



# Cu (II) and Zn (II) Complexes of Benzimidazole Derived Schiff Base: A Study on their Antifungal Activity

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**Abstract** - Two novel complexes of Cu(II) and Zn(II) ions with Schiff base ligand have been prepared. The ligand and its metal complexes have been characterized by using various spectral and analytical techniques. The results of elemental analysis for these complexes are in good agreement with the calculated values showing that the complexes have 1:1:2 [L: M:co-L] stoichiometry of the type  $[ML(bpy)_2]Cl_2$  wherein L acts as a bidentate ligand. The antifungal property of the complexes has been verified. The outcome of the antifungal screening demonstrated that the complexes possess good biological activity against different bacterial strains. The results therefore suggest that all the complexes are better antifungal agents than the free ligand.

**Keywords:** Bipyridine, Antifungal, Octahedral, Benzimidazole

## 1. INTRODUCTION

Schiff bases, due to their extensive applications play a pivotal role in the development of co-ordination and bio-inorganic chemistry. The condensates of aldehydes and amines are known as Schiff bases and the metal complexes of these strong chelators exhibit large prospective applications in various areas such as in medicine as antibiotics and anti-inflammatory agents and in the industry as corrosion inhibitors, agriculture, analytical chemistry, dye and polymer industry, catalysis, enzyme modeling, magneto-structural chemistry and diverse miscellaneous studies [1-4]. Heterocyclic compounds have played an important role in the field of therapeutics as they possess diverse pharmacological properties such as antimicrobial, antiinflammatory, anti-convulsant, antiviral and anti-malarial etc. These desirable features are the reason for the synthesis of metal complexes that contain heterocycles in their structure. Particularly, imidazole based compounds are

still being researched upon due to their broad spectrum of activity. The benzimidazole scaffold is a useful structural motif for displaying chemical functionality in biologically active molecules. Some of its derivatives have potent biological activities as antitumor [5], anti-HIV [6], anti-Parkinson [7] and antimicrobial [8] agents. At the same time, because of the coordination chemistry of azoles acting as ligands in transition metal compounds, the chelating ligands incorporating benzimidazole groups have been extensively studied in the context of modeling biological systems in recent years [9]. The metal complexes are antimicrobially active and show higher activity than the free ligand. Metal chelation affects significantly the antimicrobial/bioactive behaviour of organic ligands [10]. Having all these in mind, in this paper, we are interested to explore the antibacterial activity of benzimidazole based Schiff base and its metal complexes of Cu(II) and Zn(II) ions. Besides the characterization of complexes has been carried out by physicochemical techniques like IR, UV-Vis., EPR, elemental analyses, magnetic susceptibility and conductance measurements.

## 2. EXPERIMENTAL

The materials and methods, antimicrobial studies were followed as per the procedures previously reported by us [11].

### 2.1. Synthesis of Schiff Base

The Schiff base L was prepared by neutralizing 2-(aminomethyl) benzimidazole

dihydrochloride (5mmol) dissolved in 15 mL of water by adding aqueous potassium carbonate solution and then condensed with the solution of 4-methoxybenzaldehyde (5 mmol) in methanol (8 mL). The condensed mixture was then refluxed for 3 h and the yellow solid precipitated on cooling was washed with hot ethanol first, then pet-ether and dried. Further, it was recrystallized in a hot solution of ethanol–methanol (1:1) and dried *in vacuo*.

## 2.2. Synthesis of Mixed Ligand Metal Complexes

The metal complexes of the type  $[ML(bpy)_2]Cl_2$  was synthesized using the following procedure. The synthesized ligand **L** (5 mmol) was dissolved in a hot methanolic solution. The hot methanolic solution was stirred continuously in a magnetic stirrer and condensed with the appropriate metal(II) chloride salts of Cu(II) and Zn(II) (5 mmol) for 3 h. To the resultant solution the co-ligand 2,2'-bipyridine was added and refluxed for 2 h. On cooling, the product obtained was washed with hot ethanol, pet-ether and then dried *in vacuo*. The obtained metal complexes  $[ML(bpy)_2]Cl_2$  were in 1:1:2 ratio (metal: ligand : co-ligand).

## 3. RESULTS AND DISCUSSION

The Schiff base ligand and its Cu(II) and Zn(II) complexes have been synthesized. They are found to be air stable. The ligand is soluble in ethanol, methanol, DMF and DMSO but the complexes are soluble only in DMF and DMSO. The ligand and its complexes have been characterized by the usual analytical and spectral techniques. The analytical data of the complexes correspond well with the general formula  $[ML(bpy)_2]Cl_2$ , where M = Cu(II) and Zn(II). Their magnetic susceptibility values of the complexes at room temperature

are consistent with octahedral geometry around the central metal ion. The higher molar conductance of the complexes supports their electrolytic nature.

### 3.1. IR Spectra

The IR spectra provide valuable information regarding the nature of the functional group attached to the metal atom. The spectrum of free ligand **L** shows a band at  $1628\text{ cm}^{-1}$ , characteristic of stretching modes of  $\nu(-CH=N)$  [12-14] indicating the formation of the Schiff base. This band is found to shift towards the lower frequency at 1612 and  $1617\text{ cm}^{-1}$  in case of Cu(II) and Zn(II) metal complexes respectively, inferring the role of the azomethine nitrogen in coordination with metal ion [15]. Presumably, the coordination of the nitrogen lone pair with metal centre would have reduced the electron density in azomethine link, leading to red shift in the  $\nu(-CH=N)$  group [16]. The complexation was further supported by the appearance of new bands in their spectra at 437 and  $426\text{ cm}^{-1}$  of Cu(II) and Zn(II) metal complexes respectively, allotted to the  $\nu(M-N)$  stretching vibrations that are not identified in the spectra of free ligand [17].

### 3.2. Magnetic Moments and Electronic Spectra

The geometry of the metal complexes is predicted from electronic spectra and magnetic moment data of the complexes. The electronic absorption spectra of the ligand and its metal complexes were recorded in DMF, in the 200-1100 nm range. The free ligand exhibited two intense bands at 36,231 and  $31,847\text{ cm}^{-1}$  due to  $\pi \rightarrow \pi^*$  and  $n \rightarrow \pi^*$  transitions [18], respectively. The d-d bands found to be in the region  $14,925\text{ cm}^{-1}$ , for Cu(II) complex is assigned to  ${}^2E_g \rightarrow {}^2T_{2g}$  transition, deducing that the geometry around the metal ion is distorted octahedral. The magnetic moment

value obtained was 1.83 BM. This value indicates the monomeric nature of the complex [19, 11]. Due to the diamagnetic nature of Zn(II) complex, d-d transition is not obtained in the visible region. Hence its geometry was confirmed based on stoichiometry and elemental analysis which is six coordinated and ascribed to the octahedral geometry.

### 3.3. EPR Spectra

The X-band EPR spectrum of the Cu(II) complex was recorded in DMSO at liquid nitrogen temperature (LNT) and also at room temperature (RT) using tetracyanoethylene (TCNE), as field marker. The EPR spectrum of the Cu(II) complex at RT (300 K) showed one intense absorption band in the high field and is isotropic due to the tumbling motion of the molecules. However, this complex at LNT (77 K) showed three well-resolved peaks with low intensities in the low field region and one intense peak in the high field region. The spectral data revealed that the  $A_{\parallel}$  (164) >  $A_{\perp}$ (106) ;  $g_{\parallel}$  (2.25) >  $g_{\perp}$  (2.06) >  $g_e$  (2.0023). This supports the  $d_{x^2-y^2}$  as the ground state which is the characteristic of octahedral geometry and axially symmetric. Further, the G value,  $G = (g_{\parallel} - 2)/(g_{\perp} - 2)$ , measures the exchange interaction between the copper centers in polycrystalline solid. The value of G is found to be 4.3 for the copper complex indicating negligible exchange interaction of Cu–Cu in the complex according to Hathaway [20]. The interpretation is seconded by the

magnetic moment value for copper complex (1.83 BM). Based on the above spectral characterization the proposed structure is given in figure 1.

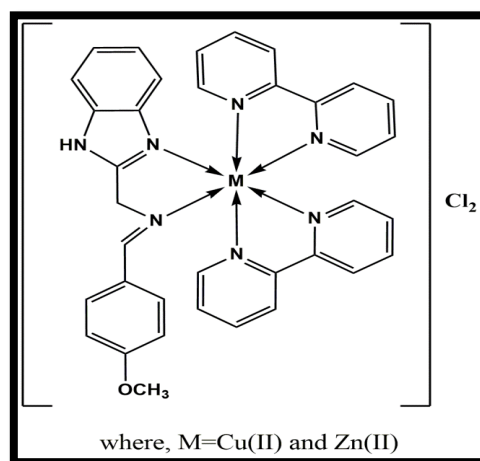


Figure 1 Structure of the complexes

### 3.4. Antifungal Bustle

The synthesized ligand and metal complexes were evaluated for the antifungal activity. Five types of fungi were taken and their minimum inhibitory concentration was evaluated. The comparative study revealed that the complexes exhibited higher activity than the ligand and the results were tabulated in Table 1. The reason for such results can be explained through Tweedy's chelation theory and Overtone concept [21-23]. According to these theories, the metal chelation increases the polarity of the complex which in turn increases the lipophilic nature of the complexes that allows easy entrance of the complexes into lipid membranes [24]. It is found that the copper complex exceeds the ligand and zinc complex in the antifungal activity.

Table 1. Minimum inhibition concentration of the synthesized compounds against the growth of fungi ( $\mu\text{g/mL}$ ).

Compounds	<i>Aspergillus niger</i>	<i>Fusarium solani</i>	<i>Curvularia lunata</i>	<i>Rhizoctonia bataticola</i>	<i>Candida albicans</i>
[L]	19.5	20.0	20.1	20.4	20.8
[CuL(bpy) <sub>2</sub> ]Cl <sub>2</sub>	9.3	9.5	9.7	9.9	10.1
[ZnL(bpy) <sub>2</sub> ]Cl <sub>2</sub>	11.4	12.2	13.0	13.3	14.1
<sup>a</sup> Fluconazole	1.4	1.7	1.2	1.5	1.8

<sup>a</sup>Fluconazole is used as the standard

#### 4. CONCLUSION

Novel Cu(II) and Zn(II) complexes of the type  $[ML(bpy)_2]Cl_2$  have been synthesized and structurally characterized by elemental analysis, molar conductance, magnetic susceptibility, UV-Vis, IR and EPR spectra. From the UV-Vis spectra, Cu(II) complex has adopted distorted octahedral geometry around the central metal ion. The magnetic susceptibility value provides evidence for its monomeric nature. IR spectral data provide a key recognition for the coordination modes and sites of ligand and its complexes. All these complexes have higher electrolytic nature confirmed by their molar conductance data. Antifungal activity of the compounds has been tested *in vitro* against five fungi by the broth dilution method. The MIC values against the growth of microorganisms are much larger for metal complexes than the ligand. These complexes may give an opportunity to provide routes towards rational drug design.

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# Study of Inter-relationship between the Chemical Parameters of a Lentic Habitat and Freshwater Fish *Oreochromis Mossambicus* during the Winter Season

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**Abstract** - In a Lentic habitat, to study the chemical parameters of water and the growth improvement of the fish and its nutritional quality is the need of the hour. Concrete relationship was studied in the present investigation between the chemical parameters and the tissue biochemistry of fish *Oreochromis mossambicus* in the lentic habitat Kullursandhai dam the only water resource for Virudhunagar town. Gradual steady rise in the level of pH, Free Carbon dioxide, Total Alkalinity, Total Hardness, Calcium and Magnesium in the water favored the growth of the fish by improved tissue Carbohydrate, Protein and Lipid content from the month of December to February 2016-2017, the Winter season. Due to the settled water condition in the Winter season, Dissolved oxygen level was found to be rapidly raised from 4.45 mg/l to 8.20 mg/l during the study period of 1<sup>st</sup> day to 90<sup>th</sup> day. Thus Dissolved oxygen played a pivotal role for the higher amount of Protein (11.46 mg/gm) and Lipid (8.26 mg/gm) in the Muscle tissue of the fish *Oreochromis mossambicus*. Dissolved oxygen is also a determining factor for the higher amount of Liver Protein (11.06 mg/gm) and Lipid (13.70 mg/gm). Thus from the present study it was informed to the fish farmers that the better chemical parameters and higher Dissolved oxygen level in the Kullursandhai dam have initiated the better quality fish and its growth during the Winter season.

**Keywords:** Chemical Parameters, Lentic Habitat, *Oreochromis Mossambicus*

## I. INTRODUCTION

Prime need for the survival of the human beings and all living organisms on the earth is because of the most vital solvent, the water (Adenyi, 2004). Water is the colloid of all the living cells. 96.8% of water on earth is salty water and only 3.2 % of water is fresh water (Ramachandraiah, 2004). Water is an abiotic factor, a chief natural resource which influences the agriculture, fish culture, industrial purpose and human settlement patterns (Nwaugo *et al.*, 2006). Inland fishery and water medium quality is interrelated to each other, but due to industrialization especially small scale and medium scale has its own share of waste generation and disposal problem (Ajiwe *et al.*, 2000). Water tanks and

channels are the various inlets for the water inflow in to the lentic habitat and it has a high utility value for the growth and improves the nutritional value of the fish living in the fresh aquatic conditions (Sreenivasan, 1993; Sivanappan, (2001). The Physical and chemical properties of water plays a significant role in the composition, distribution and abundance of aquatic organisms (Nagarajan and Kannan, 2013). Relationship between the organisms and their environment can be used to determine the water quality and productivity of the water body (UBRDA, 1980). Fish gains growth by weight and length when the water inflow in to a lentic habitat or dam is continuous. Construction of a dam, a lentic habitat will solve the problems such as water scarcity, drought, famine floods and under quality fish yield (Abubaker *et al.*, 2015). Fish culture practice, fish yield analysis and the nutritive quality of the fish must be assessed periodically. Chemical exposure of aquatic organism to the environmental pollutants with possible effects or growth and reproduction are important considerations of fish farmers (Lamai *et al.*, 1999). Fish have rich source of essential nutrients required for supplementing for both infant and adult diets (Botta *et al.*, 1978). Carbohydrates are the most economical and inexpensive sources of energy for fish diets (Eyo, 2001). Lipids are high energy nutrients than the Proteins and Carbohydrates (Love, 1980). Lentic habitat Kullursandhai dam was selected as the experimental sites which have high importance as the only water source for the people of Virudhunagar town. Mixing up of sewage water and domestic waste and industrial effluents in the dam water will be at

its maximum which will consistently alters the chemical parameters of the water (Venkatesan, 2007). Fish catch was done every year from the month of February to April every year in the Kullursandhai dam. Winter season which immediately follows the rainy season extends from December to February. During this season full capacity of water was attained in the dam and is an apt season for the initiation of the fish growth. Therefore the Winter season was selected as the period of my investigation to study the tissue biochemistry of *Oreochromis mossambicus* with relation to the chemical parameters of the water.

## 2. MATERIALS AND METHODS

### Study Area

Kullursandhai dam was constructed during the year 1974 across the Kowshiganadhi River running through the Virudhunagar town. It is located 4 km away from the VHNSN College in Kullursandhai village which belongs to the Koorakundu panchayat. This was selected as study area due to two reasons. It was a dam which spill over the water for the agricultural pupose after the rainy season. Second reason is Kullursandhai dam is the only fish culture practice fish resource for Virudhunagar town.

One litre of water was collected from different sites at random from the first day in the month of December, 15<sup>th</sup> day, 30<sup>th</sup> day 45<sup>th</sup> day, 60<sup>th</sup> day, 75<sup>th</sup> day and 90<sup>th</sup> day up to February. Immediately pH of the water was found out and noted with the help of Digital pH meter. Collected sample was brought to the VHNSN College Zoology laboratory for further analysis. Chemical parameter analysis such as Dissolved Oxygen by Winklers method, Free CO<sub>2</sub> was analyzed by Mackereth titration method, Total Alkalinity by Welch Titration method, Total Hardness and Calcium by EDTA Titration method, Magnesium by Ca-Mg titration method.



Figure 1. *Oreochromis mossambicus* fish

Five experimental fishes (Fig.1) were caught from different sites in the Kullursandhai dam on every experimental day from December to February and brought to the laboratory immediately. Fishes were dissected carefully to separate the Muscles, Liver and Gills cleanly. Tissues were subjected to biochemical analysis for quantitative estimation of Carbohydrate Anthrone method, Protein by Lowry *et al* (1951) method and Lipid by Bragdon (1951) method. Recorded values are given in the Table II, III and IV.

## 3. RESULTS

Table I. Chemical parameters of the Kullursandhai dam from December, 2016 to February, 2017

Chemical Parameters	1 <sup>st</sup> Day	15 <sup>th</sup> Day	30 <sup>th</sup> Day	45 <sup>th</sup> Day	60 <sup>th</sup> Day	90 <sup>th</sup> Day
pH ( mg/l)	6.03	6.02	6.04	6.03	6.02	6.05
Dissolved Oxygen (ml/l)	4.45	4.48	4.90	5.39	6.85	8.20
Free Carbon dioxide ( mg/l)	1.73	1.78	2.37	2.67	2.85	3.43
Total Alaklinity ( mg/l)	101	123	127	145	149	153
Total Hardness	125	128	132	141	148	153
Calcium ( mg/l)	64.78	65.4	68.3	69.8	72.3	75.72
Magnesium ( mg/l)	31.14	33.9	34.8	35.6	43.8	48.5

The relationship between Chemical parameters of Kullursandhai dam water and tissue biochemistry of *Oreochromis mossambicus* was studied and tabulated.

**Table II Carbohydrate content of *Oreochromis mossambicus* during the Winter season**

Experimental period	Muscle mg/gm	Liver mg/gm	Gills mg/gm
1 <sup>st</sup> day	3.02±0.49	3.00±0.94	3.36±0.42
15 <sup>th</sup> day	3.03±0.28	6.07±0.54	3.37±0.39
30 <sup>th</sup> day	3.09±0.47	6.09±0.55	3.43±0.29
45 <sup>th</sup> day	4.02±0.33	7.06±0.46	3.53±0.30
60 <sup>th</sup> day	4.03±0.26	7.02±0.58	5.40±0.66
75 <sup>th</sup> day	4.06±0.49	7.46±0.66	5.05±0.44
90 <sup>th</sup> day	4.02±0.57	8.06±0.69	9.06±0.82

**Table III Protein content of *Oreochromis mossambicus* during the Winter season**

Experimental period	Muscle mg/gm	Liver mg/gm	Gills mg/gm
1 <sup>st</sup> day	3.63±0.39	5.73±0.54	2.36±0.22
15 <sup>th</sup> day	3.76±0.31	6.70±0.54	2.37±0.29
30 <sup>th</sup> day	4.06±0.48	7.20±0.65	3.23±0.39
45 <sup>th</sup> day	5.02±0.53	7.46±0.76	5.30±0.50
60 <sup>th</sup> day	5.37±0.56	7.72±0.78	5.66±0.56
75 <sup>th</sup> day	5.06±0.59	7.86±0.76	5.73±0.44
90 <sup>th</sup> day	11.46±0.90	11.06±0.99	5.83±0.59

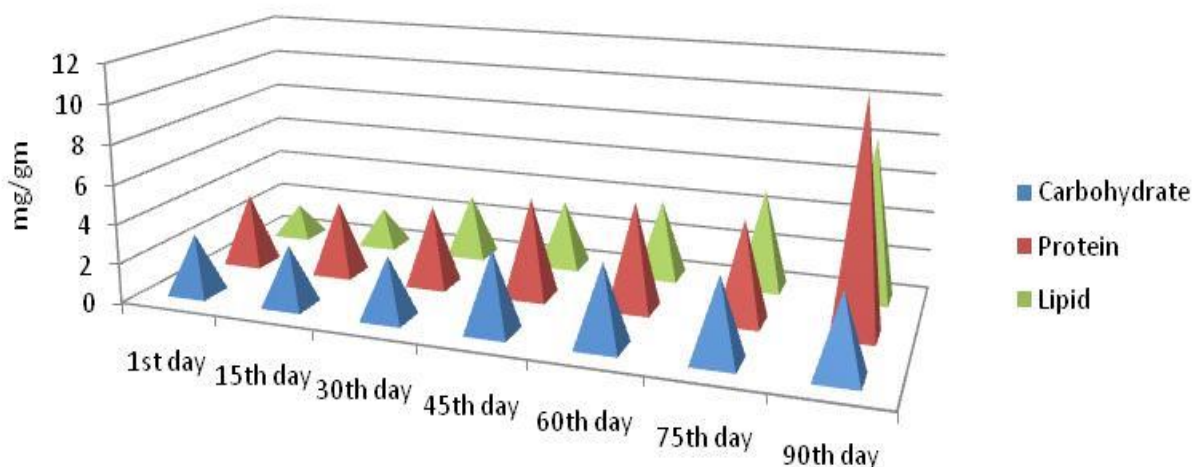
**Table IV Lipid content of *Oreochromis mossambicus* during the Winter season**

Experimental period	Muscle mg/gm	Liver mg/gm	Gills mg/gm
1 <sup>st</sup> day	1.63±0.39	4.10±0.54	2.06±0.22
15 <sup>th</sup> day	1.96±0.31	4.46±0.54	3.07±0.29
30 <sup>th</sup> day	3.20±0.48	4.63±0.65	3.02±0.39
45 <sup>th</sup> day	3.40±0.53	4.60±0.76	3.43±0.50
60 <sup>th</sup> day	3.95±0.56	6.43±0.78	3.53±0.56
75 <sup>th</sup> day	5.06±0.59	7.36±0.76	3.86±0.44
90 <sup>th</sup> day	8.26±0.8	13.70±0.9	5.40±0.52

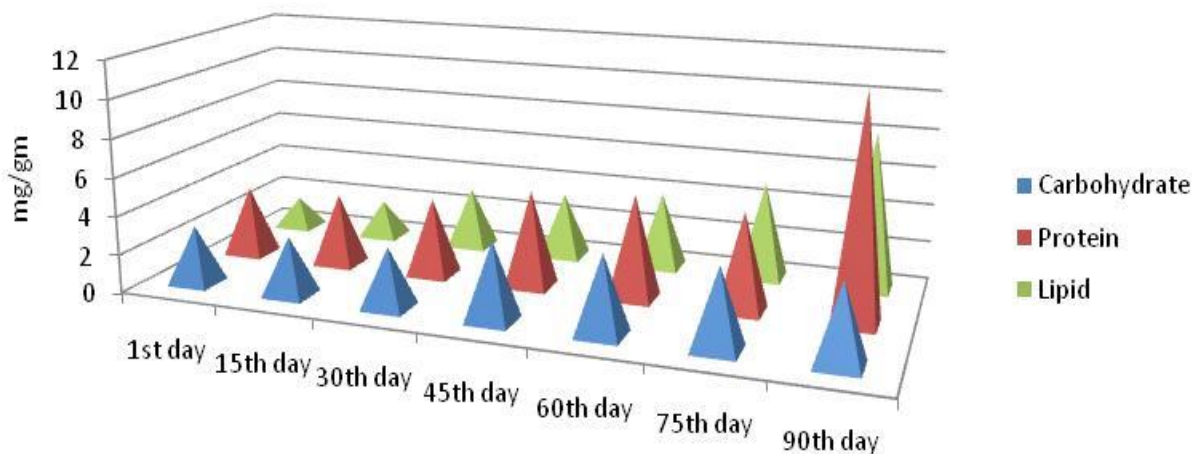
In Table I slight increase was noticed in pH, Free Carbon dioxide, Total Hardness,

Calcium and Magnesium level from the 1<sup>st</sup> day to 90<sup>th</sup> day. But the Dissolved oxygen level was increased drastically from 4.45 to 8.20 mg/l. Carbohydrate content was lowest in the liver tissue (3.00 mg/gm). Highest value of 9.06mg/gm was recorded in the gill tissue on 90<sup>th</sup> day. Carbohydrate amount was higher in the Gill tissue followed by the liver tissue and the lowest amount was raised in the Muscle tissue.

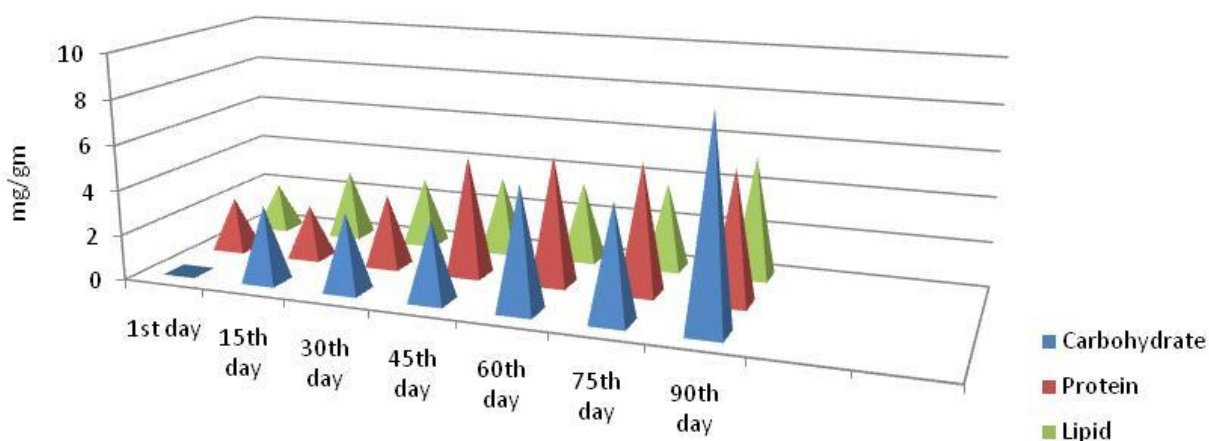
Increase in the chemical parameters was not found to be much significant for pH, Free CO<sub>2</sub>, Total Hardness, Calcium and Magnesium level from the 1<sup>st</sup> day to 90<sup>th</sup> experimental day. But the Dissolved oxygen level was estimated to be increased drastically from 4.45 to 8.20 mg/l. Protein level was least in the gill tissue (2.37 mg/gm). Highest value of 11.46 mg/gm was observed in the liver tissue on 90<sup>th</sup> day. Protein amount was higher in the Muscle tissue followed by the liver tissue and the lowest amount was recorded in the gill tissue. Protein level was lowest in the Muscle tissue of value 1.63 mg/gm. Highest value of 13.74 mg/gm was estimated in the liver tissue on 90<sup>th</sup> day. Lipid amount was higher in the Liver tissue followed by the muscle tissue and the lowest amount was quantified in the gill tissue.



