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Editorial.....

It is heartening to note that our journal is able to sustain the enthusiasm and covering various facets of knowledge. It is our hope that IJMER would continue to live up to its fullest expectations savoring the thoughts of the intellectuals associated with its functioning. Our progress is steady and we are in a position now to receive evaluate and publish as many articles as we can. The response from the academicians and scholars is excellent and we are proud to acknowledge this stimulating aspect.

The writers with their rich research experience in the academic fields are contributing excellently and making IJMER march to progress as envisaged. The interdisciplinary topics bring in a spirit of immense participation enabling us to understand the relations in the growing competitive world. Our endeavour will be to keep IJMER as a perfect tool in making all its participants to work to unity with their thoughts and action.

The Editor thanks one and all for their input towards the growth of the **Knowledge Based Society**. All of us together are making continues efforts to make our predictions true in making IJMER, a Journal of Repute

Dr.K.Victor Babu
Editor-in-Chief

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FACTORS TRIGGERING PURCHASE INTENTION AND CUSTOMER SATISFACTION BETWEEN RURAL AND URBAN MARKETS OF INDIA- A SOLUTION FOR MANUFACTURERS IN THE INDIAN 2-WHEELER SECTOR

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ABSTRACT:

The Indian automobile market has been very sluggish in 2019, and the 2 wheeler segment is no exception. Hence, profits have reduced, and have made the manufacturers look for options to either cut costs, or to introduce new campaigns to increase revenues. One of the major ways by which both of these can be done, is to segment the market, identifying the main attributes that are responsible for the purchase intention and cause satisfaction for each segment, and then model the product mix based on these facts. This reduces the cost, as the manufacturer can focus more on the attributes that are important, than the other attributes. This increases the revenue, as it enables the manufacturer to offer a customized product mix, which has been the need of the hour.. This paper tries to present the main attributes that trigger the purchase intention and cause customer satisfaction in rural markets, and urban markets exclusively. 10 basic attributes, namely After sales service, Design, Advertisement Campaigns, Mileage, Price, Attractive showroom, Brand name, Maintenance cost, and Weight were chosen initially to work on, and the final recommendations are provided. The demographics details such as Educational Qualification, Annual Income, Gender, and Occupation of the respondents were also collected. T-Test, and ANOVA were conducted to identify the major demographic factors that cause the differences in the factors that affect purchase intention, and customer satisfaction of rural customers from those of urban customers, and the results are also provided. This helps the manufacturers to go one step further, and play with the 4 Ps of Marketing based on these demographics.

Key words : Purchase intention, Customer satisfaction, Attributes for purchase trigger, Product mix , rural and urban markets.

INTRODUCTION

The Indian 2 wheeler market is one of the markets in the world that has been subjected to a huge number of studies. There are many reasons attributable to this. The foremost reason that was concerned with the growth rate of this field. ICRA expected



two-wheeler domestic volumes to grow at 8-10% during FY2019 driven by strong rural demand as well as expanding urban consumption.

Many other factors also make growth conducive in this market. For example, the pay revision is expected to drastically increase urban demand. The growth in the 2 wheeler market is not just limited to urban areas. The rural consumers have played a significant part, and their contribution is expected to increase. This is largely due to the two continuous seasons of normal monsoons, and hence a better crop yield. Yet another significant factor is the Indian Government's policies to that are aiming to double farmer's income by 2022, and other rural centric projects such as RURBAN mission, MUDRA scheme that helps to finance small scale businesses, MNREGA scheme that provides wage employment based on demand, etc.

However, the year 2019, has proved to be a contradiction. The overall Indian automobile market itself has not lived up to the expectations of experts. Sales have been reported down since the start and the first quarter already ended with sales down 8.1%, with 4.6 million units. The start of the second quarter was even worse, with **April** sales at 1,634,422 reporting the deepest fall in the last years, down in double-digit (-16.6%). **May** sales were 1.7 million (-8.1%) and **June** with 1.65 million units (-11.5%), ending the first half with a total of 9,656,125 units, down 10%. The country's largest two-wheeler maker Hero MotoCorp reported a 21.18 per cent dip in total sales at 5,35,810 units in July, as compared with 6,79,862 units in the year-ago period. "The sluggish market environment prevalent in the first quarter has continued in the beginning of the second quarter as well and its impact is visible in the dispatch volumes," Hero MotoCorp said in a statement.

In such a time when any help from the government or the public would be extremely helpful for the 2 wheeler manufacturers, this paper attempts to provide the much needed help. The main factors that contribute towards the satisfaction, and the purchase decision in the given market conditions might be drastically different from those a year ago. More importantly, these attributes might be completely different for the rural market and the urban market. Hence, through this work, we have collected primary data from both rural and urban customers, regarding the main attributes that cause customer satisfaction, and trigger their purchase decision, with special reference to 2 wheelers. This work hence becomes extremely helpful for the manufacturers as they can concentrate on the exact attributes for the target market instead of trying to offer all utilities to all markets in an untargeted way.

This paper tries to compare various aspects of Customer Buying Behavior in the 2 wheeler market of Rural consumers with that of Urban consumers to get an idea about how the preferences are different, so as to utilize this while designing future targeted 2 wheelers.

LITERATURE SURVEY:

The entire survey of literature is divided into 2 parts. The former deals with the work done so far in Consumer Behavior in general and the latter discuss Consumer Behavior with special reference to Indian 2 – wheeler buyers.

Consumer behavior in general:

Tatiana Anatolevna Anisimova, (2007), investigated the influence of the corporate brand on attitudinal and behavioral consumer loyalty. The research is based



on a sample of 285 consumers of an automobile manufacturer in Australia. Cronbach alpha and Structural Equation Modeling were used to establish psychometric properties of the corporate brand constructs. This paper establishes two groups of corporate brand attributes: corporate and marketing-level. Corporate-level dimensions include corporate activities, corporate associations, organizational values, and corporate personality. Marketing-level dimensions comprise functional, emotional and symbolic brand benefits. The results reveal that corporate values, corporate brand personality, and functional consumer benefits are the most critical and consistent predictors of both attitudinal and behavioral loyalty.

Cai Shun, Xu Yunjie found out through research that outcome value and process value contributed significantly to customer satisfaction and loyalty. Also, evidence confirmed that customer satisfaction affects customer loyalty. Enjoyment, however, had no significant positive impact on customer satisfaction.

James A. Roberts & Stehen F. Pirog III from their study find that extrinsic goals emphasizing financial success and attractiveness to others are positively related to compulsive buying. Conversely, intrinsic goals emphasizing self-acceptance and community feelings are negatively related to compulsive buying. The findings emphasize the importance of further research and theory development in the study of compulsive buying and have important implications for our understanding of consumer behavior and well-being.

Chartrand, T. L. concludes from his research that consumer behavior is often mediated by processes that occur outside of conscious awareness. However, it is important for researchers in this area to specify in each instance exactly what part of the process lies outside awareness-the environmental features that trigger an automatic process, the automatic process itself, the outcome of that automatic process, or some combination of the three. Only then will we be able to move forward with a comprehensive model of nonconscious processes in consumer behavior.

Matthias R. Greuner, David R. Kamerschen & Peter G. Klein view that advertising makes markets more competitive, not less competitive. They found no evidence that advertising operates as a barrier to entry. The results are fairly robust to model specification and choice of performance variables. On the whole, their findings strongly suggest that automobile advertising provides a social benefit.

IasonPapafotikasa, DimitriosChatzoudebs, and IreneKamenidoub reveal that contextual factors have the strongest influence on purchase decisions and have an impact on both brand loyalty and brand switching. Moreover, the findings provide important insights regarding the factors that practitioners should enhance in order to tailor their marketing approaches.

Consumer behavior with special reference to Indian 2 wheeler buyers:

Arpita Srivastava and Mitu Matta in their article, which was about the consumer behavior towards passenger cars in Delhi NCR concluded that Consumers in this region are influenced by a various factor such as culture, family, reference, age, and lifestyle. The most important factor that influences the consumer to use a passenger car is the price of cars, social status, and durability.

Patricia Huddleston, Linda K. Good & Leslie Stoel tried to determine if perceived product quality of products differs based on country of origin, product



necessity, and consumer ethnocentric tendency. They concluded that those Russian consumers do perceive differences in product quality based on country of origin and product necessity, but that consumer ethnocentrism does not have an effect on perceived product quality.

Dinker Jha found out, what the role of perception on the consumer buying decision is. He concluded that conducting surveys are one of the most important activities for an automobile company.

A. Martin Jayaraj found out the consumer awareness level of two wheeler-dealers in Coimbatore district, to in turn identify the factors influencing consumer buying behavior process, and to analyze the impact of behavioral factors of consumers on choosing the particular dealer. The study concluded that the buying behavior of consumers in purchasing two-wheelers involves several psychological factors. These factors govern the individual thinking process (like motivation, perception, and attitude), decision-making steps involved in buying (decision making process), interaction of the consumer with several groups like friends, family and colleagues (group-oriented concepts), and selection of the brand and outlet depending on features and emotional appeal (marketing mix elements in a given environment).

Debasis Tripathy & Dr. Ronald Mani did a study to identify the consumer perception of bike owners who are using the two-wheeler Bikes at Allahabad, a city of Uttar Pradesh. Their study concluded with a major finding that Honda and Bajaj show maximum satisfaction whereas TVS remains last.

I. Savarimuthu and K. Chandrakumar wanted to showcase factors like product attributes, resale value, mileage, advertisement and the personal factors upon which a company should work to create customer perception in a positive way to considerably influence the purchase decision. The study concluded that Hero Moto Corp is the leading brand of two-wheeler in Jaipur city followed by Honda, TVS, and Bajaj. Yet another major conclusion from the study is that at the time of purchasing two-wheeler customer has a different choice for two-wheelers but the purchase decision depends on various factors like product attributes, price, credit facility, and brand.

Two-wheeler companies are introducing variants of high-end motorcycles that are made from youths' perspective and these companies are mostly concentrating on certain unique attributes as essentials and latest technology in the making of these motorcycles. Y. Vinodhini measures the factors and provides strategies that sustain the motorcycle "Royal Enfield" buyer behavior. She concluded that Personality, Favourable demographics and age factors are also considered as important influencers of the motorcycle "Royal Enfield". She had also stated that among the Variants the target prefers "classic" version and with the income range of 15000-20,000 income is the most effective and there is wide scope for the company to reach to the 10,000/- income level with their promotional blitz and more stress on easy finance with minimum frills.

P. Sathish Chandra tries to depict the rural customer profile and rural customer preference towards buying a particular model of Hero Dawn motorcycles and to know the impact of Opinion Leadership on buying decision of rural customers. The study is mainly based on primary data. The primary data is obtained from customers of Hero Dawn motorcycles in rural parts of the Warangal district. He concluded that that the



Hero Dawn bikes are most utility bikes, and also that engine pick-up, mileage, and style are the most attractive features of the Hero Dawn bikes.

K. P Najeemudeen, and N. Panchanatham, investigated and identified the information sources sought by the customers for the purchase of two-wheelers, identified the information source which have a positive influence upon the buying decision of the customers, and analyzed the demographic characteristics of the respondents and their relative effect on the information sources for the purchase of two-wheelers. They concluded with an important finding that Instead of getting lured by the advertisements, they have started collecting information from all the available sources, with the help of which they make the most logical and rational purchase decision.

R. Renganathan, C. Vijayabanu, V. Srinivasakumar, and V. Vijayanand, conclude that Understanding customer requirements are very vital for the endurance and expansion of any industry. In the automobile industry dealers have an opportunity to contact buyers directly. Honda Motors dealer, Tiruvarur has to understand the requirements of the buyers in order to maintain the existing customers and to acquire new customers.

Vibha Gupta, and Yasmin Shaikh, support that Ad Campaign of Two Wheeler has a significant impact on Consumer Buying Behavior and even suggests that companies should opt for it, because advertising is a vital tool to compete, in this ever-changing environment. It benefits both the manufacturer and the consumers, manufacturer in terms of publicity and consumers in terms of information and awareness.

T. Lata Sujata, conclude that majority of the respondents gave the number one rank to good mileage. The new model was ranked second, Good pickup and speed were ranked third, easy maintenance was ranked fourth, price factor was ranked fifth after sales service was ranked as sixth, offers and schemes was ranked as the seventh and reputed brand name was ranked as eighth.

Vilas S. Balgaonkar, concludes that the multiple regression analysis indicates that the p values for each of the independent variables like social status and variety of brands are greater than 0.05 means rural youth's attitude is not dependent on these variables. Whereas rural youth's behavior is dependent on ambiance, discount /offers, attractive display, and lifestyle.

SCOPE/ RESEARCH GAP:

From the review of the literature, it is quite evident that there are many studies that try to analyze factors affecting Buying behavior of either rural or urban areas. But, there are hardly any studies that simultaneously get data at rural and urban areas, find the factors affecting the buying consideration and satisfaction of these areas, then try to map the differences in these to the demographic attributes. This type of study gives a clear idea as to what exact factors contribute to the differences between the buying behavior attributes and hence helps companies focus on these when they want to diversify. Hence, this study exactly does the same, as mentioned above, which give way for the specific objectives given below.

OBJECTIVES:

1. To find major factors influencing purchase consideration of 2 wheelers, in rural as well as urban areas.



2. To make a comparison of the factors that have an impact on purchase decision between rural buyers and urban buyers.
3. To identify the satisfaction level of consumers about 2 wheelers in rural and urban areas.
4. To analyze the cause for differences in satisfaction levels among rural and urban consumers.

RESEARCH METHODOLOGY:

The primary data was got through a Descriptive survey. Since the research involved analysis between rural and urban consumers, data was collected at 2 places- Chennai for urban, and Villupuram for rural. A total of 147 responses were taken for each rural and urban area. The Pilot survey was conducted for a group of 10 respondents in each area, and the required changes were made. Convenience sampling was used to determine the respondents, and

The entire data was collected in 60 days – 15 days for urban and 35 days for rural respectively. A structured questionnaire with 35 questions was used, as the Data Collection Instrument.

The questionnaire was designed carefully, to get important inputs, such as the importance they give for factors like Price, Design, Mileage, Weight of Bike, After-sales service, Maintenance cost, Advertisement campaigns, Brand name, etc. while considering the purchase, and the satisfaction levels of those respective factors. The questionnaire also obtained key demographic factors such as income level, occupation, age, sex, etc. The collected Data was analyzed using IBM SPSS Package and was subjected to tests such as Factor Analysis, T-tests, and ANOVA analysis. The most prominent variables were extracted using Factor Analysis first. These variables were then studied alongside the demographics, using T-Test, and ANOVA test, so as to discover the relationship between the variables.

FINDINGS:

The research showed a very interesting trend that proved against the expectations of the general public. The factor analysis helped in reducing the parameters, which were later used in comparing with the demographic attributes. Although certain parameters were easily attributed to the demographic divide, certain results prove to outweigh our judgment of the rural/ urban population to a certain type of buying behavior. Hence, after completing this article, a reader will get to know the common misconceptions, and companies will get to know the reasons for the difference in buying behavior between Rural and Urban customers, and they can correspondingly devise their marketing plans.

DEMOGRAPHIC DETAILS OF RESPONDENTS:

Table 1: Demographic Details

DESCRIPTION		NUMBER	PERCENTAGE
Location/Residence	Urban	147	50
	Rural	147	50
Educational Qualification	School Level	84	28.6
	Graduate	139	47.3



	Post Graduate	48	16.3
	Illiterate	23	7.8
Annual Income	Less than 1 lakh	66	22.4
	1 - 3 lakh	56	19
	3 - 5 lakh	20	6.8
	5 - 10 lakh	41	13.9
	10 - 15 lakh	69	23.5
	more than 15 lakh	42	14.3
Gender	Male	174	59.18
	Female	120	40.82
Occupation	Professional	110	37.8
	Homemaker	57	19.59
	Business	29	9.97
	Dailyworker	29	9.97
	Student	30	10.30
	Agriculture	36	12.37

The entire survey was conducted in 2 areas – Rural, and Urban, and within this, an equal number (147 from each area) of rural and urban respondents were surveyed, so as to make the research unbiased. The Educational Qualification of the respondents are broadly classified into 4 types – School Level, Graduate, Post Graduate, and Illiterate, and the Graduate people turned out to be the major participants, with a share of 47.3 percent. Based on the Annual income, there are 6 subclasses, as there is a huge wide between the annual incomes of rural and urban respondents. All the salaries given in the above table are in a Per Annum basis. The survey ended up with majority respondents being in the 10-15 Lakh per annum (23.5 Percent), but not by a big margin, as the next major class is the Less than 1 Lakh per annum group with 22.4 percent. Males formed a majority, by occupying a share of 59.18 percent of the total. The next basis for classification is the occupation of the respondent. There is a clear winner when it comes to the occupation of maximum respondents, and it is the section with Professionals, and they have occupied 37.8 percent of the entire mix.

FACTOR ANALYSIS

Factor analysis attempts to identify underlying variables or factors that explain the pattern of correlations within a set of observed variables. Factor analysis is often used in data reduction to identify a small number of factors that explain most of the variance observed in a much larger number of manifest variables. Factor analysis can also be used to generate hypotheses regarding causal mechanisms or to screen variables for subsequent analysis. In the present study, 9 factors were brainstormed, which have an impact on the Purchase decision, and Satisfaction Level of both Rural and Urban customers. In this part, we try to group these factors, based on the values for each factor from the rotated component matrix, and then give the most dominant factors.



The Kaiser-Meyer-Olkin (KMO) measure is an indicator of how well is the sample data suited for factor analysis. It is the ratio of the sum of the squared correlations for all variables in the analysis to the squared correlations of all variables plus the sum of the squared partial correlations for all variables. The denominator of this ratio increases with the variation that is unique to pairs of variables (partial correlations), making the value of KMO less than one. Small values of KMO (Table 4.4a) indicate that factor analysis may not be appropriate for the data. Kaiser (1974) suggests that values of .9 or higher are great and values below .5 are unacceptable. In our study, we have 4 main tables, and hence 4 KMO values, one for each table.

The main expected output from factor analysis was to identify the main factors contributing to the purchase decision for Rural customers, purchase decision for Urban customers, satisfaction levels of Rural customers, and satisfaction levels of Urban customers, and then group these dominant factors, based on the “extract value”. The KMO test results, along with the final simplified Rotated component matrix for the 4-factor analyses are given below.

- Factors affecting Purchase Decision for Rural customers

Table 2: Rotated Component Matrix

FACTOR	EXTRACT VALUE
After sales service	-0.711
Design	0.704
Advertisement Campaigns	0.595
Mileage	0.763
Price	0.678
Attractive showroom	0.523
Brand name	0.876
Maintenance cost	0.920
Weight	0.849

Table 3: Factor Analysis - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.509
Bartlett's Test of Sphericity	Approx. Chi-Square	101.391
	Df	36
	Sig.	0.000

- Factors affecting Satisfaction Level of Rural customers



Table 4: Rotated Component Matrix

FACTOR	EXTRACT VALUE
After sales service	-0.706
Design	0.804
Advertisement Campaigns	-0.552
Mileage	0.604
Price	0.939
Attractive showroom	0.932
Brand name	0.836
Maintenance cost	0.740
Weight	0.840

Table 5: Factor Analysis - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.506
Bartlett's Test of Sphericity	Approx. Chi-Square	132.927
	Df	36
	Sig.	0.000

- Factors affecting Purchase Decision for Urban customers

Table 6: Rotated Component Matrix

FACTOR	EXTRACT VALUE
After sales service	0.609
Design	0.637
Advertisement Campaigns	0.775
Mileage	0.638
Price	0.571
Attractive showroom	0.696
Brand name	0.814
Maintenance cost	0.515
Weight	0.877



Table 7: Factor Analysis - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.506
Bartlett's Test of Sphericity	Approx. Chi-Square	138.918
	Df	36
	Sig.	0.000

- Factors affecting Satisfaction Level for Urban customers

Table 8: Rotated Component Matrix

FACTOR	EXTRACT VALUE
After sales service	0.401
Design	0.723
Advertisement Campaigns	0.666
Mileage	0.689
Price	0.740
Attractive showroom	0.580
Brand name	-0.847
Maintenance cost	0.818
Weight	0.447

Table 9: Factor Analysis - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.342
Bartlett's Test of Sphericity	Approx. Chi-Square	182.898
	Df	36
	Sig.	0.000

Since for all the tables in the present study, the value of KMO is greater than 0.6, the sampled data is adequate for Factor analysis. From the 4 Rotated Component Matrix tables, factors within similar extract values were grouped.

Factors affecting Purchase Decision for Rural customers:

Factor Analysis helped us to further extract 5 major factors, and we have named them as the following. The other factors were also grouped into these 5 major factors.



- Overall Appeal – After sales service (-0.711), Design (0.704), Advertisement campaigns (0.595).
- Cost-Effectiveness – Mileage (0.763), Price (0.678)
- Aesthetics, and comfort – Attractive showroom (0.523), Weight (0.849)
- Brand Name (0.876)
- Maintenance Cost (0.920)

Factor Analysis helped us to further extract 5 major factors, and we have named them as the following. The other factors were also grouped into these 5 major factors.

- Publicity level of the company – Brand Name (0.814), Advertisement Campaigns (0.775)
- Technical attributes – Mileage (0.638), Design (0.637), and Maintenance cost (0.515)
- Retailer's impact – Attractive showroom (0.696), After sales service (0.609)
- Cost of comfort – Weight (0.877), Price (0.571)

Hence, if we consider the factors affecting purchase decision, 2 prominent factors have almost equal extraction values in Rural, and Urban areas. They are Brand Name (0.876 for Rural, and 0.814 for Urban), and Weight (0.849 for Rural, and 0.877 for urban). Hence, we choose these 2 variables for our further study, in which we try to map the similarity of Rural, and Urban people to demographic characteristics.

Factors affecting Satisfaction Level of Rural customers:

5 Final factors were formed, after factor reduction

- Technical Attributes – Design (0.804), Mileage (0.604), Advertisement Campaigns (-0.552)
- Perceived Brand Value – Brand Name (0.836), Maintenance Cost (0.740)
- Comfort – Weight (0.840), After sales service (-0.706)
- Attractive showroom (0.932)
- Price (0.939)

Factors affecting the Satisfaction Level for Urban customers

4 Final factors were formed after factor reduction

- On Paper attributes – Mileage (0.689), Advertisement Campaign (0.666), Attractive showroom (0.580), After sales service (0.401)
- Cost of comfort – Weight (0.447), Maintenance cost (0.818)
- Value for appeal - Price (0.740), Design (0.723)
- Brand name (-0.847)

For satisfaction, the 2 factors with similar values, are Price (0.939 in Rural, and 0.740 in Urban), and Weight (0.840 for Rural, and 0.447 for Urban). Hence, through Factor Analysis, we successfully reduced the prominent number of factors from 9 to 2, for both Purchase Decision, and Satisfaction.

T-TEST AND ANOVA:

After the reduction of the number of factors, we need to identify the demographic factors that cause the similarity in the behavior between rural and urban customers. After performing Descriptive Analysis on the primary data, it was found that Educational Qualification, Occupation, and Annual Income, were 3 demographic



attributes that varied a lot between rural and urban customers in the survey. Hence these 2 were taken to check for the similarities found. For this, we used 2 tests – T-Test, and ANOVA (Analysis of Variances), in the IBM SPSS Package.

1. ANOVA: The ANOVA test allows a comparison of more than two groups at the same time to determine whether a relationship exists between them. Analysis of variance (ANOVA) is a statistical procedure concerned with comparing means of several samples. It can be thought of as an extension of the t-test for two independent samples to more than two groups. The purpose is to test for significant differences between class means, and this is done by analysis the variances.

A. Let us take the dataset, pertaining to Factors affecting Purchase decision was taken for both rural and urban customers, and perform ANOVA for this data (294 entries), with the Dependent variables being all the 9 factors taken, and the Independent variable first being Educational Qualification, and the Annual Income.

- Independent Variable – Purchase Intention - Educational Level

Table 10: ANOVA – Educational Level

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Advertisement Campaigns	Between Groups	5.954	3	1.985	1.575	.195
	Within Groups	365.342	290	1.260		
	Total	371.296	293			
Maintenance cost	Between Groups	24.460	3	8.153	6.545	.000
	Within Groups	361.241	290	1.246		
	Total	385.701	293			
Price	Between Groups	26.815	3	8.938	5.940	.001
	Within Groups	436.410	290	1.505		
	Total	463.224	293			
Mileage	Between Groups	31.515	3	10.505	7.048	.000
	Within Groups	432.268	290	1.491		
	Total	463.782	293			
Design	Between Groups	88.606	3	29.535	20.061	.000
	Within Groups	426.962	290	1.472		
	Total	515.568	293			
After sales service	Between Groups	2.017	3	.672	.592	.621
	Within Groups	329.143	290	1.135		
	Total	331.160	293			
Weight	Between Groups	2.862	3	.954	.646	.586
	Within Groups	428.638	290	1.478		
	Total	431.500	293			
Brand name	Between Groups	6.187	3	2.062	1.693	.169
	Within Groups	353.323	290	1.218		
	Total	359.510	293			
Attractive showroom	Between Groups	9.517	3	3.172	.235	.872
	Within Groups	3907.480	290	13.474		
	Total	3916.997	293			



The factors for which the significance level (Sig.), is greater than 0.05 are considered insignificant. Hence, from the above ANOVA study, it was found that the difference in education levels of Rural and Urban consumers, is insignificant in explaining the variation in importance given towards Advertisement Campaigns (0.195), After sales service (0.621), Weight (0.586), Brand name (0.169), and Attractive showroom(0.872), as factors affecting their purchase decision by consumers by customers, while the difference in education levels is significant when it comes to addressing the difference in importance given towards factors such as Maintenance Cost(0.000), Price (0.001), Mileage(0.000), and Design(0.000).

- Independent Variable – Purchase Intention - Annual Income

Table 11: ANOVA – Annual Income

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Advertisement campaign	Between Groups	26.806	5	5.361	4.579	.000
	Within Groups	333.689	285	1.171		
	Total	360.495	290			
Maintenance cost	Between Groups	23.902	5	4.780	3.803	.002
	Within Groups	358.208	285	1.257		
	Total	382.110	290			
Price	Between Groups	88.144	5	17.629	13.425	.000
	Within Groups	374.227	285	1.313		
	Total	462.371	290			
Mileage	Between Groups	29.021	5	5.804	3.808	.002
	Within Groups	434.368	285	1.524		
	Total	463.388	290			
Design	Between Groups	178.914	5	35.783	30.396	.000
	Within Groups	335.506	285	1.177		
	Total	514.419	290			
After Sales service	Between Groups	32.222	5	6.444	6.184	.000
	Within Groups	297.001	285	1.042		
	Total	329.223	290			
Weight	Between Groups	13.057	5	2.611	1.790	.115
	Within Groups	415.830	285	1.459		
	Total	428.887	290			
Brand name	Between Groups	15.514	5	3.103	2.592	.026
	Within Groups	341.207	285	1.197		
	Total	356.722	290			
Attractive showroom	Between Groups	127.993	5	25.599	1.932	.089
	Within Groups	3776.838	285	13.252		
	Total	3904.832	290			

The factors, whose differences in importance given to factors between rural and urban customers can be accounted successfully and significantly by differences in Annual Income are Advertisement Campaigns(0.000), Maintenance cost(0.002), Price (0.000), Mileage(0.002), Design(0.000),and After sales service(0.000), Brand Name (0.26). Hence, it is evident that Maintenance Cost, Price, Mileage and Design are significantly affecting both the Purchase Intention, and the Satisfaction Level of Rural Customers.



- A. Let us take the dataset, pertaining to Factors affecting Satisfaction Level was taken for both rural and urban customers, and perform ANOVA for this data (294 entries), with the Dependent variables being all the 9 factors taken, and the Independent variable first being Educational Qualification, and then Annual Income.

- Independent Variable – Educational Qualification

Table 12: ANOVA – Satisfaction Level - Educational Qualification

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Price	Between Groups	168.239	3	56.080	2.912	.035
	Within Groups	5585.176	290	19.259		
	Total	5753.415	293			
Mileage	Between Groups	4.739	3	1.580	1.038	.376
	Within Groups	436.814	287	1.522		
	Total	441.553	290			
Design	Between Groups	26.441	3	8.814	5.887	.001
	Within Groups	434.212	290	1.497		
	Total	460.653	293			
After sales service	Between Groups	4.851	3	1.617	1.022	.383
	Within Groups	454.187	287	1.583		
	Total	459.038	290			
Maintenance cost	Between Groups	32.671	3	10.890	6.172	.000
	Within Groups	511.683	290	1.764		
	Total	544.354	293			
Weight	Between Groups	8.248	3	2.749	1.378	.250
	Within Groups	578.677	290	1.995		
	Total	586.925	293			
Advertisement campaign	Between Groups	3.939	3	1.313	.974	.405
	Within Groups	390.935	290	1.348		
	Total	394.874	293			
Brand name	Between Groups	32.930	3	10.977	6.544	.000
	Within Groups	486.444	290	1.677		
	Total	519.374	293			
Attractive showroom	Between Groups	47.564	3	15.855	12.980	.000
	Within Groups	354.218	290	1.221		
	Total	401.782	293			

The factors, whose differences in importance given to factors that affect Satisfaction

Levels between rural and urban customers can be accounted successfully and significantly by differences in Educational Qualification, are Maintenance cost (0.000), Brand Name (0.000), Design (0.001), and Attractive Showroom (0.000), Price (0.035).

- Independent Variable – Annual Income



Table 13: ANOVA – Satisfaction Level - Annual Income

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
Price	Between Groups	123.824	5	24.765	1.254	.284
	Within Groups	5629.523	285	19.753		
	Total	5753.347	290			
Mileage	Between Groups	21.486	5	4.297	2.996	.012
	Within Groups	404.428	282	1.434		
	Total	425.913	287			
Design	Between Groups	58.010	5	11.602	8.219	.000
	Within Groups	402.320	285	1.412		
	Total	460.330	290			
After sales service	Between Groups	22.884	5	4.577	2.972	.012
	Within Groups	434.227	282	1.540		
	Total	457.111	287			
Maintenance cost	Between Groups	53.439	5	10.688	6.407	.000
	Within Groups	475.455	285	1.668		
	Total	528.893	290			
Weight	Between Groups	9.373	5	1.875	.926	.464
	Within Groups	576.655	285	2.023		
	Total	586.027	290			
Advertisement campaign	Between Groups	18.905	5	3.781	2.879	.015
	Within Groups	374.257	285	1.313		
	Total	393.162	290			
Brand name	Between Groups	46.935	5	9.387	5.665	.000
	Within Groups	472.247	285	1.657		
	Total	519.182	290			
Attractive showroom	Between Groups	53.084	5	10.617	8.687	.000
	Within Groups	348.304	285	1.222		
	Total	401.388	290			

The factors, which have differences in importance given to affect Satisfaction Levels between rural and urban customers, successfully and significantly being accounted by differences in Annual Income levels, are Maintenance cost (0.000), Brand Name (0.000), Design (0.000), and Attractive Showroom (0.000), Mileage(0.012), After Sales Service (0.012), Advertisement Campaigns (0.015).

