Thrift & Credit: Kudumbashree promotes Thrift mobilization by setting up Thrift & Credit Societies at NHG level to encourage the poor to save and to provide them cost effective and easy credit. Thrift and credit Societies facilitate easy and timely credit to the un-reached. The amount of loan and the priority of disbursement are decided by the NHG. The repayment is collected weekly during the routine NHG meetings. The total thrift collected by NHGs in the state comes to ₹ 844.95 crore and the internal loans generated are to the tune of ₹ 2255.59 crore.

Linkage Banking: The Bank Linkage programme has helped the NHGs to augment their existing resources collected through thrift. The efficiency and effectiveness of the NHGs are verified on the basis of some objectively verifiable and easily identifiable parameters. NABARD has developed a 15-point index for rating NHGs on the basis of which they will be allowed to link with various banks under the Linkage Banking Scheme. The total amount which has been mobilized under linkage banking is ₹ 461.81 and 87715 NHGs have availed of the loans.

Micro Enterprise: Kudumbashree views Micro Enterprise Development as an opportunity for providing gainful employment to the people below poverty line and thereby improving their income and living standard. Kudumbashree



considers micro enterprise development as an emerging process which will start with low capital low risk and low profit at the initial stage which will gain momentum and later switch to low to medium capital and then to low to medium risk. Micro enterprises facilitated by Kudumbashree fall under the banner of Rural Micro Enterprise (which takes after the SGSY pattern), Yuvasree (which caters to educated youth), and the SJSRY programme (which is implemented through the agency of Kudumbashree).

Result and Discussion

The demographic profile of Kudumbashree (KDMS) members selected as samples for the present study. Simple percentage analysis was used to check the percentage of sample belonging to various categories like age, marital status, educational level and occupation.

Table 3: Demographic profile of Kudumbashree members selected as sample

SI No	Variables	No. of respondents	Percentage
I	Age		
	18-30	14	28.00
	31-45	26	52.00
	46 and Above	10	20.00
II	Marital Status		
	Single	12	24.00
	Married	27	54.00
	Others	11	22.00
III	Educational Level		
	Primary	12	24.00
	Secondary	17	34.00
	High Secondary	15	30.00
	Higher Education	6	12.00
IV	Occupation		
	Private Employed	7	14.00
	Women Entrepreneur	15	30.00
	Daily Wage Labour	19	38.00
	Other Self Employment	9	18.00

Source: Primary Data

52% of the members are between age group of 31-45 years, 28 % are from the age group between 18-30 years and only 10% comes under the age group of 46 years and above. Majority i.e., 54% of members are married, 24% unmarried and the rest were either widows or divorced women. It also reveals that 34% of the respondents have secondary education, 24% of the respondents are educated upto primary level and the rest 30% and 12% have higher or senior secondary and higher education respectively. The occupational status of respondents shows that the private employed, women entrepreneurs, daily wage labourers and other self employed were 14%, 30%, 38% and 18% respectively.

Impact of Microfinance

The impact of microfinance is studied through the members of Kudumbashree units on the basis of followings: Change in the level of indebtedness from outside loans, Changes in annual income and annual savings of members, Economic Empowerment of members.

1 Change in the Level of Indebtedness of Members: The contribution of microfinance programme in the reduction of outside loan among the Kudumbashree members was tested by applying 'Z test' to test the proportions of increase during pre-KDMS and post-KDMS period. Changes of Indebtedness from Moneylenders

H₀: There is no significant improvement in the indebtedness of members from money lenders through the intervention of microfinance programme.

$$Z = \frac{P_1 - P_2}{SE}$$

$$SE$$

$$Z = \frac{0.84 - 0.18}{0.0777} = 8.49$$

$$0.0777$$



The calculated value (8.49) is greater than the table value (2.326) at level of significance = 1% and degree of freedom = infinity. Therefore the null hypothesis is rejected and there is significant improvement in the indebtedness of members from moneylenders through the intervention of microfinance programme.