**Figure 2. Carbohydrate, Protein and Lipid content in the Muscle tissue of *Oreochromis mossambicus* in Kullursandhai dam during Winter season**



**Figure 3. Carbohydrate, Protein and Lipid content in the Liver tissue of *Oreochromis mossambicus* in Kullursandhai dam during Winter season**



**Figure 4. Carbohydrate, Protein and Lipid content in the Gill tissue of *Oreochromis mossambicus* in Kullursandhai dam during Winter season**

Fig. 2 represents the higher content of Protein, followed by Lipid and Carbohydrate in the Muscle tissue of *Oreochromis mossambicus*. The value of all the biochemical factors gradually raised from the 1<sup>st</sup> day to 90<sup>th</sup> experimental days in Kullursandhai dam.

Fig. 3 represents the higher content of Lipid, followed by Protein and Carbohydrate in the Liver tissue of the fish *Oreochromis mossambicus*. The value of all the biochemical gradually rises from the 1<sup>st</sup> day to 90<sup>th</sup> experimental days in Kullursandhai dam

Fig. 4 represents the higher content of Protein, followed by Lipid and Carbohydrate in the Gill tissue of the fish *Oreochromis*

*mossambicus*. Steady increase in the biochemical parameters and slightly variation was observed when compared to the muscle and liver tissues from the 1<sup>st</sup> day to 90<sup>th</sup> experimental days in Kullursandhai dam

#### 4. DISCUSSION

Chemical parameters of the Lentic habitat Kullursandhai dam, have no significant change in the pH of water during the experimental period in winter season. This may be due to the stable condition of the water in winter season. Concordant observation was made by Madhavan (2012) in Khadakwasla reservoir. Due to the constant pH and the Total alkalinity was also analysed to be within the



range of 101 to 153 mg/l. The Free Carbon dioxide level of the water was found to be 2.25 mg/l increased from the 1<sup>st</sup> day to 90<sup>th</sup> day. Utilization of Carbon dioxide by the polysynthetic activities of flora and fauna may be the reason for the lesser CO<sub>2</sub> (Sahai and Sinha, 1969). Slight increase in the Calcium and Magnesium was recorded in the present study, will favour the growth of the fish by nutritional quality and quantity (Huynh *et al.*, 2000). According to Graves (1970) the body composition of fish seems to depend on season. Drastic increase in the Carbohydrate level in the liver and gill tissues than in the muscles may be due to the absence of lethal concentrations of toxic materials in the water as well as high muscular activity of the fish (Quang, 2014). In the present study accumulation of Protein in the muscle and gill tissues was observed very less, but in the liver tissue Protein level was steeply increased due to the higher Oxygen level of 4.45 mg/l to 8.20 mg/l throughout the study period. Depletion in the protein level in the muscle and gill tissues may be due to the higher metabolism and excretion of protein by the kidney (Patel and Parmer, 1993). Intensive respiratory activity to the sufficient dissolved oxygen in Kullursandhai dam may be the reason for the higher lipid level in the muscle and liver tissues than in the gills. Same trend was reported by Das (2009) in *Oreochromis mossambicus* fish. Therefore in the present study, due to the constant rise in the level of Dissolved Oxygen parameter, nutritive value of the fish by the accumulation of Protein and lipid in the muscle and liver tissues of *Oreochromis mossambicus* was highly productive. Muscle carbohydrate was found to be improving from the 1<sup>st</sup> day to 90<sup>th</sup> day during the Winter season shows a good sign that the fish growth was initiated from the winter season was confirmed and was referred to the fish farmers.

## 5. CONCLUSION

- Raised level of chemical parameters such as pH, Free Carbon dioxide, Total alkalinity, Total Hardness, Calcium and Magnesium raise was recorded, but only insignificant rise in the level was observed during the study period from the 1<sup>st</sup> to 90<sup>th</sup> day during Winter season in the lentic habitat Kullursandhai dam
- Significant rise in the Dissolved oxygen level of Kullursandhai dam was recorded which was found to be a good sign for the growth of the fish of *Oreochromis mossambicus*.
- Carbohydrate content in the Muscle tissue was improved during the study period compared to the Liver and Gills.
- Amount of protein in liver increased alarmingly but only slight increase was noticed in the muscle and gills.
- Shoot up in the level of lipid was studied in the muscle and liver compared to the gills.
- Rise in the level of seven chemical parameters and the rapid rise in the level of the Dissolved oxygen improved the level of tissue carbohydrate, protein and lipid content particularly remarkably higher amount in the muscle and liver tissues of *Oreochromis mossambicus*.

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# Insight into the Antifungal Activity of Triazole Based Schiff Base Cu (II) and Zn (II) Complexes

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**Abstract** - Two mixed-ligand Cu(II) and Zn(II) complexes were designed, synthesized and characterized by utilizing triazole-derived Schiff base as the primary ligand and 1,10-phenanthroline as the co-ligand. These compounds were then characterized analytically and spectroscopically by means of various techniques such as elemental analyses, magnetic susceptibility, UV-Vis, IR, EPR and molar conductance measurements. The complexes espouse octahedral geometry around the central metal ion. The metal complexes were electrolytic in nature and of the type  $[ML(phen)_2]Cl_2$ . The synthesized Schiff base and its two mixed-ligand metal complexes were screened against the fungal strains *Aspergillus niger*, *Fusarium solani*, *Curvularia lunata*, *Rhizoctonia bataticola* and *Candida albicans*. The obtained results of the antifungal screening revealed that the growth inhibitory activity of the complexes against the fungi was more efficient than the ligand.

**Keywords:** Schiff base; Triazole analogues; Antifungal activity

## 1. INTRODUCTION

Of late, applications of metals and metal complexes mainly the medicinal uses are mounting high in the hierarchy of clinical and commercial importance. Recent advances in chelation research have paved the way for the development of “magic bullets” for chemotherapy using different strategies and pharmacological manipulation, thus demonstrating the significant potential of the utilization of metal complexes as drugs, and highlighting that medical inorganic biochemistry is a flourishing field [1]. Schiff bases are widely known ligand systems that are researched upon for their biological profile, as they can be found in literature as intermediates in the formation of medicinal compounds [2]. The several factors that contribute in the research of Schiff bases are the specific attributes like novel structural features, thermal stability, abnormal magnetic properties and relevant

biological properties [3,4]. Alternatively, microbial resistance is a major global health problem, along with multidrug resistance in pathogenic species. There is an urgent need to develop new antimicrobials with novel mechanisms of action to overcome the problem of resistance [5]. Therefore, researchers are increasingly turning their attention to folk medicine, looking for new leads to develop better drugs for treating microbial infections and also the Schiff based metal complexes were known to exhibit antimicrobial properties [6].

Likewise, triazole analogues are extensively studied owing to their impressive biological activity [7]. Drugs like fluconazole (antifungal agent), terconazole (antifungal agent), trazodone (anti-depressant), vorozole, letrozole and anastrozole (inhibition of breast cancer) contain triazole in their moiety. As the coordination of metal ions to the biologically active Schiff base ligands enhances their efficacy [8], a Schiff base ligand condensed from 3-amino-1,2,4-triazole and benzaldehyde was coordinated with corresponding metal chloride salts. In addition two moles of 1, 10-phenanthroline, a planar aromatic bidentate ligand was coordinated to obtain  $[ML(phen)_2]Cl_2$  type complexes, where M =Cu(II), and Zn(II). The synthesized mixed ligand complexes were characterized and its antifungal activity was screened. The results showed excellent activity than the Schiff base ligand.

## 2. EXPERIMENTAL PROTOCOLS

The chemicals involved in this work were of AnalaR grade and were used without further purification. However, the solvents were distilled and then used. 3-amino-1,2,4-triazole, benzaldehyde, and 1,10-phenanthroline were obtained from Sigma Aldrich. Solvents dimethyl formamide was procured from Hi-media chemicals. The copper and zinc metal salts were received from E-Merck. CHN analyzer Elemental Vario EL III Carlo Erba 1108 was used for determining the microanalyses (C, H and N), available at Sophisticated Analytical Instrument Facility (SAIF), Central Drug Research Institute (CDRI), Lucknow, India. A Systronic model-304 digital conductivity meter was used to measure the molar conductivities in DMF ( $10^{-3}$  M) at room temperature. Gouy balance was used to determine the magnetic susceptibility of the complexes where copper(II) sulphate pentahydrate was employed as a calibrant. Vibrational spectra ( $4000\text{--}400\text{ cm}^{-1}$  KBr disk) of the samples were recorded on an IR Affinity-1 FT-IR Shimadzu spectrophotometer. The EPR spectra for the complex was subjected to Varian E 112 EPR spectrometer in DMSO solution, at room temperature (300 K) and liquid nitrogen temperature (77 K) using TCNE (tetracyanoethylene) as the g-marker. A Shimadzu model UV-1800 spectrophotometer was used to record absorption spectra at room temperature. The *in vitro* antifungal activity was performed against the fungal strains- *Aspergillus niger*, *Fusarium solani*, *Curvularia lunata*, *Rhizoctonia bataticola* and *Candida albicans*. The standard and test samples were dissolved in DMF to give a concentration of 100  $\mu\text{M}$ . The minimum inhibitory concentration (MIC) was determined by broth micro dilution method

[9]. Dilutions of test and standard compounds were prepared in nutrient broth [10]. The samples were incubated at  $37^\circ\text{C}$  for 24 h, and the results were recorded in terms of MIC (the lowest concentration of test substance which inhibited the growth of the fungi).

### 2.1 Synthesis of Schiff Base Ligand (L)

The Schiff base (L) was prepared by condensing 3-amino-1, 2, 4-triazole (10 mmol) dissolved in hot ethanol (15 mL) to a magnetically stirred hot solution of benzaldehyde (10mmol) in hot ethanol (15 mL), in a rotamantle. The condensed mixture was then refluxed for 4 h. The product was obtained through slow evaporation and the yellow solid precipitated was washed with hot ethanol first, then pet-ether and dried. Further, it was recrystallized in a hot solution of ethanol–methanol (1:1) and dried in *vacuo*.

### 2.2 Synthesis of metal complexes

The synthesized ligand L (10 mmol) was dissolved in a hot ethanolic solution and condensed with the appropriate metal chloride salts (Cu and Zn) (5 mmol). After vigorous stirring for 2 h, the co-ligand 1, 10-phenanthroline (20 mmol) was added slowly and refluxed for 2 h. The resultant mixture was set aside to cool. On cooling the product obtained was washed with hot ethanol, pet-ether and then dried in *vacuo*. The obtained metal complexes  $[\text{ML}(\text{phen})_2]\text{Cl}_2$  were in 1:1:2 ratio (metal: L: co-ligand).

## 3. RESULTS AND DISCUSSION

The ligand and its complexes are found to be stable in air. The ligand is soluble in common organic solvents but the complexes are soluble only in DMF and DMSO.

### 3.1 Elemental Analysis and Molar Conductivity Measurements

The elemental analysis data for the metal complexes are in good agreement with the calculated values. The complexes are found to be electrolytic in nature in

$10^{-3}$  M DMF solution, implying the presence of chloride anions in the ionization sphere. The presence of counter (chloride) ions is confirmed from Volhard's test. The elemental analysis and molar conductance data are tabulated in Table 1.

**Table 1** Physical characterization, molar conductance and magnetic susceptibility data of the ligand (L) and its metal complexes

S. No	Compounds	Found (calc)%				$\Omega^{-1} \text{ cm}^2 \text{ mol}^{-1}$	Magnetic Moment (BM)
		M	C	H	N		
1	L	-----	62.53 (62.78)	4.56 (4.68)	32.39 (32.54)	-----	-----
2	[CuL(phen) <sub>2</sub> ]Cl <sub>2</sub> (1)	10.48 (10.66)	66.31 (66.49)	4.00 (4.06)	18.62 (18.80)	142.5	1.83
3	[ZnL(phen) <sub>2</sub> ]Cl <sub>2</sub> (2)	10.61 (10.93)	66.09 (66.28)	4.01 (4.05)	18.58 (18.74)	147.9	diamagnetic

### 3.2 IR Spectra

One of the techniques, vibrational spectroscopy is used to confirm the formation of the compounds by the comparison of the IR spectra of the ligand and its complexes. The band corresponding to the azomethine group  $\nu$  (-CH=N) was observed at  $1642 \text{ cm}^{-1}$  in the spectrum of the free ligand which considerably shifted to lower frequencies  $1601$  and  $1623 \text{ cm}^{-1}$  for the Cu(II) and Zn(II) complexes respectively, indicating the involvement of the azomethine nitrogen in the coordination with the metal ion, which was further supported by the appearance of new bands in their spectra at  $435$  and  $441 \text{ cm}^{-1}$ , assigned to the  $\nu(\text{M-N})$  stretching vibrations. Sharp peak at  $3172 \text{ cm}^{-1}$  belonging to the -NH of triazole appeared in the ligand and reappeared in both the complexes, signifying its non-participation in the complexation.

### 3.3 Electronic Spectra and Magnetic Properties of the Complexes

The stereochemistry of metal ions in the complexes is assigned based on the position and number of d-d transition peaks, the electronic spectral data of Cu(II) and Zn(II) complexes of the ligand L were recorded in DMF. The free ligand exhibited two intense bands at  $41,556$  and  $27,132 \text{ cm}^{-1}$  due to the charge transfer band [11]. The transitions were shifted to higher or lower frequencies due to the coordination of the ligand with metal ions in the range  $39,840$ - $42,372 \text{ cm}^{-1}$  and  $26,809$ - $39,370 \text{ cm}^{-1}$  for  $\pi \rightarrow \pi^*$  and  $n \rightarrow \pi^*$  respectively. The electronic spectrum of the Cu(II) complex showed d-d absorption band at  $13,872 \text{ cm}^{-1}$  assigned to transition  ${}^2E_g \rightarrow {}^2T_{2g}$ . According to these data the complex adopts a distorted octahedral geometry around the central metal ion and the magnetic moment of 1.83 BM was observed for the complex, which indicates that the mononuclear complexes are uncoupled  $d^9$  systems with an  $s = 1/2$  spin state of distorted octahedral geometry [12].

Furthermore, the microanalytical data and mass spectral data second the monomeric nature of this copper(II) complex. The electronic absorption spectrum for the diamagnetic Zn(II) complex showed bands at 39,840 and 39,370  $\text{cm}^{-1}$  which belong to  $\pi \rightarrow \pi^*$  and  $n \rightarrow \pi^*$  transitions respectively that are assigned to intraligand charge-transfer transitions [15]. According to the empirical formulae, an octahedral geometry is proposed for Zn(II) complex.

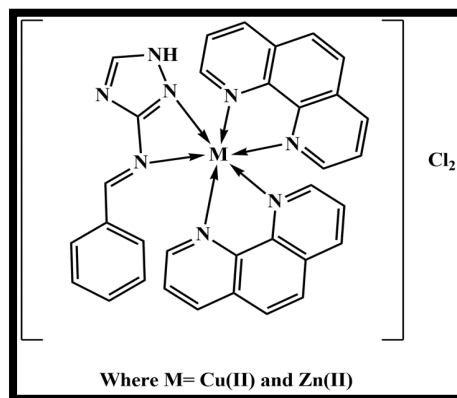
### 3.4 EPR Spectrum of the Cu(II) Complex

The EPR spectra of Cu(II) complex were recorded in DMSO at 300 K and 77 K. The spin Hamiltonian parameters of the complex have been calculated. From these spectral data, it is found that  $g_{\parallel}$  (2.27)  $>$   $g_{\perp}$  (2.06)  $>$   $g_e$  (2.0023), which supports the  $d_{x^2-y^2}$  as the ground state, characteristic of octahedral geometry and axially symmetric. Further, in an axial symmetry, the  $g$ -values are related by the expression,  $G = (g_{\parallel} - 2)/(g_{\perp} - 2)$ , which measures the exchange interaction between the copper centers in polycrystalline solid. The  $G$  value of 4.64 for the copper complex indicates negligible exchange interaction of Cu–Cu in the complex according to Hathaway [16]. These values were further supported by their magnetic moment values for complex (1.83 BM). Thus, the spectral data discussed above confirm the proposed structure of Cu(II)

complex and the structure is given in Scheme 1.

### 3.5 Antifungal Activity

The Schiff base and the mixed ligand complexes were screened against the fungal strains (*Aspergillus niger*, *Fusarium solani*, *Curvularia lunata*, *Rhizoctonia bataticola* and *Candida albicans*) using the broth dilution method [17]. The Minimum inhibitory concentration was determined by assaying at several dilutions. In order to evaluate the interfering effect of DMF on the biological screening, alternate studies on DMF solution showed no activity against any microbial strains. The overall outcome of the screening is tabulated in Table 2 which evidently depicts that both the complexes show higher activity compared to the free ligand. The Overtone's concept [18] and Tweedy's chelation theory [19] efficiently explain the cause of increased activity in the metal complexes. The order of the activity is given as follows: **1>2>L**.



Scheme-1 Proposed structure of the metal complexes

Table 2. Minimum inhibitory concentration of the synthesized compounds against the growth of fungi ( $\mu\text{M}$ )

Compounds	Minimum inhibitory concentration (MIC) ( $\times 10^4 \mu\text{M}$ ) SEM = $\pm 2$				
	<i>Aspergillus niger</i>	<i>Fusarium solani</i>	<i>Curvularia lunata</i>	<i>Rhizoctonia bataticola</i>	<i>Candida albicans</i>
L	22.7	21.9	21.7	20.3	22.5
1	9.2	10.7	11.3	10.5	9.7
2	10.5	9.3	11.4	10.9	10.2
<sup>a</sup> Fluconazole	1.4	1.7	1.2	1.5	1.8

<sup>a</sup>Fluconazole is used as the standard

#### 4. CONCLUSION

Two new transition metal complexes (Cu(II) and Zn(II)) comprising of versatile triazole analogues were synthesized and they have been characterized by analytical and spectral methods. The compounds were then screened against five fungal strains and the data reveal that the metal complexes are more effective than that of the free ligand.

#### 5. ACKNOWLEDGEMENTS

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# Customers' Perception of Pradhan Mantri Jan Dhan Yojana

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**Abstract** - Government of India's 'mantra' is financial inclusion. Ever since Independence of the country, the Central Government is chanting the mantra of financial inclusion which is hotly pursued for the upliftment of the low income group economically. A series of programmes has been launched for the promotion of financial inclusion; started with co. operative credit society and later regional rural bank, of late in 2015, the Government introduced the scheme of 'Pradhan Mantri Jan Dhan Yojana'(PMJDY) as a fillip to financial inclusion programme. The present paper brings to limelight perception of the customers of Karur Vysya Bank, Chidambaram about PMJDY.

**Keywords:** Financial inclusion, PMJDY, Financial inclusion.

## 1. INTRODUCTION

India's strategy to develop from the nineties or from the days when India started to opening up its economy particularly lies on financial inclusion and deepening of financial system. The speed of financial inclusion is accelerated in recent years by Reserve Bank of India and the Government, to achieve the objective of faster and higher inclusive growth. The 11<sup>th</sup> Five year plan has focused on the financial inclusion of poor or weaker section of our country and further emphasized on inclusive growth. Financial inclusion or linking the poor with a bank account will enable them to save and make investments and reduce the difficulties due to low and irregular earnings. Financial inclusion brings employment, economic growth, and social cohesion and reduce poverty of the poor and weaker section of our society. The financial inclusion secures the family with insurance, facility of credit, overdraft, etc and freed poor from money lenders. In long run, the above-mentioned scenario breaks the mire of poverty.

Strong financial institutions are the pillars of economic growth and progress. Lack of accessible and appropriate financial services has always been a global problem. The significance of an inclusive financial system is

widely accepted not only in India, but it also becomes a policy priority in many countries. Financial access can really boost the financial condition and standards of life of the poor.

## 2. OBJECTIVE OF THE STUDY

The objective of the study is to understand the customer's perception about PMJDY in the study town.

## 3. METHODOLOGY OF THE STUDY

The study has mainly depended on primary data which were collected by conducting a sample survey of customers of Karur Vysya Bank (Ltd), Chidambaram. The survey was conducted during Nov – Dec 2017. The sample size was 180 customers. Convenience sampling method was used to select the required number of samples. Exploratory factor analysis, a multivariate sampling method was applied for the analysis of survey data.

## 4. FACTOR ANALYSIS

Factor analysis, a multi variate inter dependence type of technique was performed to summarise respondents' perception of (14 variables / items) PMJDY into underlying factors or broad criteria. As the sample size was limited to 180 respondents, to verify sampling adequacy and correlations among the variables, KMO and Bartlett's test was used and the result of the test is given in Table 1.

**Table 1 KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.857
Bartlett's Test of Sphericity	Approx. Chi-Square	904.750
	df	91
	Sig.	.000

An overall MSA of 0.80 or higher is very good with a measure of under 0.50 considered poor. In the present study, the KMO



measure is above 0.80 and hence deemed very good. The result of Bartlett's test of sphericity indicates a significance value of far less than 0.05 (0.000). Considering the above tests, one is eligible to use factor analysis for respondents' perception of PMJDY.

**Table 2 Communalities**

	Initial	Extraction
PMJDY is beneficial for people	1.000	.652
Processing under this scheme is easy.	1.000	.692
Banks follow a non-discriminatory approach in opening bank accounts.	1.000	.573
People are aware of the provision of rupay debit card under this scheme	1.000	.605
Bank officials are cordial in providing information about the scheme.	1.000	.549
PMJDY is effectively advertised/publicized	1.000	.476
PMDJY is helpful in improving the country's economic growth.	1.000	.578
PMJDY is an important scheme for human welfare.	1.000	.595
People are aware of the provision of overdraft facility (up to rs 5,000) under this scheme.	1.000	.732
PMJDY is/will be helpful in reducing the spread of poverty in the country.	1.000	.593
Benefits under this scheme are adequately provided by banks to all customers (e.g; debit cards).	1.000	.585
There is a need to up-pace the extent of awareness about this scheme.	1.000	.620
People are aware of the provision of Accidental Insurance worth Rs.100,000 under this scheme.	1.000	.934
People are aware of the provision of Life Insurance worth Rs.30,000 under this scheme.	1.000	.949
Extraction Method: Principal Component Analysis.		

Table 2 shows communalities of variables which are captured by the three extracted factors. It is to be noted that all the variables excepting the 6<sup>th</sup> variable have communalities above .5; this also indicates that

variable highly align with the underlying factors.

The researcher has applied principal component analysis (PCA) for the initial extraction of factors, and the analysis extracted 3 factors.

**Table 3 Component Matrix<sup>a</sup>**

	Component		
	1	2	3
People are aware of the provision of overdraft facility (up to rs 5,000) under this scheme.	.760	.371	-.127
PMDJY is helpful in improving the country's economic growth.	.759	-.028	.033
People are aware of the provision of rupay debit card under this scheme	.750	-.203	.021
People are aware of the provision of Life Insurance worth Rs.30,000 under this scheme.	.737	.529	-.354
People are aware of the provision of Accidental Insurance worth Rs.100,000 under this scheme.	.707	.555	-.357
PMJDY is effectively advertised/publicized	.687	.031	.048
Bank officials are cordial in providing information about the scheme.	.680	-.278	-.096
PMJDY is/will be helpful in reducing the spread of poverty in the country.	.678	-.147	.334
Processing under this scheme is easy.	.675	-.367	-.318
PMJDY is an important scheme for human welfare.	.674	.037	.372
Banks follow a non-discriminatory approach in opening bank accounts.	.668	-.354	.036
Benefits under this scheme are adequately provided by banks to all customers (e.g; debit cards).	.664	.050	.375
PMJDY is beneficial for people	.603	-.493	-.214

There is a need to up-pace the extent of awareness about this scheme.	.300	.334	.647
Extraction Method: Principal Component Analysis.			
a. 3 components extracted.			

**Table 4 Total Variance Explained**

Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
6.406	45.756	45.756	6.406	45.756	45.756	3.756	26.829	26.829
1.486	10.613	56.369	1.486	10.613	56.369	2.959	21.132	47.961
1.239	8.849	65.218	1.239	8.849	65.218	2.416	17.257	65.218
.911	6.505	71.723						
.760	5.428	77.151						
.641	4.580	81.731						
.516	3.683	85.414						
.436	3.113	88.527						
.413	2.947	91.475						
.358	2.557	94.031						
.326	2.325	96.356						
.272	1.944	98.301						
.219	1.566	99.867						
.019	.133	100.000						

Extraction Method: Principal Component Analysis.

Table shows cumulative percent of variance. It is recommended that the factors extracted should account for atleast 60% of the variance. In the present study, the cumulative percentage of variance is found to be more than 65.00. A factor is said to be valid if the eigen value of the factor is one and above. In this

analysis, all the three extracted factor have the eigen value of above 1(Table3).

An important step is finding out which variable comes under which factor and this is known through each variable’s high leading or alignment with particular factor. This is easily known by looking into Rotated Component Matrix (Table 5).

**Table 5 Rotated Component Matrix<sup>a</sup>**

	Component		
	1	2	3
PMJDY is beneficial for people	<b>.802</b>	.094	.009
Processing under this scheme is easy.	<b>.787</b>	.269	-.022
Banks follow a non-discriminatory approach in opening bank accounts.	<b>.694</b>	.111	.281
Bank officials are cordial in providing information about the scheme.	<b>.679</b>	.231	.187
People are aware of the provision of rupay debit card under this scheme	<b>.648</b>	.268	.336
PMDJY is helpful in improving the country’s economic growth.	<b>.529</b>	.388	.384
PMJDY is effectively advertised/publicized	<b>.436</b>	.382	.374
People are aware of the provision of Accidental Insurance worth Rs.100,000 under this scheme.	.174	<b>.941</b>	.136
People are aware of the provision of Life Insurance worth Rs.30,000 under this scheme.	.212	<b>.939</b>	.148

People are aware of the provision of overdraft facility (up to rs 5,000) under this scheme.	.287	<b>.738</b>	.324
There is a need to up-pace the extent of awareness about this scheme.	-.173	.099	<b>.762</b>
Benefits under this scheme are adequately provided by banks to all customers (e.g; debit cards).	.334	.231	<b>.648</b>
PMJDY is an important scheme for human welfare.	.351	.229	<b>.647</b>
PMJDY is/will be helpful in reducing the spread of poverty in the country.	.491	.122	<b>.581</b>
Extraction Method: Principal Component Analysis.	Rotation Method: Varimax with Kaiser Normalization.		
a. Rotation converged in 5 iterations.			