Hence, Maintenance cost, Brand Name, Design, and Attractive Showroom, being common to both, are significant in affecting both the Purchase decision and the Satisfaction when it comes to Urban customers.

Maintenance cost, and Design are 2 factors which seems to affect both the Purchase Intention, and the Satisfaction Levels of both Rural and Urban Customers.

1. T-TEST: A T-test is a type of statistical test that is used to compare the means of two groups. It is one of the most widely used statistical hypothesis tests in pain studies. T-tests can be divided into two types. There is the independent t-test, which can be used when the two groups under comparison are independent of each other, and the paired t-test, which can be used when the two groups under comparison are dependent on each other. Here, we will be performing the paired T-Test, as we need to compare the data of rural and urban consumers.



The dataset pertaining to factors affecting Consumer Purchase Intention was taken and performed a paired sample T-Test, with the Dependent parameters being Brand Name, and Weight, as these were the prominent factors chosen from Factor Analysis, and the Independent variables being Educational Qualification, Annual Income as these 2 demographics had the highest difference between rural and urban consumers. Before performing the test, the Null Hypothesis and Alternate Hypothesis were formed for each of the 6 pairs.

H₀: Independent Variable (Educational Qualification/Annual Income/ Occupation) has no significant influence on the role played by the dependent variable (Brand Name/Weight), in affecting the purchase decision

H₁: Independent Variable (Educational Qualification/Annual Income/ Occupation) has a significant influence on the role played by the dependent variable (Brand Name/Weight) in affecting the purchase decision.

Table 14: T-Test – Purchase decision

PAIR NUMBER	INDEPENDENT VARIABLE - DEPENDENT VARIABLE	SIGNIFICANCE (2-tailed)
1	Education – Brand name	0.000
2	Education – Weight	0.000
3	Annual Income – Brand name	0.000
4	Annual Income - Weight	0.005

Based on the output of T-Test, it is found that the Null Hypothesis is rejected for all the 3 pairs (1, 2, 3, and 4), and hence alternate hypothesis is accepted. Since the significance level is less than 0.01, the relationship is Highly Significant.

Next, T-Test was done on the dataset pertaining to factors affecting Satisfaction. Here, the independent variables are again Education, and Annual Income, for the same reason stated before, and the Dependent Variables are Price, and Weight, as these were the prominent factors taken from Factor Analysis of data regarding Satisfaction affecting Factors. Here the Null and Alternate Hypotheses are as follows:

H₀: Independent Variable (Educational Qualification/Annual Income) has no significant influence on the role played by the dependent variable (Price/Weight) in affecting Satisfaction

H₁: Independent Variable (Educational Qualification/Annual Income) has a significant influence on the role played by the dependent variable (Price/Weight) in affecting Satisfaction

Table 15: T- Test - Satisfaction

PAIR NUMBER	INDEPENDENT – DEPENDENT PAIR	SIGNIFICANCE(2- TAILED)
Pair 1	Education - price	0.000
Pair 2	Education - weight	0.000
Pair 3	Annual income - price	0.010
Pair 4	Annual income - weight	0.661



Hence, from the results, it is clear that Null Hypothesis is rejected, and Alternate Hypothesis is accepted for pairs 1, and 2, as the significance level is less than 0.05, and in fact, the relationship between these pairs is highly significant, as the significance level is less than 0.001. For Pairs 3(0.010), and 4(0.661), the Null Hypothesis is accepted, and Alternate Hypothesis is rejected since the significance levels are greater than 0.05.

IMPLICATIONS:

The study mainly focused on 2 datasets Factors that have an influence on Purchase Decision of Consumers, and Factors that have an influence on the Satisfaction of consumers. If we consider the factors affecting purchase decision, 2 prominent factors have almost equal extraction values in Rural, and Urban areas. They are Brand Name (0.876 for Rural, and 0.814 for Urban), and Weight (0.849 for Rural, and 0.877 for urban). This implies that Brand Name and Weight affect the Purchase decision equally in rural and Urban areas, although the demographics of these areas are different. For satisfaction, the 2 factors with similar values, are Price (0.939 in Rural, and 0.740 in Urban), and Weight (0.840 for Rural, and 0.447 for Urban). This implies that Price and Weight of a 2 wheeler affect the Satisfaction of a customer equally in Rural and Urban areas irrespective of the difference in the demographics. After finding these prominent features, T-Test, and ANOVA were done to check the similarity between demographics and the prominent factors. ANOVA was done first with the Dependent Variables as Brand Name and Weight for Purchase Decision, and Price and Weight for Satisfaction. The Independent variables were Educational Qualification, and Annual Income as these were the demographics showing maximum variation between rural and urban consumers.

The ANOVA test showed that urban and rural consumers differ on Maintenance Cost (0.000), Price (0.001), Mileage (0.000), and Design (0.000), with respect to their purchase decisions. This difference is caused majorly by the differences in Educational Qualifications.

The ANOVA test showed that urban and rural consumers differ on Maintenance cost (0.000), Brand Name (0.000), Design (0.000), and Attractive Showroom (0.000), with respect to their purchase decisions. This difference is caused majorly by the differences in Annual Income.

The ANOVA test showed that urban and rural consumers differ on Maintenance cost (0.000), Brand Name (0.000), Design (0.000), and Attractive Showroom (0.000), with respect to their Satisfaction Levels. This difference is caused majorly by the differences in Educational Qualification.

The ANOVA test showed that urban and rural consumers differ on Maintenance cost (0.000), Brand Name (0.000), Design (0.000), and Attractive Showroom (0.000), with respect to their purchase decisions. This difference is caused majorly by the differences in Annual Income.

Paired T-Test was performed, to further study the impact of the selected factors and demographics. The results imply that the Educational Qualification of a consumer plays a Highly Significant role in deciding the importance given by that consumer to Brand Name and Weight of the bike, in affecting his purchase decision, while Annual Income plays a highly significant role in deciding the importance given by the consumer



to Brand Name of the bike, in affecting his purchase decision. While it comes to satisfaction, Educational Qualification plays a highly significant role, in deciding the importance given by the consumer to Price and Weight, in affecting his satisfaction.

CONCLUSION:

This study gives a few important insights, which 2 – wheeler companies can keep in mind, while developing their products, marketing campaigns, distribution channels, developing a customized product for the rural and urban population, etc.

The weight of the bike has been found out to be an important factor affecting both the purchase decision and satisfaction of both rural and urban consumers. Hence, it is important for companies to conduct surveys, events, etc. to get to know the ideal weight range that consumers are expecting. They can also manufacture the same models of different weights, to cover consumers of all segments, and thereby satisfy them.

The brand name is playing a significant role in affecting the purchase decision of both rural and urban consumers. Hence, manufacturers should not miss out on advertising their brand name effectively in urban areas.

Manufacturers who target the Rural Sections must focus more on aspects such as Maintenance Cost, Price, Mileage and Design, as these were the factors that affect both the Purchase Intention and the Satisfaction Level of the rural customers.

Similarly, manufacturers who target the Urban Sections must focus more on attributes such as Maintenance cost, Brand Name, Design, and Attractive Showroom, as these were the factors that affect both Purchase Intention and Satisfaction Level of Urban Customers.

Manufacturers who have both the Rural and Urban Segments can focus on Maintenance Cost, and Design, as these 2 factors affect both the Purchase Decision and Satisfaction Level of both Rural and Urban Customers.

Both Educational Qualification and Annual Income have a significant influence on the role played by both Brand Name and Weight in affecting the purchase decision. Educational Qualification has a significant influence on the role played by both Price and Weight in affecting Satisfaction, while Annual Income doesn't affect the relationship between Satisfaction, and both Price and Weight. Hence, overall Educational Qualification has a higher say and power than Annual Income in the buying process.

This study is done in a time when the entire Indian automobile industry is going through a rough patch, as mentioned before. Hence, the timing of this study makes these findings extremely helpful in deciding the attributes that manufacturers must concentrate on while deciding their 4Ps of marketing, for both rural and urban markets. The behavior mapped with the demographic causes also helps the companies develop strategies accordingly. Therefore, this study has a great impact on the modern 2 wheeler manufacturer in deciding the segmentation, targeting, and positioning strategies too.

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RAPE AND THE DELIBERATE SILENCE OF REPRESENTATION IN J. M. COETZEE'S NOVEL "DISGRACE"

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Abstract:

Coetzee's novel "Disgrace" prompts representation of the sexual victimization, racial discrimination, white guilt and black revenge, which compels woman to remain deliberately salient after sexual exploitation. In this novel, Coetzee examines colonialism and the way in which power works under colonialism. Coetzee has provided the representation of colonialism and apartheid system through helplessness rape and deliberate silence. In this period, women were considered nothing more than sex slaves. Thus, rape on colonised people was considered deed during colonialism. Same show of violence has been recorded in history during the apartheid era in South Africa. "**Rape**" and "**deliberate silence**" due to oppression was common. Coetzee in his novel "Disgrace" provides blueprint to same oppression of colonialized people. The researcher explored that "Rape and Deliberate Silence" was chartered in South Africa under colonialism and apartheid system. The investigator consider Lucy's marriage and refusal from submitting compliant a "**deliberate silence**" and this deliberate silence is the result of colonialism and apartheid system in South Africa.

Keywords: Rape Representation, Deliberate Silence, Disgrace

1.1: INTRODUCTION:

Post-colonial literature largely deals with the prevalence of colonial tendencies, like racism, apartheid, genocides, protest, displacement, exile, identity crisis, slavery, possession of land, mass executions of the natives and other subjects. Coetzee's novels can be studied as post-colonial novels because almost all the features of post-colonial literature are found in it. They sustain Coetzee's emphasis on ethnicity as an indisputable post-colonial area of dialogue. Though this study does not wholly concentrate on Coetzee as a post-colonial novelist, such an approach can offer substantial evidence in the critical study of his novels. J.M. Coetzee's "Booker Prize-winning novel" Disgrace (1999) is a powerful narrative offering an sharp critique of the socio-political disturbances, and ethnic tension of human condition stemmed from colonial rule and legacy of apartheid in South Africa. The Novel Disgrace flow heavy doses of racism, terrorism, sexual exploitation, fear and injustice. Published merely half a decade after the official end of the apartheid regime in South Africa, this novel



provides an ample understanding of the troubled country's social order after the chaotic aftermath of centuries of racial oppression. It is thus a bleak tale of human in post-apartheid South Africa exploring the diverse issues related to racial paranoia, white guilt, black revenge, the shift in political power and resultant problems out of divisive past and problematically shared future. Consequently, this novel is frequently read regarding its relation to modern South African violence and racism. Thus, there is a great wealth of variety in Coetzee's works, each element being unique, deserving a separate painstaking analysis. *Disgrace* provides an actual representation of an individual's struggle with their own personal flaws, defects and powerlessness. Besides, most importantly, the political, social and cultural conflict between the dominant and the dominated culture, the oppressor and the oppressed in contemporary postcolonial post-apartheid South Africa has shown in the novel, without giving clear picture and time. *Disgrace* is part of a transition in South African writing, from the fictional representation of difference among people based on the biological notions of blood and genes to notions of difference among people based on culture and social origin. The investigator in this novel explores the acceptance of rape victimization with deliberate silence.

1.2: STATEMENT OF THE RESEARCHER PROBLEM: The statement of research problem for the present study is as under:

Rape and the Deliberate Silence of Representation in J. M. Coetzee's Novel "Disgrace"

1.3: OBJECTIVES OF THE STUDY: The objectives of the present study are as under:

- 1) To analysis the sexual exploitation through "*Rape inhumanness*" as reflected in J. M. Coetzee's Novel "Disgrace".
- 2) To explore the prevalence of "*Deliberate Silence*" in context of J. M. Coetzee's Novel "Disgrace".

1.4: RATIONALE OF THE STUDY: Coetzee novel (*Disgrace*) involves the readers in the struggle of a rapist university professor "David Lurie" to defend his own and his daughter Lucy's honour in the new circumstances that have arisen in South Africa after the collapse of white supremacy. Here, he has been concerned with important moral issues including post-apartheid and racial relations in his native South Africa. The novel speaks volumes about various issues like rape, human rights, animal rights, unethicalness and social and political injustice. However, the investigator will explore the "**Rape**" and "**Deliberate Silence**" only in context of the novel J. M. Coetzee's Novel "Disgrace". According to the justification and procedure of the study is as under:



1.4.1 RAPE REPRESENTATION: Disgrace takes place in Cape Town in South Africa, which was considered the urban site of South Africa. In Cape Town the life is considered better as compared to the countryside. The Cape Town in the novel reflects the place, where the educated people live in the cities working in institutions, like the university where David is a professor, and the people living on the countryside spend their days trying to take care of their smallholdings and farms. The political situation and Apartheid in South Africa in “Disgrace” is reflected in utmost context. In the novel “Disgrace” David Lurie a white man is a professor. Actually, novel Disgrace unfolds with the story of fifty-two-year-old Professor “David Lurie” of the Cape Technical University, an ordinary, rather unhappy white man. The novel narrates “*For a man of his age, fifty-two, divorced, he has, to his mind, solved the problem of sex rather well*”. (J. M. Coetzee Disagree, 1999, P-1). Thus, the novel in its opening page discredits Professor David Lurie indirectly considering him “**sexually hunted person**”. Therefore, in novel “Disgrace”, disgrace starts with the inserting character of David Lurie. Professor David Lurie twice divorced with one grown-up daughter Lucy, who is obsessed with sex. Professor David Lurie is having sexual engagement with Muslim girl Suriya and Melanie. Both were sexually assaulted by Professor David Lurie. Melanie is not giving any desirable lift to Professor David. If it may be, it may be sympathetic weightage nothing else as Professor David is twice divorced. But, according to David Lurie, she had a silent consent because she did not resist her approach: “*She does not resist. All she does is averting herself: avert her lips, avert her eyes*” (J. M. Coetzee Disagree, 1999, P-25). The investigator can evaluate this justification into two dimensions: 1) it is the statement in which Professor David Lurie acknowledges his sexual relation with Melanie. 2) This justification argued by David Lurie indicates that Lurie is evaluating his own case on the previously established agency like approach made during white supremacy. Thus, investigator can infer that Professor “Lurie” is a “**self-acknowledged rapist**”. In addition to this Lurie called women as a “**Natural Bounty in man’s life**” and according to him sharing her beauty is duty of women. Thus, it is the juncture at which Lurie consider that sharing sex through the manners of **rapes** is not only justifiable but responsibility of women. Again the investigator can call Lurie as “Rapist ideology personality”. Besides in the novel, David revealed that:

“Because a woman’s beauty does not belong to her alone. It is part of the bounty she brings into the world. She has a duty to share it” (J. M. Coetzee Disagree, 1999, P-16).



The indication reveals that professor David Lurie considers rape like inhuman activities genuine. The novelist tried to justify the Lurie ideology in complex historical past and in the fractured social value in post-apartheid. J. M. Coetzee was conscious that the system of apartheid was a shameful institution, which is characterized by rapes, terrorism, barbarism and violence. Thus, the novel justify the **“Rape representation”** in apartheid system of South Africa. J. M. Coetzee considers his rape like a deed by saying that **“Rape is the result of right of desire”**. Melanie is a black sex slave and Lucy is a dominant white sex slave. Alexander (1997) explains that:

“Formerly conflated in the imaginary of the (white) imperial hetero-patriarch, the categories lesbian and prostitute now function together within Black hetero-patriarchy as outlaw, operating outside the boundaries of law and, therefore, poised to be disciplined and punished within it.”

After his resignation, Lurie decided to travel countryside to stay with his daughter Lucy, so as to get psychological relief. However, Lucy is living an enjoyable, professional and peaceful life at countryside by managing the business at his farmer. But misfortune never comes alone; it proves true in the life of Lurie, while reaching countryside David Lurie felt with more disgrace.

1.4.2 DELIBERATE SILENCE: The first rape victimization with a Muslim Girl Suraiya depicts **“deliberate silence”**. She has remained just a sex slave of Professor David Lurie nothing else, because, she never dare to report against David Lurie. However, when Professor David Lurie, established second illegal sexual relation with Melanie, she is not giving any desirable lift to Professor David. If it may be, it is sympathetic weightage nothing else, because Professor David is twice divorced. But, according to David Lurie, she had a silent consent because she did not resist her approach: *“She does not resist. All she does is avert herself: avert her lips, avert her eyes”* (J. M. Coetzee Disagree, 1999, P-25). Thus, this statement of the Lurie, indicates that Melanie sexual exploitation was long existing as reported in the novel she deliberately off the classes of Professor David Lurie two times. Remaining absence from the classes for the spell of two times is again **“deliberate silence”**. However, the deliberate silence of Melanie is not for a long period of time. When Professor David Lurie comes to establish heavy emotion and biological bonding with Melanie, she discloses the secret of sexual exploitation committed by Professor Lurie. Thus, the relationship starts off because of due to Lurie's extreme eagerness and devil-may-care attitude. However, Melanie reveals everything to her boyfriend and father, both of whom rudely challenge Lurie and chastise him. Melanie's boyfriend visits Lurie unexpectedly in his office one afternoon and threatens



him with disclosure of the illegal relationship. However, disgrace opens new window for David Lurie when Melanie's father approached David Lurie. Now, Lurie's relationship with Melanie epitomizes his brazen disregard for the law, societal rules, or ethics. In Melanie's father's words—

“We put our children in the hands of you people because we think we can trust you. If we can't trust the university, who can we trust? We never thought we were sending our daughter into a nest of vipers. No, Professor Lurie, you may be high and mighty and have all kinds of degrees, but if I was you I'd be very ashamed of myself”. (J. M. Coetzee Disagree, 1999, P-22)

Thus, these shameful words were disgraceful spells for Professor David Lurie. The disgraceful events of David Lurie extents more when Melanie's boyfriend, ransacked the house of David Lurie in Cape Town. Furthermore, Melanie even goes on to lodge a formal complaint against Lurie in which David Lurie was declared culprit for violating the Article 3: (the victimization or harassment on grounds of race, ethnic group, religion, gender, sexual preference, or physical disability); and Article 3.1: (the victimization or harassment of students by teachers). Indeed, Lurie has violated ethical code of conduct. Ultimately, after procedure trail, Lurie resigned and lost his social identity in a disgraced event. However, Lurie is justifying his unjustifiable behaviour where the research proved true the “Freudian psycho-analytical theory-Defence Mechanism (1905). The Justification made by David Lurie seems psychological and biological rather ethical. While justifying his behaviour David Lurie remarked *“Frankly, what you want from me is not a response but a confession. Well, I make no confession. I put forward a plea. As is my guilt. Guilty as charged. That is my plea. That is as far as I am willing to go”* (J. M. Coetzee Disagree, 1999, P-51).

Now David Luri is passing his days with Lucy. One day, two black men and a boy arrive on the farm and attack both father and daughter. They set him on fire and take turns brutally raping Lucy. Despite Lurie's insistence that she press charges against her attackers, she refuses and offers the following explanation:

“What if . . . what if that is the price one has to pay for staying on? Perhaps that is how they look at it; perhaps that is how I should look at it too.” They see me as owing something. They see themselves as debt collectors, tax collectors. Why should I be allowed to live here without paying? Perhaps that is what they tell themselves” (J. M. Coetzee Disagree, 1999, P-158)



The response of Lucy, “*They see themselves as debt collectors, tax collectors*”, reflects the “**deliberate silence**” of both father and mother. Ironically, Lurie is interested to submit a complaint against the black goons who made gang rape and vandalised the property of Lucy. But the reply of Lucy made Lurie compel to remain salient. The investigator considers “**deliberate silence**” of Lucy as his intellectual sign. On the one hand she is aware that she is paying debit of his rapist father and on the other hand she knew that justice system will be mere eye wash. In addition to this, the “**deliberate silence**” made by Lucy is to protect her from future threats. The novelist actually draws the attention of the stakeholders towards that the impact that the colonial encounter created was traumatic for both the ruler and the ruled. As we observe in the novel both black as well as whites get victimised. Neither the coloniser nor the colonised experienced happiness in this new not a single character remained in peaceful and prosperous life. The characters from rapist ideology (David Luri) to angle ideology (Lucy) were assaulted. The intellectual charter, Lucy despite being innocent was raped in the novel. The reason behind this ideology was the dark rule operated in South Africa. The sexual episodes of Melanie and Lucy into silent victim and sexual tool, however painful and humiliating, do not deny these two women’s right to a new South African identity. In commenting on Coetzee’s characterization of female characters in his novels, Cooper, Pamela, asserts that through all of Coetzee’s books, “*the potency of women is often bound up with their mysteriousness; their strength depends on their unread ability*”.

1.5: CONCLUSION:

Coetzee, very sympathetically, brings out the trauma that the oppressed go through in such a situation. Disgrace explores the post-apartheid climate in South Africa. Lucy comprehends the post-apartheid violence very visibly. The decision of Lucy to live on the farm emphasizes her bond with the land of South Africa. Lucy’s child will be the child of new South Africa. The whites and the blacks have to live together in South Africa. The novel gives a call to allow the natives to be love with their land so that they do not demonstrate antagonism towards the whites and the whites also accept their share on the land of Africa. The mischief in them surfaces without any restraint depicts their “**deliberate silence**” for which they became habitual for giving them safeguard. These men have absolutely possessed no human heart for the people whom they have colonised. They deduce that the native men and women are uncouth, uncivilised and hence they ought to be treated in a violent manner. Women were considered nothing more than sex slaves. Thus, Rape on colonised people was considered deed in South Africa. Same show of violence has been recorded in



history during the apartheid era in South Africa. Rape and “*deliberate silence*” due to oppression was common. Coetzee in his novel “Disgrace” provides blueprint to same oppression of colonialized people. The researcher concluded that Rape and Deliberate silence was chartered in South Africa during colonialism and apartheid system. The investigator consider Lucy’s marriage and refusal from submitting compliant a “*deliberate silence*” and this deliberate silence is the result of colonialism and apartheid system in South Africa.

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NEW FORM OF SOVEREIGNTY AND THE RISE OF MULTITUDE: MICHAEL HARDT AND MICHAEL NEGRI

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Abstract:

This article discusses the concept of biopolitics as understood by Michael Hardt and Antonio Negri, mainly derived and developed from the analysis of three of their seminal works *Empire* (2000), *The Multitude: War and Democracy in the Age of Empire* (2004) and *Commonwealth* (2009). It tries to analyze how these thinkers by contrasting and comparing the functioning of 'Empirical Sovereignty' with Hobbes's concept of *Leviathan* point out that the new form of sovereignty tries to capture the massive demography and the population. It tries to operate across the world population as if it forms the absolute cosmic order. It has no centre and outside. It has observed world as a single entity irrespective of borders, nation-state, tradition-culture and rules. They understood Bio politics as not a overlapping of rules and "exception" but in fact disappearance of border between economics and politics, production and reproduction. The transaction between the political, the social, the economics and the cultural give rise to Biopolitical production. In this new regime the victimization and exploitation remain the same as before but in different forms. But, the emergence of "Multitude" in opposition to imperial sovereignty, gives high hopes and aspirations for egalitarian forms of life and autonomous social relation.

Key word: Empire, Multitudes, cognitive Capitalism, immaterial labor, biopower, biopolitics, sovereignty, governmentality etc.

Introduction

In this paper I try to locate this debate alongside Hardt and Negri and try to understand the development of the new global-capital resonating itself in the garb of 'Empire' amongst world population. They recognise that since 1970s decisive change in the mode of production has occurred, where paradigm of industrial capitalism has been increasingly replaced by 'cognitive capitalism'. This form of capitalism is characterised by the informatised, networked and globalised production process. This form of capitalism uses language, creativity, knowledge, and emotion as the source of production and reproduction within the society. The emotional and creative characteristics as a capital production



are on the other hand used to produce capital. Desires are being taken to trade and successively being controlled by the capital nexus, taking into account, to satisfy the requirement of the people. It is really difficult to maintain the division between Individual and collective, intellectual and physical labour. Therefore, this new forms of socialized mode of production what they call as an "Immaterial labor".

The concept of Bio politics has received a colossal responses and remarkable reception in social sciences, humanities and in various other disciplinary and inter-disciplinary cultures across the academic circle and else-where in recent times. Basically, it draws its idea originating in Foucault's governance of sexuality, hygiene and mental-illness in eighteenth-century Europe. However, encroaching itself into understanding of developments taking place virtually in all areas of management of life, from immigration to economics regulation and development of biotechnology to neuroscience. Now, its footprint is felt in diverse discipline such as Philosophy, Economics, Aesthetics, law, History and so on.

In recent years, the development of research on Bio politics has dominated because of two major reasons. The one aspect appear to be the increasing and sophisticated theoretical and Philosophical engagement with the government of life and the relation between the two, which we find in Foucault's elaboration of some of the key concepts on the one hand and the intriguing responses it receives from recent scholar like Giorgio Agemben, Antonio Negri, Roberto Espesito and Paulo Virno. These recent scholars very meticulously try to imagine some of basic questions like: How to understood bio politics, how is it different from the classical technologies of power, Sovereignty in particular, is biopolitics distinctly a modern phenomenon and so on. The other aspect tends to be more rigorous, empirically rich investigations carried out by various interdisciplinary fields. They try to capture a concrete aspect of the governmentality of life from their own vantage point, and this range of discipline in recent days include technology, history of science, cultural anthropology, gender studies, international relations and so on.

1.1 Foucault Understands of 'Anatomo-Bio-Politics'

Foucault in his seminal work, *The History Of Sexuality* (1980) try to explain: The will to knowledge try to problematised Bio politics as disciplinary formation and try to compare the classical form of sovereign and the 'anatomo-bio-politics' emerging in 18th century by analyzing the methodologies used by this two form to regulate life. The former exercises its power in deductive



manner as "right to take life", and the latter try to manage "administration of bodies" vis-a vis "management of life".

Foucault describes power in "*Will to Knowledge*" as: "[A] power that exerts a positive influence on life, which endeavors to administer, optimize, and multiply it, subjecting it to precise controls and comprehensive regulations." Now, let us understand how bio power develops and, in a way, directs bio politics as a mechanism to function in a society, to what Foucault describe as "a very profound transformation of [the] mechanism of power" of the western classic age. Bio politics can be understood as a political rationality which takes the administration of life and populations as its subject: "to ensure, sustain, and multiply life, to put this life in order."

In the same breadth Foucault asserts that: "If there was no resistance, there would be no power relations. Because it will simply be a matter of obedience So, resistance comes first, and the resistance remain superior to the forces of the process; power relation obliged to change with the resistance. So, I think resistance is the main words, the key word, in this dynamic." He thinks that the real power operation start functioning only when there is a resistance. Otherwise, power becomes a static idea which stays inactive without resistance. But what I observed is that obedience in the first place assume power as its counterpart.

Power lies within the people, for; it is they who agree to submit power to someone to rule over them. It is they who unanimously agree to stay at ruler behest, obey him. Obedience is directly related to power, obeying whom? And in what circumstances? And therefore, it follows that power always assume obedience as its integral part. And hence, it forms one of the primary sources of power relations. Love does not need obedient agent, because to obey is to follow a code of conduct which is practiced and followed by everyone, but framed by powerful to meet their ends. Rule need rationality, and since powerful has an authority to frame it, therefore, it is incumbent on them to frame it taking into consideration the subaltern and oppressed who were thrown at the margin; but taking into account anecdotal evidences we have observed that they have failed drastically, not mindful at all. On the other hand, it gives possibility for people to unite and destroy the establishment in its worst form. Rules were made to place life in order and harmony but in fact it becomes the structurally violent mechanism to exploit people within the preview of organised circumstances, which endeavor to administer, organize, protect, multiply it, and ensuring security. In fact, subjecting them for precise control



and comprehensive regulation. On, the other, generating a secure feeling in the mind of the population and individual.

1.2 Revelation of "Biopolitical Production"

Liberalism first became a distinct political movement during the Age of Enlightenment, when it became popular among philosophers and economists in the Western world. Liberalism rejected the prevailing social and political norms of hereditary privilege, state religion, absolute monarchy and the divine right of kings. It all started with liberalism, people on the other hand received it as a blessing and accepted it as an alternate to the sovereign authority but it turned out to be the continuation of the same, of course in different incarnation.

Hardt and Negri in their co-written works, *Empire* (2000) and *Multitude: War And Democracy In The Age Of Empire* (2004), in fact evaluating all other regulatory factors and considers empire of global capital nexus as the sovereign authority where all states and countries are integrated and connected whereby making this neo-sovereign authority or system a self-referential and complimentary decision-making unit establishing a qualitatively different system of rule. Hardt and Negri see the economic dimension of power as the new stage of global capital production and power.

Agamben understood Bio politics as a catastrophic history which marked the Nazi extermination camps. Whereas literary theorist Michael Hardt and Philosopher Antonio Negri attempted to treat this idea differently merging it with Capitalism, economics, politics and production at large. They understood Bio politics as not an overlapping of rules and "exception" but in fact disappearance of border between economics and politics, production and reproduction. However, increasing globalization of the economy has subsumed the world as a single entity irrespective of borders, nation-state, tradition-culture and rules. They try to analyze the comprehensive account of the contemporary process of rule and the possibilities of political resistance using variant theories and references.

The perspective of "Biopolitical production" has rejuvenated various debates and discussion which helped the anti-globalization movement receive a monumental boost at the beginning of the new millennium, as many activists and scholars were looking for a new theoretical method using which to analyze international politics and restructuring of contemporary capitalism. In this rendition Hardt and Negri's works play a major role and contribute to a large network of research in the journal "Multitude" co-authored by Judith Revel, Maurizio Lazzarato, and Paolo Virno.



What follows is that in *Empire* (2000) Hardt and Nergi try to understand a new world order which is characterized by the emerging nexus of new economic structure with Juridico-political arrangements. The world Empire here connotes for "a new form of sovereignty" which is somewhat similar to Hobbes concept of "Leviathan". Basically, the idea of new form of sovereignty tries to capture the massive demography and the population falls under it. It tries to operate across the world population as if it forms the absolute cosmic order. Faced with the trans and supranational organizations, such as united nations or the European union, and the growing importance of nongovernmental organizations, the regulatory power and the authority are losing their grounds. They also observe the shift from the traditional policy which is informed by the constitutional guarantees to the forms of interventions that follows the logic of police-state. This major intervention function as the "state of exception" and operates in the name of higher ethical principles. Therefore, in relation to the previous sovereign power this new imperial sovereignty has no center and knows no outside. This new imperial sovereign has a self-referential network and it also consists of complementary decision-making unit that pretend to be designing qualitative system of rule, which appear to be a people's regulatory principles but tend to serve colossal economical enterprise. This thesis does not refer solely to the present global market but also to the previously unreached depth of capital socialization which does not include solely the man power but also intellect, production of bodies, and affects.