2 Changes of Indebtedness from Friends and Relatives

H0: There is no significant improvement in the indebtedness of members from friend and relatives through the intervention of microfinance programme.

$$Z = \frac{P_1 - P_2}{SE}$$

$$Z = \frac{.64 - .36}{0.0773} = 3.62$$

The calculated value (3.62) is greater than the table value (2.326) at level of significance = 1% and degree of freedom = infinity. Therefore the H0 is rejected. We can interpret that there is significant improvement in the indebtedness of members from friends and relatives through the intervention of microfinance programme.

3 Monthly Income Analysis and interpretation using the T-test:

The null hypothesis (Ho): There is no significant difference between the mean values of the two variables Monthly income before the intervention of Kudumashree and Monthly income after the intervention of Kudumashree impac

Table 3: Paired Sample T Statistics

		Mean	N	S.D	Std.Error mean
Pair1	AIA	1664.80	50	701.24	70.12
	AIB	687.50	50	429.21	42.96
		S.D	T	Df	Sig(2 tailed)
	AIA-AIB	546.46	17.884	99	.000

Source: Primary Data

The income earned by the respondents have increased considerably after joining SHG. 79 percent of the respondents are now earning above ₹ 1000 per Month. The economic position of the SHG members was very poor before they had joined the group.

The result of the analysis states that, the averages mean value of monthly income after and before intervention of SHG is ₹ 1664.80 and ₹ 687.50 respectively and the standard deviation is ₹ 701.24 and ₹ 429.61 respectively. Since the result of the analysis indicates that the null hypothesis is rejected at 1% significant level.

6 Asset creation Analysis and interpretation using the T-test.

The null hypothesis (Ho): There is no significant difference between the mean values of the two variables namely Asset creation before the intervention of SHG and Asset creation after the intervention of SHG impact.

Economic changes of a person are associated in the asset holding in the form of movable and immovable property. 73% of the respondents are now creating asset above ₹ 500 per month. The researcher ascertained that the assets can be increased only when there are sizable increases in income. Some of the members create assets in the form of consumer durables and animals like cow, goats etc.

Table 4: Paired Sample T Statistics

		Mean	N	S.D	Std. Error mean
Pair1	ACA	1085	50	605.01	60.50
	ACB	694	50	450.49	45.05
		S.D	T	Df	Sig(2 tailed)
ACA-ACB		303.23	12.89	99	.000

Source: Primary Data



T-test was employed to see the significance of SHGs in changing the members' asset level. The average mean value of asset creation after and before intervention of SHG is ₹ 1085 and ₹ 694 respectively and the standard deviation is ₹ 605.01 and ₹ 450.49 respectively. The null hypothesis is rejected at 1% significant level and hence the alternative hypothesis that there is statistically significant difference between the mean values of the two variables after the intervention of SHG and before the intervention of SHG is accepted. It is further confirmed that, there is an increase in the asset creating capability of the members of the SHGs after the intervention of SHG. Also it is observed that NGOs and Bankers actively participated in SHGs activity and encourage to SHG members in Income generation activity like animal husbandry, sheep and goat rearing, poultry, tailoring, small trade etc. Hence there is a significant increase in asset creating capability of SHG members in study area. The mean value of asset creation has increased from ₹ 694 to ₹ 1085 after the intervention of SHG.

7 Learning experience from Kudumbasree

Among the participants 90% of them strongly agrees that Kudumbasree program has bridged the gender as well as economic gap to a larger extent. It provided various opportunities and has improved many skills like financial, career, communication, listening, leadership, and group behavior among them. 10% of them suggest that the Kudumbasree projects should whole heartedly include illiterate women too for meeting the effective standard of women empowerment.