Experts say as factor analysis is based on high inter correlation of variables, multiple tests must be applied for the validity or statistical acceptance of it. One among them is each factor shall have 3 or more constituent variables. In the present study, all the 3 factors have 3 or more variables aligned with it.

The final step of factor analysis is labelling the factors and this is done through looking into Table 5, one would see what are all the variables aligned with a factor. Under Factor 1, there are six variables; based on these variables Factor 1 is named as “Banks’ sound approach of the scheme”; Factor 2 is labeled as “Provision of social insurance”; Factor 3 bears the label of “Adequacy of scheme’s Benefits”.

## 5. SUGGESTION AND CONCLUSION

The application of factor analysis in the present study is found to be statistically valid as it passes the multiple tests of communalities, cumulative percent of variance, sufficient eigen value of factor, and the alignment of at least three variables to each factor extracted. The analysis unveils that the customers of the bank in Chidambaram have a good perception of ‘Pradhan Mantri Jan Dhan Yojana (PMJDY) like good approach of banks in operating the scheme and attaching social insurance coverage to beneficiaries. The salient features of the scheme should continue in order to bestow everlasting benefit on the neglected sector.

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# Effectiveness of Celebrity Advertisement in Marketing of Cosmetic Products in Virudhunagar District

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**Abstract** - People forget eighty percent of the information in their daily activities. It is the challenge of all companies to hold the brands in the minds of the customers. In the present business environment, marketers are using different kinds of marketing strategies to achieve the organizational goals. Celebrity endorsement is one of the marketing strategies which is adopted by the companies to achieve the organizational goals. Celebrity advertisements have been known as ubiquitous feature of modern marketing. This study made an attempt to know the attitude of customers towards celebrity advertisement in marketing of cosmetic products.

**Keywords:**

## 1. INTRODUCTION

The modern world of marketing communication has become colorful and inundated with advertisements, and it is hard to get noticed. It is an uphill task for the designer of an advertising campaign to differentiate itself from others and attract viewers' attention.<sup>[1]</sup> In this jet age, people tend to ignore all commercials and advertisements while flipping through the magazines and newspapers or viewing TV. But even then, the beauty of a celebrity seldom goes noticed. Celebrities are people who enjoy specific public recognition by a large number of certain groups of people.<sup>[2]</sup> They have some attributes like attractiveness, extraordinary lifestyle or special skills that are not commonly observed. No doubt celebrities attract more audience towards an advertisement or a product. A celebrity talking about an ad will attract more eye balls than a common person talking about a product.<sup>[3]</sup> Celebrity branding is a global phenomenon and it assumes paramount importance in countries like India where celebrities are given the status of demigods by the masses.<sup>[4]</sup> Thus, celebrity endorsement in advertisement and its impact on the overall brand is of great significance. Celebrity refers

to individual who are well known to the public such as actors/actress, entertainers and sports personalities. Celebrity advertisement is a form of brand or advertising campaign that involves a well known person using their fame to help promote a product or service. Cosmetics, also known as make-up, are care substances used to enhance the appearance of the human body. Cosmetics selected for this study are hair oil, soap, face cream, face powder and shampoo. Those products are endorsed by celebrities which are generally used by all types of consumer irrespective of socio-economic variables of the consumers.

## 2. STATEMENT OF THE PROBLEM

The market for cosmetic products still niche in India is still growing and evolving. Consumers are placing greater importance on looking good and personal care. The impact of using a Celebrity to advertise a cosmetic product can generally be improved by matching the image of the Celebrity with the quality of the product. Hence, it is interested to make an attempt to analyze the effectiveness of Celebrities in cosmetic product advertisements in Virudhunagar District.

## 3. OBJECTIVES OF THE STUDY

- ❖ To present the socio-economic profile of the cosmetic product consumers
- ❖ To find out the opinion about celebrities in cosmetic product advertisement
- ❖ To evaluate the effectiveness of celebrity advertisements
- ❖ To present the truthful suggestions to marketers and celebrities

## 4. RESEARCH METHODOLOGY

The study is based on both primary and secondary data. The primary data has been collected from 400 respondents in Virudhunagar district. Convenient sampling

method has been adopted to collect primary data from the consumers. Proper care should be taken to cover all types of consumers on the basis of Gender, Age, Marital status, Education, Occupation, Monthly income and monthly spending on Cosmetics products. Secondary data has been collected from various journals,

magazines, books and websites. The Null Hypotheses are formulated and tested by applying Kruskal Wallis Test.

## 5. ANALYSIS AND INTERPRETATION

The following table presents the demographic profile of the cosmetic product consumers.

**Table 1 Demographic Profile of The Respondents**

Characteristics		Number of Respondents	Percentage
Gender	Male	134	33.50
	Female	266	66.50
Age (in Years)	Below 20	149	37.25
	21-30	125	31.25
	31-40	61	15.25
	41-50	52	13.00
	Above 50	13	3.25
Marital Status	Married	125	31.25
	Unmarried	275	68.75
Educational Qualification	Below Higher Secondary	88	22.00
	Under Graduate	167	41.75
	Post Graduate	118	29.50
	Professionals	15	3.75
	Others	12	3.00
Occupation	Students	136	34.00
	Home maker	92	23.00
	Working	109	27.25
	Business man	48	12.00
	Professionals	15	3.75
Family's Monthly Income (₹)	Below 10000	88	22.00
	10,000-20,000	93	23.25
	20,000-30,000	74	18.50
	Above 30,000	145	36.25
Monthly Spending on Cosmetics Products (₹)	Below 500	148	37.00
	500-1000	91	22.75
	1000-1,500	90	22.50
	Above 1,500	71	17.75

Source: Primary Data

Out of 400 respondents, 266 (66.50%) are female and 134 (33.50%) are male, 149 (37.25%) are below 20 years and 125 (31.25%) belong to the age group of 21-30 years, 275 (68.75%) are unmarried, 167 (41.75%) are under graduate and 118 (29.50%) are post graduate, 136 (34%) are students and 109 (27.25%) are working, 145 (36.25%) respondents family monthly income was above ₹ 30,000, 148 (37%) are spending below ₹ 500

for purchasing their cosmetics products every month.

### Celebrity Advertisement

Marketers need to develop appropriate measure of recall for testing the effectiveness of Celebrity advertisements. In such cases marketers use message strategies that encourages the respondents to think about the product and its qualities.

If the respondents are able to recall the products, then the Celebrity advertisement is treated as very effective. The present study deals with Bollywood Female Celebrities as an Endorser, Bollywood Male Celebrities as Endorsers, Kollywood Female Celebrities as Endorsers, Kollywood Male Celebrities as Endorsers and Sports Celebrities as Endorsers.

**Bollywood Female Celebrities as Endorsers**

Bollywood female Celebrities are famous in all over India. Female bollywood Celebrities are the excellent endorsers. If they endorse any product it should be popular in throughout India. So the cosmetic products marketer selects female bollywood Celebrities for their endorsement.

Garrett’s ranking technique has been adopted for analysing the respondents opinion about Celebrities in cosmetic product advertisements.

**Table 2 Garrett Ranking Result for Bollywood Female Celebrities as Endorsers**

Bollywood Female Celebrity	Total Score	Average Score	Rank
Aishwarya Rai	27272	68.18	I
Asin	21619	54.05	II
Kareena Kapoor	20481	51.20	IV
Anuska Sharma	17873	44.68	IX
Amy Jackson	19141	47.85	VII
Deepika Padukone	20934	52.34	III
Shilpa Shetty	16691	41.72	X
Priyanka Chopra	18409	46.02	VIII
Katrina Kaif	20157	50.39	VI
Sonam Kapoor	15427	38.57	XI
Kajol	20186	50.47	V

From the table 2 it is clear that ‘Aishwarya Rai’ secured first rank with the average score of 68.18, this shows that most of the consumers are familiar with Aiswarya Rai as an endorser for cosmetic product advertisement, ‘Asin’ secured second rank with the average score of 54.05.

**Bollywood Male Celebrities as Endorsers**

Bollywood Male Celebrities are similarly promoting cosmetic products. Like females, males also using cosmetic products. In order to attract the male consumers the marketers use male bollywood Celebrities for their product.

**Table 3 Garrett Ranking Result for Bollywood Male Celebrities as Endorsers**

Bollywood Male Celebrity	Total Score	Average Score	Rank
Shah Rukh Khan	26,305	65.76	I
Amitabh Bachchan	23,055	57.64	II
Saif Ali Khan	14,710	36.78	VI
John Abraham	18,230	45.58	V
Sahid Kapoor	18,392	45.98	IV
Imran Khan	18,642	46.61	III

From the analysis it is proved that, Shah Rukh Khan obtain first rank with the average score of 65.76, this shows that the most of the peoples like to see Shah Rukh Khan in cosmetic advertisements and Amitabh Bachchan secures second rank with an average score of 57.64.

**Kollywood Female Celebrities as Endorsers**

Kollywood female Celebrities are admired and recognized by the rural peoples. Kollywood female Celebrities endorse cosmetic products like soaps, hair oils and talcum powders. The role of Kollywood female Celebrity is to focus the each and every cosmetic product consumer in Tamilnadu.

Table 4 presents the details about the mean score and rank of Kollywood Female Celebrities as Endorsers.

**Table 4 Garrett Ranking Result for Kollywood Female Celebrities as Endorsers**

Kollywood Female Celebrity	Total Score	Average Score	Rank
Anushka	23,967	59.92	III
Trisha	24,283	60.71	II
Kajal Aggarwal	23,379	58.45	IV
Devayani	18,770	46.93	VII
Shriya	19,555	48.89	VI
Jyothika	25,385	63.46	I
Kasthuri	14,639	36.59	IX
Nadhiya	20,573	51.43	V
Anjali	16,510	41.28	VIII
Vishakha Singh	12,178	30.45	X

The table reveals that out of ten Kollywood female Celebrity, Jyothika is ranked first with the average score of 63.46, this proves that most of the people gave first rank for Jyothika and the next Trisha holds second rank with an average score of 60.71.

#### Kollywood Male Celebrities as Endorsers

Endorsing a product with familiar face is one of the fastest and easiest ways for marketers to create brand associations in the minds of the consumers. So the marketers use Kollywood male Celebrity for the cosmetic products. Using Kollywood female Celebrities to endorse cosmetics is a good marketing strategy because this endorsement attracts both male and female customers to the beauty products, feel industry major player. Male Celebrity advertising is a wise option because it appeals to both male and female consumers.

**Table 5 Garrett Ranking Result for Kollywood Male Celebrities as Endorsers**

Kollywood Male Celebrity	Total Score	Average Score	Rank
Suriya	26,705	66.76	I
Madhavan	22,388	55.97	II
Rahman	16,998	42.49	VI
Arjun	18,522	46.31	III
Prakash Raj	17,494	43.74	IV
Vimal	17,079	42.70	V

The table explains that out of six Kollywood male Celebrities, Suriya scored first rank with an average score of 66.76, this shows that most of the consumers first choice is Suriya as an endorser. The second rank with an average score of 55.97 is given to Madhavan.

#### Sports Celebrities as Endorsers

The sports Celebrities are the real heroes of our nation. If they advertise any product it should be more popular. The sports Celebrities have a positive impact on young consumers. But the marketers use sports Celebrities very limited.

**Table 6 Garrett Ranking Result for Sports Celebrities as Endorsers**

Sports Celebrity	Total Score	Average Score	Rank
Yuvraj Singh	17,539	43.85	III
Virat kohli	19,254	48.14	II
Mahindra Singh Dhoni	22,807	57.02	I

From the table it is clear that, out of three sports Celebrities Mahindra Singh Dhoni got first place with an average score of 57.02. The second rank scored by Virat Kohli with an average score of 48.14 and third position with an average score of 43.85 is for Yuvraj Singh.

#### Effectiveness of Celebrity Advertisement

Right use of Celebrity plays a vital role for the success of the brand along its advertising over the target market. In order to assess the effectiveness of Celebrity Advertisement, memory recall test has been conducted in four ways.

- ❖ Memory Recall test by visualizing Celebrity
- ❖ Memory Recall test by visualizing Cosmetic Products
- ❖ Memory Recall test by visualizing Logos
- ❖ Memory Recall test by reading Slogans

#### Recall Strategy of Cosmetic Identification By Visualizing Celebrity

The picture of Celebrity is shown to the respondents. 27 statements related to celebrity advertisements are given to the respondents for finding out the level of satisfaction. The celebrities are selected on the basis of high level of satisfaction securing mean score of 95.9025 towards celebrities in cosmetic product advertisements.

The respondents are asked to find out the cosmetic product name in which the Celebrities appear. Thus to analyze the recall strategy of cosmetic identification, the Kruskal Wallis Test has been used. The null hypothesis is framed as follows.

**H<sub>01</sub> – There is no significant difference among the respondents regarding recall strategy of cosmetic identification by visualizing Celebrity**

**Table 7 Recall Strategy of Cosmetic Identification by Visualizing Celebrity**

Attributes	Suriya		Aiswarya Rai		Kareena Kapoor		Virat Kohli		Kajol		Madhavan		Prakash Raj		Shah Rukh Khan		Asin		Anushka		John Abraham	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Wrong recall	82	12	19	3	35	6.5	16	2	67	11	44	9	35	6.5	32	4.5	39	8	32	4.5	177	23
Cannot recall	147	16	123	14	144	15	190	27	167	19	187	26	171	21.5	108	13	179	24	48	10	12	1
Right recall	171	21.5	258	31	221	30	164	17	166	18	169	20	194	28	260	32	182	25	320	33	211	29
Total		49.5		48		51.5		46		48		55		56		49.5		57		47.5		53

From the table it is clear that the calculated value of Kruskal Wallis Test is 0.502 for the identification of cosmetic products by visualizing the Celebrity are less than Table value 18.3070 (for df = 10 at five per cent level of significance). Therefore, the null hypothesis framed for the identification of cosmetic products by visualizing the Celebrity is accepted. It is found that there are no significant differences among the respondents' recall strategy about the identification of cosmetic products by visualizing Celebrity. Therefore the respondents are able to recall the cosmetic products by visualizing Celebrity.

**Recall Strategy of Celebrity Identification by Visualizing Cosmetic Products**

The picture of familiar cosmetic product is shown to the respondents. The respondents are asked to find out the Celebrity name in which the advertisements appear. Thus to analyze the recall strategy of Celebrity identification, the Kruskal Wallis Test has been used. The null hypothesis was framed as follows.

**H<sub>02</sub> – There is no significant difference among the respondents regarding recall strategy of Celebrity identification by visualizing cosmetic products.**

**Table 8 Recall Strategy of Celebrity Identification by Visualizing Cosmetic Products**

Attributes	Loreal		Vivel		VVD		Induleka		Indica		Yardley		Nivea		Parachute		Veare	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Wrong recall	16	5.5	24	8	12	4	79	13	40	10.5	20	7	40	10.5	92	15	91	14
Cannot recall	4	1	4	1	16	5.5	127	17.5	110	16	8	3	39	9	54	12	127	17.5
Right recall	380	27	372	25	372	25	194	20	250	21	372	25	321	23	254	22	182	19
Total		33.5		34		34.5		50.5		47.5		35		42.5		49		50.5



From the table it is clear that the calculated value of Kruskal Wallis Test is 2 for the identification of Celebrity by visualizing the cosmetic products are less than Table value 15.5073 (for  $df = 8$  at five per cent level of significance). Therefore, the null hypothesis framed for the identification of Celebrity by visualizing the cosmetic products is accepted. It is found that there are no significant differences among the respondents' recall strategy about the identification of Celebrity by visualizing the cosmetic products. Therefore the respondents are able to recall the Celebrity by visualizing the cosmetic products.

### Recall Strategy of Cosmetic Product Identification by Visualizing Logos

The picture of familiar cosmetic product logo is shown to the respondents. The respondents are asked to find out the cosmetic products in which the advertisements appear. Thus to analyze the recall strategy of cosmetic product identification, the Kruskal Wallis Test has been used. The null hypothesis was framed as follows.

**H<sub>03</sub> – There is no significant difference among the respondents regarding recall strategy of cosmetic product identification by visualizing logos.**

**Table 9 Recall Strategy of Cosmetic Identification by Visualizing Logos**

Attributes	Hamam		Fair and Lovely		Olay		Head and Shoulders		Gokul Sandal		Pantene	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Wrong recall	8	2	16	6	83	9	28	7	16	5	39	8
Cannot recall	146	11	8	2	130	10	195	12	8	2	12	4
Right recall	246	15	376	16.5	187	14	177	13	376	16.5	349	18
Total		29		24.5		33		32		23.5		30

From the table it is clear that the calculated value of Kruskal Wallis Test is 1.56 for the identification of cosmetic products by visualizing the cosmetic logos are less than Table value 11.0705 (for  $df = 5$  at five per cent level of significance). Therefore, the null hypothesis framed for the identification of cosmetic products by visualizing the cosmetic logos is accepted. It is found that there are no significant differences among the respondents' recall strategy about the identification of cosmetic products by visualizing the cosmetic logos. Therefore the respondents are able to recall the cosmetic products by visualizing the cosmetic logos.

### Recall Strategy of Cosmetic Identification with the Help of Slogans

In this test, the familiar cosmetic products slogans are given to the respondents and they are asked to recall the cosmetic products name. Thus to analyze the recall strategy of cosmetic product identification, the

Kruskal Wallis Test has been applied. The null hypothesis was framed as follows.

**H<sub>04</sub> – There is no significant difference among the respondents regarding recall strategy of cosmetic product identification by reading slogans.**

The table 10 is clear that the calculated value of Kruskal Wallis Test is 2.290 for the identification of cosmetic products by reading slogans are less than Table value 21.0261 (for  $df = 12$  at five per cent level of significance). Therefore, the null hypothesis framed for the identification of cosmetic products by reading slogans is accepted. It is found that there are no significant differences among the respondents' recall strategy about the identification of cosmetic products by reading slogans.

**Table 10 Recall Strategy of Cosmetic Identification with the Help of Slogans**

Attributes	Garnier		Head and Shoulders		Hamam		Navaratna Oil		Nature Power		Fair and Lovely		Clear		V Care		Induleka		Dhathri		Lux		Santoor		Pantene	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Wrong recall	51	11	24	6	12	2	20	4.5	36	8	40	9	80	17	170	27.5	130	23	162	26	107	19	59	13	209	32
Cannot recall	44	10	68	15	4	1	71	16	87	18	20	4.5	132	24	118	21	64	14	206	30.5	123	22	16	3	136	25
Right recall	305	34	308	35	384	39	309	36	277	33	340	38	188	29	112	20	206	30.5	32	7	170	27.5	325	37	55	12
Total		55		56		42		56.5		59		51.5		70		68.5		67.5		63.5		68.5		53		69

**6. SUGGESTIONS**

**To Marketers**

- The marketers put more effort to select popular Celebrity at present for cosmetic products advertisement. This is important key to match the right Celebrity with the right product and place them in the right advertisement campaign. If the combination is done well, it can lead to huge profits and an immediate change in the public perception of a company.
- Marketer can select an expertise Celebrity endorser to represent their brand if the cosmetic product is new in the market.
- While preparing the cosmetic products advertisement, marketer should give more attention for focusing the product and not for the Celebrity.
- While selecting the Celebrity, the marketer also considers the tastes and preferences of rural people and their opinion about the Celebrity. This is because of the immense potential for sales in rural areas that is largely untapped.
- The marketer should design Celebrity advertisement to cover all age group of people.
- It is recommended that the marketer should promote exclusive cosmetics for male and employ male Celebrities for those cosmetics.

- Marketers try to identify the consumers’ attitude towards cosmetics, so that they position their products.

**To Celebrities**

- Celebrities should be patriotic and they should concentrate on home country products.
- Celebrities can consider the skin care and health facts about the cosmetics and they act only in the advertisement when the product is good for the consumers.
- Cosmetics are applied in human body. Consumers trust the Celebrity endorsed cosmetics. So the Celebrity may endorse after they utilize it.

**7. CONCLUSION**

People prefer to hold a cosmetic product which is endorsed by famous film star. They buy cosmetic products to maintain some status. It is not only that they have trust over the film stars and cricketers; this makes them to have a good perception of the product also. Thus, Celebrity endorsement has become an important tool for creating awareness about the product. Celebrities attract the attention, create interest in advertisement and create a differentiation. To conclude that Celebrity endorsement is a powerful marketing tool which is always a centre of attraction to most of the consumers.

Celebrity endorsed advertisement are more reliable than non-Celebrity endorsed advertisement due to which they preferred trustworthiness of Celebrity to be the influencing factors in their mind. Therefore, through this feature Celebrities deliver their image to the target market effectively.

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# Embattled and Embittered Women in Anita Nair's *Ladies' Coupe*: A Case Study

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**Abstract** - Anita Nair's novel *Ladies Coupe* questions the role of woman in a patriarchal society. She presents the image of suffering women preoccupied with their inner world, their sulking frustration and the storm within the existential predicament of a woman in a male dominated society. Patriarchy, in its different forms has tried in many ways to repress, debase and humiliate women especially through the images represented in cultural and traditional forms. The novel *Ladies coupe* not only questions the ideological ground of man's patriarchal role in a traditional society but also implies the existence of an alternative reality. The novel questions whether the role of Indian women living under oppressive patriarchal systems should be restricted only to their roles as wives and mothers.

**Keywords:** patriarchy, oppression, victim, aspirations, frustration, emptiness, and sense of escape

The image of women in fiction has undergone a change during the last four decades. Women writers have moved away from traditional portrayals of enduring, self-sacrificing women toward conflicted female characters searching for identity, no longer characterized and defined simply in terms of their victim status. In contrast to earlier novels, female characters from the 1980s onwards assert themselves and defy marriage and motherhood. In recent years women novelists are making bold attempts to explore the conditions of women as a social and psychological phenomenon. They consider it as a base for a movement for social change.

Through this fictional endeavour they seem to underscore the need for subverting the present oppressive value system in order to make way for a humane social order. Women essentially write from their experience as women. Through the characters in their novels they make a plea for a better way of life for women. Recent Indian women novelists depict both the diversity of women and diversity within each woman, rather than limiting the lives of women to one ideal. The novels emerging in the twenty-first century furnish

examples of a whole range of attitudes towards the imposition of tradition, an analysis of the family structure. The work of Indian women writers is significant in making society aware of women's demands, and in providing a medium for self-expression. In the women's novels one hears the voice of the new women's definition of herself and a quest for her own identity. In the field of regional fiction, three women writers Arundhati Roy, Anita Nair and Kamala Das put the southern state of Kerala on the fictional map while the culture of other regions has been represented by other women writers.

*Ladies Coupe* (2001) is the second novel of Anita Nair which receives a wide acclaim in the literary world. In this novel, Anita Nair, with a deep, psychological insight, skillfully utilizes the stories of six women who met in the ladies coupe of a train to portray the society dominated by patriarchal culture. Mainly it depicts the crisis of social norms that laid down upon women and their inner urge for freedom. She also ironically comments on this society which shuns to think that the woman is strong willed to create disastrous consequences if she is completely ignored.

Akhilandeswari alias Akhila is the protagonist of the novel. She is a forty-five year old single woman who is working as a clerk. She has been brought up in a conservative family of Tamil Brahmins. After the death of her father, she has to bear the burden of her family as a bread winner. She brought up her two brothers and a sister who got married and settled in their lives. They hardly think about Akhila's needs and aspirations. Now she is travelling to Kanyakumari in a ladies coupe where she meets five different women – Janaki Prabhakar, Prabha Devi, Margaret Paulraj, Sheela

Vasudevan and Marikolanthu. Though, they meet for the first time they share their life's experience with each other. Even though they differ in age, educational and cultural background, their stories have a common thread, the tragic predicament of Indian women in a patriarchal social order.

Even the beginning of the novel shows the protagonist Akhila's sense of escape. The author says, "This is the way it has always been: the smell of a railway platform at night fills Akhila with a sense of escape" (1). Akhila often dreamt of travelling alone and escaping to an unknown world, "Of sitting with her back to her world, with her eyes looking ahead" (1). She lives her life upto the expectations of others and does what is expected of her. Her wishes always remain a dream only. Her decision to move away from her routine kindled the suspicion of her sister Padma whether she was travelling with a man or not. When she reached the station she found that she had to travel with five others Sheela Vasudevan, Prabha Devi, Janaki Prabhakar, Margaret Paulraj and Marikonlanthu in a ladies coupe.

Janaki was the elderly lady in the coupe. Prabha Devi's husband has a jewellery and she is a housewife. Margaret's husband is the principal of school. She is a chemistry teacher in the same school. The Youngest of the six is Sheela, fourteen-years-old girl who is going to attend the funeral of her grandmother. Marikolanthu is also another passenger who is reserved kept aloof from the other passengers. Akhila decided to share her views and desires with her co-passengers since she thought that they would not meet each other again. Since, "Akhila knew she could tell these women whatever she chose to. Her secrets, desires and fears. In turn, she could ask them whatever she wanted. They would never see each other again." (20)

She collects 'epithets of hope like children collect ticket stubs'. Though she completed forty-five years she never has a

family of her own and still longing for her own space and having hunger for life and experience. Being an organized person she pondered and examined every single nuance and point of view before she took decisions. Her desire to travel to Kanyakumari 'land's end, perhaps' is a long awaited desire to see the land where Vivekananda sat on a rock and waiting for answers that had eluded him all his life:

Akhila is now ready to share her life's experience with the co-passengers. ...Akhila...surprised by her own garrulousness. She seldom made small talk and never began conversations with strangers. But this evening, she had behaved so unlike herself. Eager to spill her secrets. Anxious to probe into lives. Willing to talk. (60)

To Amma, Akhila had become the head of the household, 'Someone who would chart and steer the course of the family's destiny to safe shores'. When thinking of her destiny Akhila thought that her life took care of itself without her plan. When Narsi decided to get married no one dared to ask about Akhila's marriage. "In their minds Akhila had ceased to be a woman and had already metamorphosed into a spinster"(77). Akhila was the only unmarried person in her office. She could not share her personal with anyone of them. She thought, "From the Gurukula stage of life she had moved directly to the Vanaprastha" (86). Only friend she had was Katherine Webber an Anglo-Indian girl.