1.3 New Avenues of Exploitation and Manipulation.

There is nothing much change so far as the exploitation is concerned, this is because the mode of exerting exploitation may have taken a different form but the victimization remains the same even today. New forms are originating recurrently with different well thought strategical endeavour, systematically carried out which involve intellect and knowledge at its advantage, so as to make it so abstract to transcend the understanding capacity of oppressed and marginalised who were time in memorial kept in isolation institutionally, linguistically, logically with which they are in constant confrontation in their everyday life; which is, by the way, the irony of modern times. On the one hand, we observe that this new emerging world order claim to be feeding the protection and security to its fellow citizens-countrymen but on the other hand this new form of world order tries to capture the lives of people by using this vigilantism idea, not as it is, but in the form of asylum, lock-ups, detention, guardhouse etc. to torture, torment, maltreat, persecute and so on. This is to exert enduring pain on fellow citizens in order to maintain the equilibrium between the people and the state. There are other new avenues of exploitation



and the best example Foucault and Agamben used is Nazi's "concentration camp" or gas chamber etc.

There is yet an evolution of new form of energies, for instance, the effective and intellectual capacity of the people used by the capital to exploit and manipulate people. Empire, for instance, stand for the limitless mobilization of the individual and collective power in order to generate surplus values, where all energies and sphere of lives were invested and subordinated to law of accumulation. They also try to encash emotion, language, human subjective creativity and in fact our entire creation is invested for economical mileage and its control.

Following the Foucault line of argument, Hardt and Negri argues that the transaction between the political, the social, the economics and the cultural give rise to Biopolitical production, wherein increasingly overlap and invest each other for accumulation and benefits. Biopower they term as the "the real subsumption of society under capital". Interesting, they try to borrow the argument of French Philosopher Gilles Deleuze, where he argues that the postwar society has increasingly transformed themselves from "society of discipline" to "society of control." He also argues that the exercise of power is less through disciplinary institution like school, hospital and factories than through mobile and flexible network of existence. Following Deluze, they try to argue that Biopolitics has encroached "throughout the depth of consciousness and body of population" and by doing so participating and operating the entire social relation at large.

1.4 Juridico-Political Regulations as "Autopoietic Machine".

The creation of life is no longer something both limited to the realm of reproduction and subordinate to the labor process, to the contrary, life now determines production itself. Subsequently, the distinction between production and reproduction dissolved overtime. If biopower for one time stood for the reproduction of the relation between production and serve to secure and preserve them, today it is the integral component of production. Hardt and Negri explains relation between production and reproduction as: "Production becomes indistinguishable from reproduction; productive forces merge with relations of production; constant capital tends to be constituted and represented within variable capital, in the brain, and cooperation of productive subjects. Social subject is at the same time producers and products of this unitary machine."

They also try to draw our attention on relation between nature and culture so as to find the neo transaction policy between the two and how they operate



between each other. Now, in doing so they try to understand life as the object of technological intervention and nature as the subject to capital or capital itself. Biological resources, by definition fall under the preview of juridico-political regulation, while natural on the other hand is the susceptible to commercial or potential industrial purpose. Comparing the two stages of Industrial revolution, we find that earlier we got machine-made consumer goods, machine-made machine but now we generate a machine-made raw material, hence, followed by machine-made cultures and nature.

They term this process as "autopoietic machine" which is essentially a self-sufficient system that is capable of producing immanent justification and rationale for itself. This imperial order not only rule subject but it also generates them, same is applicable to nature as well. Therefore, in these circumstances it is very difficult to identify binaries, such as basis/ superstructure, material reality/ideological veil, and being/consciousness. It no longer holds its ground.

1.5 Bio-Political Vigilantism and the Rise of Multitude

Power can achieve the effective command over life of the population only when it becomes an integral or vital function where every individual endorse it, takes part in it and reactivates it according to his/her own accord. The different modes of vigilantism and security promised to assure protection generally flows as a rule inside the society and ultimately capture the consciousness of the people making them slave of that rule and therefore becoming their daily habits and finally making them succumb to it. Generally, we understand power as something used in the political arena to coerce or exert power over others, but power can also be influential, these powers have a different forms of manifestation, it influence people through different popular activities which are loud in the society and somewhere cherished by all consciously or unconsciously.

They also come up with a revolutionary hope with the emergence of "Multitude". Multitude is a term for a group of people who cannot be classed under any other distinct category, except for their shared fact of existence. It was first used by Machiavelli as a purely political concept and later reiterated by Spinoza. It also stands for the heterogeneous and creative whole of actors who move within power relation without invoking any higher authority or any underlying identity except existence.

Empire, as a single authority also creates a space for liberation and potential for revolution within its power structure than the modern regime of power does. In response to imperial sovereignty, the emergence of "Multitude" gives high hopes and aspire for egalitarian forms of life and autonomous social relation without any kind of political representation of the people, nations or class



structures. In this context, exploited and subjugated gathers in one accord in opposition to empire without invoking any mediation, whatsoever. However, in all-embracing and boundless system of rule, the emerging new Multitude in opposition, isolate themselves from exploitation and victimization, creating a new world order without any higher authority or underlying identity.

1.6 The Paradox within Empire

The paradox, therefore, remain is that the same force and tendencies remain to preserve the system of rule, ineluctably generate a similar power to annihilate it. There is an increasing possibility for a plural multitude which have invested itself as a production or as a creative subjectivity in the making of globalized empire has a potential and capability to rejuvenate as a different countervailing force. It uses the same competence, energy and the forms of interaction which was used to preserve empire, to create a living alternative that grows within empire, which unite different social resistance and transformative force to create the possibility of rebellion, dissent in order to promote a beautiful world around. The heterogeneous potential which flows from the repository of empire in the form of transformative Biopolitics leading itself to rescue from the conundrum which monopolized it, because it finds itself as the result of lively and creative forces within the structure and hence give rise to the new possibility of ontology. Which is not the case with Biopower because it observes and regulates thing from outside. Therefore, the militancy of Multitude finds Biopolitics as a source and method which erect from within, being a part of it, otherwise, the leviathan which stand outside of the system and dictate the insider.

Conclusion

Like Hardt and Nergi, Agamben views liberalism as a totalized power machine, willing and able to dominate the world and reduce its opponent to docile 'subject'. Thus, Agamben's *Homo Sacer*(1998), tells the story of liberal power through an analogy with the concentration camp. Now, in this rendition, the declaration of a war on terror by the United States produce a global and permanent state of exception -the instantiation of Schmitt's sovereign power, suspending all the rules. In Agamben's words Bush is attempting to produce a situation in which emergency becomes the rule, and the very distinction between the rule and the very distinction between peace and war becomes impossible. The point about such practices, however is, precisely that states do not broadcast them, in fact they are kept out of the spotlight as much as possible and why it will be? If it is manufactured by the state itself. The Obama's administration's expansion of drone attack follows precisely this trajectory: The practice is downplayed and the debate is kept at bay through the insistence that



the attack constitute the minimal part of the general approach to the use of force. Thus, the policing war narratives present this practices as precisely 'exceptional' while the reminder of the narratives constructs the use of military force as part of 'normal' politics, the everyday mundane necessity of upholding order and pursuing disorderly element be they "criminal" or "terrorist" Power in Agamben account, thus remain absolute confined in the hand of a global sovereign.

Multitude in a way tries to construe a condition within the Empire, which eventually give rise to the resistance. Resistance from the exploitation which they have to face within the global economic framework. The new form of production is what define modern society, and to procure it we need a new human creativity, language, activity, intellect, emotion for the investment, all the more a new culture and discipline is being established. By using the same human capacity and cognitive power the subdued subject within the capital finds a way out to liberation, the same human creativity generates an anti-capital force and try to bring the larger audience under it empathizing with their pain and agony to revolt and agitate against this force in order to assemble and formulate new structure where every citizen shares the minimal equal resources for progress. It crosses the boundary of capital cosmos, transcends it, mobilizes people, speak the necessity and hence try to break the fence. Being an insider, it generates a drive for resilience and hence the same force crosses outside to device a huge repository of human relation to destroy the very structure of so-called liberal capital economy.

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Q- FUZZY DERIVATION OF N FUZZY SOFT HOMOLOGICAL ON G-MODULES

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ABSTRACT:

In this paper, we define Q-fuzzy derivation of negative fuzzy soft (N-fuzzy soft) homology G-modules with respect to S-norm S and investigate some of their algebraic properties. Later we introduce some operations on it and finally we prove that the Union. direct sum homomorphic image and pre images of them are also N-fuzzy soft homology G-modules with respect to S-norm. Mathematics Subject Classification (2010): 33B10

1. INTRODUCTION:

The concept of soft set theory is introduced by Molodtsov to overcome uncertainties which cannot be dealt with by classical methods in many areas such as engineering, economics, medical science and social science. At present, works on the soft set theory . P.K.Maji at all [2] defined basic properties of soft set theory. Aktaş and Çağman [3] compared to soft sets to the related concepts of fuzzy sets and rough sets and introduced soft group and derived their basic properties. Sujoy Das and S.K. Samanta [4-6] studied soft real sets, soft real numbers, soft complex sets, soft complex numbers and soft metric. Soft linear spaces and soft norm on soft linear spaces are given and some of their properties are studied by Samanta, Das ve P.Majumdar [7]. In [8] Q. Sun, Z. Zang and J. Liu, introduced the definition of soft modules and constructed some basic properties of soft modules. Module theoretic approach is better suited to deal with deeper results in representation theory. Moreover, module theoretic approach gives more elegance to the theory. In particular, the G-module structure has been extensively used for the study of representations of finite groups. Group theory is now factored into two parts. First, there is a study of the structure of abstract groups. Second is the companion question: given a group G, how can we describe all the ways in which G may be embedded in a linear group $GL(V)$ This is the subject matter of representation theory [9,10,11]. Soon after the introduction of fuzzy set theory by L.A. Zadeh [12] in 1965, Rosenfield [13] initiated the fuzzification of algebraic structures. Recently, some researchers studied G-modules on fuzzy sets. As a continuation of these



works S. Fernandez [14] introduced fuzzy parallels of the notions of G-modules, group representations, reducibility, irreducibility and completely reducibility and observe, some of their basic properties. In [15] A.K.Sinho and K. Dewangan studied isomorphism theorems for fuzzy submodules of G-modules. Recently, many authors have studied some algebraic structures of soft set theory. [16,17,18,19,20] some interesting results in the theory of soft modules are still being explored currently. Moreover the theory of soft modules has not yet been studied. In this paper, we defined Q-fuzzy derivation of negative fuzzy soft (N-fuzzy soft) homology G-modules with respect to S-norm S and investigate some of their algebraic properties. Later we introduce some operations on it and finally we prove that the Union. direct sum homomorphic image and pre images of them are also N-fuzzy soft homology G-modules with respect to S-norm

SECTION -1

PRELIMINARIES

The following definitions and preliminaries are required in the sequel of our work and hence presented in brief. For details we refers to [2] throughout the paper Q, R, C will always be rational, real and complex numbers respectively.

Definition: 1 Let R be a ring. A commutative group $(M, +)$ is called a left R module or left module over R with respect to a mapping, $: R \times M \rightarrow M$

If for all $r, s \in R$ and $m, n \in M$

- (i) $r \cdot (m + n) = r \cdot m + r \cdot n$
- (ii) $r \cdot (s \cdot m) = (rs) \cdot m$
- (iii) $(r + s) \cdot m = r \cdot m + s \cdot m$

If R has an identify 1 and if $1 \cdot m = m$ for all $m \in M$, then M is called a unitary or unital left R-module. A right R-module can be defined in a similar fashion.

Definition 2: Let M be an R- module and N be a non- empty subset of M. Then V is called a sub module of M if V is a subgroup of M and for all $r \in R, a \in V$, we have $ra \in V$.

Definition 3: Let G be a finite group. A vector space M over a field K is called a G- module if for every $g \in G$ and $m \in M$, there exist a product (called the action of G on M)

$m \cdot g \in M$ Satisfying the following axioms;

- (i) $m \cdot G = m, \forall m \in M$ (G being the identity element in G),
- (ii) $m \cdot (g \cdot h) = (m \cdot g) \cdot h, \forall m \in M; g, h \in G$ and
- (iii) $(k_1 m_1 + k_2 m_2) \cdot g = k_1(m_1 \cdot g) + k_2(m_2 \cdot g), \forall m_1 m_2 \in M; g \in G; k_1 k_2 \in K$

Example: 4 Let $G = \{1, -1\}$ and $M = C$ then M is a vector space over R and under the actual addition and multiplication of real numbers we can show that M is a G-module.



Note-5: The operation $(m, g) \rightarrow m.g$ defined above may be called a right action of G on M and M may be said to be a right G -module. In a similar way, we can define left action and left G - module. We shall consider all G - modules as left G -sub modules.

Definition: 6 Let M be a G -module. A vector space V of M is a G -module if V is also a G - module under the same action of G . Thus V is G - submodule of G -module M if and only if V is sub module of M and V be a G - module.

Example: 7 Let P be the field of rational and $G = \{1, -1\}$ and $M = R$. Then M is a G - submodule over P . Now for each $r \notin P$ we get that $V = P(r)$ is a G -submodule of M .

Definition 8: Let M and V be G -modules. A mapping $f: M \rightarrow M$ is a G -module homomorphism if

- (i) $f(k_1m_1 + k_2m_2) = k_1f(m_1) + k_2f(m_2)$
- (ii) $f(gm) = gf(m)$, for all $m_1, m_2 \in M$ and k_1, k_2 and $g \in G$

Definition 9: Let X a non- empty sets. A negative fuzzy subset (N – fuzzy subset) A of X is a function $A: X \rightarrow [1, 0]$ denote by $[-1, 0]$ the set of all fuzzy subset of X .

Q – Fuzzy set:

Definition 10: Let $f: M \times Q \rightarrow V$. Let $A \in [-1, 0]^M$ and $B \in [-1, 0]^V$. For all $y \in V, q \in Q$ define $f(A) \in [-1, 0]^V$ and $f^{-1}(B) \in [-1, 0]^M$ as

$$f(A)(y, q) = \begin{cases} \max\{A(x, q)/x \in M, f(x) = y\} & \text{if } f^{-1}(x) \neq \emptyset \\ 0 & \text{if } f^{-1}(x) = \emptyset \end{cases}$$

Also for all $x \in M, f^{-1}(B)(x, q) = B(f(x, a))$

Definition 11: A s -norm S is a function. $S: [0, 1] \times [0, 1] \rightarrow [0, 1]$ having the following properties

- (S_1) : $S(x, 0) = x$ (Natural element)
- (S_2) : $S(x, y) \leq S(x, z)$ if $y \leq z$ (monotonically)
- (S_3) $S(x, y) = S(y, x)$ (Commutativity)
- (S_4) $S(x, s(y, z)) = S(s(x, y), z)$ Associativity for all $x, y, z \in [0, 1]$

Properties $(S_1), (S_2)$ and (S_3) given $S(1, 1) = S(1, 0) = 1, S(0, 0) = 0$. We say that S is idempotent if for all $x, \in [0, 1]$, we have $S(x, x) = x$.

Example: For all $x, y, \in [0, 1]$ the basic s -norm as

$$\begin{aligned} S_m(x, y) &= \max\{x, y\} \\ S_b(x, y) &= \min\{1, x + y\} \\ S_p(x, y) &= x + y - xy \\ S(x, y) &= \begin{cases} x & \text{if } y = 0 \\ y & \text{if } x = 0 \\ 1 & \text{other wise} \end{cases} \end{aligned}$$

Which are called standard Union, bounded sum, algebraic sum and drastic Union respectively we can see that $S_M(x, y) \leq S_P(x, y) \leq S_b(x, y) \leq S^*(x, y)$



Definitions:

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Define

$S_n(x_1, x_2, x_3, \dots, x_n) = S(x_i, S_{n-1}(x_1, x_2, \dots, x_{i-1}, x_{i+1}, \dots, x_n))$ for all $1 \leq i \leq n, n \geq 2, S_2 = S$. Also define $S_\alpha(x_1, x_2, x_3, \dots) = \lim_{n \rightarrow \infty} S(x_1, x_2, x_3, \dots, x_n)$.

Definition: 13 The Union of Q fuzzy subsets A_1 and A_2 in a set X over S -norm S we mean the Q fuzzy subset $A = A_1 \cup A_2$ in the set X such that for any $x \in X$ $A(x, q) = (A_1 \cup A_2)(x, q) = S(A_1(x, q), A_2(x, q))$

Definition: 14 Define the union of collection of Q fuzzy subset $\{A_1, A_2, A_3, \dots\}$ in a set X over S -norm S as Q – fuzzy subset U_{SAi} such that for any $x \in X$, $(U_{SAi})(x, q) = S_\alpha(A_1(x, q), A_2(x, q), \dots)$

Lemma 1: Let S be a s -norm. Then $S(S(x, y), S(w, z)) = S(S(x, w), S(y, z))$. For all $x, y, w, z \in [0, 1]$

SECTION: 2

NEGATIVE Q-FUZZY SOFT HOMOLOGICAL G-MODULES

Firstly, we define negative fuzzy soft homological G -module on M with respect to S -norm S .

Definition 15: Let G be a finite group and M be a G -module over K , Which is a subfield of C . then a negative fuzzy soft homology G -module on M under S -norm S is a Q fuzzy soft subset. $A: M \times Q \rightarrow [-1, 0]$ Such that

- (i) $A(ax + by, q) \leq S(A(x, q), A(y, q))$
- (ii) $A(m, q) \leq A(m, q)$ For all $a, b \in G$.

Denote by $NQFSHG(M)$ the set of all negative Q -fuzzy soft homology G -module on M under S -norm S

Example 2: Let $G = \{1, -1\}$ and $M = R^2$ is a Vector space over real field R . Then M is a G -module over R . Define $A: R^2 \rightarrow [-1, 0]$ by

$$A(x_1, x_2) = \begin{cases} (0, 0) & \text{if } (x_1, x_2) = (0, 0) \\ -0.32 & \text{if } (x_1, x_2) \neq (0, 0) \end{cases}$$

If C be a standard Union S -norm $S(a, b) = S_m(a, b) = \max\{a, b\}$ for all $a, b \in [-1, 0]$, then $A \in NQFSHG(M)$, In the following proposition, we investigate relationship between $NQFSHG(M)$ and G -submodule of M .

Proposition: 1 Let M be a G -Module over K and A be a Q - fuzzy soft set of M of $A \in NQFSHG(M)$ and S be idempotent S -norm, then $L(A, \alpha) = \{x \in M / A(x, q) \leq \alpha\}$ will be G -submodule of M .

Proof: If $L(A, \alpha) = \emptyset$, then nothing to Prove. Therefore, Suppose that $L(A, \alpha) = \emptyset$, and Let $x, y \in U(A, \alpha)$ and $a, b \in K$. Then

- (i) $A(x, q) \leq \alpha$ and $A(y, q) \leq \alpha$ and as $A \in NQFSHG(M)$, so

$$\begin{aligned}
 A(ax + by, q) &\leq S(A(x, q), A(y, q)) \\
 &\leq S(\alpha, \alpha) \\
 &= \alpha \quad \text{and}
 \end{aligned}$$

Then $A(ax + by, q) \leq \alpha$, So $ax + by \in L(A, \alpha)$.



(ii) If $g \in G$, then $A(gx, q) \leq A(x, q) \leq \alpha$ and then $x \in L(A, \alpha)$. Thus (i) and (ii) give us that $L(A; \alpha)$ is G -submodule of M

Corollary: Let $A \in \text{NQFSHG}(M)$, then $N = \{x/x \in M, A(x, q) = 0\}$ is a G -submodule of M .

Proof: In the above proposition set $\alpha = 0$. In the following propositions, we prove that the union and direct sum of all $\text{NQFSHG}(M)$ under S -Norm S are also $\text{NQFSHG}(M)$ under

S -norm S

Proposition: 2 The Union of any collection of $\text{NQFSHG}(M)$ is a $\text{NQFSHG}(M)$

Proof: Let $x, y \in M$ and $a, b \in k$. Then

$$(i) (\cup_{SAi})(ax + by, q) = S_{\alpha}(A_1(ax + by, q), A_2(ax + by, q) \dots \dots \dots)$$

$$\leq S_{\alpha}(S(A_1(x, q), A_1(y, q)), S(A_2(x, q), A_2(y, q)) \dots \dots \dots)$$

$$= S(S_{\alpha}(A_1(x, q), A_2(x, q) \dots \dots \dots), S_{\alpha}(A_1(y, q), A_2(y, q) \dots \dots \dots)) \\ = S(\cup_{SAi}(x, q), \cup_{SAi}(y, q)).$$

$$(ii) \text{ Let } g \in G. \text{ Then } (\cup_{SAi})(gx, q) = S_{\alpha}(A_1(gx, q), A_2(gx, q) \dots \dots \dots) \\ \leq S_{\alpha}(A_1(x, q), A_2(x, q) \dots \dots \dots) \\ = (\cup_{SAi})(x, q).$$

Thus $(\cup_{SAi}) \in \text{NQFSHG}(M)$.

Definition 16:

By the direct sum of Q – fuzzy soft sets $\{A_1, A_2, A_3 \dots \dots A_n\}$ over a s – norm S we mean the Q – fuzzy soft subset $A = \bigoplus_{i=1}^n A_i$ such that

$$A(x_1, x_2, x_3, \dots, x_n) = \left(\bigoplus_{i=1}^n A_i \right) (x_1, x_2, x_3, \dots, x_n)$$

$$= S_n(A_1(x_1, q), A_2(x_2, q) \dots \dots A_n(x_n, q)).$$

Proposition: 3 Let $(M, M_2, M_3, \dots, M_n)$ be a collection of G -submodules and $\bigoplus_{i=1}^n M_i$ be its direct sum of $A_i \in \text{NQFSHG}(M)$ then $A = \bigoplus_{i=1}^n A_i \in \text{NQFSHG}(M)$.

Proof: Let $x, y \in M, x = (x_1, x_2, x_3, \dots, x_n), y = (y_1, y_2, y_3, \dots, y_n)$ and $a, b \in k$ and $g \in G$. Then

$$(i) A(ax + by, q) = A(a(x_1, x_2, x_3, \dots, x_n) + b(y_1, y_2, y_3, \dots, y_n), q)$$

$$= A((ax_1, ax_2, ax_3, \dots, ax_n) + (by_1, by_2, by_3, \dots, by_n), q) \\ = A((ax_1 + by_1, ax_2 + by_2, \dots, ax_n + by_n), q) \\ = S_n(A_1(ax_1 + by_1, q), A_2(ax_2 + by_2, q) \dots \dots A_n(ax_n + by_n, q))$$

$$\leq S_n(S(A_1(x_1, q), A_2(y_1, q)), S(A_2(x_2, q), A_2(y_2, q)), S_n(A_n(x_n, q), A_n(y_n, q)))$$



$$\begin{aligned}
 &= \\
 &S(S_n(A_1(x_1, q), A_2(y_1, q)), S_n(A_2(x_2, q), A_2(y_2, q)), S_n(A_n(x_n, q), A_n(y_n, q))) \\
 &= S(A(x, q), A(y, q)) \\
 (ii) \quad &A(gx, q) = A(g(x_1, x_2, x_3, \dots, x_n), q) \\
 &= (A(gx_1, gx_2, gx_3, \dots, gx_n), q) \\
 &= A_n(A_1(x_1, q), A_2(x_2, q) \dots \dots \dots A_n(x_n, q)) \\
 &= A(x, q)
 \end{aligned}$$

Therefore $A \in \text{NQFSHG}(M)$.

In the following propositions we investigate $\text{NQFSHG}(M)$ under G module homomorphism.

Proposition: 4 Let $f: M \rightarrow V$ be a G module epimorphism of $A \in \text{NQFSHG}(M)$, then $f(A) \in \text{NQFSHG}(M)$.

Proof: Let $y_1, y_2 \in V$ and $a, b \in K$.

$$\begin{aligned}
 (i) \quad &f(A)(ay_1 + by_2, q) = \max\{A(ax_1 + bx_2, q)/x_1, x_2 \in M, f(ax_1) = ay_1, f(ax_2) = by_2\} \\
 &= \max\{A(ax_1 + bx_2)/x_1, x_2 \in M, af(x_1) = ay_1, bf(x_2) = by_2\} \\
 &\leq \max\{S(A(x_1, q), A(x_2, q))/x_1, x_2 \in M, f(x_1) = y_1, f(x_2) = y_2\} \\
 &= S(\max\{A(x_1, q)/f(x_1) = y_1\}, \max\{A(x_2, q)/f(x_2) = y_2\}) \\
 &= S\{f(A)(y_1, q), f(A)(y_2, q)\}.
 \end{aligned}$$

(ii) Let $y \in V$ and $g \in G$.

$$\begin{aligned}
 f(A)(gy, q) &= \max\{A(gx, q)/x \in M, f(gx) = gy\} \\
 &= \max\{A(gx, q)/x \in M, gf(x) = gy\} \\
 &\leq \max\{A(x, q)/x \in M, f(x) = y\} \\
 &= f(A)(y, q)
 \end{aligned}$$

Thus $f(A) \in \text{NQFSHG}(M)$.

Proposition: 5 Let $f: M \rightarrow V$ be a G module homomorphism of $B \in \text{NQFSHG}(M)$, then $f^{-1}(B) \in \text{NQFSHG}(M)$.

Proof: Let $x_1, x_2 \in M$ and $a, b \in K$. Then

$$\begin{aligned}
 (i) \quad &f^{-1}(B)(ax_1 + bx_2) = B(f(ax_1 + bx_2)) \\
 &= B(f(ax_1) + f(bx_2)) \\
 &= B(af(x_1) + bf(x_2)) \\
 &\leq S(Bf(x_1), Bf(x_2)) \\
 &= S(f^{-1}(B)(x_1), f^{-1}(B)(x_2))
 \end{aligned}$$

(ii) Let $x \in m$ and $g \in G$. Then

$$f^{-1}(B)(gx) = B(f(gx)) = B(gf(x)) \leq Bf(x) = f^{-1}(B)(x). \text{ Then } f^{-1}(B) \in \text{NQFSHG}(M)$$

Proposition: 6 Let M be a G module and V be a subset of M . Let



$$A(x) = \begin{cases} \alpha & \text{if } x \notin V \\ 0 & \text{if } x \in V \end{cases}$$

With $\alpha \in [-1, 0]$ and S be an idempotent s -norm then $A \in NQFSHG(M)$ if and only if V is a G -sub module of M

Proof: Let $A \in NQFSHG(M)$ we have that V is a submodule of M . Let $x, y \in V \subseteq M$ and $a, b \in K$.

$$\begin{aligned} \text{Now } A(ax + by, q) &\leq S(A(x, q), A(y, q)) \text{ then } ax + by \in V. \\ &= S(0, 0) \\ &= 0. \end{aligned}$$

$$\text{So } A(ax + by, q) = 0.$$

Also let $g \in G$ and then $A(gx, q) \leq A(x, q) = 0$. so $A(gx, q) = 0$ and $gx \in V$. Therefore V is a sub module of M and Since V be a subset of M so V will be a G -sub module of M .

Conversely, let V is a sub module of M and we prove that $A \in NQFSHG(M)$. suppose $a, b \in K$ and we investigate the following conditions:

(i) If $x, y \in V$, then $ax + by \in V$ and then

$$A(ax + by, q) = 0 \leq 0 = S(0, 0) = S(A(x, q), A(y, q)).$$

(ii) For any $x \in N$ and $y \notin N$ then $ax + by \notin V$ and so

$$\begin{aligned} A(ax + by, q) &= \alpha \leq \alpha = S(\alpha, 0) = S(0, \alpha) \\ &= S(A(x, q), A(y, q)) \end{aligned}$$

(iii) Let $x \notin V$ and $y \in V$ then $ax + by \notin V$ and then

$$\begin{aligned} A(ax + by, q) &= \alpha \leq \alpha = S(\alpha, 0), \\ &= S(A(x, q), A(y, q)). \end{aligned}$$

(iv) Finally, if $x, y \notin V$, $ax + by \notin V$ and so

$$\begin{aligned} A(ax + by, q) &\neq \alpha \leq \alpha = S(\alpha, \alpha) \\ &= S(A(x, q), A(y, q)). \end{aligned}$$

Therefore from (i)-(ii) we have that $A(ax + by, q) \leq S(A(x, q), A(y, q))$. Now let $x \in M$ and $g \in G$. Then we have

(i) If $x \in N$, then $gx \in N$ and then $A(gx, q) = 0 \leq A(x, q)$

(ii) $x \notin V$, then $gx \notin V$ and then $A(gx, q) \alpha = 0 \leq \alpha = A(x, q)$.

Therefore from (i) and (ii) we have that $A(gx, q) \leq A(x, q)$,

Thus $f(A) \in NQFSHG(M)$.

Corollary: Let M be an R -module and V be a subset of M . If $f: M \rightarrow \{-1, 0\}$ be the negative characteristic function as

$$A(x) = f(x) = \begin{cases} -1, & \text{if } x \notin V \\ 0, & \text{if } x \in V. \end{cases}$$

Then $A \in NQFSHG(M)$ if and only if V is a sub module of m



CONCLUSION:

Module theoretic approach is better suited to deal with deeper results in representation theory. Moreover, module theoretic approach gives more elegance to the theory. In particular, the G-module structure has been extensively used for the study of representations of finite groups.

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A STUDY ON THE AWARENESS OF THE DIFFERENT INVESTMENT AVENUES TOWARDS HOUSEHOLD'S SAVINGS AND BUDGETING IN THOOTHUKUDI DISTRICTS

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Abstract:

The study has made an attempt to find the awareness of different investment avenues towards household savings and budgeting. The study was confined to Thoothukudi district. Proportioned method of calculation was used to find sample size and the result was obtain in the study. A well-structured questionnaire was carried out on the assumption that there was certain key parameter such as family size, family income, savings, land holding and type of house. Similarly, the study has built hypothesis model with family income of the respondents and the awareness of investment household savings. The study has concluded that the investment in different avenues is mainly for getting reasonable return for their long-term investments.