Table 5: Kudumbashree Micro Entrepreneurs –Level of Empowerment

Factors related to Socio-Economic and Political Empowerment of Women Micro Entrepreneurs under “Kudumbashree”	Level of Empowerment			Average Weighted Score
	Yes (Weight 2)	To Some Extent (Weight 1)	No (Weight 0)	
Confidence to promote own micro enterprise	27	17	6	1.42
Managerial/administrative capability	19	23	8	1.22
Inspiration to undertake risk	25	19	6	1.38
Generation new business ideas	18	29	3	1.3
Freedom to spend and save the earnings	31	16	3	1.56
Freedom to decide on children’s education	19	25	6	1.26
Deciding on purchase of household assets	18	24	8	1.2
Public speaking ability	18	25	7	1.22
Expressing opinion in a meeting/discussion	29	15	6	1.46
To raise voice against injustice	23	15	12	1.22

Source: Primary Data

It may be noted that the high levels of empowerment is there for factors like **freedom to spend and save earnings (score 1.56)**, expressing opinion in a meeting/discussion (score 1.46), confidence to promote own micro enterprise (1.42) and inspiration to undertake risk (1.38). In respect of other factors also, there is moderate level of empowerment as evidenced by scores ranging from 1.3 to 1.2. In short, there is high empowerment potential for micro enterprises under “Kudumbashree”. Besides, from the high scores of the four factors as noted above it may be concluded that there is high scope for socio-economic empowerment of women because of their participation in the micro enterprises under “Kudumbashree”.



The following are the major findings that appeared while analyzing the study

- The study founded that the intervention of microfinance programme reduces the indebtedness of members from moneylenders, and friends and relatives.
- Due to the support of Kudumbashree programme the annual income and annual savings of the members has significantly improved. There is a significant increase in asset creating capability of members in study area.
- From the findings of the study it is noted that micro enterprises significantly enhances the individual and family empowerment of rural women by ensuring freedom to spend and save earnings. Simultaneously, it improves the confidence to promote own micro enterprises and also inspiration to undertake risk. These facts, when considered together points to the logical conclusion that suitable credit facilities if extended to “Kudumbashree” micro entrepreneurs, they can come up with their own individually managed micro enterprises meaningfully (as against collective endeavors comprising of 5 members each under “Kudumbashree” micro enterprises). Commercial banks can extend suitable credit under their MSME/SSI financing schemes meaningfully to interested “Kudumbashree” micro entrepreneurs individually too based on their performance track record under “Kudumbashree” micro enterprises.
- Advanced level classes in topics like Organizational management, financial accounting, entrepreneurship and marketing have to be imparted at CDS level.

- Officials must ensure that they make a visit to the enterprises more frequently giving proper support system, clarifying doubts and proper guidance.

Conclusion

Microfinance acts as a catalyst in the lives of the poor and Kudumbashree became the lifeline to many of the poor women. In the present study, an attempt has been made to analyze the impact of microfinance, and purpose of obtaining microfinance. The microfinance helps the members to come out of the indebtedness from outside loan, increase the living status through increased income and increased savings, and empowered by engaged in income generating activities. Microenterprise under Kudumbashree helps in developing an entrepreneurial culture in society and increasing better living capacity of the poor. In the study area the members are mainly adopt microfinance for the purpose of purchasing household item. Thus, there is an urgent need to widen the scope and financial services to cover the unreached population.

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Note : The research paper was reviewed and I felt that it follows the research methodology and the paper is eligible for publication.

RESISTANCE AND RESURGENCE IN NIPIN NARAYANA'S NANO GRATOON LITERATURE

Rahana Mansur

Lecturer, Bharata Mata College

ABSTRACT

Advancing technology has altered the reader and the act of reading to perfectly fit into the pace of the modern world. The death of the conventional reader at the cost of the birth of digital literature opens up vistas of new genres which celebrate the expression of literature entwined with graphics and cartoons. The paper aims to analyze how Nipin Narayana's *Vara-
ezhuthu* which blends nano literature, graphics and cartoon emerge as a tool of resistance, and resurgence in social media. The one liners encapsulate the essence of revolution and celebration emancipating literature from conventional practices. Nipin's 'nanogratoon literature' satiates the new generation readers who gain the aesthetic pleasure of reading within seconds, leaving them with, innumerable questions. The pungent satire along with gratoon makes it a modern social weapon to expose the follies and double standards that are followed in the society.