Friendship with Hari, a man who was younger than her, kindled the desires hidden in her mind. Feeling of love towards a man began to wind around her like "a python that gathers her within its grasping coils"(92). He also tried to convince her by saying that. "You are Akhila the woman. Everyone else might have forgotten about the woman within you. But I see her. I see the desire in her eyes, the colours in her heart"(92).

Akhila's relationship with Hari made her feel like a woman. Since she was older than Hari, she thought that she was not suitable for him and someday he might regret their relationship. She said to him:

Everything is wrong, Hari... It bothers me that we are not suited. That I am older and look older, and I can't live with the thought that some day you might regret this

relationship, that you might turn away and I would be left with nothing – neither you

nor my family (153)

When Akhila went to live with Padma in Bangalore after the death of her mother, she found it difficult to cope with. Padma thought that Akhila was a 'misfit' as a woman. Akhila consoled herself by thinking that, "Maybe she longed for wider horizons, the financial independence that Akhila possessed"(163).

Akhila believes that marriage is unimportant as, "Akhila saw herself as a serpent that had lain curled and dormant for years. She saw life as a thousand-petalled lotus she would have to find before she knew fulfilment, she panicked. How and where was she to begin the search? (39). So she asked her fellow passengers whether she could cope along in her life. There started the sharing of their life's experience to Akhila which they thought will assist her to decide what to do in her future.

Janaki, the eldest of all began to narrate her experience as a daughter, a sister, a mother and a grandmother. All through her life she was pampered and taken care of someone: her father, her brothers, her husband and her son. She believed that a woman's duty was to get married:

All through her girlhood, marriage was a destination she was being groomed for. Her mother and aunts took great care to perfect what they called the skills of marriage - cooking and cleaning, sewing and pickling...she

wasn't expected to know what it really meant to be married, and neither was she curious about it. It would come to her as it had to her mother, she thought. (25)

Janaki felt that she is not the right person to advise Akhila instead Margaret and Prabha Devi can guide her properly.

Sheela, another passenger of the coupe was about fourteen years old. She remembered the way she loved her grandmother as she was going to attend her funeral. Her grandma was sixty-nine years old. She was very rich and owned several houses in Always, an acre of teak trees and several paddy fields. Ammumma left her house and stayed with Sheela's parents because she wanted her sons to know that they had driven her away from her own house. She was angry with them for not giving importance to her but to their wives.

She lived with Sheela's family and had complaints over her going to play badminton with her friend's father, Naazar. She hated him and the way he treated Sheela when they played badminton together. Sheela too had felt that something was wrong with him and began to avoid going to Hasina's house. Ammumma began to eat whatever she wished the day before she admitted in the hospital. Sheela knew why she behaved so strangely. "That day was Ammumma's last day as a whole woman and this was her way of forgetting what lay ahead"(67). Ammumma hated imperfections and now a part of her body was to be remained and thus condemned her to be flawed for life. She advised her, "You mustn't become one of those women who groom themselves to please others. The only person you need to please is yourself. When you look into a mirror, your reflection should make you feel happy" (67-68).

When Ammumma was in her deathbed Sheela did not want her to die untidy. She put make up on her face and adored her with jewels which shocked her uncles and aunts. Her father

looked stern with disapproval and disappointment. But she did not care about it she knew that Ammamma would have been pleased.

Margaret Shanti, the next one to share her experience, hardly supported the views of Janaki and Prabha Devi about a woman's life. They thought that the world was not for a single woman. Margaret called it a myth. Further she disclosed the secrets in her life in which her sole desire was to take revenge upon her husband, "To erode his self-esteem and shake the very foundations of his being." (96) She says:

Among the five elements that constitute life, I classify myself as water. Water that moistens. Water that heals. Water that forgets. Water that accepts. Water that flows tirelessly. Water that also destroys. For the power to dissolve and destroy is as much a part of being water as wetness is" (96)

She felt that all those years she was frozen in a solid state. On that state she had forgotten what it was to be water.

Ebenezer Paulraj, the school Principal was her husband. To her, the school was her husband's kingdom and the cane was his sceptre. She hated him more than she had ever hated anyone since Ebenezer listened to no one but himself. Margaret met Ebenezer at the age of 22 at the Church youth group meeting and fell in love with him at first sight. He had also had the same feeling and they got married after two months. The first year of their marriage life went on well and the only thing Margaret wanted to do was to be with him and to please him. Everything else was unimportant for her. When her husband advised her to abort their first child she was ready to do for the sake of her husband. Yet the feeling of killing a child in the womb tormented her and a faint voice lingered in her ears pleading for life. After that she found an emptiness in her life and began to hate her husband. At the same time Ebenezer

grew a successful man and loved by her family. Even Margaret's mother brushed aside her feeling of hatred for her husband saying:

I have said many times before, it is a woman's responsibility to keep the marriage happy. Men have so many preoccupations that they might not have the time or the inclination to keep the wheels of a marriage oiled (112)

She was fed up with her routine. She was not appreciated for her work and Ebenezer treated the house as a hotel. When she came to know that she could not change her husband, she lost all hope in life. She felt suffocated by her marriage. Margaret would like to divorce him, but does not dare to do so because she is afraid of the society. Her way of taking revenge is to feed him oily food and make him a fat and dull person. Before leaving, she advised Akhila:

People don't like to think that their opinion of someone means nothing to that person. And when it is a woman...the thought is intolerable. But you'll discover that once you stop worrying what the world will think of you, your life will become that much easier to live. (136)

Akhila thought, "All these women, she thought, all these women, Janaki, Sheela and even Margaret who wears her self-sufficiency as a halo, are trying to make some sense of their own existence by talking about it to anyone who will listen. (136)

Prabha Devi felt a gradual awakening of life only after her fortieth birthday. She thought, "... a woman with an opinion was treated like a bad smell" (170) Prabha Devi became a replica of her mother. She cooked well, did embroidery works, sang at the puja. "She walked with small mincing steps, her head forever bowed, suppliant, womanly" (170).

The pain caused by the advantage taken by Pramod, her husband's friend. There she realized her mistake of being attracted the

attention of the gazer by her way of dressing and make up, the result of her visit to America. She retrieved herself into her snail shell and became a woman once again. Having two grown up children, she led a scheduled life, cooking, embroidering and doing all the household chores that a mother was expected to do. When she realized that she could find her lost happiness as an independent woman by learning swimming, which excited her much, she felt 'that moment of supreme content' (195).

Among the fellow passengers, Akila felt that Prabha Devi was the closest to her in age and manner. She thought, "I too must learn to move on with the tide of life rather than be cast on its banks" (208).

The last passenger who shared her experience is Marikolanthu, a thirty-one year old woman from Palur near Kancheepuram. She faced so many hardships from childhood days, she remembered her life as a handmaiden to Sujatha Akka, Chettiar's daughter-in-law. She earned the trust of Sujatha Akka and when she became matured, Sujatha Akka sent her to Vellore to assist two foreign women in their home. Her life in Vellore for three years was memorable one but fate made her to return to her village since her mother was ill. At the age of eighteen she was full of colourful dreams and Missy K, one of the foreign women promised her to make her a nurse. Her dreams shattered in the form of the illness of her mother and she had to stay for a long time. That was a bitter period in her life which she wanted to forget. Murugesan, Chettiar's niece seduced her and ruined her life. But she was not ready to expose the truth and kept it a secret. When her mother found that she was pregnant she revealed the truth. Amma did not believe her whereas Sujatha Akka believed but was helpless. Marikolanthu's mother decided to send her to her periamma's house near Salem where she gave birth to a male child which was named 'Muthu'. She hated the child who was

"a reminder of what my life had turned out to be..." (250).

She left the child under the care of her mother and went back to Vellore with the hope of becoming a nurse. Things were changed there and the relationship between the Missies was not good and they could not find the cheerful and compassionate Marikolanthu who deserved to become a nurse. Once again she came to her village to take care of Chettiar's wife, a mad woman. After she died she became an assistant to Sujatha Akka. Sujatha Akka found out the secret relationship she had with her husband Sridhar and threw her away from her home. Her efforts to explain that she did all these only for her kind Sujatha Akka went in vain.

After the death of her mother she had to take care of Muthu. But she mortgaged him to Murugesan's looms in Kancheepuram for five thousand which she needed for her surgery. After the surgery she stayed at Kancheepuram and became a cook. A year later, Murugesan died. From behind a clump of trees she watched the cremation where she saw her son and felt, "... a great sadness wash over me. I had reduced the boy to this. A chandala. A keeper of graves, the overseer of the dead. He did not deserve this. Or any of what had happened to him". (268)

She felt that her hatred towards Muthu burnt with the flames which burnt the body of Murugesan:

For the first time, I felt shame. Not remorse for having rejected him as a baby, you must understand. That was destined to be. But I felt shame for having used him. How was I any different from that long line of people who had used me and then discarded me when their need was over? (268)

Before leaving she said, "For so long now, I had been content to remain a sister to the real



thing. Surrogate housewife. Surrogate mother. Surrogate lover. But now wanted more. I wanted to be the real thing.”(268)

In Kanyakumari, Akhila found her sensual desires fulfilled with the physical relationship she had with a young man she met there. There:

A need satiated. Her past purged. A point proven to herself.

An older man would want to know much more. An older man would

want to lead the way. So Akhila smiles again because she discovers

it is so easy to smile now that she has her life where she wants it to be” (275).

Once she had thought that she could not love another man except Hari. Now she found that everything was possible in her life. Yet her interaction with the five women in the ladies coupe, helped Akhila to realize that she had given the society an unnecessary power of ruling her life. The thought of Hari was lingering in her mind and she wanted to begin her life where she left. To Akhila, the train journey is a journey away from her family and responsibilities and it is also a journey to discover her own self, Akhilandeswari.

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# 7 P's of Customer Satisfaction towards Bancassurance of Public and Private Sector Banks in Virudhunagar District

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**Abstract** - Banks play a very important role in the economic development of every nation. They have control over a larger part of the supply of money in circulation. Through their influence over the volume of bank money, they can influence the nature and character of production in any country. Insurance Companies see bancassurance as a tool for increasing their market penetration and premium turnover. The customers see bancassurance as a bonanza in terms of reduced price, high quality product and delivery at door steps. Banks and insurance companies have complementary strengths. In their natural and traditional roles and with their current skills, neither banks nor insurance companies could effectively mount a bancassurance start-up alone. Collaboration is the key to making this new channel work.

**Keywords:** Bank, Insurance, Bancassurance, Customer Satisfaction, 7 P's

## 1. INTRODUCTION

A bank is an institution which deals in money and credit. Thus, bank is an intermediary which handles other people's money both for their advantage and to its own profit. But bank is not merely a trader in money but also an important manufacturer of money. In other words, a bank is a factory of credit, for banks it is a means of product diversification and a source of additional fee income. Banks bring a variety of capabilities to the table. Most obviously, they own proprietary databases that can be tapped for middle-market warm leads. In addition, they can leverage their name recognition and reputation at both local and regional levels. Life insurance premium, which is basically a saving market, represents 55% of the world insurance premium. It symbolizes the convergence of banking and insurance. The term involves distribution of insurance products through a bank's branch network. While bank assurance has become a success story in Europe, it is relatively a new concept in Asia. Bank assurance in its simplest form is the

distribution of insurance products through a banks distribution channels. In concrete terms bancassurance, which is also known as Allfinanz – describes a package of financial services that can fulfill both banking and insurance needs at the same time. It takes various forms in different countries depending upon the demographic profile, economic situation and legislations prevailing in that country.

## 2. LITERATURE REVIEW

**Staikouras.S.K., (2008)**, in his article titled “An Event Study Analysis of International Ventures between Banks and Insurance Firms” stated that the effects on shareholders wealth as a result of the bank–insurance interface. Using a global sample of financial intermediaries and an event-study framework the findings reveal significant abnormal returns surrounding the announcement of bank–insurance ventures. A control sample using financial institutions that do not pursue bank–insurance deals shows negative abnormal returns with much higher magnitude in absolute terms. When the sample is separated on the basis of the bidder's nature, then bank-bidders earn significant positive returns, while the insurance-bidders experience significant losses. The author analysis further unveils either statistically significant negative returns or insignificant values for bank–insurance divestments. Finally, profitability, size and functional diversification are all found significant in determining abnormal returns over various intervals.

**Rebeena Alavudeen and Dr. Sr. Rosa K.D (2009)**, in her article titled “Growing Role of Bancassurance in Banking Sector” opined

that the insurance industry in India has been progressing at a rapid speed since the inception of this sector. There is a bright future for bancassurance in the Indian insurance market. Growth rate of insurance income is remarkable in some of the banks so there is very good scope for further development in the selling of bancassurance products by the banks in the long run. The author concludes that bancassurance is gaining recognition in the market.

**Sarvanakumar, U.Punitha, S. Gunasekaran and S Sankar (2012)**, in his article titled "Flourishing Bancassurance Business: An Indian Perspectives" emphasized that the success of bancassurance greatly hinges on banks ensuring excellent customers relationship; therefore banks need to strive towards that direction. This is somewhat similar a trend observed in the United Kingdom and elsewhere where banks started off as distributors of insurance but then moved on to the fully owned insurance subsidiaries. Going by the present pace, bancassurance would turn out to be a norm rather than an exception in future in India. Supervisory concerns as pointed out earlier could best be tackled by way of closer and systematized coordination between the respective supervisory authorities. There needs to be a clear cut identification of activities between banking and insurance at the institutions level as also at the level of regulators. Adequate training coupled with sufficient incentive system could avert the banks staff resistance if any. In sum, bancassurance strategy would be a win-win situation for all the parties involved - the customer, the insurance companies and the banks<sup>87</sup>.

### **3. STATEMENT OF THE PROBLEM**

It is very important in the point of view of banks to have a study about the opinion and satisfaction of the customers. So the purpose of the research is to study the view of the customer for using bancassurance services.

This study is conducted in selective public and private sector banks in virudhunagar district, tamilnadu. The respondents of the study were the customers of the banks using various bancassurance services (Whole life insurance, Endowment, Joint Life, Pension Scheme and Child life).Therefore the researcher has identified the research area to find the investors of bancassurance. Therefore an attempt is made by the researcher to identify a 7 P's of customer satisfaction towards bancassurance of public and private sector banks in Virudhunagar district, Tamilnadu.

### **4. OBJECTIVES**

1. To present an overview of bancassurance of public and private sector banks in virudhunagar district.
2. To study the personal profile of the bank customers for buying bancassurance products.
3. To identify and analyze the level of customer satisfaction towards the bancassurance services.
4. To offer suitable suggestions based on the findings for the improvement of bank marketing to enhance the 7 P's of customer satisfaction factors for bancassurance of public and private sector banks in virudhunagar district.

### **5. HYPOTHESES OF THE STUDY**

- There is no significant relationship between gender, age, marital status,educational qualification and 7P's of Customer Satisfaction towards bancassurance services in public and private sector banks in Virudhunagar district, Tamilnadu.

### **6. METHODOLOGY**

#### **Research design**

Research Design is the basic framework which provides guidelines for the rest of research process. The research design followed for this study is Descriptive research design

#### **Source of Data**

A collective recording of observations either numerical or otherwise is called data.

Often it is found that data at hand are inadequate to do further study, and hence, it becomes necessary to collect data that are appropriate.

*Primary Data* - The primary data are collected from the customer’s service loyalty towards bancassurance of public and private sector banks through a structured questionnaire

*Secondary Data* – Company profiles, websites, magazines, and research articles were used widely as a support to primary data.

**Sampling Plan**

The sample design is a definite plan for obtaining a sample from a given population.

*Sampling Technique* – The technique adopted for the study is non-probability sampling technique of convenience sampling.

*Sample Size* - The study has depended on primary data. Primary data were collected through a sample survey with a questionnaire. The sample size is 390 respondents for the research.

**Statistical tool used**

The technique used in analyzing the collected data is known as tools for analyzing data. The tool used in this study is as follows:

- *Percentage analysis*
- *ANOVA*

**7. ANALYSIS AND INTERPRETATION OF DATA**

**TABLE 1 Gender of the Respondents**

Gender	Frequency	Percentage
Male	163	41.8
Female	227	58.2
Total	390	100.0

Source: Primary Data

It is observed from the above table 4.1 that out of 390 respondents, 227 (58.2%) respondents are female and the remaining 163 (41.8%) respondents are male.

**TABLE 2 Age of the Respondents**

Age	Frequency	Percentage
Below 20 yrs	24	6.2
21-30 yrs	94	24.1
31-40 yrs	67	17.2
41-50 yrs	126	32.3
51 yrs & Above	79	20.3
Total	390	100.0

Source: Primary Data

The Table 4.2 makes it clear that out of 390 respondents, 126(32.3%) respondents belong to the age group of 41 – 50 years, 94(24.1%) of the respondents belong to the age group of 21 – 30 years, 79(20.3%) of the respondents belong to the age group of 51 years & above, 67(17.2%) of the respondents belong to the age group of 31 – 40 years and the remaining 24(6.2%) of the respondents belong to the age group of below 20 years.

**TABLE 3 Marital Status of the Respondents**

Marital Status	Frequency	Percentage
Married	353	90.5
Unmarried	37	9.5
Total	390	100.0

Source: Primary Data

It is apparent from the Table 4.3 that out of 390 respondents, 353(90.5%) of the respondents are Married and remaining 37(9.5%) of the respondents are Unmarried.

**TABLE 4 Educational Qualifications of the Respondents**

Educational Qualification	Frequency	Percentage
Primary Level	53	13.6
Secondary Level	63	16.2
Higher Education Level	9	2.3
Graduate Level	139	35.6
Post Graduate Level	67	17.2
Professionals	59	15.1
Total	390	100.0

Source: Primary Data

It is seen from the Table 4.4 that out of 390 respondents, 139(35.6%) of the respondents are Graduate Level, 67(17.2%) of the respondents are Post Graduate Level, 63(16.2%) of the respondents are Secondary Level, 59(15.1%) of the respondents are Professionals, 53(13.6%) of the respondents are Primary Level and remaining 9(2.3%) of the respondents are Higher Education Level.

**TABLE 5 ANOVA between Gender of the respondents and the Overall Customer Satisfaction for Product, Price, Place, Promotion, People, Process and Physical Evidence adopted**

**Hypothesis 1:  $H_0$**  – There is no significant relation between gender and overall customer satisfaction towards Product, Price, Place, Promotion, People, Process and Physical Evidence of the respondents at 5% level.

		Sum of Squares	df	Mean Square	F	Sig.
Product Mix	Between Groups	479.676	1	700.277	6.770	.010
	Within Groups	4046.283	388	103.440		
	Total	4525.959	389			
Price Mix	Between Groups	.003	1	20.740	.199	.655 <sup>#</sup>
	Within Groups	3003.033	388	103.965		
	Total	3003.036	389			
Place Mix	Between Groups	1664.030	1	507.180	4.938	.027
	Within Groups	3100.637	388	102.711		
	Total	4764.667	389			
Promotion Mix	Between Groups	1217.902	1	5569.652	46.815	.000
	Within Groups	7834.867	388	118.972		
	Total	9052.769	389			
People Mix	Between Groups	2635.064	1	400.266	3.371	.067
	Within Groups	16498.936	388	118.748		
	Total	19134.000	389			
Process Mix	Between Groups	6370.558	1	30574.007	327.496	.000
	Within Groups	7492.009	388	93.357		
	Total	13862.567	389			
Physical Evidence Mix	Between Groups	2176.222	1	381.531	6.164	.013
	Within Groups	9083.421	388	61.897		
	Total	11259.644	389			

<sup>#</sup> $H_0$  accepted at 5%

**Inference**

The significance of 'F' is more than 0.05 for the factor Price Mix. So, the null hypothesis is accepted and it is concluded that there is no significant relation between gender and overall customer satisfaction of the respondents at 5% level.

The significance of 'F' is less than 0.05 for the factor Product, Place, Promotion, People, Process and Physical Evidence. So, the null hypothesis is rejected and it is concluded that there is significant relation between gender and overall customer satisfaction of Place, Promotion, People, Process and Physical Evidence of the respondents at 5% level.

**Table 6 ANOVA between Age and Overall Customer Satisfaction for Product, Price, Place, Promotion, People, Process and Physical Evidence adopted**

**Hypothesis 2:  $H_0$**  – There is no significant relation between age and overall customer satisfaction towards Product, Price, Place, Promotion, People, Process and Physical of the respondents at 5% level.

		Sum of Squares	df	Mean Square	F	Sig.
Product Mix	Between Groups	2077.648	4	4366.855	71.948	.000
	Within Groups	2448.311	385	60.695		
	Total	4525.959	389			
Price Mix	Between Groups	1854.546	4	42.397	.406	.804 <sup>#</sup>
	Within Groups	1148.490	385	104.388		
	Total	3003.036	389			
Place Mix	Between Groups	3434.132	4	139.123	1.346	.252 <sup>#</sup>
	Within Groups	1330.535	385	103.383		
	Total	4764.667	389			

Promotion Mix	Between Groups	7164.597	4	5862.715	79.814	.000
	Within Groups	1888.172	385	73.454		
	Total	9052.769	389			
People Mix	Between Groups	17091.432	4	5744.522	94.127	.000
	Within Groups	2042.568	385	61.029		
	Total	19134.000	389			
Process Mix	Between Groups	12931.096	4	14220.430	552.194	.000
	Within Groups	931.471	385	25.753		
	Total	13862.567	389			
Physical Evidence Mix	Between Groups	9958.285	4	3424.005	123.184	.000
	Within Groups	1301.359	385	27.796		
	Total	11259.644	389			

#H<sub>0</sub> accepted at 5%

**Inference**

The significance of ‘F’ is more than 0.05 for the factor Price and Place Mix. So, the null hypothesis is accepted and it is concluded that there is no significant relation between age and Price and Place Mix of the respondents at 5% level.

The significance of ‘F’ is less than 0.05 for the factor Product, Promotion, People, Process and Physical Evidence. So, the null hypothesis is rejected and it is concluded that there is significant relation between age and Product, Promotion, People, Process and Physical Evidence of the respondents at 5% level.

**Table 7 ANOVA between Marital Status of the respondents and the Overall Customer Satisfaction for Product, Price, Place, Promotion, People, Process and Physical Evidence adopted**

**Hypothesis 3: H<sub>0</sub>** – There is no significant relation between marital status and overall customer satisfaction towards Product, Price, Place, Promotion, People, Process and Physical Evidence of the respondents at 5% level.

		Sum of Squares	df	Mean Square	F	Sig.
Product Mix	Between Groups	2161.450	1	65.565	.624	.430 <sup>#</sup>
	Within Groups	2364.509	388	105.076		
	Total	4525.959	389			
Price Mix	Between Groups	1723.113	1	2.474	.024	.878 <sup>#</sup>
	Within Groups	1279.923	388	104.012		
	Total	3003.036	389			
Place Mix	Between Groups	1435.920	1	211.206	2.041	.154 <sup>#</sup>
	Within Groups	3328.746	388	103.474		
	Total	4764.667	389			
Promotion Mix	Between Groups	735.226	1	1288.039	9.907	.002
	Within Groups	8317.543	388	130.007		
	Total	9052.769	389			
People Mix	Between Groups	10459.136	1	1053.354	8.998	.003
	Within Groups	8674.864	388	117.064		
	Total	19134.000	389			
Process Mix	Between Groups	5816.115	1	383.968	2.243	.135 <sup>#</sup>
	Within Groups	8046.452	388	171.166		
	Total	13862.567	389			
Physical Evidence Mix	Between Groups	3470.165	1	149.005	2.384	.123 <sup>#</sup>
	Within Groups	7789.478	388	62.496		
	Total	11259.644	389			

#H<sub>0</sub> accepted at 5%

**Inference**

The significance of ‘F’ is more than 0.05 for the factor Product, Price, Place,

Process and Physical Evidence. So, the null hypothesis is accepted and it is concluded that there is no significant relation between marital status and Product, Price, Place, Process and

Physical Evidence of the respondents at 5% level.

The significance of 'F' is less than 0.05 for the factor Promotion and People. So, the

null hypothesis is rejected and it is concluded that there is significant relation between marital status and Promotion and People of the respondents at 5% level.

**Table 8 ANOVA between Educational Qualification of the respondents and the Overall Customer Satisfaction for Product, Price, Place, Promotion, People, Process and Physical Evidence adopted**

**Hypothesis 4: H<sub>0</sub>** – There is no significant relation between Educational Qualification and overall customer satisfaction towards Product, Price, Place, Promotion, People, Process and Physical Evidence of the respondents at 5% level.

		Sum of Squares	df	Mean Square	F	Sig.
Product Mix	Between Groups	2161.450	5	432.290	70.205	.000
	Within Groups	2364.509	384	6.158		
	Total	4525.959	389			
Price Mix	Between Groups	1723.113	5	344.623	103.393	.845 <sup>#</sup>
	Within Groups	1279.923	384	3.333		
	Total	3003.036	389			
Place Mix	Between Groups	1435.920	5	287.184	33.129	.218 <sup>#</sup>
	Within Groups	3328.746	384	8.669		
	Total	4764.667	389			
Promotion Mix	Between Groups	735.226	5	147.045	6.789	.000
	Within Groups	8317.543	384	21.660		
	Total	9052.769	389			
People Mix	Between Groups	10459.136	5	2091.827	92.596	.000
	Within Groups	8674.864	384	22.591		
	Total	19134.000	389			
Process Mix	Between Groups	5816.115	5	1163.223	55.512	.000
	Within Groups	8046.452	384	20.954		
	Total	13862.567	389			
Physical Evidence Mix	Between Groups	3470.165	5	694.033	34.214	.000
	Within Groups	7789.478	384	20.285		
	Total	11259.644	389	432.290	70.205	

<sup>#</sup>H<sub>0</sub> accepted at 5%

### Inference

The significance of 'F' is more than 0.05 for the factor Price and Place. So, the null hypothesis is accepted and it is concluded that there is no significant relation between Educational Qualification and Price and Place of the respondents at 5% level.