Keyword: Awareness, Investment Avenues, Household Savings And Budgeting

Introduction

A Course in investments teaches how we can use our accumulated assets to earn a monetary return in exchange for waiting to spend those assets on consumption. Investments are the purchase of an asset to a produce a return. Before one can invest, however, one must accumulate some assets. This is done through the process of savings or spending less than our incomes. This simple truth applies to all financial entities, be they households, businesses, or units of government. Asset they are accumulated by saving may or may not earn a return. The classic miser who keeps money hidden in a Lumpy matter is not earning a return, save for insomnia. In some circumstances, it is even possible to invest more than one has saved by borrowing a portion of the amount to be invested. The overall return that an investor may realize depends upon a number of things. Among these are the amounts of money available for investment, the degree of risk that the investor is willing to take; the amount of immediate income that is needed; the degree of liquidity that it needed; the intelligence and knowledge that the investor possesses; and pure luck. The field of investments related with the parts of our money. Money and information are the basis and the first requirement is the availability of money or savings. But money is not enough, as investments are generally made on the



basis of information of the companies, instruments, industry and economy. But money and information flow to help making investment management.

Statement of the problem

Thoothukudi is a major port and industrial city. People dwelling in the city find it hard to earn income in this competitive environment. Middle class and upper middle class people are not left with any funds after meeting their routine family expenses. In order to protect and multiply the surplus funds, they wish to invest in various investment outlets available in Thoothukudi, as there are quite large number of investment avenues such as real estate, provident fund, gold, bank deposits, LIC, mutual funds etc.,

Objectives:

1. To find out the factors influencing investment decision on savings habits of households.
2. To assess the awareness towards investment opportunities on savings among the sample households in the study area.

Hypothesis of the study

- There is no significant relationship exists between the family size and family monthly income of the respondents
- There is no significant relationship exists between the family size and savings per month of the respondents
- There is no significant relationship exists between the family size and land holding of the respondents
- There is no significant relationship exists between the family income and type of house of the respondents
- There exists no relationship between the family income and awareness towards investment opportunities on savings and budgeting.

Methodology of the study

The present study is mainly based on the primary data and is behavioural in nature. However, the secondary data is also made use of, at places where it becomes necessary. The primary data is collected through structured schedule designed keeping in view the objectives of present research work. The relevant secondary data is gathered from the reports, books, journals, periodicals, magazines and websites. The data and the information collected with the help of a schedule are processed and analysed using SPSS software. The study is limited to Thoothukudi district only.

Review of Literature:

1. Murithi Suriya, Narayanan and Arivazhagan (2012)¹, in their study reveal that female investors dominate the investment market in India. According to their survey, majority of the investors are found to be considering two or more sources of information to make investment decisions. Most of the investors discuss with their family and friends before making an investment decision.
2. Geeth and Ramesh (2011)² have stated that there are a lot of investment choices and one must select the most appropriate one. The person dealing with the planning must know the various investment choices and how these can be chosen for the purpose of attaining the overall objectives. The details of making the investment



along with the various ways in which the investment has to be maintained and managed.

3. V.Sornaganesh and Karthikeyan (2014)³ in their study they reveal that there are a large number of investment avenues for savers, some of them are marketable and liquid while other are more risky and less safety. Risk is invariably presented in an every investment which should be faced and handled by the investors. The investor has to choose a better one in order to minimize the risk and maximize the returns.

Table 1: Demography Information

Family size	Particulars	No. of respondents	Percentage
	Below 3 members	122	29.8
Family size	3 – 5 members	229	55.9
	5 members and above	59	14.4
	Total	410	100.0
Family monthly income	Less than ₹. 6,000	12	2.9
	₹. 6001 - ₹. 12,000	97	23.7
	₹.12,001 - ₹. 18,000	98	23.9
	₹.18001 - ₹. 24,000	13	3.2
	Above ₹. 24,000	190	46.3
	Total	410	100.0
Savings	No savings	29	7.1
	Less than ₹.2,000	187	45.6
	₹.2,001 - ₹.3,000	126	30.7
	₹.3,001 - ₹.4,000	52	12.7
	Above ₹.5,000	16	3.9
	Total	410	100.0
Land Holding	Yes	279	68.1
	No	131	32.0
	Total	410	100.0
Types of House	Terraced	378	92.2
	Tiled	20	4.9
	Thatched	12	2.9
	Total	410	100.0

According to the survey, there are 410 respondents has selected and out of them 55.9 percent of the respondent's family size is between 3 to 5 members. Since their family monthly income is more than Rs. 25,000 their savings are up to Rs. 2,000. Majority of the respondents are possessing owned land and 92.2 percent of the respondents live in terraced house.



Table 2: Chi-square tests

Relationship	Test	Value	df	Significance	Conclusion
Relationship between the family size and family monthly income	Chi-Square	243.277	8	.000	Rejected
Relationship between family size and saving per month of the respondents.	Chi-Square	108.587	8	.000	Rejected
Relationship between family size and land holding of the respondents	Chi-Square	82.680	2	.000	Rejected
Relationship between family income and type of house of the respondents	Chi-Square	32.898	8	.000	Rejected

Since the calculated values of chi-square are more than the table values (5% significances), the null hypothesis has been rejected.

Table 3: Multiple regression (family income and investment)

R	R square	df	Significances
.855	.730	24	.000

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-5.611	3.455		-1.624	.105
Fixed Deposits	.452	.116	.173	3.887	.000
Recurring deposits	-2.642	.194	-.834	-13.651	.000
Savings Accounts	1.143	.261	-.301	-4.379	.000
PPF	-.307	.230	-.096	-1.336	.182
Others	1.243	.660	-.272	-1.884	.060
IPO	.732	.626	.172	1.170	.243
pension funds	-	.551	-.202	-1.884	.060



	1.038				
Income Scheme	2.847	.541	.508	5.258	.000
income cum growth	- 3.605	.650	-.264	-5.541	.000
Tax savings	2.742	1.109	.246	2.472	.014
Endowment	- 2.307	.623	-.333	-3.701	.000
Pension Scheme	- 1.540	.378	-.299	-4.077	.000
NSS	6.428	.492	1.356	13.063	.000
RD	-.459	.147	-.161	-3.111	.002
KVP	1.856	.465	.608	3.990	.000
postal insurances	-.830	.346	-.130	-2.399	.017
debentures	5.989	.616	.536	9.727	.000
Bonds	-.034	.216	-.010	-.155	.877
commodity	1.194	.576	.376	2.074	.039
forex. Investment	.386	.402	.129	.959	.338
Bonds	-.034	.216	-.010	-.155	.877
Land	- 2.456	.467	-.906	-5.255	.000
Building	-.668	.263	-.246	-2.545	.011
Gold	.660	.238	.196	2.777	.006
Others	- 1.258	.165	-.287	-7.602	.000

A multiple linear regression was calculated to predict family income based on their various types of investments. A significant equation was found ($F(24,385) = 43.411, p < .000$), with an R^2 of .713. Participants' predicted family income is equal to $-5.611 + 0.452 (IV_1) - 2.642 (IV_2) - 1.143 (IV_3) - .307 (IV_4) - 1.243 (IV_5) + 0.732 (IV_6) - 1.038 (IV_7) + 2.847 (IV_8) - 3.605 (IV_9) + 2.742 (IV_{10}) + 2.370 (IV_{11}) - 1.540 (IV_{12}) + 6.428 (IV_{13}) - 0.459 (IV_{14}) + 1.856 (IV_{15}) - 0.830 (IV_{16}) + 5.898 (IV_{17}) - 0.034 (IV_{18}) + 5.989 (IV_{19}) - 0.034 (IV_{20}) + 1.194 (IV_{21}) + 0.386 (IV_{22}) - 2.456 (IV_{23}) - 0.668 (IV_{24}) + 0.660 (IV_{24}) - 1.258 (IV_{25})$

where investment avenues is coded as 1 = fixed deposits, 2 = recurring deposits, 3 = savings accounts, 4 = PPF, 5 = others, 6 = IPO, 7 = pension funds, 8 = income scheme, 9 = income cum growth, 10 = tax savings, 11 = endowment, 12 = pension scheme, 13 = NSS, 14 = RD, 15 = KVP, 16 = postal insurances, 17 = debentures, 18 = bonds, 19 = commodity, 20 = forex. Investment, 21 = land, 22 = building, 23 = gold, 24 = others. Hence, fixed deposits and recurring deposits, endowment, PPF were significant predictors of family income



Conclusion:

Investment are important for the well – being of individuals as – well – as for the country's economic development. The investor aware about the various alternative investments available for their investment and the risk associated with them. They are feared to take the market-based investment. The study also reveals that only a smaller amount of money is invested for their future due to the rising cost of living in Thoothukudi district. In the current investment environment, the investor must learn and invest in the market-based investment for getting reasonable return for their long-term investments.

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A STUDY OF RURAL AND URBAN TEACHER'S ATTITUDE TOWARDS THEIR TEACHING PROFESSION

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Abstract:

Teachers are the effective and dominating factors among the ones contributing to educational improvements. In pursuance to same, Present study was intended to investigate the level of attitude of teachers towards their teaching profession. The study was carried in context of descriptive method. Teaching Attitude Inventory (TAI) developed by S. P. Ahluwalia (1998) was used for data collection. 400 respondents were selected by using random sampling technique with due representation of rural urban dichotomy. The collected data was statistically analysed by using inferential statistics. The results subsequently, indicate that locality seems insignificant impact on the level of teacher's attitude towards teaching profession.

Key words: Rural Teachers, Urban Teachers, Attitude Towards Teaching Profession.

1.1: INTRODUCTION:

Teaching is noble profession among all profession of world. Teachers hold valuable place in society with due respect and love. Teacher is the most paramount component of the education and the facilitator of cultural and scientific development of society. The main function of the teacher is to promote all-round development among children. However, teachers with unfavourable attitude towards their profession might develop concerns, stress and may yield adverse results in education system. It is the fundamental duty of the teacher to manage all positive and negative spells and simultaneous should show resilience while dealing with negative situation of his profession. The National Curriculum Framework (2005) remarked that "*A favourable attitude towards constructivist approach, on the part of the teacher will contribute towards the successful implementation of constructivist teaching in the classroom while an unfavourable attitude will hinder its application in classroom situations*". In Indian society, marginalised sections of people are



living, as a result diversified attitude have been observed while reacting single situation. A number of studies have been conducted to assess the influence of attitude towards teaching profession in relation to their locality, experience, gender and demographic profile. In regard to same, Devi (2005) found that there is insignificant impact of locality on teacher's attitude towards teaching. Mathai (1992) in his study emphasised that attitude towards profession and success in teaching are correlated to each other. In another study, Cornelius (2000) revealed that intelligence, attitude towards teaching and academic achievement of teacher trainee cast impression on their attitude towards teaching profession. Gynanduru and Kumar (2007) established that over achievers and average achievers possess more favourable attitude towards teaching in comparison to under achievers. Pushpam (2003) confirmed negative relationship between women teachers' attitude towards teaching and their locality. As mentioned above large number of studies has been conducted on teaching attitude. However, there may be hardly any study which will explore the attitude of teachers at elementary in union territory of Jammu and Kashmir. In pursuance to same, the investigator conducted a study on below mentioned research problem.

1.2: STATEMENT OF THE RESEARCH PROBLEM: The statement of the research problem for the present study is as under:

“A Study of Rural and Urban Teacher's Attitude Towards Their Teaching Profession”

1.3: OBJECTIVES OF THE STUDY: The objectives of the study are as under:

- 1) To analyse the rural and urban teachers attitude towards their profession at elementary level on below mentioned dimensions:
 - a) Attitude towards teaching profession
 - b) Attitude towards classroom teaching
 - c) Attitude towards child centred practices
 - d) Attitude towards educational process
 - e) Attitude towards pupils
 - f) Attitude towards teacher

1.4: HYPOTHESIS OF THE STUDY: The hypothesis for the present study is itemised as under:

- 1) There exists no significant difference between rural and urban teachers on their level of attitude towards teaching at elementary level on below mentioned dimensions:
 - a) Attitude towards teaching profession



- b) Attitude towards classroom teaching
- c) Attitude towards child centred practices
- d) Attitude towards educational process
- e) Attitude towards pupils
- f) Attitude towards teachers

1.5: OPERATIONALIZATION OF THE VARIABLES: The operationalization of the terms and variables are as under:

- 1) **Elementary teachers:** In the present study elementary teachers refers those respondents who are recruited as general line teachers by Service Selection Recruitment Board (SSRB) and are teaching in Middle Schools (MS) of selected area.
- 2) **Teacher's attitude towards teaching:** Teacher's attitude towards teaching in the present study refers the set of score obtained by the respondents on "Teachers Attitude Inventory" (TAI) developed by S.P. Ahluwalia (1998).

1.6: DELIMITATION OF THE STUDY: Keeping the budget and time constraints under consideration, the investigator delimited the present study as under:

- 1) The present study was delimited to Anantnag District of Union Territory of Jammu and Kashmir.
- 2) The study will be delimited to Middle Schools (MS) and teachers teaching in these schools

1.7: METHODOLOGY AND PROCEDURE: Keeping research feasibility under consideration, the investor found it suitable to use descriptive research design for the present study:

1.7.1: Sample: The representative sample of 400 rural and urban teachers were selected by using random sampling technique with below mentioned bifurcation:

Table 1.0: Showing the bifurcation of respondents for present study.

Category	Rural	Urban	
Teachers	100	100	
Teachers	100	100	Total 400
Total	200	200	

1.7.2: Sampling Technique: Whole sample for the present study was selected with the help of random sampling technique, with due representation of rural urban dichotomy.

1.7.3: Instrument Used: For measuring teachers attitude of teachers at elementary level, Teachers Attitude Scale (TAS) developed by S. P. Ahluwallia



(1998) was used. The scale consists of 90 based on Likert five point scale and consisting of below mentioned six sub scales:

- a) Attitude towards teaching profession
- b) Attitude towards classroom teaching
- c) Attitude towards child centred practices
- d) Attitude towards educational process
- e) Attitude towards pupils
- f) Attitude towards teachers

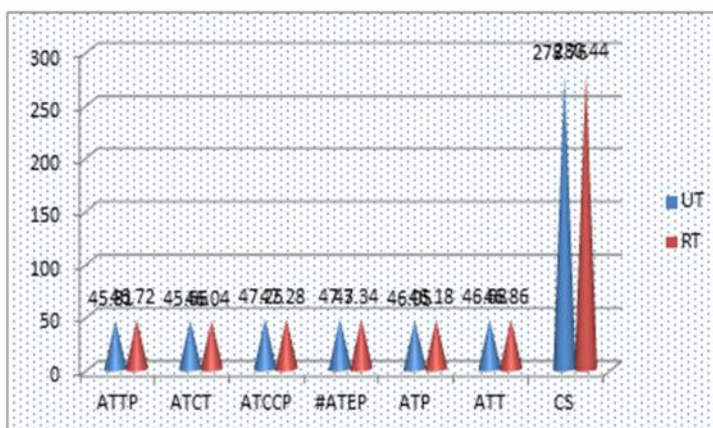
1.8: ANALYSIS OF THE DATA: The data has been analysed with the statistical treatment as under:

Table: 1.1: Showing significance difference between rural and urban teachers on various dimensions of attitude towards teaching profession. (N=200 each)

DTAI	Urban Teachers		Rural Teachers		't' value
	Mean	SD	Mean	SD	
ATTP	45.81	12.94	46.72	12.82	0.70#
ATCT	45.66	13.65	46.04	12.76	0.29#
ATCCP	47.25	12.62	47.28	12.01	0.28#
ATEP	47.30	13.24	47.34	12.44	0.31#
ATP	46.05	13.09	46.18	46.68	0.10#
ATT	46.68	13.25	46.86	12.58	0.13#
CS	278.76	76.61	280.44	72.32	0.22#

Index:

- ❖ DTAI= Dimensions of teachers attitude inventory
- ❖ ATP: Attitude towards Teaching profession
- ❖ ATCT: Attitude towards Classroom Teaching |
- ❖ ATCCP: Attitude towards Child centred practices
- ❖ ATEP: Attitude towards Educational Process
- ❖ ATP: Attitude towards Pupils
- ❖ ATT: Attitude towards Teachers
- ❖ CS= Composite score
- ❖ #= Insignificant at 0.01 level of confidence



Index:

- ❖ UT= Urban Teachers
- ❖ RT= Rural Teachers
- ❖ ATP: Attitude towards Teaching profession
- ❖ ATCT: Attitude towards Classroom Teaching
- ❖ ATCCP: Attitude towards Child centred practices
- ❖ ATEP: Attitude towards Educational Process
- ❖ ATP: Attitude towards Pupils
- ❖ ATT: Attitude towards Teachers
- ❖ CS= Composite score

Fig: 1.1: Showing graphical representation of rural and urban teachers on various dimensions of teacher attitude inventory.



1.9: INTERPRETATION OF THE DATA: The result enlisted in table 1.1 (*Please Refer Fig. 1.1*), gives significance of difference between the mean scores of rural and urban teachers in relation to their teaching attitude. While perceiving the first dimension “**Attitude towards teaching profession**” of Teaching Attitude Inventory (TAI), it has been observed that the two rural and urban teachers did not differ significantly with each other. The mean score of urban teachers (UT) was reported 45.81 while as the mean score of rural teachers (RT) was seen (46.72). The calculated ‘t’ value came out to be 0.70, which is insignificant at 0.01 level of confidence. Thus, from the results it can be inferred that rural and urban teachers differ insignificantly on their level of attitude towards their teaching profession. Coming towards the second dimension (**Attitude towards Classroom Teaching**) of Teaching Attitude Inventory (TAI), insignificant difference has been examined among rural and urban teachers. The inspection of the mean indicates insignificant difference indicates that the mean score of rural teachers (M=45.66) was observed and in case of urban teachers (M=46.04). When the mean significant difference has been analysed on the independent ‘t’ test, it has been discovered that the calculated ‘t’ value (t=0.29) is lower than the table value at 0.05 level of confidence. Thus, statistically insignificant difference has been observed among rural and urban teachers. From the results it can be inferred that impact of locality seems insignificant on the level of attitude of teachers in their classroom management. While exploring the (**rural and urban teachers**) on third dimension (**Attitude towards child centred practices**), results indicate again insignificant difference between two groups under discussion. The mean score of urban teachers was reported 47.25. However, in case of rural teachers it was reported 44.18. The calculated ‘t’ value (t=0.28) also indicated the insignificant difference between rural and urban teachers. The comparative analysis on the fourth dimension (**Attitude towards educational process**) of “Teaching Attitude Inventory (TAI)”, reveal that the two rural and urban teachers differ significantly with each other on this dimension also. The mean score of urban teachers was reported 49.79, while as in case of rural teachers it was observed 44.84. The calculated “t” value came out to be 0.31, which is lower than the table value at 0.01 level of confidence. Thus, results reveal that locality of the teachers seems insignificant difference on the level of teachers attitude towards educational process. The momentary look on the fifth dimension (**Attitude towards pupils**), gives mean significant difference between rural and urban teachers in relation to their attitude towards pupil. The obtained results reveal that there is insignificant difference between rural and teachers on their level of



attitude towards dealing their learners. The obtained results reveal that the mean score of urban teachers was 46.05, while as the mean score of their counterparts (rural teachers) was reported 46.18. The comparative analysis of the mean significance indicate the obtained 't' value ($t=0.13$) is significantly lower than the calculated value at 0.01 level of confidence. Thus, from the above results the investigator may infer that locality of the respondents seems insignificant impact on the level of attitude of teachers, while dealing with their learners. Coming towards the sixth dimension (**Attitude towards teachers**), it has been observed that there is again insignificant difference between rural and urban teachers. The comparative analysis on the basis of independent 't' test indicate that the mean score of urban teacher was reported 46.68. However, the mean score of rural teachers was obtained 46.86. Thus, the results indicate insignificant difference between urban and rural teachers. Besides, it was observed that both rural and urban teachers consider that there should be cohesive relation among colleges so that all stakeholders of the institution will collaborate towards effective teaching learning process. While analysing the rural and urban teachers on their "**Composite Score**", it has been observed that there is again insignificant difference between rural and urban teachers on their composite score. The numerical analysis indicate that the mean score of urban teachers was reported 278.76 which is significantly resembles the mean score of rural teachers ($M=280.44$). The comparative analysis of the independent 't' test indicate that there is insignificant difference between rural and urban teachers. The calculated 't' value ($t=0.22$) was reported insignificant at 0.01 level of confidence. Thus, from the above results it can be inferred that insignificant difference has been observed between rural and urban teachers on all dimension of their attitude towards teaching viz.; attitude towards teaching profession, attitude towards classroom teaching, attitude towards child centred practices, attitude towards educational process, attitude towards pupils, attitude towards teachers and composite score. Therefore, keeping in view, the above results it can be inferred that locality (Rural urban dichotomy) of the teachers has insignificant impact on the level of attitude of teachers towards their teaching profession. The results are carried out in consonance of the bunch of the researchers like; Elina, S. (2016), Young, P. S (2010), Misra, S. L. (2015), Yawer, A. K. (2018), Sandal, P. T. (2017). Hence, keeping the insignificant difference under consideration the below mentioned hypothesis has been accepted.



Hypothesis-IV: *There exists no significant difference between rural and urban teachers on their level of attitude towards teaching at elementary level on below mentioned dimensions: (Please Refer Item no. 1.4).*

- a) *Attitude towards teaching profession*
- b) *Attitude towards classroom teaching*
- c) *Attitude towards child centred practices*
- d) *Attitude towards educational process*
- e) *Attitude towards pupils*
- f) *Attitude towards teacher*

(Status: Accepted)

1.10: CONCLUSION OF THE STUDY: The study was planned to explore the level of attitude of teachers towards their teaching profession in relation to their rural urban dichotomy. In context to same, it was found that there exists insignificant impact of locality on the all dimension of their attitude towards teaching viz.; attitude towards teaching profession, attitude towards classroom teaching, attitude towards child centred practices, attitude towards educational process, attitude towards pupils, attitude towards teachers.

1.11: CONFLICT OF INTERESTS: Keeping the results of the present study under consideration, the investigators have not declared any conflict of interests.

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A STUDY OF RELATIONSHIP BETWEEN CAREER DECISION MAKING AND PARENTING STYLE AMONG ADOLESCENTS

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Abstract

Career choice is the biggest dilemma in anybody's life. At adolescence stage decision and selection of career is very crucial and every adolescent has to face this. Innumerable factors contribute while making a career choice. Parents who are the first guide of the child have predominant influence in career decision making process of adolescents. So the present study was conducted to find out the relationship between career decision making and parenting style of adolescents. A sample of 704 adolescents studying in 10th standard in Government Schools affiliated to Punjab School Education Board, Mohali was selected from Bathinda and Ludhiana district of Punjab, India for the present study. Random sampling technique was employed to collect the sample. Career Decision Making Scale (Singh, 2014) and Parenting Style Scale (developed by the researcher) were used to collect the data on these variables. Career Decision Making was taken at two dimensions i.e. career decidedness and career indecision and Parenting Style was taken at three dimensions i.e. authoritarian, permissive and authoritative parenting style. Product moment correlation was used to find out the relationship between the stated variables. The study revealed that career decidedness dimension is positively correlated with permissive and authoritative parenting style whereas it has negative relation with authoritarian parenting style. Career indecision dimension of career decision making has positive relationship with authoritarian parenting style and career indecision has no significant relationship with permissive and authoritative parenting style.

Keywords: Career Decision Making, Career Decidedness, Career Indecision, Parenting Style

INTRODUCTION

Adolescence age is marked with challenges and the major challenge at this stage is- selection of a life long career. Due to the complex and fluid character of the world of work, it becomes very challenging to decide the career. It involves becoming aware of the need to make a decision and going through a process of working on that decision (i.e. gathering information,



identifying options, evaluating options, selecting among options), making a decision and then taking action to implement that decision (Tiedman and O'Hara, 1963). Stoner (2011) defined "decision making is the process of identifying and selecting a course of action to solve a specific problem."

Career decisions are based on the interaction of maturity with regards to career, self-concept, social background, home, family environment and parenting style along with many other psychological and environmental factors. Parents which are the child's first teacher guide, advisor and counselor, their behavior towards the child's occupational aspirations influence the career decision making process of adolescents. Parenting style is one of the most studied approaches to understand the parental influence on human development. Carlo *et al.* (2007) defined parenting style "reflect parental control of parent-child relationships, in addition to represent emotional climate."

Researcher has taken only the three types of parenting style identified by the Baumrind (1967) for the present study:

1. **Authoritarian Parenting Style:** Authoritarian parents establish the rules and expect that children to follow them without exception. Children have little or no involvement in problem-solving challenges or obstacles. Instead, parents expect that children will follow all rules all the times.
2. **Authoritative Parenting Style:** Authoritative parents allow some exceptions to the rules established for the children. They often explain the children the reasons for the rules and they willingly consider the feelings of children while setting limits. Authoritative parents tend to use consequences instead of punishments to reinforce good behaviours and may be more willing than authoritarian parents to use reward systems and praise.
3. **Permissive Parenting Style:** Permissive parents don't offer much discipline. They are lenient and may only interfere when there is a serious problem. Permissive parents behave like a friend than like a parent. They encourage children to talk with them about their problems but may not discourage a lot of bad behaviours. They are high in nurturance but low in supervision, maturity demands, and bi-directional communication between parents and children.

Keeping in mind the importance of parents in career selection of adolescents, the present study was conducted to explore relationship between career decision making and parenting style among adolescents.

REVIEW OF RELATED LITERATURE

Onder et al. (2010) examined career decision-making pattern across parenting styles



and parental attachment levels among Turkish high school students. For this purpose, 382 (200 females; 182 males) Turkish high school students aged 14-18 were studied. Career Decision Inventory, The Parenting Style Inventory and The Inventory of Parent Attachment, as measures of career decision, parenting style and parental attachment levels, respectively were used to collect the data. One way ANOVA was performed to analyze the data. Results of the study demonstrated that children of more authoritative and authoritarian parents were found more decisive than the children of neglectful and indulgent parents. Furthermore, students who experienced a medium degree of attachment to their parents were found more decisive than the ones experiencing low or high degree of attachment. Therefore, the effects of parenting styles and parent attachment levels on career decision-making pattern have to be taken into consideration regarding to career development and career choice of adolescents.

Datu (2012) investigated personality traits and parenting style as predictive factors of career choice. 200 college students aged from 15 to 23 years of two private collegiate institutions in Metro Manila of Philippines were taken as sample. Parental Authority Questionnaire (PAQ) by Buri (1991) were used to measure the students' perception for parenting style. Descriptive predictive research design was employed the collected data. Correlational analysis revealed that authoritarian parenting style is significantly related to respondents' career choice. It is also concluded that degree of strictness and stringency of father would be evocative of better capability to choose a career path for the respondent. The more authoritarian the father is, the more chance that the child will have a definite career behaviour.

Cheung *et al.* (2014) studied career unreadiness in relation to anxiety and authoritarian parenting style among undergraduates. 229 undergraduates of two universities in Hong Kong China. The study revealed the result that career indecision consistently received a significant positive effect from authoritarian parenting.

Sovet & Metz (2014) studied parenting styles and career decision making among French and Korean adolescents. This study compared the relationship of parenting styles to the career decision-making of adolescents from a Western and an Eastern context. Specifically, 575 French high school students and 613 South Korean high school students completed a questionnaire assessing perceived parenting style, career decision-making difficulties, and career decision self-efficacy. The authoritarian parenting style was associated with higher scores on career decision self-efficacy and lower scores on a measure of career decision-making difficulties in the Korean sample while the authoritative parenting style was associated with higher scores on career decision self-efficacy and lower scores on a measure of career decision-making difficulties in



the French sample. Results showed significant effects for gender and parenting style on the career decision-making outcomes of both samples.

Tekke and Kurt (2014) studied affect of parenting style on vocational interest in childhood. Various theories on career development, growth stages and features of vocational interest ,family functioning and parental involvement were discussed in the study. It demonstrated the results that parenting behaviour and family functioning have strong influence on career development. The reviews also indicated that career educators need to involve in parental support to guide their children towards career progress. Moreover authoritative parenting style is demanding, consider ways in which their child rearing patterns and family interactions are not provocative. Authoritative parents can support learning strategies and motivate children to take challenging tasks.

Objective

To study the relationship between career decision making and parenting style among adolescents.

- (i) To study relationship between career decidedness and parenting style among adolescents
- (ii) To study relationship between career indecision and parenting style among adolescents

Hypothesis

There is no significant relationship between career decision making and parenting style among adolescents.

- (iii) There is no significant relationship between career decidedness and parenting style among adolescents
- (iv) There is no significant relationship between career indecision and parenting style among adolescents

Methodology

To conduct the present study descriptive survey method was used. A sample of 800 adolescents studying in 10th standard in Government Schools affiliated to Punjab School Education Board, Mohali from Bathinda and Ludhiana district of Punjab (India) was taken for the present study. To collect data related to career decision making and parenting style, Career Decision Making Scale (Singh, 2014) and Parenting Style Scale (developed by the researcher) were used. Career decision making was taken at two dimensions i.e. career decidedness and career indecision and parenting style was taken at three dimensions i.e. authoritarian, permissive and authoritative parenting style. To analyse the data, Product Moment Correlation was employed.



Analysis and Interpretation

To achieve the objective and to test the hypothesis the collected data was scored, organized and tabulated. Pearson Product Moment correlation was employed. The results of the product moment correlation are presented in Table-1 to Table-2.

Relationship between career decidedness and parenting style among adolescents

Summary of correlation of coefficient between career decidedness a dimension of career decision making and parenting style is given in Table-1.

Table-1: Showing summary of coefficient of correlation between career decidedness and parenting style among adolescents (N=800)

Variable	Sum	Sum of Squares	Mean	S.D.	Product	Correlation	Probability
Authn PS	37406	1778852	46.7575	6.111291	445122	-0.169	<0.00001
Perm PS	38108	1848730	47.635	6.470828	457268	0.195	
Auth PS	37603	1803897	47.0037	6.750978	452402	0.292	
Career Decidedness	9556	117510	11.945	2.051764			

*Authn PS- Authoritarian Parenting Style, Perm PS- Permissive Parenting Style, Auth P S- Authoritative Parenting Style

Table-1 shows the value of coefficient of correlation of career decidedness with authoritarian, permissive and authoritative parenting style comes out to be -0.169, 0.195, and 0.292 respectively. Probability of all correlation is less than 0.01 which shows that permissive and authoritative parenting styles have significant and positive correlation with career decidedness whereas authoritarian parenting style is correlated significantly and negatively with career decidedness dimension of career decision making.

Hence, the hypothesis that 'There is no significant relationship between career decidedness and parenting style among adolescents' is rejected for permissive and authoritative parenting style but accepted for authoritarian parenting style.

Relationship between career indecision and parenting style among adolescents

Summary of coefficient of correlation between career indecision a dimension of career decision making and parenting style is given in Table-2.