Gone are the days lives of people were entwined with the scent and essence of books, which made them relive and recreate their memories of the past by revisiting the texts. The smell of old texts encapsulated the splendors of the past. With the advent of technology, the 'herculean task' of carrying a text paved the way to e-books which became the new generation reader's favourite text, safe within his 'smart' gadgets except in the realm of academics. But the busy reader who struggled to find some leisure time to invest on reading found it difficult to spend hours or may be weeks together to enjoy a text and hence showed reluctance to read and instead turned



towards the easy modes of entertainment. To gratify the needs and demands of new techno- savvy reader, there emerged digital literature which served him aesthetic pleasure in the shortest and easiest manner possible. The birth of digital literature at the cost of the death of the conventional author, too found its way into social networking sites like facebook, twitter etcetera, which forms a virtual hangout platform for the twenty first century reader. Digital literature found its way in facebook in the form of internet memes (an activity, concept, catchphrase or a piece of media which spreads from one person to person via the internet).

Nipin Narayan who came up with his idea to blend one liners with graphics and cartoon, would have never thought that his venture is going to rewrite the age old equation of author, reader and literature leading to a newer digital reader culture. Nipin's Nano – literature enhanced with the 'gratoon' illustration captures the spirit of literature, along with the pungent socio – political criticism, which makes even a hesitant reader to turn towards reading without investing much of his time to gain the pleasure, satisfaction and knowledge about contemporary socio political scenario. The greatest visionary of all times, William Shakespeare while penning down 'Brevity is the sole wit' for Polonius would never have imagined a prophetic ring to his words that centuries later Nano literature will emerge out exemplifying and justifying Nipin has used the new medium of artistic expression to question the follies and double standards of the society often provoking a thought process in the minds of the readers by leaving his works open ended.

Nipin Narayanan's *Varayezhuthu* came to the public attention with the election campaign of 2016 Parliamentary elections, and the novel attempt grabbed the attention of people in no time. It narrated how Kerala's leftist movement hold an undebatable position in Kerala polity while also illustrating the author's one liner catch phrases with his signature gratoon

representation. Nipin wrote numerous digital graphic stories by juxtaposing seven- eight posters. They often narrated the untold stories of unsatiated love, the craziest dreams and the long lost friendships as well as the perfect moments that everybody would have had crafted in the deepest corners of their hearts. The works unveiled those shared experiences and collective memories that every Malayali across the globe identified himself/herself with. Nipin, being a committed social being took his medium of art to the plain of an active when he dared to expose media hypocrisy in the Jisha murder case. Nipin immersed his words in the most concentrated satire solution to burn the hearts of readers who enthusiastically followed his posts in facebook. The series started with a word of apology to mock at the police officials who failed to reach the place since it was ‘an isolated area’ and hence have no access. He criticizes the politicians since they have never been to the place as the scope for development is pretty low. He pities the celebrities pseudo social commitment which make them mourn for publicity stunts. He summarizes the post with a shocking revelation that there isn’t much distance from Perumbavoor to our own houses and ends the series with a rhetorical question of whether our mothers and sisters are safe at home. Mocking at the Malayali consciousness which never bothers about society, Nipin *Varayezhuthu* thus emerge as an outcry for justice, making the cyber world to react against the corrupted system that operates within an authoritarian government. The protests across Kerala used the posters of *Vareyeshuthu* for the demonstrations since no other writing could essentially express the gravity of the situation in such graphic detail.