The significance of 'F' is less than 0.05 for the factor Product, Promotion, People, Process and Physical Evidence. So, the null hypothesis is rejected and it is concluded that there is significant relation between Educational Qualification and Product, Promotion, People, Process and Physical Evidence of the respondents at 5% level.

### 8. SUGGESTION

Finally it can be suggested that:

- The bank should maintain smooth relation for customers and to improve personal advisory system.
- The bank should concentrate efficient insurance sales promotion.
- The bank should also have environmental friendly location and comfortable bank layout.

### 9. CONCLUSION

From this research it can be concluded that, customer satisfaction has become a necessary survival weapon and is fundamentally changing the banking industry worldwide. Banks are considered to be very important financial mediators or institutions because they result into well being of saver as

well as investors. The study finds that the bank customers are satisfied with the product, place, price, promotion, process, people and physical evidence properly provided by the bank to their customer. It means that customers expect the bank to rectify the problem and to update the banking technological services in bancassurance products for improving 7 P's of service marketing mix strategy and to improve customer satisfaction in future.

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# Theme of Political Conflict in Bhabani Bhattacharya's *Shadow* from Ladakh

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**Abstract** - Conflict forms part of human nature. It carries an element of universality in the sense that all men and women have their unique characteristics, adopt and reveal various attitudes, view-points, approaches which are at variance or singularly similar. It is not surprising that divergent canons authored and presented by people have direct, vigorous or aggressive conflict with other equally powerful concepts. This paper makes an attempt to explore the theme of conflict which is explicitly treated by Bhabani Bhattacharya in his epoch-making novel *Shadow from Ladakh*.

**Keywords:** Conflict, Non-violence, Ideology, Tradition, Modernity, war, peace.

The theme of conflict is inherent in all the novels of Bhabani Bhattacharya. But in *Shadow* it is distinctly present, strikingly prominent, explicitly treated, appropriately interwoven with the fictional tale 'told' by a talented writer who demonstrates an immense interest in the political, social, religious issues of the society and the nation. One cannot miss *Shadow's* historical perspectives and political connotations.

Bhattacharya breathes new life into the dry, bald beliefs and convictions and create characters who fully subscribe to their goals visualize and activate them with their enthusiasm and energy. They invest them with profound meaning and make them 'move' and 'live'.

What makes his novel *Shadow* more interesting, diverting and exceptional is the way Bhattacharya so fervently, perceptively recreates the historically important political conflict and clash between India and China in 1962, thereby revealing or reviving his intense historical sensibility, sharp political awareness and consciousness.

Bhattacharya has chosen to treat the interesting theme of political conflict in quite new, refreshing way. It has a national and international implications and complications. It

brings the two Asian giants India and China face to face; it is an armed conflict, an unprovoked war China has imposed on India in 1962. As remarked by K.R.Srinivasa Iyengar, in *Shadow* "Bhattacharya has a challenging theme: India at the time of the Chinese invasion of 1962. The title itself set the pace of the writing, and the military situation casts its shadow almost everywhere" (420).

In the very first chapter describing Suruchi's visit to Russia to attend the five day session of Peace Congress, she was shocked to learn of the aggressive mentality of the Chinese. She chanced to meet Mrs. Tung Pao from Peking, a woman delegate from China. Even the playthings they (Suruchi and the old Chinese woman) wanted to buy (engines the Chinese woman chose) and dolls which Suruchi would like to buy) are quite suggestive. Engines and dolls bring into sharp oppositional attitudes: war and industrialization in contrast to soft, trait, conventional preference.

And the old Chinese woman's outburst in the conference against India was hurting, blunt and unsparing. She mouthed undiplomatic expressions. She proudly declared that China had "one thought, one program, one plan of action" (SFL 4). She made a vehement attack on imperialists: "Strike at the imperialists; strike the death blow" (SFL 4). She pooh poohed the idea of co-existence and contemptuously dismissed it as "a fairy tale for children" (SFL 4). She asked the delegates, from many lands to cast off their illusion and get used to the hard reality of the world. Her further remark on war and peace gave a rude shock to the delegates: "Peace, everlasting peace, cannot be won without war. War is the only way to world peace. War to end all wars" (SFL 4).

This hard-hitting speech by the Chinese woman and her unsparing criticism of non-violence and eulogistic rhetoric on war are the very antithesis of the ideals of non-violence and co-existence cherished and advocated by India and other Asian countries. To them *Pancheel* is sacred and inviolable and is the only way to establish world peace. Preaching of war to end all wars is a clear, unabridged, call to more war, further bloodshed.

Suruchi was shrewd enough to see through the Chinese action and design. She told the village assembly about her view of the Chinese woman and added that India should keep her eyes open to harsh realities. Her warning was clear and to the point: "We cannot afford to live in a paradise where we think all's bound to be well" (SFL 53). Her suspicion about the Chinese ironically proved to be painfully true and correct. Suruchi's political sagacity stands in amazing contrast to her husband's blind faith in the public assertion and declaration of comradeship by China. She rightly understood that the pretty Chinese woman's observation carried a warning note: "Behind the attractiveness was something hard, ruthless, and almost sinister" (SFL105).

It also implied that Gandhian idea of non-violence will not work in the context of alien attack and of total disregard of Gandhian Gospel of peace. One may feel that non-violence is an anathema and will be ineffectual in the present day situation but Satyajit's faith in it is steadfast and unwavering and overwhelmingly genuine. His profound belief in the essential goodness of human nature marks him out as one of the remarkable characters created by Bhattacharya.

Bhattacharya chooses to deal with other conflict or opposing ideologies or concepts, which are relevantly linked to the main conflict with China, which swore by communism, communalism of a different type datively, forcefully went upon transforming China into a welfare state and on improving and fulfilling all

the needs of the common people- workers- for a better life and a prosperous future under MaoTse-tung with his People Liberation Army (PLA).

One may find a striking contrast in this attitude between India and China. China subscribed to monolithic regimented one-path theory, India, to diversity of thoughts and ways. Further, India significantly spoke in favour of enlightened neutralism. Bhattacharya remarks in admiration of Nehru's contribution to the resolution of conflicts and world-peace: "That was Nehru's gift to his people; in its long range meaning it was a gift for many peoples" (SFL77). It is unprejudiced non-partisan method of approach that will certainly lessen the vigours of conflict and help the parties arrive at amicable settlement through persuasive negotiations.

China, impelled by the compelling urge of territorial expansion, sowed the seeds of Sino-Indian conflict of 1962 by advancing its frontiers over the Himalayan ranges with publication of each succeeding map. It did not care for specific agreements between India and Tibet concerning demarcate of boundary "by the well-defined watershed ridges of the high Himalayan range" (SFL79). China felt that it was imposed by British imperialism, it maintained, "... Tibet, conquered by China, had no right to enter into treaties with a foreign power" (SFL78). And the conclusion was inescapable and inevitable: ". . . the Chinese had no use for geography, history, tradition or usage" (SFL 79). China had surreptitiously annexed, in slow stages, sixteen thousand square miles of territory that had been an integral part of India (SFL 79). It is aggression; it is illegal occupation of another country's land; it is flagrant calculated violation of the sanctity of the code of co-existence.

Satyajit wondered whether aggression should be met with armed resistance. A forced settlement of a dispute could never bring a permanent solution and could never be final.

Satyajit accurately judges that China and India have contributed two conflicting concepts to humankind. Chinese concept is built around military might, which, if continually strengthened, increased and modernized with its striking power enhanced massively, can end wars, and crush resistance and establish peace. China's armed might would certainly lead to conflagration and war. But India has given it the great idea of "non-alignment of dynamic neutralism (SFL 79) which is creative, offering tranquility and joys of peace, furthering human development and progress..

The political conflict (between Indian and China) is brought into sharp focus and Bhabana Bhattacharya with his fictional power and political acumen explores the origin of the wrangle and clash between the two neighbours actuated by contrastive ideals and ideologies. Here Bhattacharya refers to what the village women think about the conflict between India and China. They are not concerned with the political implications of the tussle but with the human aspect of the dispute. To them "All fighting was hateful, none more hateful than fighting between neighbors" (SFL 71). They add that India should steadily, persistently, firmly stand for peace. 'Peace' is the only word that resonates and reverberates in all the rituals conducted in the village as enshrined in the Vedas: "In this village, as in all others, every ritual-at birth, marriage, funeral-ended with the words proclaimed by Vedic sages three thousand years ago: Peace and Peace and Peace!" (SFL 71).

There is also a conflict between tradition and modernity. Hitherto, Satyajit remains unchallenged with all his illuminating Gandhian ideals. They are unilaterally accepted without questioning with one great, grateful unanimous approval and approbation, and received with loud, 'yes' in pure admiration. Now this all agreeable, sweet 'yes', is rejected, ejected with 'No.' It was Bhashkar Roy who has forcefully, vigorously, scientifically proved

the received concept wrong, irrelevant and irrational. Bhashkar Roy returns to India from America and wants to construct a steel plant in Gandhigram. But Satyajit who is an ardent follower of Gandhian principles strongly opposes it.

Bhabani Bhattacharya turns from the political wrangle between the two neighbours India and China to the conflict between Gandhigram and Steel town in terms of their fundamental ideologies that inspire them. It is quite strange and unacceptable that the great neighbours should come into a serious conflict despite a long and historically proven tradition of friendship and intimate cultural contact uniting them. The cause of the conflict is, of course, the shocking aggression committed by China and unreasonable claims triggered chiefly by its territorial ambition. Similarly, the internal confrontation between Gandhigram and Steeltown is odd for they too are neighbours, and one can find that this face-off is suggestively between the village and the city. It is the direct consequence of Steeltown's expansive drive as can be seen in China's ulterior intention and attempts to disrupt and destroy the very identity and spirit of Gandhigram. Here the poet in Bhattacharya puts it so elegantly "And the city [Steeltown] planning to annex the village [Gandhigram], not acres of earth alone, but a way of life, an inner spirit" (SFL 71).

Bhattacharya quotes what Gandhi said about the disastrous consequence of the destruction of the village that is, the spoliation of the country side, in economic terms. It would force the poor, indigent villagers to migrate to the city to seek jobs in a factory or mill which is "ugly ugly, repressive" (SFL 71).

Gandhi pointed out (as Bhattacharya quotes him) that the country people were compelled to quit their beautiful villages with all their healthy environment. In the cities they were tempted to give up their naturally beautiful simplicity (which itself a noble

Gandhian quality) in preference to a life of sophistication. Besides these external attractions of a village, there was another rational argument favouring the country life. Large scale industry cannot give employment to the ever burdening enormous man power but spinning wheel, in Gandhi's view can reduce and control.

Thus, Bhabani Bhattacharya creates a number of conflicts which are intertwined and relevant yet they project differing perspectives, each signals and offers something new and meaningful. It leads to the development of the story and adds to its profundity.

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# Effect of Training and Business Environment on Policy Holders' Strength of Micro Insurance Agents in Kollam District, Kerala

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**Abstract** - Insurance business is not only commercial but also professional now. Knowledge of insurance is as much essential as in trading business especially for the insurance agents. Privatisation of insurance business has added much significance to the life of the people. Safety and investment have become the need of the present society. India is enjoying rapid growth and benefits from her younger generation. Her middle class is growing fast, but majority of the population is still rural, poor and handicapped by poor health and low literacy rate. These highlight the need for micro insurance. In India, Liberalisation has created opportunity for insurance to reach a vast majority of the poor. Amid this backdrop, the present paper focuses on the impact of training and business environment on policyholders' strength of micro insurance agents in Kollam district, Kerala.

**Keywords:** Micro Insurance, Insurance agent, Kinds of training, Aspects of business environment in insurance

## 1. INTRODUCTION

Micro insurance, the term used to refer insurance to the low income people, is different from insurance as it is a low value product (having modest premium and maturity value) which requires different design and marketing strategy, active involvement of insurance agents and so on. There are different types of micro insurance such as life insurance, health insurance, property insurance, disability insurance, crop insurance unemployment insurance and disaster insurance. In the case of life micro insurance policy, the cover amount of insurance ranges from Rs.5,000 – Rs.50,000 for a minimum term of five years and maximum of 15 years. The entry age for this policy is kept from 18-60 years.

Insurance Regulatory and Development Authority (IRDA) has stipulated that persons should pass an examination to be certified fit for serving as insurance agents. There is a provision for corporate under which firms pursuing a commercial objective can also take up insurance marketing on behalf of insurance companies. In order to comply with the stipulations of the IRDA, all insurance

companies have designed their micro insurance policies for the poorer sections and low income individuals.

## 2. REVIEW OF LITERATURE

The study of Ahuja and Basudeb Guha(2005) reveals that the present spread of micro insurance in India is restricted.

Amitabh Verma(2008) reports that high business retention ratios indicate health of an insurance company and adds that insurers should adopt dynamic methods of insuring so that a customer does not go out of their reach.

The study of Anup Cherian et al (2006) reveals that micro insurance might be seen as an ideal self help strategy for the rural population against the natural disaster.

Anand Pejavar (2010) opines that there is an increasing emphasis on prompt customer service and adds that insurance companies have to be imaginative in finding new ways of rendering it.

The study of Arman Oza(2006) attempts to find out the appropriate channel for distributing micro insurance product. It also mentioned typical features of micro insurance like small ticket size, access to widespread rural population, and regional as well as demographic diversity of risks.

Arvind and Narayana Renukumar(2008) in their study report that micro insurance is just an evolving field of insurance and it has numerous challenges at insurance company level, rural household level and MFI level.

Ashwin Parekh(2010) stresses the need to gain training in human resources in order to achieve the goal of insurance company. He considers that insurance is a difficult product to sell owing to the financial complexity, low financial literacy and lack of awareness among the consumers of the need for such a product.

Basant Sahu(2014) reports that MFI as distribution channel of micro insurance is found to be effective in reducing administrative cost. Micro credit related insurance business is one of the key drivers of micro finance.

The study of Job Harms(2011) reveals that there is a strong preference among potential micro insurance customers in rural Kenya for micro insurance policies as similar to insurance business in developed countries.

Jeyaseelan(2014) in this study reports insurers should modify the products to diverse market segments according to their felt needs. As the micro insurance sector is in its childhood, all the stakeholders, i.e., Government, international donors, market regulator, insurers, banks, NGOs and SHGs have to exert intensive effort in building this sector.

**3. STATEMENT OF THE PROBLEM**

India is the largest democracy with a population of over 1.30 billion. Life insurance is turning as the fastest growing segment in the financial sector. The new business is forecasted to grow at a rapid pace. Insurance sector is the biggest market for the service marketers. It is the fond expectation of under privileged communities for the economic protection. Among the various problems of micro insurance, the marketing problem in attracting, persuading and winning the under privileged to be handled and tackled carefully came to the fore in Kollam district, Kerala. There are several training programmes for the agents like market training, policy knowledge training and special training meant for imparting marketing knowledge to the agents. The insurance agents’ sufficient knowledge in marketing would help them for better marketing of micro insurance policy. In fact, the agents’ knowledge about the plans and benefits of micro insurance policy would help them to approach the potential buyers with confidence. Similarly, there are the several aspects of business environment of micro insurance agents like amount of premium

charged, risk coverage of policy, amount of commission given to agents, incentives given to agents, method of accepting complaints from policy holders, penal amount levied by the insurance company, redressal of grievances by the company, insurance ceiling fixed by the company, and so forth, affecting the marketing effort of the agents. Formulation of an effective plan and administration of suitable promotional activities by micro insurance organizations of the country would tackle their marketing problem by raising the number of policyholders of micro insurance agents in the study district.

**4. OBJECTIVE OF THE STUDY**

To study the effects of training and business environment aspects on the strength of policyholders of micro insurance agents in Kollam district.

**5. HYPOTHESIS**

Ho: Training and business environment variables have no significant effect on the policyholders’ strength of micro insurance agents.

**6. METHODOLOGY**

The study primarily depended on first hand data which were collected from sample micro life insurance agents 400 in number from a pool of 3000 agents: the agents were chosen by stratified random sampling method. The data gathering instrument was a structured questionnaire. The sample size was fixed by “Kukeran” formula. The formula is:

$$n = \frac{Z^2 pq / d^2}{1 + 1/n \left( \frac{Z^2 pq - 7}{d^2} \right)}$$

To the selected 341 sample agents, 59 were added to have the sample agents 400 in number. The questionnaire contained 24 main aspects related to micro insurance policy; of which, two were scaled questions. The questionnaire was face validated by two experts in the field of micro insurance. The reliability of the scaled questions was tested with cronloach’s alpha, and the alpha values for the two sets of questions 0.87 and 0.79 were well

above the acceptable value 0.7. The sample months in 2016.  
survey was conducted for the period of nine

## 7. DATA ANALYSIS AND FINDINGS

**Table1 shows the demographic profile of sample micro insurance agents**

Characteristic		F	%
Gender	Male	158	39.50
	Female	242	60.50
Age (years)	25-35	32	8.00
	36-45	127	31.75
	46-55	191	47.75
	56 & above	50	12.50
Education	Primary Level	61	15.25
	Secondary Level	199	49.75
	Diploma	30	7.50
	Graduate	110	27.50
Marital Status	Married	340	85.00
	Un Married	60	15.00
Nature of Family	Joint	62	15.50
	Nuclear	338	84.50
Area of Residence	Urban	58	14.50
	Semi Urban	59	14.75
	Rural	283	70.75
Annual Income (Rs.)	Below 50000	31	7.75
	50001 – 70000	73	18.25
	70001 – 90000	97	24.25
	90001 & above	199	49.75

Source : Primary data

### Agents Experience:

Previous experience of agents would provide some basic knowledge in approaching the customers.

The survey noted the sample agents' previous experience as LIC agent, small saving agent, postal insurance agent and the like. The details of mean years of experience of agents in previous occupations of different categories are

LIC agent 5.94 (mean year of experience); small savings agent 4.39; General insurance agent 3.81; postal insurance 2.76 and other agencies 2.43.

### **Training attended:**

The improved knowledge of the agents from training would help them for better marketing of micro insurance policy. The survey noted whether the agents have undergone training. It was a disclosure that while 66.30 percent agents had undergone

training, a sizeable 33.8 percent had not undergone the training.

The study revealed agents' mean period of training in different areas such as marketing, policy knowledge, consumer approach, premium collection, periodical training and special training. Particulars of agents' mean period of training in different areas are presented in Table 2.

**Table 2 – Mean Period of Training in Different Areas**

Training area	Mean	SD
Training in marketing	5.26	4.12
Training in Policy Knowledge	5.57	18.33
Consumer approach training	3.52	4.62
Premium Collection Training	2.72	3.98
Periodical training	2.67	3.69
Special training	2.01	2.74
Other areas	2.00	3.68

Source : Primary data

Table 2 shows that agents' training in policy knowledge secured the highest score of 5.57 (with SD 18.33) indicating the highest

period of training received by the agents, followed by training in marketing (with mean score 5.26), and consumer, approach training (3.52).

**Business environment variables:**

Apart from training, business environment aspects would also impact the number of policy holders of micro insurance agents. These aspects of business environment include co-operation of agents’ insurance officials in processing the policies, attitude of officials at the subsequent stages of insurance work, ceiling on insurance amount fixed by the company, the amount of premium collected, amount of commission given to agents, method of accepting complaints from policyholders,

and so on. (These aspects 19in number are shown in Table 3).

In order to find out the effect of training and business environment on the agents’ strength of policyholders, multiple regression was performed. The existing number of policyholders of agents was taken as continuous dependent variable and number of different areas of training attended, and nineteen variables of business environment were taken as continuous independent variables. Backward stepwise regression method was used to extract the significant independent variables which affect the number of policyholders of agents. The backward selection method eliminated 13 independent variables (Table 4).

**Table 3 coefficients of initial regression model for the effect of training and Business Environment Variable on policyholders’ strength**

Variables	Unstandardized Coefficients		Standardised Coefficient	t	Sig.
	B	Std. error	Beta		
(constant)	27.105	15.810		1.714	0.088
With the help of insurance officials in processing policies	-0.988	3.657	-0.023	-0.270	0.787
With cooperative attitude of officials at subsequent stages of insurance work	-3.247	4.257	-0.070	-0.763	0.446
Insurance ceiling fixed by the company	-1.097	3.163	-0.026	-0.347	0.729
Assisting clients for continuing / increasing insurance policies	-0.461	3.293	-0.010	-0.140	0.889
Amount of premium charged	-0.026	3.267	-0.000	-0.008	0.994
Risk coverage of policy	0.382	2.748	0.010	0.139	0.889
Informing all policy details	-4.099	2.925	-0.097	-1.401	0.162
Amount of commission given to agents	7.480	2.999	0.211	2.494	0.013
Incentives given to agents	1.262	2.809	0.036	0.449	0.654
Method of accepting complaint from clients	7.847	3.104	0.208	2.528	0.012
Redressal of grievances by insurance company	-1.905	3.276	-0.050	-0.581	0.561
Penal amount levied by the company	-4.132	2.621	-0.114	-1.577	0.116
Marketing training	1.723	0.804	0.143	2.144	0.033
Policy knowledge training g	0.572	0.180	0.213	3.180	0.002
Consumer approach training	0.539	0.736	0.051	0.732	0.465
Premium collection training	0.577	0.906	0.047	0.637	0.525
Periodical training	2.652	0.877	0.199	3.025	0.003
Special training	0.075	1.186	0.004	0.063	0.950
Other	-0.820	0.904	-0.061	-0.907	0.365

Source : Primary data

**Model Summary**

**Model 1**

R 0.532; R<sup>2</sup> 0.283; Adjusted R<sup>2</sup> 0.247

Standard error of estimate 39.297

**Model 14**

R 0.519; R<sup>2</sup> 0.269; Adjusted R<sup>2</sup> 0.258



Standard error of estimate 39.012

The above model summary is the regression for the effect of training & Business environment variables on number of policyholders of agents. It can be seen that R<sup>2</sup> of initial regression model is 0.283 and it reduces to 0.269 after removing certain

independent variables. The R<sup>2</sup> of the final regression model indicates that 26.9 per cent of the variation in the policyholders' strength existing with agents determined by the independent variables retained in the final regression model.

**Table 4 –ANOVA of Initial & Final Regression models for the above effect of variables**

Model	Sum of Squares	df	Mean square	F	Sig.
1 Regression	132403.3	19	6968.597		
Residual	505124	243	2078.699	3.352	0.000
Total	637527.3	262			
14 Regression	119261.1	6	19876.855		
Residual	518266.2	256	2024.477	9.818	0.000
Total	637527.3	262			

Source : Primary Data

Table 4 presents ANOVA of initial and final regression models for the effect of independent variables on the number of policyholders of agents. The significance level of F values of initial and final regression models is less than 0.05 indicating that the regression model is well fitted with the data and so it is valid to explain the variation in the number of policyholders existing with agents by the help of the retained independent variables.

Table 3 shows the co efficient of initial regression models for the effect of training and business environment variables on the number of policyholders. The table also shows that out of the total variables only five variables have significant effect on the number of policyholders held by the agents. The significant independent variables in the initial regression model are amount of commission given to the micro insurance agents, method of

accepting complaints of policyholders, number of marketing training, policy knowledge training, and periodical training attended by the agents. The co efficient of these variables are positive indicating that when the level of these variables increases, the number of policyholders of the agents also increases. It means that these variables have positive significant effect on the number of policyholders held by them.

In order to isolate the most significant variables affecting number of policyholders held by the agents, backward selection method was applied. The method eliminated 13 insignificant independent variables from the regression model. Table 5 resents the Co-efficient of final regression model on the effect of training and business environment on the number of policyholders of micro insurance agents.

**Table – 5 Co efficient of Final Regression model for effect of Training & Business Environment on Number of Policyholders**

Variables	Unstandardised Co efficiencies		Standardised Co efficient	t	Sig.
	B	Std. error	Beta		
(constant)	8.618	8.873		0.971	0.332
Amount of commission given to micro insurance agents	5.446	2.390	0.153	2.278	0.024
Method of accepting complaint from Policyholder	5.097	2.473	0.135	2.061	0.040
Penal amount levied	-4.601	2.422	-0.127	-1.900	0.059

Training in Marketing	1.916	0.695	0.159	2.755	0.006
Policy knowledge training	0.576	0.153	0.215	3.763	0.000
Periodical training	3.007	0.755	0.226	3.982	0.000

From Table 5 it can be seen that there are six independent variables which significantly affect the number of policyholders held by agents. It means when the amount of commission given to micro insurance agents increases the number of policyholders held by agents also increases. The Co. efficient of all the significant variables except that of penal amount levied by the insurance company are positive. But when level of penal amount levied increases the number of policyholders held by the agents is found to decrease significantly.

## 8. MANAGERIAL IMPLICATIONS AND CONCLUSION

The main marketing concern of the managements of insurance companies is to increase the number of micro insurance policyholders. It is evident from the analysis that of the 19 various business environment aspects, three aspects, namely, agents' commission, amount of penalty and method of accepting complaints from the policy holders. This implies that the policyholders' strength may be raised by paying attractive commission to the agents, reducing the amount of penalty payable by the clients, and judicious method of accepting the clients' complaints.

There are several training programmes meant for imparting / improving the knowledge of the agents, i.e., training in marketing, policy knowledge training, periodical training, consumer approach training, premium collecting training, special training and other forms of training. The analysis reveals that more programmes may be arranged for marketing training and policy knowledge training as well as regularly conducting periodical training; such training programmes would enhance the number of policyholders of the insurance agents/companies. In addition, wherever feasible, there may be cooperation

between the insurance agents/companies and the NGOs & SHGs for tapping the market potential of micro insurance.

As there exists huge business potential in micro insurance, the current system of the micro insurance may be streamlined so as to attract the prospective buyers of the policy in the study district.

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# Ratio Analysis for Dividend Payment of Public Sector Banks

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**Abstract** - Dividend is the most inspiring factor for the investment on shares of a company, is thus desirable from the stockholder's point of view. On one hand, the payment of dividend makes the investors happy; but on the other hand, the payment of dividend decreases the internal financing required for making investment in golden opportunities. This will hamper the growth of the firm which in turn affects the value of the stock. Earnings are also treated as financing sources of the firm. If a firm pays dividend, it may need to raise capital through capital market that involves risk. This paper focuses on the comparative position of public sector banks based on their payment of dividend.