Table-2: Showing coefficient of correlation between career indecision a dimension of career decision making and parenting style among

Variable	Sum	Sum of Squares	Mean	S.D.	Product	Correlation	Probability
Authn PS	37406	1778852	46.7575	6.111291	988551	0.215	<0.00001
Perm PS	38108	1848730	47.635	6.470828	1002773	0.011	0.381971
Auth PS	37603	1845000	47.0037	6.750978	988489	-0.033	0.770781
Career Indecision	21046	568244	26.0375	4.271212			

adolescents (N= 800)

*Authn P S- Authoritarian Parenting Style, Perm PS- Permissive Parenting Style, Auth PS- Authoritative Parenting Style

Table-2 also shows that the value of coefficient of correlation of career indecision with authoritarian, permissive and authoritative parenting style comes out to be 0.215, 0.011, and -0.033 respectively. Probability of correlation between career indecision and authoritarian parenting style is <0.001 which shows that authoritarian parenting style and career indecision are correlated positively and significantly. But probability of other correlations are greater than 0.05. This means that career indecision dimension of career decision making is not correlated significantly to permissive parenting style and negatively related to authoritative parenting style.

Hence, the hypothesis 'There is no significant relationship of career indecision and parenting style among adolescents' is rejected for authoritarian parenting style and accepted for permissive and authoritative parenting style for career indecision dimension of career decision making.

It is clear from the above results that career decidedness among adolescents is positively correlated with permissive and authoritative parenting style whereas it has negative relation with authoritarian parenting style. Career indecision dimension of career decision making has positive relationship with authoritarian parenting style but the authoritative and permissive parents do not have significant effect on the career indecision of adolescents.

The results of the study are similar with the results revealed by the research Cheung *et al.* (2014) that career indecision consistently received a significant positive effect from authoritarian parenting. Study of Onder *et al.* revealed partially similar results whereas Sovet & Metz (2014) revealed significant effect of parenting style on career decision making.

The results of the present study are contradictory to the result of the study conducted by Datu (2012) which revealed that authoritarian parenting style is significantly related to career choice of an individual.



Discussion

The results of the study concluded that career decidedness of adolescents has positive relationship with permissive and authoritative parenting style whereas it has negative relation with authoritarian parenting style. It can be said that authoritarian parents try to decide the career of their children on their own they do not give much freedom to the children for decision making. But permissive and authoritative parents inculcate career decision making qualities among their children than authoritarian parents. Career indecision dimension of career decision making has positive relationship with authoritarian parenting style. But there is no significant relationship exists between career indecision and permissive and authoritative parenting style. It indicates that adolescents of authoritarian parents opt the career of the choice of their parents and unable to take their own decisions.

Recommendations

The results of the present study will be helpful for parents as well as teachers. Parents' upbringing plays a crucial role in career decision making of an individual. Parents should guide the children in the path of their career as a friend, philosopher and guide. They should not be too demanding or strict while selecting the career path for them. Parents should play role of guide in career decision making of their children in light of their interest.

Moreover the present study was conducted on 10th standard students, in future such studies can be conducted on senior secondary or college students. It can be conducted in other districts of Punjab. Adolescents from CBSE and ICSE board can be taken as the sample of the future studies.

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A STUDY OF INVESTMENT PREFERENCE AMONG WORKING WOMEN IN BANKING AND EDUCATIONAL SECTOR

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Abstract:

The present study was intended to explore the investment preferences of investors with special reference to type of employment. 200 employees (investors) were selected by using random sampling technique. The bifurcation of the respondents was made on the basis of their employment. 100 banking associates and 100 teachers were selected from Jammu and Kashmir Bank and different schools of District Kupwara of Union Territory of Jammu and Kashmir. However, only female employees were selected for the present study. These respondents were selected by using random sampling technique. A self-made information blanket was used for collecting data. The data was analysed to statistical treatment by using percentage and frequency distribution. The results were analysed with the help of descriptive analysis. Apart from this, on the basis of results, some suggestions were outlined.

Key words: Investment preferences (IB), Working women (WW), Banking Sector (RI), Educational Sector (UI).

1.1: INTRODUCTION: Investment is considered backbone for enhancing economic development of the country. Investments are choices made by individuals to put in their specific amount of money in a specified investment avenue for a stipulated period of time in anticipation that they will get more at the end in the form of returns. Such decisions are usually taken by individuals. Investment in different dimensions varies from individual to individual. India is a developing country where, there has been a consistent increase in the national saving rate after the independence period, though with considerable fluctuations from year to year. While speaking from international standpoint of view, India had a high saving rate as compared to other developing countries, except those in East Asia. In the developed countries, the income is generated at a higher rate which encourages people to have more savings which opines to more investment leading to more capital formation. The lack of information and demographic barriers has limited the scope of investment in India. Usually more investment is made by employees of different sectors and organisations. The determinants and patterns of saving differ from one profession to another



profession. Some professionals possess high level of knowledge about investment and some professional possess low level of knowledge regarding their level of investment. As a result, it has been observed that the marginal propensity to consume is more rather than the marginal propensity to save which seems to be vice-versa in different employee's behaviour. According to Lewis (1954), *"the central problem in the theory of economic development is to understand the process by which a community which was previously saving and investing four or five percent of its national income changes into an economy where voluntary saving is running at about twelve to fifteen percent or more of the national income"*. Selvakumar (2012) found that that awareness about investment avenues is very low among rural people compared to urban people. Apart from this the investigator revealed that impact of investment is significant on the level of investment pattern of respondents. Kumar (2012) found that type of job has significant impact on the investment pattern of the respondents. Those employees who are engaged with finance and banking possess innovative investment patterned as compared to those employees who are engaged with non- finance department. Kumar Rajesh and Arora R. S. (2013) suggested that investors need investment education and well informed about investment avenues through TV, Internet, Newspapers and professional journals in order to enhance the awareness level. Priyalaxmi and Dhanlaxmi (2014) examined investor's preferences towards various forms of investment viz., shares, bank deposits, gold, real estate, life insurance, postal savings and mutual funds and found that bank deposits were popular among the investors. In the same study, the researchers concluded that there was no significant association between income level and investment awareness level. Therefore, large numbers of studies are conducted on investment preferences of the respondents, but there may be hardly any study on the investment pattern of employees of Union Territory of Jammu and Kashmir. Subsequently, the researchers found it imperative to conduct a research problem which reads as:

1.2: STATEMENT OF RESEARCH PROBLEM: The statement of the research problem for the present study is as under:

A Study of Investment preference Among Working Women in banking and educational sector

1.3: OBJECTIVES OF THE STUDY: The objectives for the present study are as under:

1) To explore the level of investment pattern of investors in relation to type of employment.

1.4: OPERATIONAL DEFINITIONS OF TERMS AND VARIABLES: The operational definitions of terms and variables are as under:



- 1.4.1 Investment pattern:** Investment pattern in the present study refers the frequency and percent wise distribution obtained by respondents on selected information blanket.
- 1.4.2 Banking Sector:** Banking sector in the present study refers those women respondents who are working as banking associates in Jammu & Kashmir Bank. However, in the present study only those employees were included who possess length of service of 5 years or above.
- 1.4.3 Education Sector:** Education sector in the present study refers those women respondents who are working as teachers in Education Department. However, in the present study only those employees were included who possess length of service of 5 years or above.

1.5: DELIMITATIONS OF THE STUDY: Present study has been delimited to below mentioned dimensions.

- 1) The present study has been delimited to banking associates and Government teachers.
- 2) The present study has been delimited to 200 respondents
- 3) The present study has been delimited to Kupwara District of Union Territory of Jammu and Kashmir.

1.6: METHODOLOGY: Keeping the nature of the study under consideration, the present study was carried with the help of descriptive survey. So the parameters are discussed as under:

1.6.1: Sample: In the preliminary stage the investigator compiled list of 20 sampling sites from each category. The sampling sites in the present study were Jammu and Kashmir Banks and Higher Secondary schools. In these sampling sites the list of women investors was framed. These lists were converted into sampling frame. In these sampling frames 400 women investors were selected from each site. Consequently final sample was selected by using random sampling technique. The sample for the present study consists of 200 women employee's minimum length of service five years. The total sample for the present study consists of 200 women employees. Among them 100 women employees were selected those who are working as banking associates in Jammu and Kashmir Bank and 100 women employees were selected those who are working as teachers in Education Department of Union Territory of Jammu and Kashmir. Apart from this is pertinent to mention here that whole sample was selected from Kupwara District of Union Territory of Jammu and Kashmir. This recognizable bifurcation is reported as under:



Table: 1.0: Showing bifurcation of the sample:

Category	Number	Site
Banking Associate	100	JKB
Teacher	100	HSS
Total	100	02

Index:

- ❖ JKB= Jammu & Kashmir Bank
- ❖ HSS= Higher Secondary School

1.6.2: Sampling technique: After compiling the sampling frames by investigator, randomization was made on the same sampling unit and required sample was selected from these sampling frames.

1.6.3: Tools used: A self-made information blanket was used by the investigator to explore the level of investment pattern of the respondents.

1.7: STATISTICAL TREATMENT OF THE DATA: The present study was intended to explore the pattern of investment of the respondents; accordingly the investigator employed the descriptive statistical technique. Henceforth, the detailed statistical treatment is given in below mentioned tables:

Table: 1.1: Showing the frequency and percent wise distribution banking associate and teacher investors on their investment preferences. (N= 100 each)

S. NO	IP	Banking Associates		Teachers	
		F	%	F	%
1	Debentures/Bonds	11	5.5	03	1.5
2	Stock Futures and Options	15	7.5	6	03
3	Mutual Funds	22	11	8	04
5	Fixed Deposits	100	50	49	24.5
6	Insurance Policies	26	13	50	25
7	Real Estate	6	03	4	2
8	Gold /Silver	16	08	70	35
9	Others	04	02	10	05
Total		200	100	200	100

Index: IPC= Investment Pattern

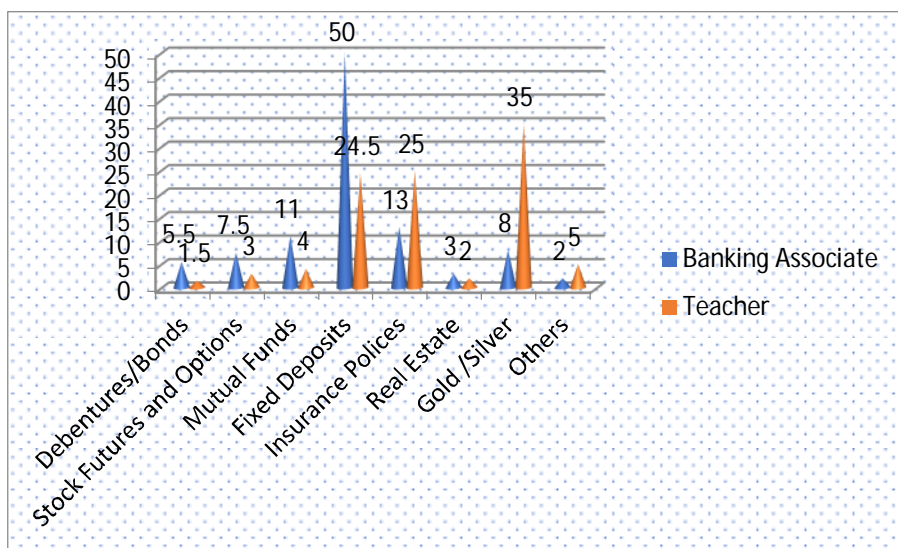


Fig: 1.1: Showing the graphical representation of banking associate and teacher investors on their investment preferences.

Table 1.2: Showing the frequency and percent wise distribution investors on composite score on their investment preferences. (N= 800)

S. NO	IP	ICSIP	
		F	%
1	Debentures/Bonds	14	3.5
2	Stock Futures and Options	21	5.25
3	Mutual Funds	30	7.5
5	Fixed Deposits	149	37.25
6	Insurance Policies	76	19
7	Real Estate	10	2.5
8	Gold /Silver	86	21.5
9	Others	14	3.5
Total		400	100

Index:

- ❖ IP= Investment Pattern
- ❖ ICSIP= Investors composite score on investment pattern

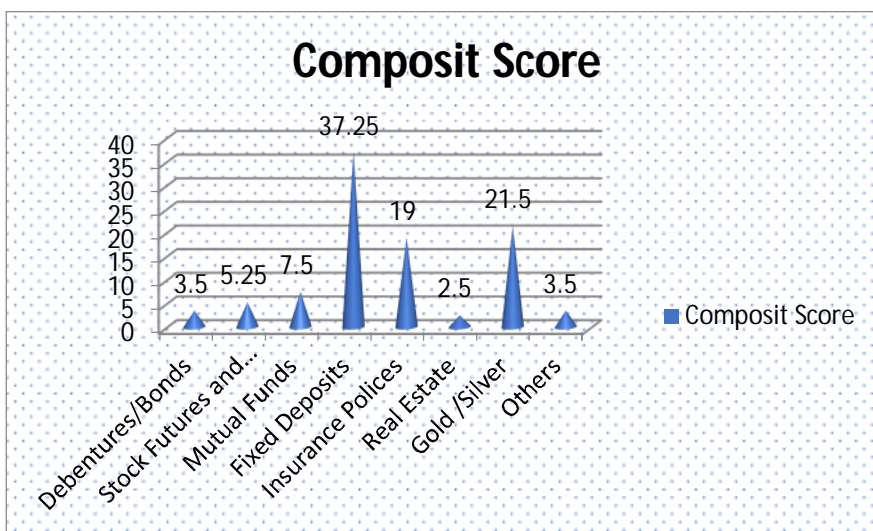


Fig.1.2: Showing graphical representation of investors on composite score on their investment preferences.

1.8: INTERPRETATION OF THE DATA: The data was analysed with the help of the statistical treatment. Frequency and percent wise distribution was calculated to whole data. The interpretation of the same statistical treatment is itemized as under:

The perusal of the table 1.1 (*Please Refer Fig. 1.1*) gives the detailed analysis of banking associates and teachers on their investment pattern. The obtained results reveal that 5.5 % (F=11) banking associates were observed in investing in debentures/bonds. From the same analysed results it was observed that 7.5% (F=15) banking associates were seen in investing stock futures and options available in the same field. The examination of the same table exposes that 11% (F=22) baking associates invest in mutual funds deposits. In addition to this, it was observed that 50% (F=100) banking associates invest in fixed deposits. The assessment of the same table indicates that 13% (F=26) banking associates were observed in investing in insurance policies. Besides, it was found that 03% (F=06) banking associates were observed gaining wealth through real estate. The description of the same table indicates that 08% (F=16) banking associate used to invest in gold or silver. Besides, it was found that 02% (F=04) banking employees were seen to invest in other avenues. Coming towards their counterparts, it was observed that 1.5% (F=03) teachers were observed in investing in debentures/bonds. From the same analysed results it was observed that 3% (F=06) teachers were seen in investing stock futures and



options available in the same field. The examination of the same table exposes that 4% (F=8) teachers invest mutual funds. In addition to this, it was observed that 24.5% (F=49) teachers invest in fixed deposits. In addition to this it was found that 25% (F=50) banking associates invest in insurance policies. The assessment of the same table indicates that 02% (F=04) teachers were observed in investing in real estate. The description of the same table indicates that 35% (F=70) teachers used to invest in gold or silver. Besides, it was found that 05% (F=10) teachers were seen to invest in other avenues. Thus from the results it has been observed that majority of the respondents among banking associate used to invest in fixed deposits. The results may attribute to this fact that these employees possess first-hand experience regarding fixed deposits, subsequently, they are inclined towards same investment.

The perusal of the table 1.2 (*Please Refer Fig. 1.2*) gives the detailed analysis of banking associates and teachers on their composite score of investment pattern. The obtained results reveal that 3.5% (F=14) investors were observed in investing in debentures/bonds. From the same analysed results it was observed that 5.25% (F=21) investors were seen in investing stock futures and options available in the same field. The examination of the same table exposes that 7.5% (F=30) investors invest in mutual funds deposits. In addition to this, it was observed that 149% (F=37.5) investors invest in fixed deposits. The assessment of the same table indicates that 19% (F=76) investors were observed in investing in insurance policies. Besides, it was found that 2.5% (F=10) investors were observed gaining wealth through real estate. The description of the same table indicates that 21.5% (F=86) investors used to invest in gold or silver. Besides, it was found that 3.5% (F=14) investors were seen to invest in other avenues. Thus, from the results it can be inferred that majority of the respondents were inclined towards fixed deposits. The results may attribute to the fact that it is the easy way for the investors to know and calculate the benefit of the investment.

1.9: SUGGESTIONS OF THE STUDY: After evaluating the results of the study, the suggestions of the study are as under:

- 1) Seminars and conferences should be organized by different institutions of the society. In these seminars training should be provided regarding investments plans and procedures. So that maximum benefit may be availed by investors in the process of investment.
- 2) In the present study it was observed that among teachers employee's majority of the respondents denote that they invest in gold so it indicates the lack of awareness. According mobile facilities should be made available in different institutions so that female employees may get access regarding investment.



- 3) Investment training centers should be established by Government so that need based person may get information within stipulated period of time.
- 4) Awareness campaigns should be organized by the banks with the motive of creating awareness among the rural household regarding the concept of saving and investment.
- 5) Financial advisors should be appointed in each and every department so that they may provide appropriate information to their clients.

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TAGORE'S THE HOME AND THE WORLD AND CONTEMPORARY INDIAN POPULAR CULTURE

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Abstract

Rabindranath Tagore's novel *The Home and the World* (1916) and its film adaptation, *Ghare Baire* (1985) have made an unbeatable mark in the history of women's studies in India. The novel published in the early twentieth century has dealt profusely with the perpetual predicament of home and the world, i.e., the inner and outer spaces for women in India. What strikes a reader of this novel is the impact it has on the popular culture today and how the two spaces are getting revived in the life of women in India as portrayed in the films, TV soaps and advertisements.

The present paper aims at closely observing as to how the inner and outer spaces of women affect their life. The paper will bring out striking connections between the conflict that Bimala, the protagonist of the novel faced, and the one that contemporary Indian commercials are trying to narrate. It will try to seek answers to the question of women empowerment through the readings of Tagore's novel and the present scenario in India. Besides, the paper will focus on questions of women's identity and individuality in popular culture today, in comparison with that of Tagore's women.

Keywords: Empowerment, Identity, Patriarchy, Shakti, Zenana

Introduction

Women empowerment has been an issue of concern in India through the history since the early nineteenth century resulting in women receiving education and participating in the political activities, in the early stages. Its aftermath has never resulted thus far into what was supposedly expected, i.e., the equal socio-cultural rights for women on par with men. These instances are found in Indian literature in the early nineteenth century and surprisingly in the current literature too, with some obvious changes. The life of a woman is torn between the two, never so well defined spaces, of home and the world. Rabindranath Tagore's novel *The Home and the World* interestingly brought out this issue leading to serious discussions among scholars and feminists for the years to come. It grabs our attention to see that today's Indian popular culture shows such striking



connections with the concepts and problems Tagore discussed over a century ago.

Literature Review

The Home and the World (1916) by Rabindranath Tagore

The female protagonist of *The Home and the World*, Bimala, is a woman who was brought to be somebody's wife, a traditional Bengali wife. However, to her dismay, though initially, she came to be a wife of Nikhilesh, a liberal thinker. He makes her learn to be a 'lady' for which he appoints a western woman as her teacher. This is the first instance where Bimala is not really asked for her choice. She rather does this to please her husband, as she considers it her primary duty to fulfil her husband's wishes. Nikhilesh has an arranged marriage with Bimala and wants to know whether she really admires him, and that she doesn't love him as an inevitable obligation of a typical Indian woman: "When she is familiar with this freedom, then shall I know where my place is." (Tagore, 2008, 57). The freedom that Nikhilesh tries to bestow upon Bimala, is not her choice, but his own selfish interest. In such circumstances, though freed in his eyes, Bimala is still a puppet. On the other side of the story in this novel, we find Sandip, opposite to Nikhilesh's persona. Sandip creates the image of Shakti in Bimala's mind, which Bimala starts equalizing with herself. Sandip passionately imbibes upon her mind that Bimala was an image of the whole nation. Bimala gets completely drenched in this image of the motherland and Shakti and thus says, "I felt my resplendent womanhood made me indeed a goddess." (Tagore, 2008, 109).

In her quest for the new self (her entry into the outer world and stepping out of the *zenana*¹), Bimala moves herself in the directions of Sandip's fanatical Swadeshi ideals. Nikhilesh is a peace lover and holds contrary ideals. This is where her actual dilemma of home and the world begins; where she is unable to decide whether to go by Nikhilesh's principles and be a dutiful wife, or to support Sandip's aggressive moves. Eventually she gets infatuated towards Sandip and in its fervour does everything for the national movement that he asks her to do. It takes quite some time for her to realise that Sandip is an imposter, and not a patriot.

However until then she would have already betrayed her home and in turn her nation. Bimala confesses when she stole money from her house, "I could not think of my house as separate from my country; I had robbed my house, I had robbed my country. For this sin my house had ceased to be mine, my country

¹ *Zenana*: A part of the house exclusively for women in the household, which in a way restricted them from entering the outer space



also was estranged from me”. (Tagore, 2008, 232-33). It is here that she comes to understand that her home and world were within herself. In fact, in another instance she tries to introspect whether she really needs this type of emancipation where she has to make her presence in the outer world. It proves that her stepping out of the *zenana* was not her choice entirely. Her emancipation is Nikhilesh’s choice of a modern life, which he wants to lead with her, as against the traditions of his house.

Methodology

This study takes into account feminist and cultural studies theories. Since it seeks to analyse women’s empowerment in terms of popular culture in India, it has references to discussions on television advertisements on online portals too.

Discussion

Contemporary Indian Television Commercials

Some of the common features, which we find in the novel and contemporary advertisements could be summed up thus. Women need somebody (mostly a man) to emancipate them; women also need some kind of approval from their male counterparts to know what they are doing is right; and the ultimate and obvious reality of women’s existence and identity lies in the four walls of the house.

Seeking approval of patriarchy. Women are always found struggling to know if their stepping out of the house is right. Let us check a few examples. In a recent ad film, we see a wife being the boss of her husband in a big organisation. That initially strikes audience, as it marks a kind of role shifting for men and women. Women are generally thought of as subordinates playing so called less important tasks of house-bound chores. As a boss, the wife assigns a complicated task to her husband and another subordinate of hers. She also gives a tight deadline, to which her husband (but not the other subordinate) objects saying it would not be possible to meet the deadline. She stresses that he had no other choice but to take up the assignment. After a while when he leaves her cabin, the wife seems to be worried for him (now as a wife because her expressions change suddenly). She calls it a day after sometime, meets her husband and leaves for home. On her way, she calls him up to know what he would like to have for dinner. The call is immediately disconnected, and again it feels that the husband is stressed with the assignment. When she reaches home, we find her in the shoes of a typical housewife, and preparing a four-course meal. She once again rings the husband and this time he responds saying he will be late as his boss has assigned a lot of work. The wife makes a video call and shows him the delicious food she has cooked for him. This is the only time when both husband and wife share a smile. What is interesting to note is that the husband also looks relaxed when the wife is in the traditional homemaking role. The wife too is happier at home than at work. In the whole ad film, we can



notice that she seeks a kind of approval from her husband for doing her duty at office. Whereas she is more comfortable doing the household chores.

Thus, again it proves that women are prone to find more comfort and solace doing their 'home' duties, as they are thought to be natural to them. If we imagine the same ad film to be in reversed roles, wherein the husband would be wife's boss, neither the husband would be uncomfortable assigning her some deadline, nor would the wife be distressed. She would rather do it as her professional as well as personal duty. However, it would again end up the wife herself cooking the four-course meal! This ad film attracted great attention from audiences and people took to various social networking platforms to express their opinions. To summarise those, a general opinion is that when the couple work in such a huge organisation, why can't they afford servants to help them back home, and also that only the wife does the household work although invariably she too is equally tired at office. Nivedita Menon (2014) analyses some of her working women interviewees summarised as, working women are paid to work in the world, 'and because they do, they cannot perform their real work of looking after the home and children without pay'. She quotes an interviewee, "...I had to miss an important meeting because the nanny didn't turn up." This clearly evidences that women have to ultimately take care of the household chores, whether or not they are working. And, in any given situation, men will not share the burden of giving up on important job assignments for taking care of children. Rama Bijapurkar, a successful corporate woman wrote in an article, if the maid doesn't show up on time, "You are literally left holding the baby. Of course, the husband, as usual, also has a meeting or is travelling."

In another advertisement, we find a young daughter demanding her mother to grow her hair very long as one of the girls of her age has it. The mother, shopping in a mall, tells her daughter that she cannot nourish her hair since she is a working woman, and the other girl's mother is a housewife. On hearing this, the young girl gives a long thought as they drive back home, and demands her mother to leave the job so that she can take care of her hair. This is very shocking as for the age of such a young girl our society is imbibing the ideas of woman's duties being only in the four walls of the home. It doesn't end here, the mother brings out a shampoo as solution for this problem, and asks her daughter if she could go for work now. Do women need this type of approval to enter the public sphere even from young daughters? It seems to educate the kids as to never breach the stereotypes. The mother in this ad film too, appears very uncomfortable when the daughter questions about her job. It seems as if her primary responsibility, that of nurturing the kids was at risk owing to her working outside. We hardly see kids asking such questions to fathers in ads.

We often find women being less attentive at work due to their preoccupation with household matters. In an interesting commercial, a woman is at her



workplace. Her mind is obsessed with the things she has to cook at home for evening. She first remembers her son asking her what would she cook for dinner, and later at various places in her office, she sees the images of her daughter and husband too asking what new would she cook in the evening. The whole day she is obsessed with the same thought and is hardly seen doing any work at office. It is very important for her to prove her cooking skills at home. This is what Nivedita Menon (2014) calls 'gender performativity'. However successful a woman may be in the world outside, she cannot overlook her household performance. Women are often taken as the primary caretakers of children and they are better than men at this task. That is usually infused in young minds to secure the patriarchal system of the society.

Initiatives of Women to Multitask. In a very popular ad film we find woman with six hands performing all types of breakfast menu on a single day. That image is close to the image of Goddess Durga². We find this kind of deification of woman in *The Home and the World* too, where Sandip deifies Bimala for his hidden motto. This image of Bimala gives her the strength to step out of her comfort zones and participate in a political movement. These images of women to multitask have become so inevitable that women themselves opt for doing multiple jobs simultaneously. Chetan Bhagat, in an article interestingly brings out the reasons women are being overworked in India. He subtly observes that women expect an A+ in whatever they do, at home or at work and that causes the problem. They also compete with other women in household chores and feel stressed out.

Another ad film shows how women initiate multitasking. It opens in a college staffroom, where some teachers are discussing an extra lecture load to be shared. There is only one woman among the staff and while the men are unwilling to take the extra load, she expresses her eagerness to do that. She faces cynical laughter from the male colleagues who ask her not to take it up as she is a woman and that she has to look after her home too. That means her primary responsibility is not her work for which she is paid, but something else, which she does free of cost. What is significant to note here is the woman's initiative to multitask though it is not imposed on her. She just seems to prove her worth. Women's work is usually less valued in any job, mostly, both monetarily and reverently. As Nivedita Menon remarks,

"This sexual division of labour extends even to the 'public' arena of paid work, and, again this has nothing to do with 'sex' (biology) and everything to do with 'gender' (culture). Certain kinds of work are considered to be 'women's work', and other kinds, men's; but more

² Goddess with eight arms, also known as Shakti



important is the fact that whatever work women do, gets lower wages and is less valued.” (Menon, 2014, 11)

Conclusion

The above ad films are only a few instances of contemporary images of Indian women. There has been a remarkable change in their appearance from the past few decades, yet the roles that they play remain unchanged. The dilemma that Bimala faced while making choices between home and the world, is even today unresolved. Contemporary Indian women, in general, too are observed to have torn between the two spheres, and stressed over the confusion of prioritising home over world. We have definitely achieved a great amount of economic and legal empowerment. But social and cultural empowerment still needs attention, as much as it needed a century ago. The notion of empowerment is meant to make a woman confident of making her choices and sticking to those irrespective of an approval from society. Further, it is time to educate the future generation to strive for equal social and professional treatment for both genders. It is time to emancipate the society from gendered roles and responsibilities.

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HOW TECHNOLOGY INFLUENCING THE PEOPLE TO SWITCHING MOBILE BANKING WITH SPECIAL REFERENCE TO COIMBATORE DISTRICT

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ABSTRACT

Today all sectors are working as innovation acceptor. Banking sector's profitability depends on better customer relationship. And nowadays today's consumer banking needs are getting more complex and demands are for more innovative products. The objectives of the study was to know the socio-economic character of the customer, identify the reason for preferring the mobile banking service in few public sector bank, study the consumers service quality in mobile banking service, to find the opinion of the respondents regarding the various problems of mobile banking and to give valuable suggestion to improve awareness. The statistical tools used were percentage analysis, chi-square test and correlation. This study revealed that security and applications should be updated as per need. Building customer awareness and informing the public on use of M-banking modes is required.

Keywords : Mobile Banking, Consumers Service, Preference of Mobile Banking

1.1 INTRODUCTION

In country only banking sector is that sector which works as a channel in attracting savings and mobilizing them in required areas. It works as a weapon of capital formation. To alter the policies according to environment fluctuation is known as change and to explore or use new technology for making change is known as innovation. Today all sectors are working as innovation acceptor. Banking sector's profitability depends on better customer relationship. And nowadays today's consumer banking needs are getting more complex and demands are for more innovative products. So give them better services banks have introduced a new profitable technology called MOBILE BANKING. And many more like internet banking, ATM, debit card, credit card etc.

With mobile banking technology, banks can offer a wide range of services to their customer such as funds transfer while travelling, receiving online updates of stock price or even performing trading while being stuck in traffic. M-banking gives ability to customer to control their cash outflows anytime, anywhere, without having to connect to internet. The use of a mobile phone to make payment and carryout other banking



transaction called m-banking has started taking roots in a number of developing countries, including India.

M-banking is a service of banks to make available, the facility of banking wherever the customer is and whenever he needs.

In today's world every person has personal mobile rather than having computer at home. Even rural person also have mobile. With mobile banking customer can bank from anytime and anywhere. Over the last few years, the mobile and wireless market has been one of the fastest growing markets in the world and it is still growing at a rapid pace. And also spread of mobile phones across the developing world is one of the most remarkable technology stories of the past decade.