In no time Nipin’s *Varayezhuthu* emerged as an alter Malayali consciousness. It often addressed the issues and concerns of the oppressed. It criticized the media for its silence and double standards which kept a blind eye towards those ‘less’ important news. *Varayezhuthu* was a bold attempt to address the unaddressed issues of atrocities in the contemporary Keralite



socio – political realm. When the ‘committed Keralite media’ was busy with the latest pageant shows and cricket matches, Nipin portrayed the hapless victim of the Gulbarga ragging case, Aswathi. His series of *Varezhuthu* dedicated to the cause of Aswathi starts with the question ‘Do you know Aswathi, the sister of Jisha?’ giving a universal face to the oppressed. His works pose a question before every human being who claims to be an ideal citizen in a country which stands for equality and justice. His series named *Pennu*, addresses the issues of marginalization faced by every woman in society. It points out how man, over the course of time, has come up with a set of norms to condition the psyche of the girl child. The series start with the assertion that ‘I need a girl, a girl who never speaks, a girl who never dreams and a girl who only cries’. It questions the patriarchal system which has stripped the girl child of her essence and individuality, merely reducing her to a mere ‘delivery factory’. His series celebrate the unshared dreams and untold stories of women. His latest minimal posters celebrate the woman achievers of Rio Olympics.

Varayezhuthu recently came to public attention for its series on the Seventh Kerala Queer Pride. Nipin redefined the gender binary and power structure within the patriarchal system to address the struggles of the LGBTQI folk who had suffered constant marginalization and stigmatization in the patriarchal systems. He exposes how the heterosexual community adheres to certain practices and norms to remain ‘normal’ and labels those people outside the system as abnormal and hence less human. Nipin attempts to place homosexuals and heterosexuals in a single plane, trying to expose the hollowness of the heterosexual claim that they are ‘more equal’. He depicts how the notion of gender has to be redefined to accommodate another gender without placing them in a lower plain. His *Vareyeshuthu* celebrates homo sexuality by mocking at the public notion that heterosexuality is the only acceptable sexual orientation. The series assert

that being a transgender doesnot make him/her a gender neutral person but rather makes the person a proud member of another gender. It narrates how the gender and sexual minorities who possess different gender and sexual orientation even though they know that society denies a position for any person who dares to question its 'acceptable pattern'. He encapsulates in his work the holy wars they have fought, to stand for what they believe in. He asserts that love doesnot look for gender and orientation. It emphasizes the need to accommodate the LGBTQI community along with the heterosexual to lend meaning to the word 'US' in the truest sense. He normalizes the gay and lesbian kisses as he says the world remains a better place as long as humans love each other. The series end with an invitation to hug, kiss, love and celebrate the essence.

Nipin's *Varayezhuthu* series on the attack of Jimshar's, *Padachonte Chitra Pradarshanam* for its controversial title, reflects his indictment and outcry at the religious intolerance and censoring prevalent in contemporary India. He depicts how a person is muted in India as the religious intolerance has lead to a neo emergency period where the State owns the supreme power to decide what one should think, speak or write. He altered the famous Malayalam rhyme *Ayyanpantamma neyyappam chuttu* to portray the plight of the writers in India, evoking the images of Kalburgi, Dalbolkhar and Pansare. *Vareyeshuthu* series on Jimshar attack is crafted more like a conversation between the writer (Jimshar) and his God (*Padachon*, as called by the Kerala Muslims) reveals the absurdity of attacking a person in the name of God and a religion which stand for peace.

Nipin's *Vareyeshuthu* is a giant leap in the Keralite digital literature as it has evolved as a counter media culture which on the one hand celebrates the literature and on the other hand criticizes the society which operates on the power structure pyramid. The minimal art turned out to be a crowd puller in Facebook as it is loud enough to halt the attention of netizens assure such



nano literature has the endless possibility of the thriving of digital literature in social media, as a mirror upto to our contemporary politics, society and culture.

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Table 1 Damage location accuracy

Sl.No	Predicted location(m)	Actual location(m)	Error (%)
1	1.54	1.53	0.002
2	1.98	1.67	0.006
3	1.87	1.61	0.224

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