**Keywords:** Ratio Analysis, Dividend Payment, Public Sector Banks

## 1. INTRODUCTION

Dividend policy is an integral part of financial management decision of a business firm. As per Weston and Brigham, "Dividend policy determines the division of earnings between payments to shareholders and retained earning". Gitman, "The firm's dividend policy represents a plan of action to be followed whenever the dividend decision must be made". The main goal of the public banks is to protect and maximize the interest of the shareholders by maximizing the overall profit of the banks units; The objective of the study is to analyze the payment of dividend of selected public sector banks with the aid of accounting ratios.

## 2. OBJECTIVE OF THE STUDY

The specific objective of the study is given below:

- To evaluate the use of ratios relating to the dividend payment of study banks.

## 3. RESEARCH METHODOLOGY

The present study is an analytical one. There are many public banks in India. For this study, the top five public banks in India i.e. State Bank of India, Punjab National Bank, Bank of Baroda, Canara Bank and Bank of India are considered.

- Secondary Data:

The study mainly depended on secondary data. The required data for the purpose of the study were collected from books, journals, and company and websites.

## 4. PERIOD OF THE STUDY

The study covers five public banks' market returns for five years from 2011-2012 to 2015-2016.

## 5. TOOLS USED FOR ANALYSIS

- Arithmetic Mean, Ratio Analysis and ANOVA.

## 6. REVIEW OF LITERATURE

**Andres, Betzer, Goergen, and Renneboog (2009)** investigate dividend behavior of German firms and found that they fail to make dividend decisions on long-term target dividend payout ratios with public earnings.

**Brittain (1964, 1966)** argues that cash flow has higher explanatory power for the capacity to pay dividends than net income.

**Bhattacharya (1980) and John Williams (1985)** show that dividends allay information asymmetric between managers and shareholders by delivering inside information of firm future prospects.

**Jeong (2013)** examines dividend smoothing behavior in Korean stock market with the Lintner model and found that Korean firms smooth dividend less than the U.S. firms. Moreover, firm size, risk, firm growth and large shareholder ownership have significant impact on the extent of dividend smoothing.

## 7. ANALYSIS AND INTERPRETATION

The results of the analysis for payment of dividend of the study banks by financial ratios are given below.

### 8. DIVIDEND PAY OUT RATIO

This ratio is also known as pay-out ratio. It measures the relationship between the

earnings belonging to the ordinary shareholders and the dividend paid to them.

**Table 1 Bankwise – Dividend payout ratio**

Year	BOB	BOI	Canara	PNB	SBI
2015-16	23.56121	18.54231	4.85265	5.623147	20.2833
2014-15	21.42071	19.43333	3.885119	5.389374	19.51888
2013-14	20.33085	11.77971	4.511543	2.991701	20.56446
2012-13	20.21416	21.70222	4.526305	5.687	20.1258
2011-12	13.8671	17.40342	3.35089	4.50432	20.06152
Average	15.16656	14.06373	3.254771	3.714479	20.11079

Source: Records kept at banks.

#### 8.1 Ratio Analysis

- Bank of Baroda: Highest dividend payout ratio was found in the year 2015-16 with 23.56 and lowest dividend payout ratio was found in the year 2011-12 with 13.867.
- Bank of India: Highest dividend payout ratio was found in the year 2012-13 with 21.70 and lowest dividend payout ratio was found in the year 2013-14 with 11.77.
- Canara Bank: Highest dividend payout ratio was found in the year 2015-16 with 4.85 and lowest dividend payout ratio was found in the year 2011-12 with 3.35.

- Punjab National Bank: Highest dividend payout ratio was found in the year 2015-16 with 5.62 and lowest dividend payout ratio was found in the year 2013-14 with 2.99.
- State Bank of India: Highest dividend payout ratio was found in the year 2013-14 with 20.56 and lowest dividend payout ratio was found in the year 2014-15 with 19.51.

#### 8.2 Dividend Per Share

DPS is the net distributed profit belonging to the share holders divided by the number of the ordinary shares outstanding.

**Table 2 Bank wise Dividend per share**

Year	BOB	BOI	Canara	PNB	SBI
2015-16	0.79654	0.51061	0.21648	0.521478	2.59999
2014-15	0.748715	0.498911	0.22096	0.444852	3.425372
2013-14	0.746494	0.5	0.238477	0.27619	3
2012-13	1.41217	1.00005	0.293454	0.763855	4.150023
2011-12	1.129977	0.811077	0.248307	0.648623	3.50003
Average	0.807471	0.562008	0.20024	0.426704	3.335083

Source: Records kept at banks.

- Bank of Baroda: Highest dividend per share was found in the year 2012-13 with 1.41 and lowest dividend per share ratio was found in the year 2013-14 with 0.746.
- Bank of India: Highest dividend per share ratio was found in the year 2012-13 with 1

- and lowest dividend per share ratio was found in the year 2013-14 with 0.49.
- Canara Bank: Highest dividend per share ratio was found in the year 2012-13 with 0.29 and lowest dividend per share ratio was found in the year 2015-16 with 0.20.

- Punjab National Bank: Highest dividend per share ratio was found in the year 2012-13 with 0.76 and lowest dividend per share ratio was found in the year 2013-14 with 0.27.
- State Bank of India: Highest dividend per share ratio was found in the year 2012-13 with 4.15 and lowest dividend per share

ratio was found in the year 2015-16 with 2.59.

### 8.3 Net Profit Margin

The ratio is designed to focus attention on the net profit margin arising from business operation before interest and tax is deducted.

**Table 3 Bank wise - Net profit margin**

Year	BOB	BOI	Canara	PNB	SBI
2015-16	-3.29629	-3.72007	-1.71843	-2.42807	6.079134
2014-15	2.22999	1.12136	1.773407	2.008949	8.596996
2013-14	3.330439	2.001653	1.788174	2.451456	7.98761
2012-13	3.744634	2.297691	2.400275	3.967729	11.78783
2011-12	4.700424	2.513597	3.081736	4.58518	10.99055
Average	2.14184	0.842846	1.465032	2.117048	9.088424

Source: records kept at banks.

- Bank of Baroda: Highest net profit margin was found in the year 2011-12 with 14.70 and lowest net profit margin was found in the year 2015-16 with -3.29.
- Bank of India: Highest net profit margin was found in the year 2011-12 with 2.51 and lowest net profit margin was found in the year 2015-16 with -3.72.
- Canara Bank: Highest net profit margin was found in the year 2011-12 with 3.08 and lowest net profit margin was found in the year 2015-16 with 1.71.

- Punjab National Bank: Highest net profit margin was found in the year 2011-12 with 4.58 and lowest net profit margin was found in the year 2015-16 with -2.42.
- State Bank of India: Highest net profit margin was found in the year 2012-13 with 11.78 and lowest net profit margin was found in the year 2013-14 with 7.98.

### 8.4 Dividend Coverage Ratio

Dividend cover denotes the number of times the dividend per share is covered by earning per share.

**Table 4 Bank wise - Dividend cover**

Year	BOB	BOI	Canara	PNB	SBI
2015-16	11.56231	5.26322	27.11279	20.45632	6.356781
2014-15	10.23318	5.145799	25.73924	18.55503	5.123244
2013-14	14.12467	8.489176	22.16536	33.4258	4.862759
2012-13	7.509545	4.607823	22.09308	17.58396	4.968747
2011-12	10.74501	5.745998	29.84282	22.20091	4.984668
Average	8.522481	4.797759	19.9681	18.35314	3.987884

- Bank of Baroda: Highest dividend cover ratio was found in the year 2013-14 with 14.12 and lowest dividend cover ratio was found in the year 2012-13 with 7.51.

- Bank of India: Highest dividend cover ratio was found in the year 2013-14 with 8.48 and lowest dividend cover ratio was found in the year 2012-13 with 4.60.

- Canara Bank: Highest dividend cover ratio was found in the year 2011-12 with 29.84 and lowest dividend cover ratio was found in the year 2012-13 with 22.09.
- Punjab National Bank: Highest dividend cover ratio was found in the year 2013-14 with 32.42 and lowest dividend cover ratio was found in the year 2012-13 with 17.58.
- State Bank of India: Highest dividend cover ratio was found in the year 2015-16 with

6.35 and lowest dividend cover ratio was found in the year 2013-14 with 4.8.

**8.5 Earning Per Share**

The objective of financial management is wealth or value maximization of a corporate entity. The value is maximized when market price of equity shares is maximized. This is based on earning per share.

**Table 5 Bank wise - Earning per share**

Year	BOB	BOI	Canara	PNB	SBI
2015-16	-11.6764	-7.45049	-5.18024	-10.1202	12.81838
2014-15	7.661737	2.567295	5.687332	8.25424	17.54902
2013-14	10.54398	4.244588	5.285934	9.231861	14.58828
2012-13	10.60475	4.608055	6.483296	13.43161	20.62041
2011-12	12.14162	4.660447	7.410181	14.40002	17.44649
Average	5.85514	1.725979	3.9373	7.039509	16.60451

Source: Records kept at banks.

- Bank of Baroda: Highest earning per share was found in the year 2011-12 with 12.14 and lowest earning per share ratio was found in the year 2015-16 with -11.67.
- Bank of India: Highest earning per share ratio was found in the year 2011-12 with 4.66 and lowest earning per share ratio was found in the year 2015-16 with -7.45.
- Canara Bank: Highest earning per share ratio was found in the year 2011-12 with 11.41 and lowest earning per share ratio was found in the year 2015-16 with 5.18.
- Punjab National Bank: Highest earning per share ratio was found in the year 2011-12 with 14.40 and Lowest earning per share

ratio was found in the year 2015-16 with -10.12.

- State Bank of India: Highest earning per share ratio was found in the year 2012-13 with 20.62 and lowest earning per share ratio was found in the year 2015-16 with 12.81.

**9. ANOVA**

ANOVA is used to test the homogeneity of several means. Analysis of variance test is performed to verify the following 5 null hypotheses.

H0: There is no significant difference in Dividend Payout Ratio of five selected banks during the study period.

**Table 6 Dividend Payout Ratio**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1317.918	4	329.480	57.584	.000
Within Groups	114.435	20	5.722		
Total	1432.353	24			

Dividend payout ratio is significant at 0.05 level. From the table it is clear that at 5% level of significance the significant value is

0.000. Since it is less than 0.05 there exists significant difference between Dividend Payout

Ratio at selected banks during the study period.  
Hence the null hypothesis is rejected.

### 9.1 Dividend Per Share

H0: There is no significant difference in Dividend per share Ratio of selected five banks during the study period.

**Table 7 Dividend Per Share**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.690	4	.423	1.879	.154
Within Groups	4.497	20	.225		
Total	6.188	24			

From the table it is clear that at 5% level of significance the p-value is 0.154. Since it is more than 0.05, there exists no significant difference between Dividend per share Ratio at selected banks during the study period. Hence the null hypothesis is accepted.

### 9.2 Net Profit Margin

H0: There is no significant difference in Net profit margin of selected banks during the study period.

**Table 8 Net Profit Margin**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	227.543	4	56.886	8.568	.000
Within Groups	132.792	20	6.640		
Total	360.335	24			

ANOVA test reveals the significance of F is less than 0.05; there exists significant difference between Net profit margin Ratio at selected banks during the study period. Hence the null hypothesis is rejected.

### 9.3 Dividend Cover Ratio

H0: There is no significant difference in Dividend Cover Ratio of selected banks during the study period.

**Table 9 Dividend Cover Ratio**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1769.399	4	442.350	36.676	.000
Within Groups	241.219	20	12.061		
Total	2010.617	24			

The result shows that at 5% level of significance the p value is 0.000. Since it is less than 0.05, there exists significant difference between Dividend cover Ratio at selected banks during the study period. Hence the null hypothesis is rejected.

### 9.4 Earnings Per Share

H0: There is no significant difference in Earning per share Ratio of selected banks during the study period.

**Table 10 Earnings per Share**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	653.746	4	163.436	3.139	.037
Within Groups	1041.314	20	52.066		
Total	1695.059	24			

From the table it is evident that at 5% level of significance, the significance of F is 0.037. It is less than 0.05; there exists significant difference between Earning per share Ratio at selected banks.

**10. CONCLUSION**

Dividend policy is the set of guidelines a company used to decide how much of its earnings it will pay out to shareholders.

The selected study banks are the top five public banks rated by Bombay Stock Exchange on the basis of their net revenue. The five public banks are State Bank of India, Punjab National Bank, Bank of Baroda, Canara Bank and Bank of India.

As per the dividend payout ratio, the payment of dividend is higher in Bank of Baroda. The payment of dividend is higher in State Bank of India according to the dividend per share ratio, Net profit margin and Earning per share.

The payment of dividend is more in Canara bank according to dividend cover ratio. It is concluded that there is more dividend payment in STATE BANK OF INDIA as compared to other selected public banks.

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# Outlook of the Clientele towards Marketing Tactics of Hindustan Unilever Limited (HUL)

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**Abstract** - Hindustan Unilever Limited is the leader in consumer goods industry with many brands under its umbrella. It deals in various brands and has many products under its belt. To handle all this products and brands successfully it has a vast distribution network that includes at least two million outlets directly and 7.7 million retail shops in every part of the country. HUL is the market leader in Indian consumer products with presence in over 20 consumer categories such as soaps, tea, detergents and shampoos amongst others with over 70 crore (700 million) Indian consumers using its products. In order to capture this position, HUL executed an assortment of marketing tactics. This study makes an attempt to analyse the attitude of the customers towards the marketing tactics of the HUL.

**Keywords:** Clientele, Marketing Tactics, Hindustan Unilever Limited

## 1. INTRODUCTION

Hindustan Unilever Limited (HUL) is an Indian consumer goods company based in Mumbai, Maharashtra. It is a subsidiary of Unilever, a British-Dutch company.

HUL's products include foods, beverages, cleaning agents, personal care products and water purifiers. HUL was established in 1933 as Lever Brothers and in 1956, became known as Hindustan Lever Limited, as a result of a merger among Lever Brothers, Hindustan Vanaspati Mfg. Co. Ltd. and United Traders Ltd. It employs over 16,000 workers, while it also indirectly helping to facilitate the employment of over 65,000 people. The company was renamed in June 2007 as "Hindustan Unilever Limited".

HUL adopted a marketing tactics of segmentation, differentiation and branding for success. HUL uses a mix of demographic, geographic and psychographic segmentation variables to address the changing needs of the customers. It uses differentiating targeting tactics to make the products available to the customer accordingly as per their choice. HUL has a large number of brands in its brand

portfolio and it positions the brands on benefit and usage based positioning tactics.

## 2. MARKETING TACTICS OF HUL

Hindustan Unilever is a very large company with lots of brands and products so its promotional policies are varied and extensive.

**Advertisement** - It has taken the help of advertisements to create consciousness about its products. It has utilized the electronic media for its promotions as the advertisements are on television at regular intervals. It has also posted detailed information about its products along with advertisements on the websites to maintain consumer awareness.

**Sales promotion** - Sometimes coupons are attached with local newspapers to advertise and promote the products. Discounts are provided along with various schemes to attract the customers during off seasons and during special occasions. Sales push is also possible through various contests, free samples and lowered prices of introductory products

**Attractive appearance with package** - Hindustan Unilever has maintained attractive product appearances with detailed and complete information about the product on its packaging in at least three languages.

**Celebrity endorsement** - Sakshi Talwar is associated with Vim, Yami Gautam in Kwality Walls, Actor Kareena Kapoor is associated with Lakme, Actor Kajol is associated with Knorr soups, and Varun Dhawan in Ponds men's range and Anoushka Sharma is associated with Bru.

**Product demonstration** - In order to arouse the interest of the consumers various staffs' are hired who provide a live product demonstration through the stalls at particular public places.

### 3. PRODUCT PROFILE OF HUL

Hindustan Unilever Limited is the leader in consumer goods industry with many brands under its umbrella. It deals in various brands and has many products under its belt. To handle all this products and brands successfully it has a vast distribution network that includes at least two million outlets directly and 7.7 million retail shops in every part of the country.

The company also has a direct selling network called Hindustan Unilever network (HUNL) and under this network, Ayush Therapy markets health products, Aviance

markets beauty products, *Lever Home* markets home products, *D.I.Y.* markets male grooming products. In order to retain its market hold the company has pursued an innovative mechanism for distributing its products. In its zeal to reach the innumerable potential consumers in urban regions and in rural areas, where there is little scope for reaching and establishing a network, the company has simply gone forward with no-holds barred policy and set up various networks. Table 1 highlights the product and brand profile of HUL.

**Table 1 Product and Brand Profile of HUL**

Food Products				
Tea	Coffee	Ice cream	Salt	Others
1. Brooke Bond – 3 Roses, Taj Mahal, Taaza, Red Label)	Brooke Bond Bru	1. Kwality Wall’s frozen Dessert 2. Magnum	Annapurna salt and spices	1.Kissan squashes, ketchups, juices and jams 2. Knorr soups & meal makers and soupy noodles
Home and personal Care Products				
Hair care	Detergents and Health care	Personal care	Oral care	Skin care
1. Brylcream Hair cream and hair gel 2. Clear anti-dandruff hair products 3. Clinic Plus shampoo and oil 4. Sun silk naturals 5. Indulekha ayurvedic hair oil	1. Active Wheel detergent 2. Rin detergents and bleach 3. Sunlight detergent and colour care 4. Surf Excel detergent and gentle wash 5. Comfort fabric softeners 6. Domex disinfectant/Toilet cleaner 7. Vim dishwash	1. Lux 2. Lifebuoy 3. Liril 4. Hamam 5. Ayush 6. Breeze 7. Dove 8. Pears 9. Rexona	1. Pepsodent 2. Close-up	1. Fair and Lovely 2. Pond’s 3. Vaseline 4. Lakme
<b>Water Purifier</b> - Pureit Water Purifier				

Source: HUL Bulletin

Table 2 shows the revenue of top ten FMCG companies in the year 2016-2017.

From Table 2, it is clear that HUL is a market leader and stands first position in the revenue ladder followed by Patanjali.

**TABLE 2 Revenue of Top Ten FMCG Companies in 2016-2017**

Company	Amount (Rs. In Crores)
<b>HUL</b>	<b>30782.7</b>
<b>Patanjali</b>	<b>10561.0</b>
ITC	10336.9
Nestle India	9159.3
Godrej Consumer Group	9134.2
Britannia Industries	8844.4
Dabur	7691.0
Tata Global beverages	6963.5
Marico	5918.0
Colgate Palmolive	4010.0
GSK Consumer Healthcare	3784.9
Emami	2552.9
P&G Hygiene & Healthcare	2388.7
Jyothy Labs	1680.7
Bajaj Corporation	791.3

Source: economicstimes.indiatimes.com

#### 4. STATEMENT OF THE PROBLEM

Hindustan Unilever Limited (HUL) is one of the largest Fast Moving Consumer Goods (FMCG) company in India. HUL company is one of the best of this kind not only in the India but abroad as well. HUL is the market leader in Indian consumer products with presence in over 20 consumer categories such as soaps, tea, detergents and shampoos amongst others with over 70 crore (700 million) Indian consumers using its products. In order to capture this position, HUL executed an assortment of marketing tactics. This study makes an attempt to analyse the attitude of the customers towards the marketing tactics of the HUL.

#### 5. SCOPE OF THE STUDY

The present study is confined to study the marketing practices of HUL. It measures the level of attitude of the respondents towards marketing tactics of the HUL and analyses the effectiveness of marketing tactics.

#### 6. OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

1. To study the socio-economic profile of the respondents.

2. To measure the level of attitude of the respondents towards marketing strategies of HUL.
3. To examine the relationship between socio-economic profile of the respondents and level of attitude of the respondents towards marketing strategies of HUL.
4. To analyse the attitude of the customers of HUL towards its marketing tactics
5. To give suggestions to improve the marketing tactics.

#### 7. RESEARCH METHODOLOGY

The present study is based on both primary and secondary data. The primary data has been gathered from 225 respondents residing in Virudhunagar through structured questionnaire by adopting convenience sampling technique. The secondary data has been gathered from HUL bulletin and websites. The primary data has been analysed by using mean, standard deviation, percentage analysis, Chi square test, Kendall's Concordance test and Likert's five point scaling technique.

#### 8. RESULTS AND DISCUSSION

In this section, socio-economic profile of the respondents and level of attitude towards marketing tactics has been studied.

##### 8.1 Socio-Economic Profile of the Respondents

Socio-Economic variables manipulate the attitude, values, behavior of the people to a large extent. Here, the socio-economic variables such as gender, age, education, occupation, marital status and monthly income have been studied. Table 3 lists out the socio-economic profile of the respondents.

**TABLE 3 Socio-Economic Profile of the Respondents**

Socio-Economic Profile		No. of Respondents	Percentage
Gender	Male	133	59.11
	Female	92	40.89
Age (in years)	Below 25	22	9.78
	26-30	13	5.78
	31-35	51	22.67
	36-40	67	29.78
	Above 40	72	32.00
Education	School level	29	12.89
	College level	119	52.89
	Others	77	34.22
Occupation	Employees	40	17.78
	Housewife	108	48.00
	Business men	61	27.11
	Students	16	7.11
Marital status	Married	102	45.33
	Unmarried	123	54.67
Monthly Income (in Rs.)	Below 10,000	12	5.33
	10,000-20,000	58	25.78
	Above 20,000	155	68.89

Source: Primary data

Out of 225 respondents, 133 (59.11%) are male; 72 (32%) are in the age group of above 40 years; 119 (52.89%) completed their education upto college level; 108 (48%) are housewives; 123 (54.67%) are unmarried; 155 (68.89%) have earned above Rs. 20,000 per month.

**8.2 Level of Attitude of the Customers towards Marketing Tactics**

The level of attitude towards marketing tactics of HUL has been determined by the score values calculated for 14 statements which associate with marketing practices of HUL by adopting Likert’s five point scaling technique. The responses observed for each statement in the schedule have been scored. To secure the total attitude score for the respondents, five points are given for ‘Strongly Agree’, four points for ‘Agree’, three points are assigned for ‘No Opinion, two points for ‘Disagree’ and one

point for ‘Highly Disagree’ responses. Thus, the total attitude score of a respondent is obtained by adding up scores of all the 14 statements. The level of attitude has been classified into three categories namely low level, medium level and high level attitude for analytical purposes. Mean and Standard deviation have been computed from the attitude scores.

The mean and standard deviation values are 23.77 and 4.51 respectively.

(  $\bar{X} + S.D.$  ) = (23.77+4.51) = 28.28 and above – High level attitude

(  $\bar{X} - S.D.$  ) = (23.77 - 4.51) = 19.26 and below – Low level attitude

(  $\bar{X} + S.D.$  ) to (  $\bar{X} - S.D.$  ) = 19 to 28 – Medium level attitude

Table 3 illustrates the level of attitude of the customers towards marketing tactics of HUL.

**TABLE 3 Level of Attitude of the Customers towards Marketing Tactics**

Level	No. of Respondents	Percentage
High	68	30.22
Medium	121	53.78
Low	36	16
<b>Total</b>	<b>225</b>	<b>100</b>

Source: Primary data

Out of 225 respondents, 121 (53.78%) have medium level attitude, 68 (30.22%) have high level attitude and 36 (16%) have low level attitude towards marketing tactics of HUL.

**8.3 Relationship Between Socio- Economic Profile of the Respondents and Level of Attitude of the Respondents Towards Marketing Strategies of HUL**

Chi square test has been employed to examine the relationship between socio-economic profile of the respondents and level of attitude of the respondents towards marketing strategies of HUL. The null hypothesis framed is that there is no significant relationship between socio- economic profile of the respondents and level of attitude of the

respondents towards marketing strategies of HUL. Table 4 shows the Chi square test results.

**TABLE 4 Relationship between socio- economic profile of the respondents and level of attitude of the respondents towards marketing strategies of HUL**

Socio-Economic Profile	Calculated value	Table value	Degrees of Freedom	Result
Gender	3.41	5.99	2	Not significant
Age (in years)	6.94	15.51	8	Not significant
Education	15.33	9.49	4	Significant
Occupation	7.18	12.59	6	Not significant
Marital status	1.55	5.99	2	Not significant
Monthly income (in Rs.)	44.25	9.49	4	Significant

Source: Primary data

Out of six socio-economic variables, two variables education and monthly income have significant relationship with level of attitude of the respondents towards marketing strategies of HUL.

Remaining four variables gender, age, marital status and monthly income do not have relationship with level of attitude of the respondents towards marketing strategies of HUL.

#### 8.4 Opinion of the Customers Towards Marketing Tactics of HUL

Marketing tactics are the strategic actions that direct the promotion of a product or service to influence specific marketing goals. Essentially, these are the high-level ideas. A set of strategic methods intended to promote the goods and services of a business with the goal of increasing sales and maintaining a competitive product.

Table 5 indicates the opinion of the customers towards marketing strategies of HUL. respondents are satisfied with the marketing strategy of 'Pan Pyramid straggling portfolio' (2199.4) followed by 'Environment, Safety, Health and Energy Conservation' (214.6).