Mobile banking is enjoying a rapid growth in India. It has successfully crossed the introduction stage. Mobile banking is different from internet banking and ATMs anyways. The internet is not as commonly used as the mobile phones. Further, the internet requires particular devices such as a desktop or a laptop. Mobile banking can be said to consist of three interrelated concept viz; Mobile accounting, Mobile brokerage, Mobile financial information. ICICI bank pioneered in mobile banking service in India. Among public bank, Union bank of India was first to introduce mobile banking (Ali et al. 2010)

1.2 REVIEW OF LITERATURE

Amutha.D (2016) The aim of the study was the consumers perception towards e-banking system related to consumer awareness towards e-banking system with special reference to Tuticorin District of Tamilnadu. The statistical tools used were simple percentage analysis; averages, F-Statistic, chi square test and probability analysis were used. The study concluded that the conclude that the most of the bank customers are aware about all the banking services in Tuticorin District of Tamilnadu. The banks further have to take necessary steps to educate the customers regarding the new technology and other services offered by the banks.

Chawla, Sushma S (2018). This study aims to know the behavior of consumers who do the online shopping based on apps. Online shopping changed the lifestyle of the people. Rural people also used very huge amount. Such as agricultural marketing, purchase of raw material, etc., are practiced nowadays. The objectives of the study, was online shopping through Apps, factors influencing, consumer behavior towards online shopping through Apps. Major findings of the study is online business will increase due to ease of access, comparison, cash on delivery, variety, saves time and creates convenience for customers. saves time and creates convenience for customers. We can reduce above fears through proper legal provisions are made. Finally majority prefer online shopping apps when compare with fears of using apps.

Rajesh S Sharma, Dr. N S Bhalla (2018) The objectives of the study was to curb black money and also to make citizens of India aware about the benefits of digitized economy. The study finding and that, the 45% are using debit and credit card ,31% of the users are preferring mobile wallets, 9 % of people are preferring cash as the best mode. The study concluded that the quick availability of payment applications is Net Banking (as most of



from Google Play store like Paytm, Freecharge, Mobikwik the banks in India are providing this facility free of cost).

Sushma S Chawl (2018) The aim of the study was the to know the behavior of consumers who do the online shopping mostly depends on apps, various factors influences the online shopping. The statistical tools used were percentage and chi-square. The study finding and that was using online shopping Apps, Cash on delivery was good mode of payment fallowed by debit cards. Variety & ease of comparison was advantage in online shopping, Misuse of banking, security and personal details are major fears. The study concluded that the online banking increasing in future because ease of access, comparison, cash on delivery, saves time and create convenience for customer.

1.3 OBJECTIVES OF THE STUDY

- To know the socio-economic character of the customer.
- To identify the reason for preferring the mobile banking service in few public sector bank,(IOB, INDIAN BANK, UNION BANK OF INDIA, BANK OF BARODA,)
- To study the consumers service quality in Mobile Banking service.
- To find the opinion of the respondents regarding the various problems of Mobile Banking.
- To give valuable suggestion to improve awareness.

1.4 SCOPE OF THE STUDY

This study was focusing upon only on selected mobile Banking Services in the State of Coimbatore. Further, studies can be carried out in the following areas. The study of acceptance and satisfaction of various mobile Banking services in other regions of India would give better picture of mobile Banking adoption at National level. A comparative study can also be undertaken on mobile Banking adoption among public sector, private sector and foreign banks offering mobile Banking services in India. A detailed study can be carried out to identify the Information Communication Technology (ICT) risks involved in the delivery of mobile Banking services for better adoption of mobile Banking services.

1.5 STATEMENT OF THE STUDY

The point of investigation that is explored in this research is M-banking in general and electronic banking in India in particular. Electronic banking as it has demonstrated the velocity of its growth is incredibly fast and efficient. It has allowed individuals including companies to perform their banking businesses from their homes or offices in a very cost-effective way. Studies have shown that with this new technology, it has become possible for both the banks and customers to have an immediate insight about the status and operations of their accounts

This study focused on the opportunities and challenges that the introduction of M-banking has brought in Coimbatore district. On a deeper level the research aims to acquire better understanding of the factors influencing the development of electronic banking. The research problems in this research can be formulated as:



- What are the main opportunities for banks to adopt and implement electronic banking? The opportunities will be examined in the light of the reduction of costs and marginal profit
- What are the main challenges that may delay development of M- banking in Coimbatore district?

1.6 LIMITATIONS OF THE STUDY

- The limitation concerns the nature of the measures used. The measures included in this research were all based upon the literature review of technology enabled service service quality participating different mobile banking customers from public and private banks
- As this study has some financial restriction for carrying result to be heightened and also for giving the practical shape to this study
- Due to the rapid changing technology every time there is need to incorporate new paradigms so it is difficult for the researcher to concentrate on dynamic nature of the finding and results

1.7 ANALYSIS AND INTERPRETATION

S.No	Description	Detail	Frequency	Percentage (%)
1.	Age	18-24	81	54.0
		24-35	36	24.0
		35-44	28	18.7
		Above 55	5	3.3
2.	Gender	Male	93	62.0
		Female	57	38.0
3.	Education Status	School	33	22.0
		UG	62	41.3
		PG	31	20.7
		Others	24	16.0
4.	Occupation	Government job	26	17.3
		Non government job	38	25.3
		Business Man	32	21.3
		Other	54	36.0
5.	Marriage Status	Married	58	38.7
		Un married	92	61.3
6.	Income	Below8000	40	26.7
		8000-10000	39	26.0
		10000-12000	33	22.0
		12000-14000	38	25.3
7.	Living Area	North Coimbatore	28	18.7
		East Coimbatore	36	24.0



8.	Total Bank Accounts	South Coimbatore	29	19.3
		West Coimbatore	57	38.0
		1	65	43.3
		2	61	40.7
		3	24	16.0

Source: (collected computed through the questioner)

CHI SQUARE

Chi Square between Gender and Banking Transaction are Easy

HYPOTHESIS:

H₀: There is association between gender and banking transaction are easy

H₁: There is no association between gender and banking transaction are easy

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.963 ^a	4	.564
Likelihood Ratio	3.699	4	.448
Linear-by-Linear Association	.567	1	.451
N of Valid Cases	150		

Source: (collected computed through the questioner)

It is discussed from the above table calculated chi-square value is higher than the level of significance (.564). Hence accept the null hypothesis (H₀) and reject the alternative hypothesis. Hence there is an association between gender and banking transaction are easy.

CORRELATION

Correlation between Age and Income

Correlation

		AGE	INCOME
Age	Pearson Correlation	1	.351 ^{**}
	Sig. (2-tailed)		.000
	N	150	150
Income	Pearson Correlation	.351 ^{**}	1
	Sig. (2-tailed)	.000	
	N	150	150

^{**}. Correlation is significant at the 0.01 level (2-tailed).

Source: (collected computed through the questioner)

Since the above correlation analysis is table value is .351. So it is a positive correlation relationship between the age and income.

ANOVA TEST

Anova Analysis For Income And Payment Of Bill, Rent And Fund Transfer Through Mobile Banking.

Hypothesis

H₀: There is no variation between income and payment of bill, rent and fund transfer through mobile banking.



H₁: There is a variation between income and payment of bill, rent and fund transfer through mobile banking.

Features of mobile banking	Sum of Squares	df	Mean Square	F	Sig.
Pay the Bills	Between Groups	2.021	3	.441	.724
	Within Groups	222.813	146		
	Total	224.833	149		
Pay rent and so on	Between Groups	21.545	3	5.119	.002
	Within Groups	204.828	146		
	Total	226.373	149		
Fund transfer	Between Groups	3.105	3	.631	.596
	Within Groups	239.355	146		
	Total	242.460	149		

Source: (collected computed through the questioner)

- The above table it is interpreted that the calculation value is (.724) which is less than the level of significant (0.05) [0.05>.724]. Therefore, we accept the null hypothesis H₀ and reject the alternative hypothesis H₁. Hence there is a variation between the income and payment of bill.
- The above table it is interpreted that the calculation value is (.002) which is less than the level of significant (0.05) [0.05 > .002]. Therefore, we reject the null hypothesis H₀ and accept the alternative hypothesis H₁. Hence there is a no variation between income and payment of rent.
- The above table it is interpreted that the calculation value is (.596) which is higher than the level of significant (0.05) [0.05 < .596]. Therefore, we accept the null hypothesis H₀ and reject the alternative hypothesis H₁. Hence there is a no variation between income and fund transfer.

1.8 FINDING AND SUGGESTIONS

Bank can offer EMI or rental based mobile phone handsets to poor people with doing tie up with mobile handset company. It may gives access to them via m-banking service. The proper training to use of mobile banking to the people of rural background is proposed. Rural areas face such problem like limited product varieties, short services hours and low efficiency. Bank should take care of these problems. This study revealed that security and applications should be updated as per need. Building customer awareness and informing the public on use of M-banking modes is required. The use of smart phones in rural areas is lower than that is urban areas; operator should introduce SMS based mobile banking since it is easier and more convenient to operate. Banks should offer different versions of mobile banking to rural and urban areas. Example WSP mobile banking in urban areas and SMS based mobile banking in rural areas. The Banks should plan a coordinated campaign in partnership with the trainers and



professional to educate customers. There should be safe and secure technology used for mobile banking services. Bank should develop mobile banking software in regional languages for the people of rural background across the different regions of the country. The service providers should enhance network coverage in rural and remote areas to facilitate communication and mobile banking. Bank should take care that the refund facilities should be provided concerning to wrong transactions made by customers.

1.9 CONCLUSIONS

In this study concluded that Mobile banking enable to banking task more fast and easy have a positive effect. So Mobile banking transactions via Mobile Phones anytime, anywhere in India. Mobile banking integration gives the easy-to-use functions, fast accessibility, manageability, relevancy and user-friendly surfaces. While on the basis of Place of Stay, Age, Work status and Education Level significant difference was found on the basis of Chi Square test according to the view of the people belonging to urban area are using Mobile banking facility will enable them to complete their tasks more easy and fast. 50% residents of rural area presented their view on this factor positive but other half of them presented their view negatively in this regard. 24% urban residents and 11% rural residents were Neutral on this factor. The people belonging to 25-40 age groups are more positive on this factor rather than the people belonging to above 50 age groups.

Mobile Banking allows individuals to perform their daily banking tasks in a quick and simple manner. The leading provider of digital banking or Mobile banking solutions created a fast and Conclusions and Suggestions easy Mobile banking application that provides an exceptional customer experience. Smartphone's have many special features and banks need to understand the customers need from their devices. Mobile banking recognizes this unique requirement which helps people to get connected with their finance in an easy and intuitive way.

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AN EMPIRICAL STUDY OF FACEBOOK USAGE AMONG ADOLESCENTS

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Ph. D. Research Scholar

Abstract:

Facebook is rapidly attracting multitudes of visitors every month instigating a shift in communication. This change consequently presents that societies are choosing to become part of the popular Facebook culture for various reasons, such as its renowned opportunities for keeping in touch with current social relations, reunifying long lost family and friends and broadening prospects of finding new companions. In this regard, the present study was intended to explore the level of internet usage among adolescents of District Kupwara of North Kashmir. Facebook Usage Scale (FUS) developed by Madhuri Hooda & Ankur Tyagi (2018) was used for data collection. 200 male and female adolescents were selected from different Higher Secondary Schools of Kupwara District by using random sampling technique. The collected data was put to suitable statistical treatment by using Percentage, Frequency distribution, Mean, S.D and 't' value. The results of the study indicate that there is significant difference between male and female adolescents on their level of Facebook usage. Male adolescents were observed with high level of Facebook usage as compared to female adolescents.

Key words: Facebook usage, Male Adolescents, Female Adolescents

Introduction

During recent years, social networking sites have gained remarkable popularity from each and every corner of the world. The social networking sites have converted a divided world into a virtual village. On the other hand human beings by and large are social. They feel an inherent need to connect and expand their connections through the mode of social relations. There is a deep rooted need among humans to share. In the past, due to geographical distances and economic concerns, connections between people were limited. A social network is made up of individuals that are connected to one another by a particular type of interdependency. It could be ideas, values, trade, anything. Online social networks are ideal for exchanging ideas, views, and garnering public opinion; although, these are restricted to the users of the social network. Popular social networking sites, like Orkut, MySpace etc. However, among all these social networking sites Facebook occupies unique position and role because of its features provided to users. Mark Zuckerberg, founded Facebook while studying psychology at Harvard University In February 2004. In the initial stage of Facebook Zuckerberg told the Crimson that *"Everyone's been talking a lot about a universal face book within Harvard. ... I think it's kind of silly that it would take the University a couple of years to*



get around to it. I can do it better than they can, and I can do it in a week". Zuckerberg also stated his intention to create a universal website that can connect people around the university. Moskovitz continued to say that, "By the end of the night, we were ... actively watching the registration process. Within twenty-four hours, we had somewhere between twelve hundred and fifteen hundred registrants. By the end of 2018, world accounted for 750 Million users and the number of monthly active users in world is expected to increase significantly in the near future. Facebook is rapidly attracting multitudes of visitors every month instigating a shift in communication. This change consequently presents that societies are choosing to become part of the popular Facebook culture for various reasons, such as its renowned opportunities for keeping in touch with current social circles, reunifying long lost family and friends and broadening prospects of finding new companions. Facebook removes some of the barriers that may limit our regularity of communication with people, upholding the geographic differences, social class, busy lifestyles and economic factors that may usually discourage us from regular contact. Facebook has been made available in around 101 languages, with over 300,000 users using translations. Currently, U. S., India and Europe are among the top three countries in terms of the number of active users on Facebook. Facebook stories are viewed by 0.6 Billion viewers on daily basis. In 2019, in 60 seconds on internet, 1 (one) million people log-in to Facebook. However, in some societies we have observed classical approach towards information and communication technology. In these societies the impact of gender has been observed significant. Some researchers agreed that the gender gap in Internet use had narrowed significantly in the college age group (Goodson et al., 2001; Odell et al., 2000) as well as the general population (Brenner, 1997; Jackson et al., 2001; Mifsud, L. (2004), Ono & Zovodny, 2003). In general, some of the differences between genders had vanished. However, some gender differences had been found in attitude towards Facebook, intensity of Internet use, online applications preferred and experience in cyberspace. Several studies reported that males had significantly more positive attitudes toward computers than females did (Collis & Williams, 1987; Makrakis & Sawada, 1996; Smith & Necessary, 1996). Also, technologies were not utilized in similar ways by men and women and as a result some differences still existed (Mitra et al., 2005). Another research among Chinese and British students found that men in both countries used email and chat, played computer games and were confident about their computers skills more than their female counterparts (Li & Kirkup, 2007). It was suggested that women had to increase their level of involvement with computers and both teachers and parents had to support them in this (Shashaani & Khalili, 2000). However, other studies contradicted these findings and reported that gender had no significant effect on any of the dimensions of computer attitude studied (Jennings & Onwuegbuzie 2001; Shaw & Gant, 2002). Keeping the above mentioned researcher studies under consideration the researcher studied a researcher problem which reads as:

1.1: STATEMENT OF THE PROBLEM: The statement of the research problem for the present study is as under:



“An Empirical Study of Facebook Usage Among Adolescents”

1.2: OBJECTIVES OF THE STUDY: The present study was carried with below mentioned objectives:

- 1) To explore the level of Facebook usage among adolescents.
- 2) To study the level of Facebook usage among male and female adolescents on below mentioned dimensions:
 - a) Self-presentation
 - b) Maintaining social network
 - c) Information gathering
 - d) Entertainment

1.3: HYPOTHESIS: For the present study below mentioned hypothesis has been formulated:

- 1) There exists significant difference between male and female adolescents on below mentioned dimensions of Facebook usage:
 - a) Self-presentation
 - b) Maintaining social network
 - c) Information gathering
 - d) Entertainment

1.4: RATIONALE OF THE STUDY: The present study was conducted with the help of descriptive research. Below mentioned parameters were included in descriptive study:

1.4.1 Sample: The sample for the present study consists of 200 respondents. Among these 200 respondents 100 were male adolescents and 100 were female adolescents. Initially list of different higher secondary school were executed as sample frames. Subsequently, adequate sample was selected from these sampling frames by using random sampling techniques.

1.4.2 Research instrument: For collecting the data, the researcher used Facebook usage (FU) scale developed by Madhuri Hooda & Ankur Tyagi (2018). The scale is based on below mentioned dimensions:

- a) Self-presentation
- b) Maintaining social network
- c) Information gathering
- d) Entertainment

1.5: OPERATIONAL DEFINITION OF TERMS AND VARIABLES: The operational definitions of terms and variables included in the study are as under:

1.5.1 Facebook usage (FU): Facebook usage in the present study refers the score obtained by the respondents on Facebook Usage Scale (FUS) developed by Madhuri Hooda & Ankur Tyagi (2018).

1.5.2 Male adolescents (FA): Male adolescents in the present study refers those adolescents who were selected from different higher secondary schools (HSS)



of Kupwara District within the age group of 14-20 years. 11th and 12th standard students were selected for the present study.

1.5.1 Female adolescents (MA): Female adolescents in the present study refer those adolescents who were selected from different Higher Secondary Schools (HSS) of Kupwara District within the age group of 14-20 years. 11th and 12th standard students were selected for the present study.

1.6 STATISTICAL TREATMENT OF THE DATA: The statistical treatment for the present study is given into two SETs and has been classified as under:

1.6.1 SET-I Descriptive Analysis: In this SET-I, the data was analysed with the help of frequency distribution and percentage. More obviously, it has been itemized as under:

Table: 1.1: Showing frequency distribution and percentage on various levels of Facebook usage among male and female adolescents.

LFUS	MA		FA		OF	OP
	Frequency	Percentage	Frequency	Percentage		
EHU	30	30	04	04	34	17
HU	21	21	02	02	23	11.5
AAU	24	24	14	14	38	19
AFU	15	15	46	46	61	30.5
BAU	6	6	12	12	18	9
LU	4	4	15	15	19	9.5
ELU	0	0	7	7	07	3.5
Total	100	100	100	100	200	100

Index:

- ❖ LFUS= Levels of Facebook usage scale
- ❖ EHU= Extremely high usage
- ❖ HU= High usage
- ❖ AAU= Above average usage
- ❖ AU= Average usage
- ❖ BAU= Below Average usage
- ❖ LU= Low usage
- ❖ ELU= Extremely low usage
- ❖ MA= Male adolescents
- ❖ FA= Female Adolescents
- ❖ OP= Overall percentage
- ❖ OF= Overall frequency

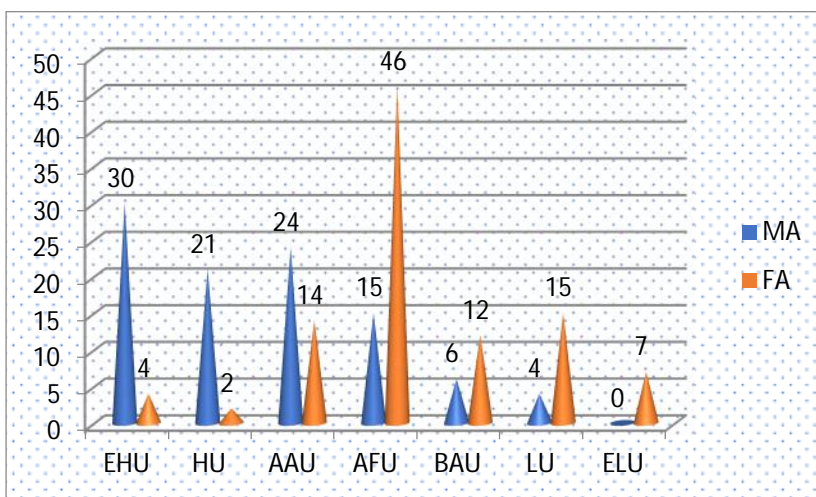


Fig: 1.1: Showing graphical representation of levels of Facebook usage among male and female adolescents.

Index:

- ❖ EHU= Extremely high usage
- ❖ HU= High usage
- ❖ AAU= Above average usage
- ❖ AU= Average usage
- ❖ BAU= Below Average usage
- ❖ LU= Low usage
- ❖ ELU= Extremely low usage
- ❖ MA= Male adolescents
- ❖ FA= Female Adolescents

1.6.2 SET-II Comparative Analysis: In this SET-II, the data was analysed with the help of frequency distribution and percentage. More obviously, it has been itemized as under:

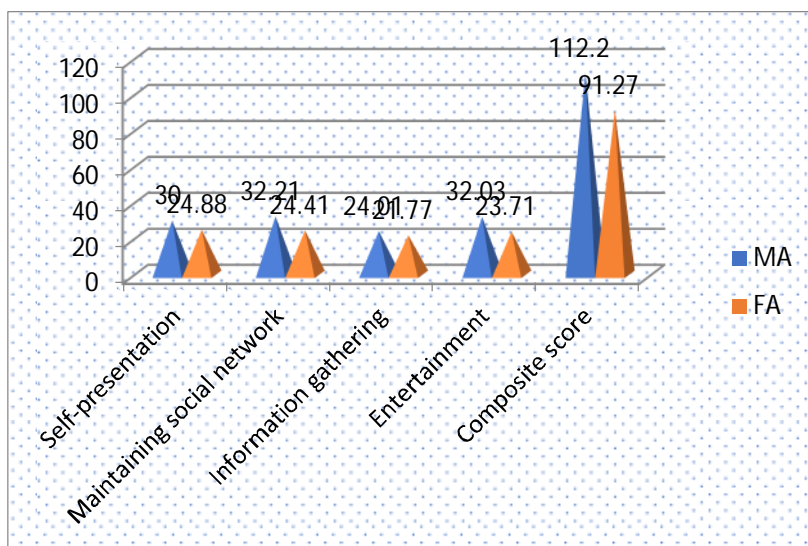
Table: 1.2: Showing significance of mean difference between male and female adolescents on various dimensions of Facebook usage. (N=100 each)

DFUS	MA		FA		't' Value
	Mean	SD	Mean	SD	
Self-presentation	30.00	4.12	24.88	2.17	11.63@
Maintaining social network	32.21	2.98	24.41	3.12	4.38@
Information gathering	24.01	3.99	21.77	2.99	4.66@
Entertainment	32.03	3.12	23.71	1.16	8.85@
Composite score	112.20	16.22	91.27	11.17	5.40@

Index:

- ❖ *DFUS= Dimensions of Facebook Usage Scale*
- ❖ *MA= Male adolescents*
- ❖ *FA= Female Adolescents*

@= significant at 0.01 level of confidence



Index:

- ❖ MA= Male adolescents
- ❖ FA= female Adolescents

Fig: 1.2: Showing graphical representation of mean difference between male and female adolescents on various dimensions of Facebook usage. (N=100 each)

1.7: INTERPRETATION OF THE DATA: The interpretation of the data has been enumerated as per the statistical treatment of the data. In order to facilitate clear understanding, interpretation has been categorised into below mentioned two SETs.

1.7.1 SET-I Descriptive Analysis: In this SET-I, the data has been interpreted with the help of frequency distribution and percentage obtained in the statistical treatment. More obviously, it has been interpreted as under:

The results presented in table 1.1 (*Please Refer Fig 1.1 or 1.6.1 SET-I Descriptive Analysis*) gives information about percent and frequency distribution of male and female adolescents on various levels of Facebook usage scale. The results indicate that among male adolescents (MA) 30% (F=30) were observed with extreme high level of Facebook usage. Meanwhile, 21% (F=21) male adolescents reported with high level of



Facebook usage. The results indicate that 24% (F=24) male adolescents (MA) were seen with above average level of Facebook usage. However, the results in the same table indicate that 15% (F=15) male adolescents (MA) were observed with average level of Facebook usage. The calculated data revealed that 6% (F=6) male adolescents (MA) were seen with below average level of Facebook usage (BAU). In addition to this it was found that 4% (F=4) Male adolescents were found with low level of Facebook usage (LU). Further, the results designate that 0% (F=0) male adolescents (MA) were observed with extreme low level of Facebook usage. Coming towards their counterparts (female adolescents-FA), it was revealed that 04% (F=04) were observed with extreme high level of Facebook usage. Meanwhile, 02% (F=02) female adolescents reported high Facebook usage (HFU). The results indicate that 14% (F=14) female adolescents (FA) were seen with above average level of Facebook usage (AAU). However, the results in the same table indicate that 46% (F=46) female adolescents (FA) were observed with average level of Facebook usage. The calculated data revealed that 12% (F=12) female adolescents (FA) were seen with below average level of Facebook usage (BAU). In addition to this, it was found that 15% (F=15) male adolescents (MA) were found with high level of Facebook usage (LU). Further, the results designate that 7% (F=07) female adolescents (FA) were observed with high extreme level of Facebook usage. While analysing the composite percentage of male and female adolescents it was observed that 17 % (34) respondents were seen with extreme low level of high level Facebook usage, 11.5% (23) were observed with high Facebook usage (HU). Apart from this, it was found that 19% (F=38) adolescents were seen with above average level of Facebook usage (AAU). However, the results in the same table indicate that 30.5% (F=61) adolescents were observed with average level of Facebook usage. The calculated data revealed that 9% (F=18) adolescents were seen with below average level of Facebook usage (BAU). In addition to this, it was found that 9.5% (F=19) adolescents were found with low level of Facebook usage (LU). Further, the results designate that 3.5% (F=07) adolescents were observed with high extreme level of Facebook usage.

1.7.2 SET-II Comparative Analysis: In this SET-II, the data has been interpreted on the basis of comparative analysis. The statistically tested hypothesis has been elaborated with the help of levels of significance. More obviously, it has been generalised as under:

The results presented in table 1.2 (*Please refer Fig. 1.2 or 1.6.2 SET-II Comparative Analysis*) giver information about significance of mean difference between male and female adolescents on various dimensions of Facebook Usage Scale (FUS). While looking towards the first dimension (Self-presentation) it was found that the mean score of male adolescents was reported higher (M=30.00) than the mean score of female adolescents (M=24.88). The calculated 't' value has been observed to be 11.63, which is significant at 0.01 level of confidence. Thus, from the above results it can be inferred that there is significant difference between male and female adolescents on their level of



self-presentation on Facebook usage. High level of self-presentation was observed among male adolescents as compared to female adolescents. With regard to the comparison on second dimension (*Maintaining Social Network*) of the Facebook Usage Scale (FUS), the mean score of male adolescents has been found 32.21, whereas the mean score of female adolescents has been found to be 24.41. The mean comparison led the investigator in the establishment of a significant difference between the mean score of adolescents at 0.01 level of confidence ($t=4.38$). Thus, it can be said that male adolescents were found more massive social network while using Facebook as compared to female adolescents. While analysing the male and female adolescents on third dimension, it was found that the mean score of male adolescents higher ($M=24.01$) as compared to female adolescents (21.77). Besides, the calculated 't' value 4.66 was reported higher than the table value. Therefore, from the results it can be revealed that there is significant difference between male and female adolescents on third dimension (*Information Gathering*) of Facebook Usage Scale (FUS). However, the mean significant difference favours male adolescents. A quick glance towards the fourth dimension of Facebook usage scale (*Entertainment*) gives information about the mean comparison of male and female adolescents, the mean score in case of male adolescents has been found to be higher ($M=32.03$) as compared to the mean score of female adolescents ($M=23.71$). The calculated 't' value is reported to be 8.85, which is significant at 0.01 level of confidence. On the basis of the results it is revealed that male adolescents were seen high level of entertainment usage on Facebook as compared to female adolescents. While comparing male and female adolescents on composite score on composite score it was found that the mean score of male adolescents was reported higher ($M=112.20$) as compared to female adolescents ($M=91.27$). Besides, the calculated 't' value came out to be 5.40, which is significant at 0.01 level of confidence. Thus, from the above results there exists significant difference between male and female adolescents on all dimensions of Facebook usage scale. Male adolescents were observed with high level of mean achievers on all dimensions viz. Self-presentation, Maintaining social network, Information gathering, Entertainment and Composite Score. Thus, from the above results it can be said that there exists significant difference between male and female adolescents on their level of Facebook usage. subsequently, below explored hypothesis stands accepted.

Explored Hypothesis: *“There exists significant difference between male and female adolescents on below mentioned dimensions of Facebook usage:*

- a) *Self-presentation*
- b) *Maintaining social network*
- c) *Information gathering*
- d) *Entertainment”*

1.8: CONCLUSIONS OF THE STUDY: The study was explored to find the impact of gender on Facebook usage. In consonance to same it was found that there is significance there is significant difference between male and female adolescents on all dimensions of Facebook usage scale. Male adolescents were observed with high level of



Self-presentation, Maintaining social network, Information gathering, Entertainment on Facebook as compared to female adolescents. The results may attribute to this fact that female adolescents possess more threat of cybercrime as compared to male adolescents and female adolescents get least leisure time as compared to male adolescents. Subsequently, male adolescents were observed with high level of Self-presentation, Maintaining social network, Information gathering and Entertainment on Facebook.

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FUNDAMENTAL ANALYSIS OF HOUSING FINANCE SECTOR IN INDIA

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Abstract

Investors across the globe decide to make investment in any stock by properly analyzing the economy of the country in whose stock market investor going to make investment. Investors also check the condition of the industry whose stock they are going to purchase. And then they check the company's position whose stock they actually purchase.

They consider all the parameters of the stock before making investment decision. Parameters such as ratios (P/E ratio, EPS, Dividend ratio), financial statements to see the profits and revenues generated, charts to check the trend in the volumes and prices of the stock. As stock market is unpredictable and it depends upon emotions of people, if people started buying stocks other people also do the same believing that market is doing great, and if people sell other also started doing the same believing that market is going down. Emotions play a big role in investment because people make investment in a stock market based on their feeling whether it will go up or down. People make investment in capital market by analyzing the market through techniques such as fundamental and technical analysis. These are the two most important methods used by people before making investment in stock market. This study focuses on the fundamental analysis of housing finance sector in India to create sector fund and evaluate if the investors should invest their money in any of the companies in this sector.

Key Words: Financial Statements, Fundamental Analysis, Stock Market Investments, Economic Parameters, Market Trends.

Introduction

Fundamental analysis is an important component of investment and portfolio management. If one wants to have growth in the investment, one needs to make smart investment in a constantly changing market environment. Stock price can easily fluctuate throughout any given frame of time. Some good news and a stock can shoot up dramatically. Hints of bad news and the stock falls. To offset risk and capitalize on opportunity, one needs expert equity research to make sound investment decisions.

Investment helps in generating back high income and wealth. Every organization or business invests for their growth. One may feel confident in



his/her investment strategy but there is constantly an uncertainty about the organization in which you are investing. The answer to avoid any kind of investment risk is fundamental analysis.

The financial markets are analyzed broadly on the bases of two techniques i.e. Fundamental analysis and Technical analysis. These two techniques are very different from each other and have a different approach towards evaluating and predicting equity valuation and movement. Many investors choose to only use one of the analyses to analysis the shares but these two techniques can co-exist with each other. Using both the methods increases the accuracy level of analysis and helps to get more accurate targets.

People make investment in capital market by analyzing the market through techniques such as fundamental analysis. These are the two most important methods used by people before making investment in stock market.