Kendall's Concordance test has been used to analyse the opinion of the customers towards marketing tactics of HUL. The null hypothesis framed is that the customers are not satisfied with the marketing strategies of HUL

**TABLE 5 Opinion of the Customers towards Marketing Tactics of HUL**

Marketing tactics	SA	A	NO	DA	SDA	Mean
Magnitude to Customer development	82	95	49	35	19	205.2
Glowing supply chain	103	24	78	63	12	196.6
Strive towards research and development	78	79	46	12	65	186.6
Technology absorption	113	48	30	67	22	200.6
Environment, Safety, Health and Energy Conservation	126	34	82	23	15	214.6
Pan pyramid straggling portfolio	119	89	21	32	19	219.4
Pushing consumer for more usage	69	49	74	30	58	176.2
Competitive and compelling communication	74	81	27	79	19	190.4
Highlighting benefits	149	26	23	10	72	202
Increasing consumption in rural markets	91	63	32	83	11	196
Stepping up front end execution	71	55	42	61	51	174.8
Betting on big starts for advertisement	73	52	55	15	85	170.6
Bigger, better and faster innovations	59	45	51	61	64	162.8
Levering Information Technology and social media	73	58	29	34	86	167.6

Source: Primary data

**TABLE 6 Kendall’s Concordance Test Calculations**

Marketing tactics	SA	A	NO	DA	SDA
Magnitude to Customer development	2	1	3	4	5
Glowing supply chain	1	4	2	3	5
Strive towards research and development	2	1	4	5	3
Technology absorption	1	3	4	2	5
Environment, Safety, Health and Energy Conservation	1	3	2	4	5
Pan pyramid straggling portfolio	1	2	4	3	5
Pushing consumer for more usage	2	4	1	5	3
Competitive and compelling communication	3	1	4	2	5
Highlighting benefits	1	3	4	5	2
Increasing consumption in rural markets	1	3	4	2	5
Stepping up front end execution	1	3	5	2	4
Betting on big starts for advertisement	1	4	3	5	2
Bigger, better and faster innovations	3	5	4	2	1
Levering Information Technology and social media	2	3	5	4	1
Sum of ranks	22	40	49	48	51
Total sum of ranks (22+40+49+48+51) = 210	Average = 210/5 = 42				
(X – mean) <sup>2</sup>	(22-42) <sup>2</sup> =400	(40-42) <sup>2</sup> =4	(49-42) <sup>2</sup> =49	(48-42) <sup>2</sup> =36	(51-42) <sup>2</sup> =81
S = ∑ (X – mean) <sup>2</sup> = 400+4+49+36+81 = 570					

Source: Primary data

$$W = 12S / K^2 (N^3 - N)$$

$$W = 12 (570) / (14)^2 (5^3 - 5)$$

$$W = 6840 / (196) (120) = 0.290$$

The K value lies between 0 and 1 which indicates that the calculated value of S is reliable. In case of large samples (greater than 30), the critical value is computed on the basis of chi square distribution with the help of the following formula:

$$\text{Chi square distribution} = m (N-1) w$$

$$m = 14; N = 5; w = 0.290$$

$$= 14 \times (5 - 1) \times 0.290 = 16.24$$

$$\text{Degrees of freedom} = (N-1) = (5-1) = 9.49$$

The calculated value of Kendall’s concordance test is 16.24 and the table value is 9.49. As the calculated value (16.24) is more than the table value (9.49), the null hypothesis is rejected.

### 9. SUGGESTIONS

On the basis of findings of the study, some suggestions are given.

1. HUL have to lever their advertisement using Information Technology and social media.
2. It has to focus on rural markets which sector consumed HUL products less when compared to urban markets.

3. It has to strive towards research and development for bigger, better and faster innovations as they have immediate competitors.

### 10. CONCLUSION

HUL promoted its products through effective marketing practices. The marketing practices of HUL encouraged the customers to use the product, increase their frequency or quantity of purchases. Imaginatively and carefully planned tactics resulted long-term benefits HUL. Even though HUL is in the leading position in the market, it will have delightful future when it modified its marketing tactics as per the circumstances and competitive forces.

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# Analysis of Financial Performance of Sivakasi Co-operative Urban Bank : Application of CAMEL Model

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**Abstract** - In an era of globalization, competition is prevalent regardless of business/ industry. Every bank has to maintain its financial health. Any one could easily as well as clearly identify financial health of a bank by making relevant financial analysis. A cogent way of financial analyses is made via ratio analysis, namely analysing financial performance in terms of the bank's profitability, Liquidity, solvency and turnover efficiency. Recently, CAMEL model has been applied to test financial robustness of the bank. The present paper lucidly analyses Financial soundness Co operative Urban Bank, Sivakasi by CAMEL model.

**Keywords:** CAMEL ratios, Capital Adequacy, Asset quality, Management Efficiency, Earning quality, Liquidity position.

## 1. INTRODUCTION

Co-operative Urban bank Ltd, Sivakasi was established in the year 2007-2017. For the sake of analysis of its financial health, the present authors applied CAMEL Model. The acronym CAMEL denotes the five segments of a bank's financial health that are examined. These five segments are Capital adequacy, Asset quality, Management efficiency, Earning Capacity and Liquidity position. A notable feature is that each of the above major parameters has its own sub parameters, so that a researcher is able to identify the financial soundness through capital adequacy, Asset worthiness, Management efficiency, Earning quality, Liquidity capacity.

## 2. OBJECTIVES OF THE STUDY

The main objective of the study is to explore the financial health of Sivakasi Co-operative Urban Bank, Sivakasi by the application of CAMEL model as well as by the use of ratios used by Beaver.

### Subsidiary Objectives

1. To find out the capital adequacy of the bank by CAMEL model
2. To analyse the own fund strength of the bank by CAMEL model

3. To study the Management efficiency of the bank by CAMEL model
4. To review the profitability of the bank by CAMEL model
5. To examine the liquidity position of the bank by CAMEL model
6. To have a comparative study of performance of the bank in the early and later period by CAMEL Ranking method.
7. To find out financial strength of bank by the ratio used by Beaver.
8. To offer suggestions in the light of finding of the study.

## 3. HYPOTHESIS

Ho : There is no difference in CAMEL Rank for the 1<sup>st</sup> major parameter of Capital Adequacy Ratio of the study bank between the two different periods of the study bank

Ho : There is no difference in CAMEL Rank for the 2<sup>nd</sup> major parameter of Asset Quality Ratio of the study bank between the two different periods of the study bank

Ho: There is no difference in CAMEL Rank for the 3<sup>rd</sup> major parameter of management efficiency ratio of the study bank between the two different periods of the study bank

Ho : There is no difference in CAMEL Rank for the 4<sup>th</sup> major parameter of Earning Quality Ratio of the study bank between the two different periods of the study bank

Ho: There is no difference in CAMEL Rank for the 5<sup>th</sup> major parameter of Liquidity position Ratio of the study bank between the two different periods of the study bank

## 4. METHODOLOGY

The study purely depended on secondary data, which constitute 10 years audited final accounts of Sivakasi co-operative Urban Bank, Sivakasi. These accounts were for the period 2007-2008 to 2016-2017. For the

compilation of accounts, the researcher spent about a period of two months, namely, Nov - Dec.2017. Both financial statement analysis tools, i.e., CAMEL ratios and statistical tools such as mean, standard deviation, co-efficient of variation, annual average growth rate and T-Test were used for the analysis of Research data.

## 5. RESULT AND DISCUSSION

Analysis of financial health of sivakasi co-operative urban bank, sivakasi by camel model is presented in the following pages.

### 5.1 Capital Adequacy Ratio

Is the first major parameter to study the financial health; it has four sub parameters such as Capital Adequacy Ratio, CAR, Total advances to total assets, debt equity ratio, coverage ratio. The capital adequacy ratio is propounded to ensure that banks can take up a reasonable level of losses arising from operational losses. The higher the CAR ratio, the stronger the bank and the more will be the protection of investors. The banks are required to maintain 9% capital adequacy as per latest RBI norms of financial health.

**Table: 1:1 Analysis by the first major parameter, i.e., Capital Adequacy Ratios of the Bank year wise (Early period of 5 years)**

Years	Capital Adequacy Ratio	Total Advances/Total Assets	Debt Equity Ratio	Coverage Ratio
2007-2008	19%	59%	93%	4%
2008-2009	22%	63%	87%	4%
2009-2010	18%	61%	92%	6%
2010-2011	17%	63%	86%	9%
2011-2012	17%	65%	87%	11%
<b>Mean</b>	19	62	90	7
<b>S.D</b>	1.897	2.049	3.605	2.792
<b>C.V</b>	9.984	3.304	4.005	39.88
<b>AAGR</b>	18.49	62.08	88.83	6.24

**Source:** Annual reports of the study Bank. Result calculated.

**Table: 1:2 Analysis (Later period of 5 years)**

years	Capital Adequacy Ratio	Total Advances/Total Assets	Debt Equity Ratio	Coverage Ratio
2012-2013	14%	66%	82%	12%
2013-2014	14%	57%	80%	13%
2014-2015	16%	54%	81%	14%
2015-2016	18%	43%	78%	17%
2016-2017	22%	36%	66%	18%
<b>Mean</b>	17	51	77	15
<b>S.D</b>	3	11	6	5
<b>C.V</b>	18	22	0.27	0.57
<b>AAGR</b>	16.56	50	77.09	14.60

**Source:** Annual reports of the study Bank. Result calculated.

### 5.2 Interpretation

The standard norm of Capital Adequacy Ratio(CAR) of the Bank is 9%. The year wise analysis reveals that for all the years, CAR is above 9% excepting in the last year it is nearer to 9% that is 8.8%. Thus capital adequacy ratio is satisfactory for the Bank in all the 10 years of the study period. The second ratio of capital adequacy ratio is Total advances to total assets;

this ratio should show an increasing trend revealing a growth in the utilization of total assets for granting the Bank's loans (or) advances. The analysis reveals that there is an increasing trend in the ratio throughout the early period of first 5 years However, there is a declining trend in this ratio during the last 4 years in the later 5 years of the study period.

The third ratio of capital adequacy ratio is Debt Equity Ratio, that is, ratio of own



capital to total capital; the ratio is found to be robust in all the 10 years of the study period except in the last year. In almost all the years own capital constitutes above 75% of total capital. The fourth ratio of capital adequacy ratio is coverage ratio representing the adequacy of own capital to cover the loss assets; it must show a decrease in trend. The analysis reveals though initially (or) namely, in all the five years of the early period was well within 10% of own capital, in the subsequent 5 years, it has shown a rising trend, as the loss assets consisted more than 10% of own capital. Not only that, in the 2 years of the later period, loss assets constituted more than 15%. So, the management of the Bank has to ponder over this issue in future. The standard deviation for all the 4 sub parameter of major ratio of capital adequacy ratio is lower in relation to standard deviation for all the sub parameters of capital adequacy in the later period.(Table:1:1) In the

early period the co-efficient of variation shows consistency in two sub parameters of capital adequacy, namely, total advances to total asset ratio and debt equity ratio. However co-efficiency of variation was lower in debt equity ratio and coverage ratio of capital adequacy ratio in the later period.

### 5.3 Asset Quality Ratio

The second major parameter of CAMEL Model is the asset quality ratio which has 3 sub parameters such as Net NPA ratio, Govt securities/Total investment ratio and standard advances to Total advances ratio. The quality of assets is an important parameter to examine the degree of financial strength. The foremost objective to measure the asset quality is to ascertain the composition of nonperforming assets (NPAs) as a percentage of total assets. Asset quality of the bank can be found out through the following ratios.

**Table:1:3 Review of Financial soundness by the second major parameter year wise. (Early period of 5 years)**

Years	Net NPA Ratio	Govt Securities/total Investment	Standard Advances/Total Advances
2007-2008	3%	49%	93%
2008-2009	5%	57%	93%
2009-2010	4%	63%	94%
2010-2011	4%	76%	95%
2011-2012	3%	73%	94%
<b>Mean</b>	4%	63%	94%
<b>S.D</b>	1.09%	10%	6%
<b>C.V</b>	27.2	15.8	6.3
<b>AAGR</b>	3.72	62.71	93.71

Source: Annual reports of the study Bank. Result calculated.

**Table :1:4 Analysis (Later period of 5 years)**

Years	Net NPA Ratio	Govt Securities/total Investment	Standard Advances/Total Advances
2012-2013	3%	76%	95%
2013-2014	1%	79%	94%
2014-2015	4%	77%	93%
2015-2016	1%	76%	91%
2016-2017	9%	100%	84%
<b>Mean</b>	3.6%	82%	91%
<b>S.D</b>	2.96	9.27	3.94
<b>C.V</b>	74	11.3	4.32
<b>AAGR</b>	2.55	81	91.2

Source: Annual reports of the study Bank. Result calculated

## 5.4 Interpretation

The study of major parameter asset quality of CAMEL model under its 3 constituent variables in the early period of 5 years and later period of 5 years disclosed the following results. The first sub parameter Net NPA ratio is more or less the same in the 5 years of the early period. Its average is above 4 % of Net advances and standard deviation is less of 1.09. The second sub parameter is Govt securities to total investments.

This ratio was 49% in 2007 to 2008, it rose to 57% in 2008-2009 and further to 73% in 2011-2012. Its average is 63% showing adequacy of liquid position as Govt securities formed major portion of total investment.

The 3<sup>rd</sup> sub parameter is standard advances / Total advances. This ratio is the dominant or the most important one in the liquidity ratio; higher the ratio the better it is. The analysis reveals that in all the 5 years in the early period, it is 93% or more than 93% of the total advances. It means (or) that a standard advance is the major portion of total advances. So it's a good or healthy sign of lending operation of the Bank. The mean value of the ratio is 94% and standard deviation is less, namely, 6% and annual average growth rate is more than 90%. About the 1st constituent of asset quality ratio, namely, Net NPA ratio to net advances, in the later period, its average is above 4% of net advances and standard deviation is less of 2.96. The second variable, namely, govt securities to total investment

shows the same position, namely, it shows less variation but in final year it is about 100%

For example, this ratio was 76% in 2012-2013, it was 79% in 2013-2014. But in the final year, this is ratio was 100%. Its average is 82% showing adequate liquid position as Govt securities formed major position of Total investment. The 3<sup>rd</sup> ratio is standard advances to total advances. This ratio is the most important one in the asset quality. The higher the ratio the better it is. The analysis reveals that in all the 5 years in the later period, it is more than 95% of the total advances. As it's the major part of total advances it's a good or healthy sign of lending operation of the Bank.

The mean value of ratio is 91% and standard deviation is less, namely, 3.94% and annual average growth rate is more than 91.24%

The co-efficient of variation shows consistency in all the three sub parameters of second major parameter, namely, in the asset quality ratio, throughout the study period.

## 5.5 Management Quality

The third major parameter is management quality which has 3 sub parameters such as Total advances to total deposits, Business per employee and Profit per employee. Management efficiency is another major component of CAMEL Model that guarantees the growth and survival of the Bank. Management efficiency means adherence with set norms, ability to plan and respond to changing environment and leadership

**Table: 1:5 Review of financial soundness by the third major parameter, i.e., management quality (Early period of 5 years)**

Years	Total Advances/Total Deposit	Business Per Employee	Profit Per Employee
2007-2008	88%	Rs.36937325.53	Rs.321893.1
2008-2009	86%	Rs.58968637.33	Rs.386271.80
2009-2010	100%	Rs.50335178.93	Rs.439098.52
2010-2011	99%	Rs.65558699.13	Rs.670534
2011-2102	84%	Rs.101607055.2	Rs.852463.8
<b>Mean</b>	91	Rs.62681379.23	Rs.534052.24
<b>S.D</b>	7	4	1.4
<b>CV</b>	8	6.3	2.6
<b>AAGR</b>	91	805378.44	1000000

**Source:** Annual reports of the study Bank. Result calculated.

**Table: 1:6 Analysis of later period of 5 years.**

Years	Total Advances/Total Deposit	Business Per Employee	Profit Per Employee
2012-2013	83%	Rs.125205183.8	RS.868752.1
2013-2014	71%	Rs.289500187.4	Rs.1855963.8
2014-2015	69%	Rs.278747305	Rs.2979774.7
2015-2016	56%	Rs.1816093599	Rs.2312752.60
2016-2017	47%	Rs.169449168.5	Rs.1877712.55
<b>Mean</b>	65	535799088	1978991.15
<b>S.D</b>	12	2	1
<b>CV</b>	18.4	3.7	5
<b>AAGR</b>	57.5	2754228703	3630780.5

**Source:** Annual reports of the study Bank. Result calculated.

## 5.6 Interpretation

The analysis of total advances to total deposit ratio under the major ratio management efficiency registers a good proportion of more than 84% in all the 5 years of the early period. The ratio is known as CD Ratio, it means a large part of resource of the bank in the form of deposit is given as loan and thereby the bank is able to earn more profit from its lending operation. The mean of CD ratio is more than 90% and its shows a less standard deviation of 7%. A notable feature is in the year 2009-2010, the CD ratio rose to 100%, however, in the year 2011-2012 the ratio declined to 84%

**Business per employee** The next constituent variable business per employee of the bank in the early period shows upward trend in all 5 years of the early period excepting in the 3 year that is in 2009 to 2010. Profit per employee is the 3 constituent variable, shows a satisfactory trend in the early period of 5 years. The analysis reveals that the profit per employee was Rs. 321893 in 2007 - 2008. It rose to Rs. 386271.80 2008 to 2009, and further its rose to Rs. Rs.439098.52 in 2009-2010; as it shows consistent growth its standard deviation was less, namely, 1.4%

In the later period the first sub parameter of management quality was 83% it started fall in 74% in 2013-14, 69% in 2014-15, 56% in 2015-16 and 47% in 2016-17 there by register in a download trend. It is clear that the relation to early period the ratio of total ratio of total deposit made a sharp decline in the later

period as against the later period. The same trend was notice for the second sub parameter of business per employee. Concerning the profit per employee in the early period shows yield variation. The same trend is found in this ratio in the later period on the whole, profit per employee in the early period was lower as against this ratio in the later period.

The co-efficient of variation for this ratio was found to be good in relation to the other two sub parameter, namely, total advances to total deposit ratio and business per employee however in the later period business per employee was found to be better as against the other two ratio namely total advances to total deposit and profit per employee.

## 5.7. Earning Quality

The fourth major parameter of CAMEL is earning quality which has 4 sub parameters like return on assets, operating profit ratio, Income spread ratio and cost income ratio. The quality of earning is a very important criterion which represents the quality of a bank's profitability and its capability to maintain earnings, quality and earn consistently. It primarily determines the profitability of a bank and explains its sustainability and growth of future earnings.

**Table:1:7 Analysis of financial Health by the fourth major parameter, i.e., Earning quality year wise (Early Period of 5 years)**

Years	Return on assets	Operating Profit	Income Spread	Cost Income Ratio
2007-2008	1%	9%	7%	82.2%
2008-2009	1%	10%	8%	81%
2009-2010	1%	9%	7%	86%
2010-2011	1%	9%	7%	80%
2011-2012	1%	10%	7%	82%
<b>Mean</b>	1%	2%	7%	82
<b>S.D</b>	0	7%	0.6%	2%
<b>CV</b>	0	35	14	2
<b>AAGR</b>	0	9.38	7.38	82

Source: Annual reports of the study Bank. Result calculated.

**Table: 1:8 Analysis of later period**

Years	Return on assets	Operating Profit	Income Spread	Cost Income Ratio
2012-2013	1%	10%	3%	86%
2013-2014	1%	10%	3%	86%
2014-2015	1%	11%	3%	80%
2015-2016	2%	11%	4%	77%
2016-2017	1%	9%	3%	78%
<b>Mean</b>	1%	10%	3.2%	81%
<b>S.D</b>	0.4%	1%	0.4%	4%
<b>CV</b>	40	10	13	5
<b>AAGR</b>	1.15	10.15	3.17	51.5

Source: Annual reports of the study Bank. Result calculated

## 5.8 Interpretation

The analysis of major standard earning quality ratio of CAMEL model under its 4 constituent variables in the early period of 5 years reveals the following results. Its 1<sup>st</sup> constituent, namely, Return on assets ratio (ROA) shows a paltry return of one percent throughout the 1<sup>st</sup> 5 years of early period. The same result is obtained for this ratio for the 5 years in the later period of the Bank- however, in the year 2015-16 in the later period, the (ROA) increased to 1.5%. It shows, the Bank's strenuous effort to enhance this ratio.

About the 2<sup>nd</sup> constituent of earning quality ratio, namely, income spread in the 1<sup>st</sup> 5 years of the early period remains more or less of the same, namely, between 7% and 8%. A striking revelation is that income spread ratio in the 5 years of the later period has been in the low range of 3 to 4%, and comparatively speaking this income spread ratio in all the 5 years of the later period lags behind the early

period. This is the matter of concern of the management of the Bank to improve this ratio in the coming years. The statistical analysis of co-efficient of variance of the ratio is better in the early period (7%) in relation to later period.

The record standard deviation there is no much different in between the 2 periods for the sub parameter of return on assets. In record to 2<sup>nd</sup> sub parameter the operating profit is standard relation is higher in the early period in relation to later period there is no much difference in the other 2 sub parameters, namely, income spread ratio cost income ratio between the two periods.

## 5.9 Liquidity

The fifth major parameter of CAMEL is Liquidity position which has 3 sub parameters like Liquid asset/ Total assets, Govt securities/ Total assets, Liquid assets/Total deposits.

An adequate liquidity position refers to a situation, when institution can obtain sufficient funds, either by increasing liabilities or by converting its assets quickly at a reasonable cost.

It is, therefore, generally assessed in terms of overall assets and liability management, as mismatching gives rise to liquidity risk.

**Table:1:9 Analysis of Financial Health by the Fifth major parameter year wise (Early period of 5 years)**

years	Liquid assets/Total assets	Govt Securities/Total Assets	Liquid Assets/ Total Deposits
2007-2008	32%	9%	47%
2008-2009	30%	12%	37%
2009-2010	30%	12%	54%
2010-2011	28%	21%	45%
2011-2102	26%	19%	34%
<b>Mean</b>	29	15	43
<b>S.D</b>	2%	5%	7%
<b>CV</b>	7	33	16
<b>AAGR</b>	29.51	13.8	43

**Source:** Annual reports of the study Bank. Result calculated.

**Table: 1:10 Analysis of Later 5 years**

years	Liquid asset s/Total assets	Govt Securities/Total Assets	Liquid Assets/ Total Deposits
2012-2013	27%	20%	34%
2013-2014	33%	21%	41%
2014-2015	37%	21%	48%
2015-2016	48%	21%	62%
2016-2017	54%	21%	70%
<b>Mean</b>	40	21	51
<b>S.D</b>	10	0.4	13
<b>CV</b>	25%	1.90	25
<b>AAGR</b>	38.5	20.78	49.2

**Sources:** Annual reports of the study Bank. Result calculated.

### 5.10 Interpretation

A probe into the first sub parameter, i.e., liquid assets to total assets of fifth major parameter, i.e., liquidity quality reveals whereas the proportion of liquid assets was around 30%, during the 5 years of early period, this proportion rose sharply around 45% during the 5 years of later period denoting higher liquidity position in later period in relation to early period. The analysis of second sub parameter, namely ratio of government securities to total assets, reveals that there is variation in it in the early period, this ratio was consistent throughout the later period (20%). The third segment, I.e., liquid assets to total deposits of liquidity quality unfolds fluctuation in it in the early period.

The same picture is seen in this ratio for the later period and thereby denoting better liquidity of the Bank. Comparative analysis unfolds that in the later period, the Bank enjoys better liquidity than in the early period.)

Fifth variable, namely liquid asset to total asset of the major variable liquidity assets position under CAMEL model shows a estate position namely the ratio between 26% to 32% and it means is 29%. It means there is adequacy proportion of liquid assets to total assets ( approximately 30% of total assets) Its standard deviation is only 2% and this less value it due to less variation in the ratio of liquid asset to total asset during all the 5 years of the early period.

However, the 2<sup>nd</sup> sub variable govt securities to total assets shows some variation. To illustrate, while it was 9% it increases to 12% in 2008-2009 and 21% in 2010-2011 and 19% 2011-2012. As there was some variation in this ratio standard deviation was 5%.

The 3 sub variable shows some variation during the 5years of the early period when it was 47% in 2007 -2008. It fell to 37% in 2008-2009 and increased to 54% in 2009-2010 and 2011-2012, it again fell to 34% As there was some variation, the standard deviation was recorded at higher value of 7%

**CV:** The co-efficient of variation shows consistency in the variable of the 3rd variable of the liquidity position, the liquid assets to total assets registers a the low value of 7% the early period of 5 years. It means there is more consistency in this ratio of liquidity position.

### 5.11 CAMEL Ranking

The whole study period 10 years has two parts. While the first part,i.e., early period comprises the first 5 years of 2007-08 to 2011-2012; the later period consists of subsequent 5 years 2012-2013 to 2016-17. For CAMEL ranking two sets of weights are assigned whereas the first composite weight is assigned to each major parameter, the second set of weight is given to each sub parameter falling under the respective major parameter. CAMEL ranking indicates the bank's relative position in two different periods based on CAMEL ratios.

Procedures For CAMEL Ranking Method:

First all the years in the study period, are ranked on each of the sub parameters of major parameter (for example Capital Adequacy).These sub parameter ranks are combined by weighted average, as given in the following table: After getting the ranks for each major parameter, these are totaled using the same weighted average method (composite weight of each major parameter) as given in the following Table: Adapted from CAMEL Rank

study of Reddy (2012), the present researchers assigned appropriate weight for different sub-parameters 17 in number of 5 major parameters of CAMEL Model .

In the present study, the first major parameter, i.e., Capital adequacy has four sub parameters, namely, CAR , Total advances to total asset, Debt Equity ratio, Coverage Ratio; 2<sup>nd</sup> major parameter is Asset quality; it has 3 sub parameters such as , Net NPA ratio, Government securities/ Total investment, standard Advances/Total Advances. The 3<sup>rd</sup> major parameter is management quality, it has 3 sub parameters such as, Total advances/Total Deposit, Business per Employee and Profit per employee. The 4<sup>th</sup> Major parameter is Earning quality, it has 4 sub parameters such as, Return on Assets, Operating Profit, Income Spread Ratio and Cost Income Ratio. The 5<sup>th</sup> major parameters Liquidity position; it has 3 sub parameters Liquid asset/Total assets, Govt securities/Total Assets and Liquid Assets/total Deposits. The result of analysis of CAMEL Ranking method for all the 5 major parameters for the two different periods of the study bank may be considered.