1.3.1 Fundamental analysis

Fundamental analysis is analyzing the economy, industry and company fundamentals which tells whether the stock will perform good in future. Fundamental means seeing very fundamental and basic thing of stock before making investment.

In fundamental analysis people take decision whether to make investment or not on the basis of fundamentals of the company, financials of the company. Fundamental analysis is done to know the intrinsic value of stocks on the basis of various quantitative and qualitative factors. If intrinsic value is more than market value then one should buy the share and if intrinsic value is less than market value then one should sell the shares.

In order to forecast future prices fundamental analysis combined the financial, industry and company analysis to infer stock's present fair value and forecast future value.

Fundamental analysis is done at three stages:

- 1) **Economic analysis** – Factors such as GDP of the country, levels of saving and investment, inflation rate, interest rate, budget, balance of payment situation are key components of economic analysis.
- 2) **Industry analysis** – It comprises of factors such as growth of the industry, nature of competition, nature of product, Industry life cycle, financial norms.
- 3) **Company analysis**- Factors such as competitive advantage, financial stability and performance, profits of the company, corporate image. People analyze various ratios such as EPS, P/E ratio, projected earnings growth, current ratio, price to book ratio, leverage ratios, dividend yield, return on equity, assets, and liabilities, market capitalization, to see if company is doing good or not. Market capitalization.



Fundamental analysis is used by the people who make investment for long term. People use this analysis to see whether stock is undervalued or overvalued and then make investment according to it. Once investment is made people forgot about it for long term and see the value of their stock after years.

The fundamental analysis starts with the ratios, dividend, operating cash flow, discounted cash flow model. Fundamental analysis is used to create sector fund. The steps include in creating sector fund are as follows:

Steps for doing sector fund analysis

- 1) Select a sector for doing analysis (This study is on Housing Finance sector)
- 2) Take large cap companies whose value is more than 5000 crore.
- 3) Note down the last closing share price.
- 4) Get the P/E value of every stock, can be calculated or from company details (In this study values has been calculated by formula (Price/ earnings per share).
- 5) Find the average of the P/E ratios. Note down the EPS
- 6) Use average of P/E ratio to see if stock is overvalued or undervalued.
- 7) If P/E ratio of a company is above industrial average then it is overvalued and if less then that then it is undervalued.
- 8) Overvalued stocks shows that its price will decrease in future and price of undervalued stocks will increase. So it is good to sell Overvalued stock and buy undervalued stock.
- 9) Value of value pick stock: In this revenue and profits had been analyzed, if both were increasing or one was increasing and other decreasing then considered the stock and if both were decreasing then reject that stock.
- 10) Growth pick stocks: In this firstly PEG ratio calculated (P/E / EPS Growth). EPS growth is the percentage growth in EPS of company compared to last year. Those stocks were selected whose PEG ratio is 1 or less than that others are rejected.
- 11) Ranking: On the basis of financial ratios ranking had been done of stocks and on the basis of hit and trial funds are allocated. Once the funds were allocated NAV was calculated on daily basis.

$$\text{NAV} = \text{Asset under management} / \text{No. of units}$$

The study is based on the fundamental of housing finance sector by taking large cap. The following companies have been included to to see in which company to invest in with the **objective to create the sector fund and to find the NAV of the companies and compare it with index of the housing finance sector:**

- | | |
|------------------------|------------------------|
| 1. LIC Housing Finance | 2. India Bulls Housing |
| 3. PNB Housing Finance | 4. Gruh Finance |



5. HDFC

Literature Review

Fundamental analysis is very important tools in share market to analyze the trends and identify which company is growing or will grow in future so that it become easy to choose in which company or stock to invest in. There are various studies conducted in investment. Some of them are:

(Chen, 1991) A study on financial investment opportunity and macroeconomics study which says that there is relationship between financial investment opportunities and changes in the macro economy. It talked about certain indicators for recent and future economic growth such as default premium, term premium, short term interest rate, market dividend- price ratio.

(Sbad, Thore, & Laffarga, 2004) A study on fundamental analysis of stocks by two stage DEA which link financial data to firm value in two steps predictive link and valuation link. In evaluation at every step casual factors are considered and piecewise linear efficiency frontier taken in observed data. Data of 30 stocks of Spanish manufacturing industry is taken from years 1991-1996.

(Zhu, 2006, posted 2012) The study on structure of housing finance market and house prices in India by Zhu and Haibin which says that housing price are responsive to market conditions, especially equity price movement.

(Zafar, Maqbool, & Chobey, 2011) A study on fundamental analysis on construction industry. Despite challenges it get year on year growth of 12% in 2000-2005. In this various industry factors are analyzed such as cost structure and profitability, government policy. And factors in company analysis are EPS, ROA, DER, CR, ROI etc. Economic factors were, inflation, interest rate, deficit slowdown and taxation.

(A.S, 2013) A study on fundamental and technical analysis which says that decision of investor depends upon the fundamental analysis first which analyse the company and as company is part of industry and economy so it also analyse the industry and company. It says that before making any decision, it is important for investor to do both fundamental and technical analysis as trends are considered best friend of investor.

Study Gaps

So far many studies were conducted which focuses on either fundamental analysis, technical analysis, whether fundamental analysis and technical analysis are complementary or substitute in nature. There were also studies on housing finance sector regarding housing finance and monetary policy, housing price.



But so far any study has not been conducted on the topic fundamental analysis of housing finance. In this research focus will be on using fundamental analysis and creating sector fund of housing finance sector.

Research Methodology

So far studies had been done in fundamental analysis whether individually on these topics or study on fundamental analysis on different sectors such as private banks, IT sector. But not many studies on fundamental analysis of housing finance sector of large capitalization companies listed in BSE have been done. So this study is based on this and on the basis of this research methodology was decided.

Objectives of the Study

- Fundamental analysis of housing finance sector to create sector fund.
- To find NAV of housing finance sector and compare with the index that have been created of the housing sector for two months.

Descriptive and exploratory design was used in the study. Knowledge gained from preliminary study forms the basis for future detailed descriptive. In the exploratory study, the various technical indicators that are important for analyzing stock were actually identified and important short were listed.

In this research the data of housing finance sector is taken, listed companies in BSE. Only companies of large capitalization are taken. The sample size of the study is five companies. Sampling technique used is purposive sampling method.

The main source of secondary data was research research papers, journals, websites (such as moneycontrol), NSE, BSE sites. The data is analyzed on the basis of index maintained, ratios, and charts.

There are some limitations of the study. There is time constraint in the study. The analysis is done for short period of two months and the data is of large capitalization companies only.

Data Analysis and Interpretation

Fundamental Analysis of Housing Finance Sector:

Economic Analysis: By nominal GDP India is the seventh largest economy in the world and by purchasing power parity it is the third largest economy. India is targeting to become 5 trillion \$ economy by 2025.

Statistics:

GDP (nominal): Nominal GDP of India is \$2.972 trillion as per data of 2019.

GDP (PPP): Purchasing power parity GDP of India is \$11.468 trillion as per data of 2019. GDP (per capita): \$2199 (nominal) and \$8484 (PPP).

GDP by sector: In agriculture sector it is 15.87%, in service sector it is 54.40%, in industry sector it is 29.73%



Inflation rate of India is 3.05% as per May 2019 data.

Base borrowing rate is 6.0% as on July 12, 2019.

India's foreign exchange reserves as on March 12, 2019 were \$405.64 billion.

Union budget 2019:

- Building physical and social infrastructure.
- Reforms measure in rental housing. Changes in tenancy laws.
- Central government and CPSEs to held joint development and concession mechanisms for public infrastructure and affordable housing on land parcels.
- In order to make housing affordable, there will be additional deduction of 1.5 lakhs for interest paid on loans borrowed till 31s march, 2020 for purchase of house up to 45 lakhs. The benefit will be of 7 lakh on loan of 15 years.
- Housing finance sector to be regulated by RBI instead of national housing bank.

Indian economy current scenario:

- Economy slows down - GDP slid in January-March to five year low of 5.8%.
- There is slow down in auto sector and companies are laying off employees.
- Nifty index has shed by around 10%.
- There is liquidity crunch in banking industry after collapse of Infrastructure leasing and financial services.
- Foreign portfolio investors withdrawing their money from Indian economy.
- Slump in real estate sector. Real estate is also linked with ancillary industries which means it has impacts other industries as well. There are many unsold inventory lined up which will be sold in around three to three and a half year.

Industry Analysis

Housing finance is one of the financial services provided in India. 2019 is considered as the best year to buy houses as prices are stagnant, tax incentives and also due to Pradhan Mantri Awas Yojana. It is expected that overall home loan interest rate to remain stable in 2019. Housing finance growth to slow down to 13-15 % this fiscal due to liquidity issues. There can be impact on credit of housing sector as well. Gross NPAs have increased to 1.5 in march 2019 from 1.1 in previous year. Housing sector needs 4 to 4.5 trillion to meet growth requirement of 10-14 %.

Company Analysis: In this study there were five companies that were taken. So in this part financials of those companies have been shown.



Table 1: Financial Ratios of These Five Companies

Companies	Current ratio	Return on capital employed	Profit before Tax Margin	Interest Coverage Ratio	Debt to equity
LIC Housing fin	1.08	99.37	19.47	1.26	10.37
Indiabulls Hsg	1.22	62.34	33.41	1.58	5.57
PNB Housing fin	2.86	12.36	21.09	1.34	9.66
HDFC	4.90	11.18	30.26	1.5	4.72
GRUH Finance	85.37	10.38	30.34	-	8.73

(Source: company websites)

Fundamental Analysis: In this part, fundamental analysis of housing finance sector is done.

Table 2: Calculation of P/E ratio and EPS growth

Stock	Price (15 June)	P/E	EPS (TTM)	EPS'19	EPS' 18	EPS Growth
Hdfc	2182.4	39.09	55.83	56.53	67.31	-16.02
LIC Housing Fin	536.55	11.14	48.17	48.17	39.42	22.20
Indiabulls Hsg	672.1	7.71	87.22	87.37	83.9	4.14
Gruh Finance	291.85	47.84	6.1	6.1	5.51	10.71
PNB Housing Fin	790.1	10.93	72.26	64.61	50.58	27.74
Average		23.34				

There are two overvalued stocks (HDFC, GRUH finance) as there P/E ratio is greater than average P/E ratio and three undervalued stocks (PNB housing fin, LIC housing fin and Indiabulls Housing) as there P/E ratio less than average P/E ratio.



Table 3: Overvalued and Undervalued Stocks

Overvalued	Undervalued
HDFC	LIC Housing fin
Gruh Finance	Indiabulls
	PNB Housing fin

To choose companies from overvalued PEG ratio is calculated.

Table 4: PEG Ratio (PEG ratio = P/E ratio/ EPS growth rate)

OVERVALUED STOCKS	EPS'19	EPS'18	EPS GROWTH	P/E	PEG RATIO
HDFC	56.53	67.31	-16.02	39.09	- 2.440767996
GRUH FINANCE	6.1	5.51	10.71	47.84	4.467769492

- When PEG ratio is one then it is good, in above case HDFC PEG ratio is negative and that of GRUH finance is more than one, so both the stocks are rejected as none of the two are growth picks stocks.
- 1. Undervalued or value pick stocks are selected on the basis of revenue and sales. If both are increasing then stock is selected. If revenue is increasing and sales are decreasing then also stock selected. If revenue is decreasing and sales are increasing then also stock is selected. If both are decreasing then the stock is rejected.
- 2. In this case all the three companies have increasing top and bottom line so all the three is selected. (Indiabulls Hsg, PNB housing fin, LIC housing fin).
- After selection of companies next is analysis on the basis of ratios, here five ratios are taken into consideration. These ratios are current ratio, return on capital employed, profit before tax margin, interest on coverage ratio, debt to equity ratio.
- On the basis of ratios ranking is given based on some ratios that are good if they are high and some are good if they are low. Current ratio (high is good), return on capital employed (high is good), profit before tax margin (high is good), interest on coverage ratio (high is good), debt to equity ratio (low is good).



Table 5: Ratio analysis

Companies	current ratio	Return on cap. Emp.	profit before tax margin	Interest on coverage ratio	Debt to equity
LIC Housing fin	1.08	99.37	19.47	1.26	10.37
Indiabulls Hsg	1.22	62.34	33.41	1.58	5.57
PNB Housing fin	2.86	12.36	21.09	1.34	9.66

On the basis of these ratios ranking is done.

Table 6: Company Ranking

Companies	Curren ratio	Retur n on cap. Emp.	Profit befor e tax margi n	Interest on covera ge ratio	Deb to equit y	Total of rankin g	Rankin g
LIC Housing fin	3	1	3	3	3	13	3
Indiabulls Hsg	2	2	1	1	1	7	1
PNB Housing	1	3	2	2	2	10	2

- Ranking is done in above table, total of ranking is calculated by adding individual ratios ranking and ranking is given on the basis of total of ranking, lowest rank is given number one rank and highest total given number three. On the basis of ranking funds are allocated.
- In this study total of 10 Crore are taken to be allocated among these three companies (LIC housing fin, Indiabulls Hsg, PNB housing fin)
- Company whose rank is lowest that means rank one are allocated the highest fund.



Table 7: Fund Allocation

Companies	Current price(15 june)	Funds allocated	No. of shares	Absolute shares allocated	Allocated fund value(no of shares * current price)
LIC Housing fin	536.55	30000000	55912.77	55912	29999583.6
Indiabulls Hsg	672.1	10000000	14878.73	14878	9999503.8
PNB Housing fin	790.1	60000000	75939.75	75939	59999403.9
					99998491.3

Cash in hand = 100000000-99998491.3 = 1508.7

No of units = 10000000

NAV = 100000000/10000000 = 10

The NAV calculation of the stocks for these companies were undertaken. It was seen that NAV was increasing at some time and sometimes decreasing. This was then compared with the index that has been calculated for housing finance sector to check whether the fund that has been created is doing good as compared to the index of housing finance sector. Below are the figures of the index of housing finance sector that has been created for two months.

Table 8: Index of Housing Finance Sector

DATE	INDEX	DATE	INDEX	DATE	INDEX
15-Jun	1000	12-Jul	1025.157	09-Aug	984.336
17-Jun	992.8	15-Jul	1025.772	13-Aug	946.3407
18-Jun	984.2621	16-Jul	1032.747	14-Aug	952.3972
19-Jun	988.396	17-Jul	1036.052		
20-Jun	997.9834	18-Jul	1052.971		
21-Jun	977.6245	19-Jul	1037.071		
24-Jun	981.2417	22-Jul	991.9582		
25-Jun	989.6804	23-Jul	970.1352		
26-Jun	987.4041	24-Jul	981.3887		
27-Jun	1000.339	25-Jul	988.9454		
28-Jun	998.1384	26-Jul	980.3416		

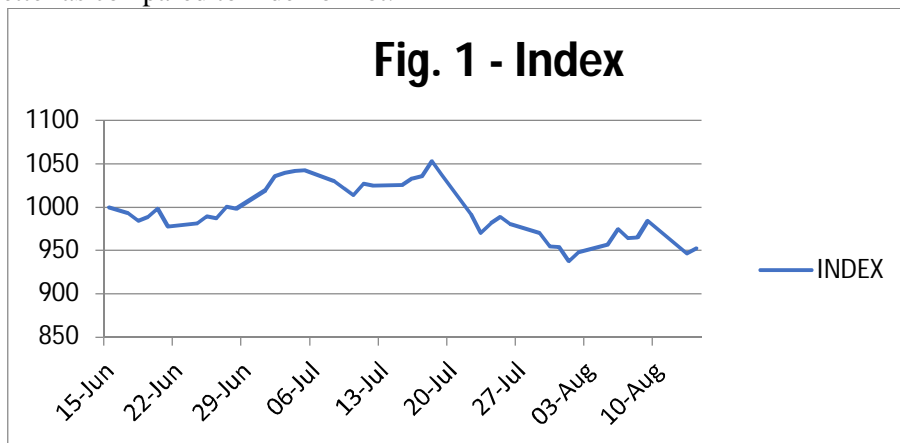


01-Jul	1019.998	29-Jul	970.048		
02-Jul	1035.706	30-Jul	954.7504		
03-Jul	1039.331	31-Jul	953.7001		
04-Jul	1042.033	01-Aug	937.7733		
05-Jul	1042.866	02-Aug	947.7137		
08-Jul	1030.352	05-Aug	957.1909		
09-Jul	1021.594	06-Aug	974.6117		
10-Jul	1013.626	07-Aug	964.1834		
11-Jul	1027.005	08-Aug	965.244		

These are the index of housing finance sector of large capitalization companies of two months from 15 June 2019 to 14 August 2019.

In this one can see that index is increasing in some point of time, and at some point it was decreasing.

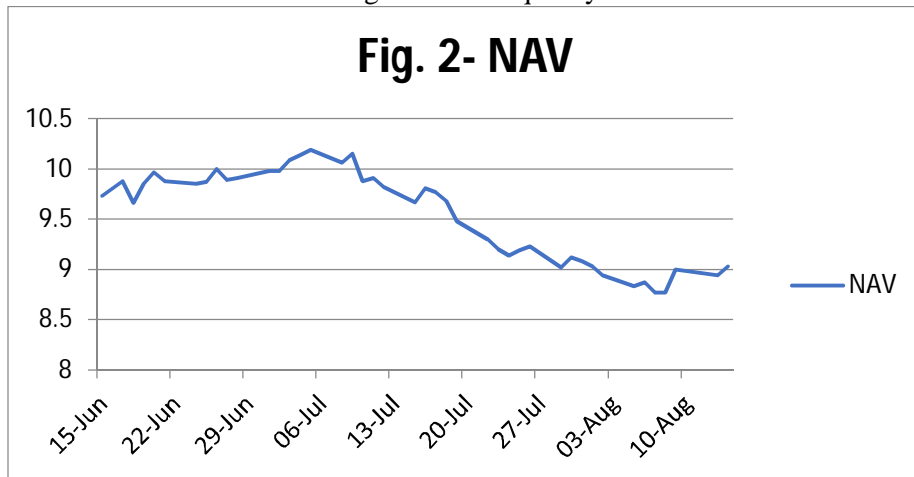
From the data above NAV and Index was compared to find that whether the companies chosen was correct or not and whether the fund created was doing better as compared to index or not.



This graph shows the movement of the Index over the period of two months, it shows that there was upward movement during the period of June and July and



downtrend at the end of the month. The downtrend was mainly due to the announcement of the union budget and the liquidity crunch.



This graph shows the movement of the NAV during the period of the two months, it also shows the same trend as of the index first upward then downtrend at the end of the July.

Since this is the data for very short period of two months due to time constraint but this analysis is for long term. As this is a short term data so the values of NAV could be less than index but in long time it outperforms the Index and in long term it will beat the index and outperform it.

Moreover in this hedging technique is used to cover the risk from any market crash or sudden change in prices.

Conclusion

This study was done on the fundamental analysis of housing finance sector. Various studies related to this were done in different sector. The data for this has been collected from different site and majority of the data was from moneycontrol.

From the fundamental analysis that had been done it can be said that the companies Indiabulls, PNB housing finance and LIC housing finance were three companies in which an investor should invest. These three companies are basically the sector fund of housing sector. The NAV of the sector was moving with the index that means the sector fund was doing great.

The analysis is done for long term purpose but this data is of very short period so at some point of time the NAV was less than Index which might happen in this short period but in long term the NAV will outperform the Index as the proper steps are done to choose the companies and hedging tool is also there



which cover the risk from any sudden change in price or any crash in market as only large cap. Companies are chosen which are less prone to risk.

From the above analysis done, if an investor wants to invest in housing finance sector, they should invest in the above three companies as these are chosen by proper calculations and analysis and they will outperform in long term though in short term the values may vary but in long these companies are good to invest in.

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DIGITAL FINANCIAL SERVICES IN INDIA: AN OVERVIEW

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ABSTRACT:

Digital monetary services have important potential to produce a variety of reasonable, convenient and secure banking services to poor individuals in developing countries. With the amount of Smartphone users in India expected to extend to 450 million by 2022, each financial organization is convinced that on-line delivery of services is that the approach forward Technology-led innovation in monetary services is required to alter speedy, large-scale, and positive amendment. The digital Bharat initiative will simply connect the various teams of society and might facilitate to realize the target of monetary inclusion through digital banking. The impact of quality goes rather more than facilitating on-the-go on-line transactions. Quality supercharged digital commerce has the potential to present a giant boost to monetary inclusion; throwing open banking facilities to individuals yet bring to a halt from identical. At a macro level, it will propel growth, boosting the economy and therefore the GDP of the country itself. This paper depicts that digital monetary services area unit driving monetary inclusion and up monetary health with digital technology. There's associate pressing got to produce awareness among the voters, particularly in rural and semi-urban areas concerning basics of digital finance services.

Key Words: Finance, Technology, Inclusion, Banking, Business, Market, Services etc.

INTRODUCTION:

With the outstanding developments within the field of digital revolution starting off at Associate in nursing exponential pace, in recent times, most of the industries, together with banking and money services sectors, are influenced in a way or the opposite. The arrival of recent technology sometimes results in innovation in trade. No matter the world, new technology is nearly continually adopted to create tasks easier and a lot of economical, and this is applicable to the money sector furthermore. Advancements like credit cards and ATMs have basically modified the method of banking and finance.



This digital revolution, additionally called 'the net economy', is anticipated to come up with new market growth opportunities, jobs and become the most important business chance for businesses within the next thirty to forty years. Digital channels like m-banking square measure doubtless to produce higher coverage and more cost effective services to the unbanked population of India. net revolution could be a world development and going by the present growth statistics, India expects a spurt within the net penetration in returning years notably within the electronic commerce. The emergence of sensible phones is enhancing mobiles from a straightforward communication device to a full-fledged payment device.

Enablers like Jan Dhan, Aadhaar, mobile penetration, and a lot of recently, ending have created favorable conditions for big scale adoption of digital payment systems in India. The new age technologies square measure serving to the economy to attain the specified result by providing worth other services at a reasonable price.

OBJECTIVES:

1. To understand the concept of digital financial services.
2. To know the types of digital financial services.
3. To identify the Government initiatives towards digital financial services.
4. To study the advantages of digital financial services.

RESEARCH METHODOLOGY:

The study is based on the secondary data collected from different journals, magazines, research articles, periodicals, and websites.

Literature Review:

Mukherjee (2011): The author mentioned the role of knowledge and Communication Technology (ICT) to bring development within the rural sector. The agricultural dominated economies square measure effort for the expansion and development. The ICT has started taking part in a vital role in every phase of the society. It's a link with the money services, receiving government advantages and plenty of additional. The character of the necessity becomes additional subtle thanks to that client preference conjointly changes drastically.

Gupta et al (2013): The authors delineated the ICT based mostly payment system within the Indian banking sector. It additionally helps to form method less complicated and value effective. Services like retreating cash, gap bank accounts, transferring cash from one account to a different additionally become attainable with the assistance of those facilities. Access to capital becomes



easier. The timely availableness of fund helps the business teams to get money for business demand during a hassle-free manner.

Pallab Sikdar and Munish Makkad (2013): Studies the advantages it provides from the purpose of read of bank's customers furthermore the banking organization. Net banking, a serious constituent of e-banking framework, has modified the dynamics of economic banking worldwide by nearly conveyance the complete banking set-up at the doorsill of a typical banking client.

Gurpreet Kaur (2015): Studies the result of digital Republic of India initiative on the idea of economic inclusion. The digital Republic of India initiative will simply connect the various teams of society and may facilitate to attain the target of economic inclusion through digital banking.

Dr. N. Sundaram and M. Sriram (2016): Discusses reviews on money inclusion within the Indian perspective, mentioned by completely different researchers everywhere the globe and to focus on the attention level of monetary inclusion, digital money inclusion and barriers confronted to money access.

Suresh Aaluri, Dr. M. Srinivasa Narayana, Dr. P. Vijay Kumar (2016): Studies the trends in banking sector for money inclusion, regulation, technology in India. The recent initiatives taken by Government of India boost to market money inclusion and certainly resulting in the position wherever all Indians have their bank accounts, victimization data Technology enabled services.

Digital Finance:

Digital finance is outlined as money services delivered over digital infrastructure-including mobile and net - with low use of money and ancient bank branches. Exploitation this explicit mode of group action entails less use of money and utility of ancient bank branches. Computers, mobile phones, or cards used over location (POS) devices that connect people and businesses to a digitized national payments substructure, sanctioning seamless transactions across all parties.

Digital Financial Services:

The broad vary of economic services accessed and delivered through digital channels, together with payments, credit, savings, remittances and insurance square measure called digital monetary services. The Digital monetary Services (DFS) construct includes mobile monetary services. During this context, the term "digital channels" refers to the net, mobile phones (both good phones and digital feature phones), ATMs (Automated Teller Machines), POS (Point-of-



Sale) terminals, NFC (Near Field Communication)-enabled devices, chips, electronically enabled cards, biometric devices, tablets, phablets and the other digital system.

There square measure 3 key parts of any such digital monetary services: a digital transactional platform, retail agents, and therefore the use by customers and agents of a tool, sometimes a mobile, to interact via the platform. It's a method by that unbanked population is progressively gaining access to monetary services through digital channels. Banks, microfinance establishments, mobile operators, and third-party suppliers' square measure leverage mobile phones, location devices, alongside networks of small-scale agents, to supply basic monetary services at bigger convenience, scale and lower value than ancient banking permits.

A digital transactional platform allows a client to use a tool to form or receive payments and transfers and to store worth electronically with a bank or nonbank permissible to store electronic worth.

Retail agents armed with a digital device connected to communications infrastructure to transmit and receive group action details alter customers to convert money into electronically keep worth and to remodel keep worth back to money. Betting on applicable regulation and therefore the arrangement with the principal institution, agents might also perform alternative functions.

The client device are often digital (e.g., mobile phone) that's a method of transmission knowledge and data or associate degree instrument (e.g., payment card) that connects to a digital device (e.g., POS terminal).

Digital Financial Products and Services provided to users include:

1. **Transaction Accounts:** Used for safe keeping of funds. They include both bank accounts and e-money accounts.
2. **Payment Services:** Ability to transfer money into or out of an account like remittances, transfers, merchant payments, bill payments etc.
3. **Savings Accounts:** It allows customers to set aside some funds in storage for intended later use.
4. **Investment Services:** It allows individuals or businesses to invest for future financial return.
5. **Loans:** It is a service which extends credit to individuals or businesses like microfinance, secured lending etc.
6. **Insurance Services:** Services that enable individuals and businesses to protect lives and assets.



The major types of Digital Financial Services are as follows

1. Cards
2. Unstructured Supplementary Service Data
3. Aadhaar Enable Payment System
4. Unified Payments Interface
5. E-Wallet

1. Cards:

These are sometimes issued by banks and may be classified supported their supply, usage and payment by the cardboard holder. There are 3 varieties of cards. These are:

Debit Cards:

These are issued by the bank wherever we've got associate degree account. These are connected to the checking account. Debit cards are issued to account holders (current/savings/overdraft) and any expenditure created is instantly debited to user's account. User will use this card to withdraw money up to the limit gift in his/her checking account.

Credit Cards:

These area unit issued by banks/other entities approved by run (Reserve Bank of India). These may be used domestically and internationally (provided it's enabled for international use). in contrast to debit cards, just in case of credit cards, a client also can withdraw on the far side the number of cash gift in his/her checking account. However there's a limit for every MasterCard up to that more money may be withdrawn. Also, there's a limit up to that the additional cash withdrawn ought to be paid back. This quantity of cash is paid back to the bank at the side of interest charges as applied by the establishment of card, just in case of delays on the far side the desired amount.

Prepaid Cards:

This area unit pre-loaded from a customer's checking account. These are used for restricted quantity of dealing. These are recharged like mobile recharge and area unit safe to use.

2. USSD (Unstructured Supplementary Service Data):

It is a service that aims to require banking services to each common person within the country. The service permits each client to access banking services with one variety no matter the telecommunication service supplier; create of the mobile telephone or the region. It's offered through a National Unified USSD



Platform (NUUP) on a brief code *99#. It will be used for payments up to ₹ 5000 per day per client. USSD has 2 sorts of services. These are:

Non- Financial Services:

- Balance Enquiry-User will check the out there balance of the checking account
- Linked to the mobile range.
- Mini Statement-User will generate mini financial statement for the checking account joined to the mobile range.
- Know MMID (Mobile cash Identifier)-User will grasp the MMID assigned by the bank to the account throughout mobile banking registration.
- Generate/Change M-PIN-User will Generate/Change the M-PIN (Mobile PIN) that is sort of a parole and used for authenticating money transactions..

Financial services:

- Fund Transfer victimization Mobile No. and MMID-User will transfer funds by victimization MMID and Mobile variety of the Beneficiary.
- Fund Transfer victimization IFSC and Account No.-User will transfer fund by inputting IFS code and Account variety of the Beneficiary.

3. AEPS (Aadhaar Enabled Payment System):

It is a payment service empowering a bank client to use Aadhaar as his/her identity to access his/her individual Aadhaar enabled checking account and perform basic banking transactions. It permits bank-to-bank dealing at PoS (Micro ATM) with the assistance of Banking Correspondent (BC). The user must seed his/her account with their Aadhar variety at bank or with the assistance of before Christ. User will do as several transactions at any AEPS purpose with none PIN or positive identification.

Types of banking transactions with Aadhaar Enable Payment System:

- Balance Enquiry
- Cash Withdrawal
- Cash Deposit
- Aadhaar to Aadhaar Funds Transfer
- Purchase at Fair Price Shops with AEPS



4. UPI (Unified Payments Interface):

Unified Payments Interface may be a system for immediate, electronic payments through user's sensible phone. It's a complicated version of payment Service (IMPS) that was accustomed transfer cash between bank accounts. Like IMPS, UPI can facilitate

- ❖ It authenticates the identity of the user like a debit card does using the phone as a tool instead of a separate card.
- ❖ It works 24x7, 365 days.

5. E-Wallet:

Electronic billfold may be a form of electronic card that is employed for transactions created on-line through a laptop or a Smartphone. The utility of e-wallet is same as a credit or open-end credit. Associate in nursing e-wallet must be coupled with the individual's checking account to form payments. The most objective of e-Wallet is to form paperless cash dealings easier.

E-wallets area unit classified as postpaid Payment Instruments (PPIs) per Indian regulation. PPIs area unit payment instruments that facilitate the acquisition of products and services, together with funds transfer, against the worth keep in them. PPIs are often issued as sensible cards, magnetic tape cards, web accounts, web wallets, mobile accounts, mobile wallets, paper vouchers, and any such instrument which will be accustomed access the pre-paid quantity.