First, the Table:

I- CAMEL Rank for 4 sub parameters of major parameter of CAPITAL ADEQUACY RATIO is presented in Table:- for the 1<sup>st</sup> 5 years of Early period of 2007-2012 and Later period of 2012-2017 Table:

**Table: 1:11 Weights of Variables Considered in Camel Ranking**

Major Parameter	Constituent Variables (sub parameter)	Weight of sub parameter	Reason	Composite Weight of major parameter	Reason
<b>Capital Adequacy Ratio</b>	a] CAR (or) CRAR	0.60	CAR indicates availability of capital for a given level of risk weighted assets considering more important variable indicating capital adequacy ratio of a bank; and hence, it carries a higher weight.	0.20	In CAMEL Parameter, asset quality and earning quality are considered very important since assets quality indicates growth of a bank and earning power ensures survival of the bank. Next important category is Capital Adequacy which ensures safety of depositors and management ability shows productivity of the bank. Though liquidity is essential, it gets least weight as high liquidity reduces profitability of a bank, and affects over all performance of the bank, hence carrying lesser weight.
	b] total advances/ Total assets	0.20			
	c] Debt Equity Ratio	0.10			
	d] Coverage Ratio	0.10			
<b>Asset Quality</b>	a] Net NPA/ Net advances Ratio	0.20	Standard advances to total advances contribute to higher earning to banks whereas NPA s result in decrease in profit level. So, this ratio is given higher weight	0.25	
	b] Govt securities/ Total investment	0.20			
	c] Standard advances / Total advances	0.60			
<b>Management Quality</b>	a] Total advances/ total deposits b] Business per employee c] Profit per employee	0.60	Total advances to total deposits ratio shows top line of bank's income statement and should be given higher weight.	0.20	
<b>Earning Ability</b>	a] Return on Assets	0.25	All the four variables (or) ratios explain the earning quality from various angle from interest activity and ability to meet costs from income earned by banks. All the variables are given equal weight due to their equal important.	0.25	
	b] Operating profit	0.25			
	c] Income spread ratio	0.25			
	d] Cost income ratio	0.25			
<b>Liquidity Position</b>	A] Liquid assets /Total assets	0.25	Liquid assets to total deposits ratio is considered more important as it ensures higher credibility in depositors minds.	0.10	
	B] Govt securities/Total assets	0.25			
	C] Liquid asset/ total deposit	0.50			

Source: Adapted from the study of Reddy, (2012).

**Table: 1:12 I – CAMEL rank of Major parameter one, namely Capital Adequacy it has Four sub parameter:**

EARLY PERIOD OF 5 YEARS					LATER PERIOD OF 5 YEARS				
Capital adequacy Ratio (1)	Ratios (2)	Weight (3)	Product (4=2*3)	Composite weight	Capital adequacy Ratio (1)	Ratios (2)	Weight (3)	product	Composite weight
CAR	19	0.60	11.4	0.20	CAR	17.6	0.60	10.2	0.20
Total advance/ Total asset	62	0.20	12.4		Total advance/ Total asset	51	0.20	7.7	
Debt equity ratio	90	0.10	9		Debt equity ratio	77	0.10	7.7	
Coverage Ratio	7	0.10	0.7		Coverage Ratio	15	0.10	1.5	
Average		1	33.5	1.66	Average		0.100	27.1	1.48
t	0.255				t	0.255			
p	1.402				p	1.402			

Source: Annual reports of the study bank, result calculated.

**Interpretation:** The above table shows that the financial performance of the study bank in the early period of 5 years is healthier in relation to the later period since the CAMEL Rank for the 1<sup>st</sup> major parameter (CAR) Capital adequacy ratio is higher 1.66 as against such rank for this major parameter of 1.48 in the later period of 5 years.

Testing of hypothesis shows that null hypothesis is accepted as p value: 1.402 is more than the significance level of 0.05; it means, there is no difference in capital adequacy ratio in terms of the sub parameter, CAR, total advances to total asset, debt equity ratio and coverage ratio between the two periods (Early period and later period)

**Table:1:13 II – Camel rank of Major parameter two, namely Asset Quality with its three sub parameters**

EARLY PERIOD OF 5 YEARS					LATER PERIOD OF 5 YEARS				
ASSET QUALITY (1)	Ratio (2)	Weight (3)	Product (4=2*3)	Composite weight (5)	ASSET QUALITY (6)	Ratio (7)	Weight (8)	Product (9=7*8)	Composite weight (10)
Net NPA ratio	4	0.20	0.80	0.25	Net NPA ratio	3.6	0.20	0.72	0.25
Govt securities/ total investment	63	0.20	12.6		Govt securities/ total investment	82	0.20	16.4	
Standard advances/Total advances	94	0.60	56.4		Standard advances/Total advances	91	0.60	54.6	
Average		1	69.8	5.81	Average		1	71.72	5.97
t					0.736				
p					.386				

Source: Annual reports of the study bank, result calculated



**Interpretation:**

The above analysis of Asset quality by CAMEL Rank deposits the 2<sup>nd</sup> major parameter, namely, asset quality with its 3 sub parameters reveals that the later period seems to be good as it has the higher Rank value of 5.97 as against such value of 5.81 in the early period.

Testing of hypothesis shows that null hypothesis is accepted as p value: .386 is more than the significance level of 0.05; it means, there is no difference in asset quality ratio in terms of the sub parameter, Net NPA ratio, govt securities to total investment and standard advances to total advances between the two periods (Early period and later period)

**Table:1:14 III – CAMEL rank of Major parameter three, namely Management Quality with it has Three sub parameter**

EARLY PERIOD OF 5 YEARS					LATER PERIOD OF 5 YEARS				
Management quality (1)	Ratios (2)	Weight (3)	Product (4=2*3)	Composite weight (5)	Management quality (6)	Ratio (7)	Weight (8)	Product (9)	Composite weight (10)
Credit deposit Ratio	91	0.60	54.6	0.20	Total Advances/ Total Deposit	65	0.60	39	0.20
Business per employee	6268137 9.23	0.20	12536275 .85		Business per employee	53579 9088.7	0.20	1071598 17.7	
Profit per employee	534052. 24	0.20	106810.4 4		Profit per employee	19780 991.1	0.20	395798.2 3	
Average		1	12643140 .8/3	842876.05				1075556 54.9/3	7170376.9
t	0.421								
p	1.005								

Sources: Annual reports of the study bank, result calculated

**Interpretation:**

Application of CAMEL Ranking for the 3<sup>rd</sup> major parameter, namely, Management quality with its 3 sub-parameters credit deposits ratio, Business per employee and profit per employee shows it is better in the early period as compared to later period because the CAMEL Rank in the Early period of Rs.842876 is higher than such value of management quality in the Later period of 7170376.

Testing of hypothesis shows that null hypothesis is accepted as p value: 1.005 is more than the significance level of 0.05; it means,

there is no difference in Management quality in terms of the sub parameter, total advances to total deposits, business per employee and profit per employee between the two periods (Early period and later period)

**Table:1:15 IV – CAMEL Rank of Major parameter four , namely, Earning quality with its Four sub parameters**

EARLY PERIOD OF 5 YEARS					LATER PERIOD OF 5 YEARS				
Earning Efficiency (1)	Ratio (2)	Weight (3)	Product (4=2*3)	Composite weight (5)	Earning Efficiency (6)	Ratio (7)	Weight (8)	Product (9=7*8)	Composite weight (10)
Return on Assets	1	0.25	0.25	0.25	Return on Assets	1	0.25	0.25	0.25
Operating profit	2	0.25	0.5		Operating profit	10	0.25	2.5	
Income Spread Ratio	7	0.25	1.75		Income Spread Ratio	3.2	0.25	0.8	
Cost income Ratio	82	0.25	20.5		Cost income Ratio	81	0.25	20.25	
<b>Average</b>		1	23/4	1.4375	<b>Average</b>		1	23.8/4	1.4875
<b>t</b>	0.773								
<b>p</b>	0.316								

Sources: Annual reports of the study bank, result calculated

**Interpretation:** The study of CAMEL Rank for 4<sup>th</sup> major standard earning quality namely, earning quality with its four sub parameters reveals it is more or less is the same the two periods. To illustrate while the CAMEL Rank for this major parameter is 1.4375 it is slightly higher in the later period with the value of 1.4875

Testing of hypothesis shows that null hypothesis is accepted as p value: .316 is more than the significance level of 0.05; it means, there is no difference in earning quality ratio in terms of the sub parameter, return on assets, operating profit, income spread ratio and cost income ratio between the two periods (Early period and later period)

**Table: 1:16 V– CAMEL Rank of Major parameter five, namely Liquidity Position with its has Three sub parameters**

EARLY PERIOD OF 5 YEARS					LATER PERIOD OF 5 YEARS				
Liquidity position	ratios	Weight	Product	Composite weight	Liquidity position	Ratios	Weight	product	Composite weight
Liquid assets/Total assets	29	0.25	7.25	0.10	Liquid assets/Total assets	40	0.25	10	0.10
Govt securities/ Total Assets	15	0.25	3.75		Govt securities/ Total Assets	21	0.25	5.25	
Liquid Assets/Total Deposits	43	0.50	21.5		Liquid Assets/Tota l Deposits	51	0.50	25.5	
<b>Average</b>		1	32.5/3	1.08			1	40.75/3	1.358
<b>t</b>	0.062								
<b>p</b>	3.811								

Source: Annual reports of the study bank, result calculated

### **Interpretation:**

CAMEL Rank for the liquidity position between the two periods shows the different picture that is, in the later period, CAMEL Rank 1.358 is higher to relation to such rank value of 1.08 in the early period

On the whole, financial performance based on the application of CAMEL Ranking is more or less the same between the two different periods of the study bank excepting for the 3<sup>rd</sup> and 5<sup>th</sup> major parameter management quality and liquidity . There is wide variance in the management quality and liquidity position for the two different periods, and for the other three major parameters, the differences are not much pronounced.

Testing of hypothesis shows that null hypothesis is accepted as p value: 3.811 is more than the significance level of 0.05; it means, there is no difference in liquidity position in terms of the sub parameter, liquid assets and total assets, govt securities and total assets and liquid assets to total deposits between the two periods (Early period and later period)

### **6. CONCLUSION AND SUGGESTION**

The application of CAMEL Ranking technique reveals that comparatively the financial performance of the study bank in terms of the 3 major parameters, namely, capital adequacy ratio, Asset quality ratio and Earning quality is more or less the same between the two periods, i.e., early period and later period. However there is variation in the performance of the bank in terms of two major parameters, management quality and liquidity position between early period and later period. Therefore management of the Bank has to ponder over the two parameters of management quality and liquidity position in order to overcome the variation in these parameters between the two periods in the future.

### **REFERENCES**

- [1] Annual reports of the study Bank for the period 2007-08 to 2016-2017



# Peer Relationship and Its Impact on Job Satisfaction at Workplace – A Special Reference to Arts and Science Self-Financing Colleges of Madurai Kamaraj University, Madurai

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**Abstract** - Satisfaction paves the way for expanding one's boundary with commitment especially in the workplaces. Dissatisfaction towards job leads to detrimental effects to both employer and employees. Since 1930, researchers have been looked into factors influencing employee's job satisfaction and its effects across industries and national boundaries. It's essential to understand the level of job satisfaction among teachers as they are contributing to national and economic development. This study envisaged to know the effects of peer relationship at workplace on teacher's job satisfaction. The empirical study proves that interpersonal relationship with peers have no effects on college teacher's job satisfaction.

**Key Words:** Peers, Commitment, Job Satisfaction, Interpersonal Relationship.

## 1. INTRODUCTION

Grouping is not novel to our society as socializing started since the evolution of humankind in the world. Human being is habituated to live and work as a group besides used to derive more emotional and moral support from group work rather than being ideal. From children to adult, business tycoon to pauper, everybody needs someone very close, and intimate in their personal space in order to share and/or exchange opinions and emotions. Individuals used to spend their pastime with the individuals of a small social group who have similar traits, interests and attitude, interestingly, hardly ever family members replace the role of peer group. An informal social group comprises of two or more individuals with some common similarities is referred as "peer group" as in Latin, the word 'peer' stands for same/equal. Members of a peer group irrespective of individual differences exert power and influence each other's beliefs and behavior often. Peer relationship is pervasive in one's social life as they play significant roles such as an intimate friend, acquaintance, mentor, leader and etc.

Relationship management in all part of life, especially in pre and post adulthood period is very much essential for personal learning, social support, emotional development, human growth and success in both personal and career fulfillment. Peer developmental relationship functions were significantly related to attitudinal outcomes, to elements of organizational learning, and to the skill development aspect of personal learning Elements of organizational socialization, personal learning, and team-source learning were significantly related to attitudinal outcomes as well <sup>[1]</sup>. Personal effects or losses are very low or nil sometimes when conflicts are aroused among members of a peer group, not in all times, special care is needed when handle professional peers. Various individual and organizational factors make the work life of individuals more stressful, hectic and volatile. In order to retain and retrieve maximum output and efficiency from talented workforce, employers offer them competitive compensation and look for strategic human resources approaches. Organization just needs to discover what motivates the people, what drives loyalty and what genuinely makes the employees happy and employee remain satisfied only when they know their issues are being addressed<sup>[2]</sup>.

For individuals spending, on average, seven to eight hours of their day at work, it is irrational to believe they can work all by themselves. This would make the employees of business organizations ought to have healthy interpersonal relationships at work in order to be able to have a friendly ambience. Numerous factors have the potential to moderate the level

and magnitude of formal and/ or informal relationship among peers. Individual as well as organizational factors can determine and also affect the temperament of a peer group in a work setting. It's essential to identify and monitor the factors leads to detrimental effects to individuals, teams and business.

A good peer relationship at workplace has a great impact on individual's job satisfaction, attitude towards job, group and organization, retention and his/ her behavior irrespective of individual differences. It also influence employee's psychological and emotional wellbeing, learning behavior, commitment, interpersonal relationship with higher officials and also with subordinates. Fortunately, there are possibilities to form friendship among peers when they have good understanding and interpersonal relationship. Multiplex workplace friendships are exhausting because they create feelings of responsibility and obligation, and because require investments of attention and energy toward their maintenance. Thus, although there are positive effects of multiplex workplace friendships on job performance<sup>[3]</sup>. Peer coaching is one form of a specialized developmental relationship that facilitates mutual career learning<sup>[4]</sup>.

The most respected profession in the world is Teacher. He is a model and is consciously imitated. There are many factors that influence the teachers' job performance such as aptitude, attitude, subject mastery, teaching methodology, personal characteristics, the classroom environment, general mental ability, personality, and relations with students. For development of quality teachers one has to understand the factors associated with it<sup>[5]</sup>. Job satisfaction is a very complex and comprehensive phenomena. It can hardly be seen in isolation from life situation. Job satisfaction is widely accepted psychological aspect of functioning in any profession<sup>[6]</sup>. A teacher who is dissatisfied with his or her job may become irritable and tense which may bring

inefficiency and other negative effects to the students' learning process<sup>[7]</sup>.

Every profession has certain aspects responsible for job satisfaction along with attitude and teaching is not an exception unless and until a teacher derives satisfaction on job performance and develops a positive attitude towards education, he/ she cannot initiate desirable outcomes to cater to the needs of the society<sup>[8]</sup>. Teachers' job satisfaction is one of the important factors in terms of which the effectiveness of an institution is evaluated<sup>[9]</sup>. The happier people are within their job, the more satisfied they are said to be. The concept of job satisfaction has gained importance ever since the human relations approach has become popular. Job satisfaction involves complex number of variables, conditions, feelings and behavioral tendencies<sup>[10]</sup>. Moreover job satisfaction is determined by how well the result of the job meets the expectations of the employee or they exceed the expectations<sup>[11]</sup>. A dissatisfied teacher is not only a disaster to him/ herself but also the entire country and its future. Dissatisfaction among employees is undesirable and dangerous in any profession, it is just suicidal if it is occurs in the teaching profession<sup>[6]</sup>. This paper is an effort to understand the level of peer relationship among teaching professionals of private management institutions affiliated to Madurai Kamaraj University, Madurai and its impact on job satisfaction.

## 2. OBJECTIVES OF THE STUDY

- ❖ To identify the relationship between socio-economic and professional factors and the peer relationship among the respondents of the study.
- ❖ To identify the relationship between socio-economic and professional factors and the level of job satisfaction among the respondents of the study.
- ❖ To identify the relation between level of peer respondents and their job satisfaction.

### 3. SCOPE OF THE STUDY

The present study confined only to the teachers of arts and science colleges which are private management institutions (Self-Financing) affiliated to Madurai Kamaraj University, Madurai. Irrespective of locality of colleges and stream of teachers all the faculty members of self-financing colleges have been considered.

### 4. METHODOLOGY

The study being undertaken in the study is descriptive in nature. Primary data was collected using a well-structured questionnaire and divided into 3 parts; socio-economic and demographic profile is included in the first part, statements ascertaining level of peer relationship and job satisfaction are included in the second and third parts respectively.

In this study, the sample unit was self-financing college teachers of arts and science colleges which are private management institutions (Self-Financing) affiliated to Madurai Kamaraj University, Madurai. Disproportionate stratified random sampling was adopted to take enough sample of respondents to represent the whole population. Suitable statistical tools were used in order to interpret the primary data of the study by using SPSS software.

### 5. DATA INTERPRETATION

The table shows that P value (.200) is higher than 0.05 thus level of peer relationship among the respondents have normality. Thus various parametric tests are used regarding level of peer relationship further in the study.

The K-S test result in the above table clearly shows that P value (.000) is less than 0.05 thus there is no normality in the level of job satisfaction. Thus non-parametric tests are used on variables regarding job satisfaction.

**Table 1: Profile of the respondents**

Particulars		No. of Responses	%
Gender	Male	68	39.1
	Female	106	60.9
Marital Status	Married	103	59.2
	Unmarried	71	40.8
Age	Below 25	42	24.1
	26-35	95	54.6
	36- 45	26	14.9
	Above 45	11	6.3
Educational Qualification	PG	18	10.3
	M.Phil	118	67.8
	Ph.D	38	21.8
Income	UPTO 10,000	100	57.5
	10-25,000	62	35.6
	25001- 50,000	10	5.7
	50,001- 1,00000	2	1.1
Stream	Arts	105	60.3
	Science	69	39.7
College Type	Co-Education	124	71.3
	Women's	50	28.7
<b>TOTAL</b>		<b>174</b>	<b>100</b>

Source: Primary Data

**Table 2: Kolmogorov-Smirnov Test**

	Kolmogorov-Smirnov <sup>a</sup>		
	Statistic	df	Sig.
Peer Relationship	.057	174	.200*

**Table 3: Kolmogorov-Smirnov Test**

	Kolmogorov-Smirnov <sup>a</sup>		
	Statistic	df	Sig.
Job Satisfaction	.107	174	.000

**Table 4: Result of Correlation Test**

		Job sat	PR
Jobsat	Pearson Correlation	1	.233**
	Sig. (2-tailed)		.002
	N	174	174
PR	Pearson Correlation	.233**	1
	Sig. (2-tailed)	.002	
	N	174	174

\*\* . Correlation is significant at the 0.01 level (2-tailed).

**H<sub>01</sub>:** There is no relationship between level of peer relationship and the job satisfaction among the respondents of the study.

Here,  $P < 0.05$  and the null hypothesis is rejected. Hence there is a relationship between level of peer relationship and the job satisfaction among the respondents of the study.

**Kruskal Wallis tests:** Kruskal Wallis test has been employed to analyze the job satisfaction in the work place on the basis of educational qualifications and income of the respondents of the study.

**Table 5: Result of Kruskal Wallis Test**

	Job Satisfaction
Chi Square	.632
df	2
Asymp. Sig.	.729

**H<sub>02</sub>:** There is no significant difference among the respondents of the study regarding job satisfaction on the basis of educational qualifications.

Here,  $P (.729) > 0.05$  and the null hypothesis is accepted. Hence there is no significant difference among the respondents regarding job satisfaction on the basis of educational qualifications.

**Table 6: Result of Kruskal Wallis Test**

	Job Satisfaction
Chi Square	.632
df	2
Asymp. Sig.	.729

**H<sub>03</sub>:** There is no significant difference among the respondents of the study regarding job satisfaction on the basis of income.

Here,  $P (.632) > 0.05$  and the null hypothesis is accepted. Hence there is a significant difference among the respondents regarding job satisfaction on the basis of income.

**Mann-Whitney Test**

**Table 7: Result of Mann-Whitney Test**

Job Satisfacio	Stream	N	Mean Rank	Sum of Ranks
	Arts	105	84.71	8895.00
	Science	69	91.74	6330.00
			.729	

**Table 8: Test Statistics**

	Job Satisfaction
Mann-Whitney U	3.330E3
Wilcoxon W	8.895E3
Z	-.904
Asymp. Sig. (2-tailed)	.366

**H<sub>04</sub>:** There is no significant difference among the respondents of the study regarding job satisfaction on the basis of their stream such as arts and science.

Here,  $P (.366) > 0.05$ , hence there is no significant difference among the respondents regarding job satisfaction on the basis of their stream.

**Table 9: Result of Mann-Whitney Test**

Job Satisfacio	College Type	N	Mean Rank	Sum of Ranks
	Co-Ed	124	93.37	11577.50
	Women	50	72.95	3647.50
			.729	

**Table 10: Test Statistics**

	Job Satisfaction
Mann-Whitney U	2.372E3
Wilcoxon W	3.648E3
Z	-2.430
Asymp. Sig. (2-tailed)	.015

**H<sub>05</sub>:** There is no significant difference among the respondents of the study regarding job satisfaction on the basis of their college type such as co-education and women’s institution.

Here,  $P > 0.05$ , hence there is no significant difference among the respondents regarding job satisfaction based on college type.

**T-Test**

**H<sub>06</sub>:** There is no significant difference between male and female respondents regarding their level of peer relationship.

**Table 11:** Gender & Peer relationship

Level of Peer relationship		Mean	SD	Statistical Value	Statistical Results
Gender	Male	67.33	11.65	't' value .926	P > 0.05 (.356) NS
	Female	65.61	12.18		

It shows that P > 0.05 and the Null hypothesis is accepted. There is no significant difference between male and female respondents regarding their level of peer relationship.

**H<sub>07</sub>:** There is no significant difference between arts and science faculties regarding their level of peer relationship.

**Table 12:** Stream & Peer relationship

Level of Peer relationship		Mean	SD	Stat Value	Stat Results
Stream of education	Arts	66.43	11.84	't' Val .204	<b>P &gt; 0.05 (.838)</b> NS
	Science	66.05	12.25		

It shows that P > 0.05 and the Null hypothesis is accepted. There is no significant difference between arts and science faculty members regarding their level of peer relationship.

**H<sub>08</sub>:** There is no significant difference between co-education and women's college teachers regarding their level of peer relationship.

**Table 13:** College type & Peer relationship

Level of Peer relationship		Mean	SD	Stat Value	Stat Results
Type of college	Co-Ed	66.43	11.84	't' Val .427	<b>P &gt; 0.05</b> (.670) NS
	Women's	66.05	12.25		

It shows that P > 0.05 and the Null hypothesis is accepted. There is no significant difference between co-education and women's college teachers regarding their level of peer relationship.

**Table 14:** Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.847
Bartlett's Test of Sphericity	1.822E3	2805.723
	153	153
	.000	.000

Source: Primary data

The (KMO) of Sampling Adequacy test value is .847 which indicate that the sample is adequate to apply factor analysis.

**Factor analysis**

**Table 15:** Rotated Varimax

	1	2	3	4
I can express my emotions to my peers.	-.158	.126	.460	<b>.640</b>
I share and receive trustworthy information	-.052	.167	<b>.662</b>	.219
I use social media to stay in touch with my peers	.470	-.112	<b>.715</b>	.072
I feel so comfortable when I talk with my peers	.220	.365	<b>.489</b>	.221
I have strong peer network	.281	.273	<b>.750</b>	.064
I always get chance to share my ideas and views		.384	<b>.596</b>	-.082
My peers genuinely appreciate my performance	.223	<b>.527</b>	.516	.139
My peers acknowledge my special/ additional efforts	.072	<b>.808</b>	.318	.057
My peers respect my ideas in a discussion	.172	<b>.697</b>	.184	.374
My peers show gratitude towards my timely help	.311	<b>.745</b>	.104	.186
My peers positively comment about me with others	.457	<b>.650</b>	.263	
My peers give me timely feedback on my contribution	.351	<b>.554</b>	.315	-.240
Peers in my department motivates me to be successful	<b>.652</b>	.323	.309	
Peer give suggestions to improve my performance	<b>.741</b>	.293	.125	.139
My peer helps me to identify my strengths	<b>.634</b>	.556		.062
My peer council me for my personal problems	.274	.109		<b>.767</b>
Peer encourage my innovative ideas	<b>.838</b>	.184		.250
Peers inspires me by their positive attitude	<b>.867</b>	.089	.140	



The above table exhibits the rotated factor loadings for the 18 statements regarding level of peer relationship. It's clear from the Table 15 that all the 18 statements had been extracted into four factors in the following way;

F1- Peer Motivation

F2- Peer Recognition

F3- Peer Communication

F4- Emotional relationship with peers

## 6. RESULTS & DISCUSSION

### 1. Percentage analysis

Out of 174 respondents, 60.9% of them are female college teachers, 59.25 are married and majority (54.6%) of them are belongs to the age category of 26-35. 67.8% of the respondents of the study are completed M.Phil and 57.5% of them are earn up to 10,000 as the study confined only to self-financing colleges. 60.3% are belongs to arts discipline and 71.3% are working in co-education colleges obviously, the samples are taken from 5 co-education and only 2 women's colleges.

### 2. K-S test

This test has been adopted to determine whether the level of peer relationship and job satisfaction has normality and the p values are .200 and .000 respectively. Thus level of peer relationship has normality as  $P > .200$  and job satisfaction have not fulfilled normality condition as  $P > .000$ .

### 3. Correlation

The P value is less than 0.05, hence there is a relationship between level of peer relationship and the job satisfaction among the respondents of the study.

### 4. Kruskal-Wallis Test

This test proved that there is no significant difference among the respondents regarding job satisfaction based on their educational qualifications and income level.

### 5. Mann-Whitney –U Test

This test also proved that there is no significant difference among the respondents

regarding job satisfaction based on their stream and their type of college in which they are working based on their .

### 6. T-Test

T-Test results affirmed all the null hypotheses framed. Thus there is no significant difference among the respondents regarding peer relationship based on their gender differences, stream and their type of college.

### 7. Factor Analysis

As the KMO value is .847 for the statements ascertaining the level of peer relationship, factor analysis has been employed. And the rotated varimax table shows that the factors are divided into four groups and named as peer motivation, peer recognition, peer communication, emotional relationship with peers.

## 7. CONCLUSION

The present study clearly indicates that there is a relationship between peer relationship at workplace among self-financing arts and science college teachers of Madurai Kamaraj University, Madurai and their job satisfaction. All the test results confirmed that other individual as well as organizational factors have no influence on the level of peer relationship and job satisfaction.

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