A mobile billfold is that the digital akin to the physical billfold that we've in our pockets nowadays. It's a vault to store digitized valuables for authorization. It's a web platform that permits a user to undertake numerous transactions while not physical cash transactions. It provides mobile-based money services to the unbanked and people living within the remote geographical locations.

Government Initiatives towards digital financial services:

1. For Infrastructure:

a. IRCTC (Indian Railway Catering and Tourism Corporation) CONNECT:

In order to cater to the growing demand of passengers, to form the ticketing application additional easy and quicker, IRCTC Connect was developed. The new app with many add-on options relies on ensuing generation e-ticketing system. Synchronous with the ticketing web site, the app facilitates search and book train tickets, check existing reservations or cancel them, and obtain approaching journey alerts.



IRCTC e-Wallet could be a theme underneath that user will deposit cash beforehand with IRCTC and might be used as payment choice together with different payment choices out there on IRCTC for paying cash at the time of booking tickets. IRCTC e-Wallet theme provides the subsequent advantages:

- ❖ Hassle-free and secure transactions.
- ❖ Saving booking time by eliminating payment approval cycle.
- ❖ Benefit of saving Payment Gateway charges per ticket.
- ❖ Manage account online and top up online.
- ❖ Dependency on a specific bank is reduced, as when any of the provided banks go offline, passengers can still book tickets from their IRCTC e-Wallet account.

b. Direct Benefit Transfer (DBT):

DBT was initiated with the aim to reform Government delivery system by re-engineering the present method in welfare schemes for less complicated and quicker flow of information/funds and to make sure correct targeting of the beneficiaries, reduplication and reduction of fraud. DBT can bring potency, effectiveness, transparency and irresponsibleness within the Government system and infuse confidence of national within the governance.

c. Aadhaar:

Aadhaar identity platform is one amongst the key pillars of 'Digital India', whereby each resident of the country is supplied with a singular identity or Aadhaar range. the most important biometrics-based identification system within the world, Aadhaar may be a strategic policy tool for social and monetary inclusion, public sector delivery reforms, managing commercial enterprise budgets, increase convenience and promote hassle-free people-centric governance. It distinctive and sturdy enough to eliminate duplicate or pretend identities and will be used as a basis/primary symbol to roll out many Government welfare schemes and programmes for effective service delivery thereby promoting transparency and smart governance.

2. For Services:

a. Un-Reserved Ticket through Mobile Application-UTS App (Unreserved Ticketing System):

To promote paperless economy, Indian Railways has launched its new UTS on mobile application. This official humanoid mobile price ticketing app permits booking unreserved paperless journey ticket; issue/renew commutation ticket and platform ticket. The app has introduced 2 modes of booking mobile tickets- Paper price ticket and Paperless price ticket.



b. BHIM (Bharat Interface for Money):

BHIM is AN app that produces payment transactions easy, simple and fast victimization UPI. It permits direct bank to bank payments instantly and collect cash employing a Mobile range or Payment address. This app is presently obtainable on mechanical man and it's downloadable from Google Playstore, for sensible phones.

3. For Empowerment:

a. Pradhan Mantri Gramin Digital Saksharta Abhiyaan:

This theme empowers the voters in rural areas by coaching them to work laptop or digital access devices (like tablets, good phones etc.), send and receive e-mails, browse net, access Government services, explore for data, undertake digital payment etc. and thus modify them to use the data Technology and connected applications particularly Digital Payments to actively participate within the method of nation building. The theme aims to bridge the digital divide, specifically targeting the agricultural population as well as the marginalized sections of society like scheduled Castes (SC)/Scheduled Tribes (ST), Minorities, below personal income (BPL), ladies and differently-able persons and minorities.

b. Paygov India:

Ministry of physical science and data Technology in conjunction with NSDL management Ltd (NDML) created a standard infrastructure which will be utilized by Center/States/Departments to supply varied services through their National/State portals with a facility to form on-line payment exploitation internet banking, credit cards and debit cards.

c. PAHAL DBTL (Pratyaksh Hanstantrit Labh Direct Benefit Transfer of LPG):

This theme aims to scale back diversion and eliminate duplicate or counterfeit LPG connections. Below the PAHAL theme, LPG cylinders area unit sold at market rates and entitled customers get the grant directly into their bank accounts. This can be done either through Associate in Nursing Aadhaar linkage or a checking account linkage.

d. Digi Dhan ABHIYAAN:

The initiative plans to alter voters and merchants to undertake real time digital transactions through the DIGIDHAN Bazaar. Through organizing DigiDhan Mela's across the country, it aims to appendage users in downloading, putting in and victimization numerous digital payment systems for ending digital transactions.



e. Aadhar Enabled Payment System (AEPS):

AEPS may be a bank light-emitting diode model that permits on-line practical monetary inclusion dealings at PoS (Micro ATM) through the Business correspondent of any bank exploitation the Aadhaar authentication. it's a payment service empowering a bank client to use Aadhaar as his/her identity to access his/her various Aadhaar enabled checking account and perform basic banking transactions like balance enquiry, money deposit, money withdrawal, remittances through a Business Correspondent.

Advantages of Digital Financial Services:

Digitization of monetary transactions extends the standard quality edges to finance, facilitating anyplace, anytime transactions, and adaptability in causation and receiving payments. quite computer-based web penetration and broadband extension, the record growth of good phones and therefore the 4G network rollout created e-tailing well-liked even in secondary cities and cities across the country.

1. More affordable:

Digital payments are creating monetary services a lot of universally reasonable, accessible and thus, have the chance to drive monetary inclusion and monetary health for billions worldwide. The conversion of cash, the fast enlargement of net access, and therefore the adoption of mobile phones, have created the proper conditions to form it reasonable to avoid wasting, spend, provide and borrow.

2. Secure:

Money held in a digital transaction account is secure, and people have assurance that money will go only to the designated recipient, with a record of transaction.

3. Convenient:

These services are highly accessible and easy to sign up for and to use.

4. Catalyst for the provision and use of a diverse set of other financial services:

It includes credit, insurance, savings, and financial education, money-transfer services, microloans, and insurance.



5. Creates an interoperable ecosystem and revenue sharing business models:

Mobile and net banking will improve the money inclusion within the country and might produce win-win scenario for all parties within the value-chain.

6. 24x7 Availability:

Enables customers with the ability to create or receive a payment at any time of day or night, any day of the week.

7. Eco-friendly:

The conversion can facilitate in maintaining the info and records on a digital medium which is able to scale back the hassle of cumbersome work at the side of the paper too.

8. Maintains payments history record:

One of the best benefits which an individual gets is the track of the transactional record. Even doing small transactions at a merchant will get recorded and can be used for the referential purpose in future, if needed.

9. Potential channel:

Digital modes of enhancing money inclusion for ladies by targeting aid teams (SHGs) can be one potential channel for fast and promoting digital money inclusion in India.

10. Digital transactional platforms:

It alter customers to form or receive payments and transfers and to store worth electronically by creating the utilization of devices that transmit and receive group action knowledge and hook up with a bank or non-bank allowable to store electronic worth.



11. Access to formal financial services:

Payments, transfers, savings, credit, insurance, securities, etc. Migration to account-based services usually expands over time as customers gain familiarity with and trust in an exceedingly digital transactional platform. Government-to-person payments, like conditional money transfers, could change digital stored-value accounts may give a path for the financially excluded into the economic system.

12. Reduces risks:

It reduces risks of loss, theft, and alternative money misconducts posed by cash-based transactions, still because the reduced prices related to transacting in money and exploitation informal suppliers.

CONCLUSION:

With the digital shift in core business, finance needs to enable and drive the change. A holistic cooperation between consumers and Government can be the road-map to reap true potential of digital finance and financial inclusion. The application of technology can improve the payment facility more smooth and transparent. The ambitious flagship Scheme DIGITAL INDIA also has one pillar as digital financing as its target. The potential of digital finance is huge. Financial independence will give empowerment to women and weaker sections of society, which is imbedded motive of financial inclusion and digital finance. Adopting digitization in financial services and including most of population in the net of banking will help in growth and development of country. With several digital financial instruments in the market, the consumer now has more choice than ever.

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సుమతీ శతక పద్యం – శాస్త్రీయ విశ్లేషణ

డాక్టర్ బాలరాజు చంద్రమౌళి

వృక్ష శాస్త్ర అధ్యాపకులు

యస్. జి. ఎ. ప్రభుత్వ డిగ్రీ కళాశాల

యలమంచిలి

పరిచయం:

తెలుగు అంటే తియ్యదనం, తెలుగంటే కమ్మదనం, తెలుగంటే అమృతనం. అన్నీ కలిసిన అమృతం తెలుగు. దేశ భాషలందు తెలుగు లెస్స అని సాహితీ సమరాంగణ సార్యభౌముడుగా కీర్తికెక్కిన కన్నడ ప్రభువు శ్రీకృష్ణ దేవరాయలు, ఆనాడు తెలుగు వైభవాన్ని చాటి చెప్పారు. తెలుగు భాష అన్నిటికన్నా తియ్యవైనది అని విశ్వకవి రవీంద్రనాథ్ ఠాగూర్ అన్నారు. వందేళ్ళు తపస్సు చేస్తేగాని తెలుగువాడిగా పుట్టగలిగే అదృష్టం, తెలుగు మాట్లాడే అవకాశం రాదన్నారు ప్రముఖ తమిళ కవి అప్పయ్య దీక్షితులు. "సుందర తెలుగు" అని తమిళ మహాకవి సుబ్రమణ్య భారతి మెచ్చుకున్నాడు. ఉన్న ఉద్యోగాన్ని మానేసి తెలుగు భాషకై కృషి చేసిన విదేశీయుడు చార్లెస్ ఫిలిప్ బ్రౌన్. ఇది ద్రవిడ భాషలలో ఒకటైన పురాతన భాష. ఇది ప్రధానంగా ఆంధ్రప్రదేశ్, తెలంగాణ రాష్ట్రాలకు మాత్రం భాష మరియు అధికార భాష. కేంద్రపాలిత ప్రాంతమైన పాండిచ్చేరిలో కూడా కొంతమంది తెలుగు మాట్లాడుతారు. దీనిని పూర్వం తెలుంగు లేదా తెనుంగు లేదా ఆంధ్రము అనేవారు. తెలుగు భాష క్రీ.పూ 400 సంవత్సరాల నుండి వాడుకలో ఉంది. 16వ శతాబ్దంలో నికోలో డికోంటి అనే ఇటలీ దేశపు శోధకుడు తెలుగు భాషకు The Italian of the East అని పేరు పెట్టాడు.

అత్యధిక సామెతలు గల భాషగా కూడా తెలుగు రికార్డు నెలకొల్పింది. అవధాన ప్రక్రియ మన తెలుగు భాషకు, తెలుగు వారికే సొంతం. నీటి వలే ఏపాత్రలో పోసినా, అట్టి ఆకారాన్ని పొందగల పంచభూతం తెలుగు. మన దేశంలో ప్రాచీన భాషలైన సంస్కృతం, తమిళంతో బాటు తెలుగు భాషను 2008 అక్టోబరు 31న భారత ప్రభుత్వం గుర్తించింది.

తెలుగు పద్యాలు నీతిని, ధర్మాన్ని, న్యాయాన్ని, అహింసను, మానవత్వాన్ని, భారతీయ వైభవాన్ని, సాంస్కృతిక విలువలను అపూర్వంగా ప్రబోధిస్తాయి. అంతే కాకుండా భక్తి, వేదాంత భావాలతో, శాస్త్రీయమైన ఆలోచనలతో మానవునిలో పరిపూర్ణమైన వ్యక్తిత్వ వికాసాన్ని పెంపొందింపజేస్తాయి. మానవుడిని మహనీయుడుగా తీర్చిదిద్దుతాయి.

తెలుగు సాహిత్యంలో అనేక శతక సాహిత్యాలున్నప్పటికీ, వీటిలో వేమన శతకము, సుమతీ శతకాలు అత్యంత ప్రాచుర్యం పొందినవి. చిన్న చిన్న పదాలతో ఎంతో అర్థాన్నిస్తాయి. అర్థాన్నే కాకుండా జీవితానికి పరమార్థాన్ని అందించి మనిషిని మహోన్నతుడిగా తీర్చిదిద్దే మణిపూసలు మన తెలుగు పద్యాలు.



తెలుగు వారికి కండబలం, గుండెబలం, నిండుదనాన్ని చేకూర్చింది తెలుగు పద్యమే. తెలుగు పద్యాలు ఎంతో శాస్త్రీయతను కలిగి వుంటాయి. శాస్త్రీయ కోణంలో విశ్లేషించినపుడు అంతర్దీనమై వున్న భావం బోధపడుతుంది. ప్రతి ఒక్కరు తెలుసుకొని జీవితంలో పాటించదగిన, నాకు నచ్చిన ఒక మంచి తెలుగు పద్యం.

క., తన కోపమే తన శత్రువు

తన శాంతమే తనకు రక్ష, దయ చుట్టంబో

తన సంతోషమే స్వర్గము

తన దుఃఖము నరకమండ్రు, తద్యము సుమతీ! (సుమతీ శతకం).

భావం:

మానవునికి తన కోపమే శత్రువు. శాంతంగా వుండడమే తనకు రక్ష. దయా గుణం తనకు చుట్టం. తన సంతోషం తనకు స్వర్గం. తన దుఃఖమే నరకం. ఇది నిజం.

వివరణ:

మనిషి జీవితం మొత్తం నిద్ర లేచినప్పటినుండి, రాత్రి పడుకునే వరకూ ఈపద్యంతో ముడిపడి వుంటుందనేది నాభావన. కోపం, శాంతం, రక్ష, దయ, సంతోషం, దుఃఖం, స్వర్గం మరియు నరకం అనే ఈ పదాలు లేకుండా మనిషి జీవితం వుండదు. వ్యక్తి వికాసానికి, మనిషి తన జీవితాన్ని సుసంపన్నం చేసుకోవడానికి ఈ ఒక్క పద్యం చాలు. మనిషి జీవితం నుండి విడదీయలేనిది పద్యం. ఈపద్యంలో ఎంతో శాస్త్రీయత దాగి వుంది.

పదార్థం గురించి చెబితే అది విజ్ఞానం, పదార్థానికి ఆవల వున్నదానిని గురించి చెబితే అది జ్ఞానం అవుతుంది. వృక్ష, జంతు, భౌతిక మరియు రసాయనిక శాస్త్రాలు కనిపించే పదార్థం గురించి వివరిస్తాయి. కనపడని అంశాలైన కోపం, కామం, అహంకారం, ఈర్ష్య, అసూయ మొదలైన వాటి గురించి, వాటి ఫలితాల గురించి చెప్పేది తత్వశాస్త్రం.

ప్రకృతిలో పరమాణువైనా, పరమాణువులతో తయారైన పదార్థమైనా, మనిషైనా, ఇతర జీవరాశులైనా ఎప్పుడూ సహజ స్థితిలో వుండడానికి ప్రయత్నం చేస్తాయి. సహజ స్థితిలో వుండాలి కూడా. పదార్థానికైనా, పదార్థంతో తయారైన మనిషికైనా అప్పుడే మనుగడ సాధ్యం. పరమాణువుకు కాస్త శక్తినందిస్తే, ఎలక్ట్రాన్లను విడుదల చేసి, భూస్థాయి (సహజ స్థితి) నుండి ఉద్రిక్త స్థాయికి చేరుకుంటుంది. అలా ఉద్రిక్త స్థితిలోగల పరమాణువు తను కోల్పోయిన ఎలక్ట్రాన్లను తిరిగి తీసుకోవడం ద్వారా గాని, ఇతర పరమాణువుల లోని ఎలక్ట్రాన్లను పంచుకోవడం ద్వారా గాని భూస్థాయికి (సహజ స్థితి) వచ్చి స్థిరత్వాన్ని పొందుతుంది. ఉద్రిక్త స్థితిని శాస్త్రీయంగా ఆక్సీకరణ స్థితి అంటారు. ఇది ప్రమాదకరమైనది. ఆక్సీకరణ ప్రక్రియ ఇనుమును సైతం మట్టి చేయగలదు.

పరమాణువు భూస్థాయికి రాకుండా ఉద్రిక్త స్థితిలోనే ఎక్కువ సమయం వుంటే ఆపరమాణువుకు ఉనికి లేదు, నశించి పోతుంది. ఒక నిర్జీవమైన పరమాణువే ఉద్రిక్త స్థితిలో వుంటే నాశనం ఐతే, ప్రాణం వున్న



మనిషికి కోపం అనే ఉద్రిక్త స్థితిలో వుంటే, ఆమనిషి తుక్కు తుక్కు అవుతాడు, క్షీణిస్తాడు. ఆ వ్యక్తికి మనుగడ లేదు.

కోపం వెనుక గల శాస్త్రం (Science behind anger):

కోపం అనునది తీవ్రమైన భావజాలం. గర్వం తియ్యని విషమైతే, కోపం చేదైన విషం. ఒత్తిడిలో మొదటిది. మనిషి కోపంలో ఉన్నప్పుడు సాధారణంగా శ్వాసరేటు పెరుగుట, శరీరంలో చెమటలు పట్టడం, చేతులు వణకడం, కంటిపాప పెద్దది అవడం, ముఖం ఎర్రబడుట, రక్తపోటు ఎక్కువ కావడం వంటి ప్రతిస్పందనలు కనిపిస్తాయి (Rothenberg, 1971; Hendricks *et al*, 2013). పదే పదే కోపానికి లోనయ్యే వ్యక్తికి గుండెపోటు వచ్చే అవకాశం ఎక్కువగా వుంటుందని పరిశోధనలు తెలియజేస్తున్నాయి (Hendricks *et al*, 2013). కోపం రావడానికి అనేక కారణాలున్నప్పటికీ, మొత్తానికి నష్టం జరిగేది అది కలిగిన వ్యక్తికే. మనస్సుకు, శరీరానికి ఇది హాని కలిగిస్తుంది.

కోపం వల్ల రక్తంలో ఎపినెఫ్రిన్ లేదా అడ్రనాలిన్ అనే హార్మోన్ విడుదలౌతుంది. దీనివల్ల ఉద్వాసన, నిశ్వాసలు పెరిగి గుండె కొట్టుకునే వేగం పెరుగుతుంది (Lakoff and Kovecses, 1987). దీని వల్ల రక్తపోటు సంభవిస్తుంది. ఈ హార్మోన్లు పరిస్థితిల కు ఎదురు నిలబడి పోరాడు లేదా పారిపో అనే సంకేతాలను ఇస్తుంది. నాన్ ఎపినెఫ్రిన్ (అడ్రనాలిన్ రవ్) అను హార్మోన్లు కూడా విడుదలై గుండె కొట్టుకొనే వేగాన్ని మరియు రక్తపోటును పర్యవేక్షిస్తూ ఈవివత్సర పరిస్థితుల నుండి తప్పుకొని, రక్షించుకునే విధంగా శరీరానికి బలాన్నిస్తుంది.

ఇలా కోపంలో వున్నప్పుడు మన శరీరంలో ఇన్ని రకాలైన రసాయనిక మార్పులు జరుగుతాయి. ఈ హార్మోన్లతో పాటు మరికొన్ని విష రసాయనాలైన కాటకోలమైన్లు విడుదలౌతాయి. అవి మన యొక్క వ్యాధి నిరోధక శక్తిని నాశనం చేస్తాయి. దీనివల్ల కొన్ని నిమిషాలపాటు శరీరంలోని ప్రాణశక్తి ఒక్కసారిగా తీసివేయబడుతుంది (Hendricks *et al*, 2013). విష రసాయనాలు రక్తాన్ని గడ్డ కట్టించి, రక్తనాళాలలో రక్త ప్రవాహాన్ని అడ్డుకోవడం గుండె కొట్టుకొనే వేగం పెరుగుతుంది. ఈ పరిస్థితిలో మెదడు ఎక్కువ ఆక్సిజన్ ను తీసుకునే ప్రయత్నం చేస్తుంది. తగినంత ఆక్సిజన్ మెదడుకు అందక పోవడం వల్ల, అధిక రక్తపోటుకు దారి తీసి ఛాతరిలో నొప్పి వచ్చి గుండెపోటు వస్తుంది (Hendricks *et al*, 2013).

కార్డిసాల్ అనే ఇంకొక హార్మోన్లు కూడా కోపంలో విడుదలౌతుంది. దీనివల్ల శరీరంలోని శక్తి తీసివేయబడుతుంది. కార్డిసాల్ ఎక్కువగా విడుదలైతే త్వరగా ముసలితనం వస్తుంది. దీనివల్ల రక్తంలో సమతుల్యత దెబ్బ తిని వ్యాధి నిరోధక శక్తి తగ్గుతుంది (Hendricks *et al*, 2013).

పురుషుడు నిత్యజీవితంలో సమాజంలోని అనేక సంఘటనలను ప్రత్యక్షంగా ఎదుర్కోవడం వల్ల ఒత్తిడికి లోనవుతాడు. దీనివల్ల స్త్రీలలో కంటే పురుషులలో గుండెపోటు వచ్చే అవకాశాలు ఎక్కువగా వుంటాయి (Hendricks *et al*, 2013). స్త్రీ మరియు పురుషుల ఇద్దరిలో కోపం వచ్చినప్పటికీ, స్త్రీలలో కంటే పురుషులలో కోప భావాలు ఎక్కువగా వుంటాయని, తరుచుగా బహిర్గతం చేస్తారని పరిశోధనలు



తెలియజేస్తున్నాయి. స్త్రీలలో కోపం వచ్చినప్పటికీ, వారు దానిని ప్రకటించక, ఒక్కోసారి వారికే తెలియనంత సూక్ష్మంగా గుండెల్లో దాచుకొని, విజయవంతంగా నియంత్రించుకుంటారు (Hendricks *et al.*, 2013).

కోపాన్ని నియంత్రించే కొన్ని మార్గాలు:

1. ధ్యానం
2. నవ్వుడం
3. గ్రంథ పఠనం
4. మంచి సంగీతం వినడం

ఈ నాలుగు అంశాలను పాటిస్తే మనసుకు ప్రశాంతత, మనిషికి విశ్రాంతి, ఆరోగ్యం లభిస్తాయి. నవ్వుడం, గ్రంథ పఠనం, మంచి సంగీతం వినడం సులభంగా ఆచరించదగిన అంశాలు. ధ్యానం సుదీర్ఘమైన ప్రక్రియ. దీనికి సంసిద్ధత, ఓపిక మరియు ఏకాగ్రత అవసరం.

ప్రమాదకరమైన కోపాన్ని అణిచివేసే ప్రధాన ఆయుధం ధ్యానం ఒక్కటే. ధ్యానంతో అద్భుతాలను సాధించవచ్చు. ధ్యానము కూడా శాస్త్రీయమైనది. ధ్యానంలో వున్నప్పుడు కూడా కోపాన్ని, ఇతర ఒత్తిడిల నుండి ఉపశమనాన్ని కలిగించే కొన్ని హార్మోన్లు, రసాయనాలు విడుదలౌతాయి. అవి సెరటోనిన్, కార్బినోల్, మెలటోనిన్, అసిటల్ కోలీన్ మరియు ఎండార్ఫిన్లు (Jevning *et al.*, 1992). ధ్యానం చేయడం వల్ల రక్తంలో విడుదలైన సెరటోనిన్ మరియు ఎండార్ఫిన్లు ఒత్తిడిని తగ్గించి, ఆనందాన్ని కలుగజేస్తాయి, ఆయుస్సును పెంచుతాయి. ధ్యానంలో విడుదలైన అసిటల్ కోలీన్, ఒత్తిడి హార్మోన్ల ప్రభావాన్ని తగ్గించి శరీరానికి విశ్రాంతినిస్తుంది (Hendricks *et al.*, 2013). ముప్పై నిమిషాల పాటు ధ్యానం చేస్తే సెరటోనిన్ గాఢతలు పెరిగి మనిషికి ఆరోగ్యాన్నిస్తాయి (Jevning *et al.*, 1992; Perez and Holmes, 2000). అంతే కాకుండా ధ్యానం చేయడం వల్ల ప్రమాదాన్ని కలిగించే కార్బినోల్ గాఢతలు తగ్గుతాయని పరిశోధనలలో తేలింది (Jevning *et al.*, 1992; Perez and Holmes, 2000).

కనిపించే పదార్థంపై పరిశోధన చేస్తే శాస్త్రవేత్త అంటారు. ఇతడు శాస్త్రవేత్తగా మాత్రమే వుండగలడు. కనిపించని తత్వాలైన కోపం, అసూయ మొదలైన అరిషడ్వర్గాలపై పరిశోధన చేస్తే తత్వవేత్త అంటారు. ఒక తత్వవేత్త, శాస్త్రవేత్తగానూ మరియు తత్వవేత్తగానూ వుండగలడు. కానీ ఒక్క కవి మాత్రమే శాస్త్రవేత్తగానూ, తత్వవేత్తగానూ మరియు కవిగానూ వుంటాడు. పరిశీలన, పరిశోధన మరియు తత్వ విచారణ వంటి అంశాలు సైతం కవికి సొంతం. ఇంతటి శాస్త్రీయత ఈపద్యంలో వున్నది కావున ఆకవిని శాస్త్రవేత్త అని అంటాను. అందుకే తెలుగు సాహిత్యం, అందు నా తెలుగు పద్యం శాస్త్రీయమైనది, వెలకట్టలేనిది. తెలుగు భాష మాట్లాడుతున్నప్పుడు శరీరంలోని లోపలి అవయవాలకు వ్యాయామాన్ని ఇవ్వడమే కాకుండా, 72000 నాడులను ఉత్తేజం చేస్తుందని శాస్త్రం చెబుతుంది. ఒక్క రూపాయి డబ్బు ఖర్చు పెట్టకుండా శరీరానికి వ్యాయామం ఇవ్వగల ఏకైక భాష మన తెలుగు. ధ్యానం చేయలేనివారు, కనీసం తెలుగు భాషను స్పష్టంగా



మాట్లాడగలిగినా ధ్యాన ఫలితాలను పొందగలుతారు. అటువంటి తెలుగు భాషలో మనం మాట్లాడుదాం, మన తెలుగు భాషను కాపాడుకుందాం.

ముగింపు:

మనిషికి కోపం బలమైన ఒత్తిడి. మనిషికి కోపంతోపాటు అనేక ఉద్రిక్త స్థితులున్నప్పటికీ, మొదటి శత్రువు కోపమే. అందుకే సాధ్యమైనంత వరకు మనిషి కోపంలో వుండకుండా, దాని దరి చేరకుండా పదికాలాల పాటు ప్రశాంతంగా, ఆనందంగా జీవించే సహజ స్థితిలో వుండాలి. మనిషి ప్రతి భావోద్వేగం పట్ల ఎరుకతో, శాస్త్రీయమైన అవగాహనను కలిగి వుండి, సాహిత్యాన్ని, తత్వాన్ని శాస్త్రంతో ముడిపెట్టుకుని విశ్లేషణ చేసుకుంటే సత్యం ఆవిష్కరించబడుతుంది. ఏమతమైనా, ఏపూరాణమైనా, ఏగ్రంథమైనా చెప్పే అంతిమ సత్యం ఇదొక్కటే.

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DEPOSIT MOBILIZATION OF CENTRAL CO-OPERATIVE BANKS LIMITED IN DHARMAPURI DISTRICT

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Guest Lecture

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INTRODUCTION:

The banks raise funds by accepting deposits from the public including members of the bank. Deposits are the life – blood of banking institutions, including rural banks. Banks undertake lending operations for earning profit. Deposits are very important and therefore banks compete aggressively among themselves for moping up deposits. The banks should introduce various deposit schemes to attract a vareity of people to suit their tast¹. The mobilization of resources through deposits helps the bank to meet the growing demands from various sectors of the economy, namely agriculture, small scale industry, weaker section of the community and the like. “The quantum of deposits and growth rate in deposit figures show the extent of public confidence that a bank enjoys”². It is size of the deposits that largely decides the lending potential of a bank. As a result of the green revolution, the rural incomes have increased and it is essential to mop up the finance. Therefore district central cooperative bank intimate contracts with the rural areas are the best agencies to mobilize deposits. In the words of All India Rural Credit Review Committee (1969) deposits not only form an important sources of funds for the cooperative banks but help the banks immediately by enabling them to cushion their overdues and maintain an uninterrupted flow of credit from the higher financing agencies. The expanding area and scale of cooperative activity and growing diversification have made it necessary for cooperative banks to build up large resources by way of deposits³.

Hence this chapter anlyse the deposits and their mobilization by the Dharmapuri District Central Cooperative Bank Limited type wise and sources wise . It compares the deposits of DDCCBL.

ANALYSIS OF VARIOUS TYPES OF DEPOSITS:

This section makes an attempt to analyse the trend and growth of various types of Deposits namely savings, current and fixed deposits collected by Dharmapuri District Central Cooperative Bank Limited during the period 2002-03 to 2011-12

FIXED DEPOSITS:

Fixed Deposit of definite sum of Money for a fixed period at a fixed rate of interest. The depositor agrees to receive back the principal amount after the



stipulated period. Interest may be received either periodically or on maturity. Fixed deposits constitute a major portion of the total deposits of the study unit. Fixed deposits include cash certificates, recurring deposits, provident fund deposits, security deposits from employees, family benefit fund, general provident fund, Amudha Surabi deposits and the like. The details of fixed deposits collected by Dharmapuri District Central Cooperative Bank the period from 2002-03 to 2011-12 are presented in Table 4.1

TABLE 4.1
TREND OF FIXED DEPOSITS DURING 2002-03 TO 2011-12
(Rs. in Lakhs)

Year	Fixed deposits	AGR	CAGR
2002-03	22,193.43	-	
2003-04	21,161.78	-4.65	
2004-05	21,154.46	-0.03	
2005-06	20,424.74	-3.45	
2006-07	21,224.75	3.92	
2007-08	25,903.86	22.05	
2008-09	31,233.01	20.57	
2009-10	43,960.25	40.75	
2010-11	48,211.25	9.67	
2011-12	56,583.72	17.37	10.94%

Source: Annual Reports of Dharmapuri District Central Co-operative Bank Ltd From 2002-2003 to 2011-2012

Table 4.1 shows the fixed deposits, Annual growth rate of fixed deposits and Compounded growth rate of fixed deposits in Dharmapuri central co-operative bank during the study period 2002-03 to 2011-12. The Fixed deposit was Rs. 22,193.43 lakhs during the first year 2002-03 and it is declined during the next three years 2003-04, 2004-05 and 2005-06. The maximum decrease in fixed deposits during the study period occurred in 2003-04 (4.65%). From 2006-07 the fixed deposit growth moves in increasing trend and the maximum growth in the fixed deposit occurred in the year 2009-10 (40.75%) and the lowest growth occurred during the year 2006-07 (3.92%). The overall compound annual growth rate was 10.94% regarding fixed deposits in the Dharmapuri central co-operative bank.

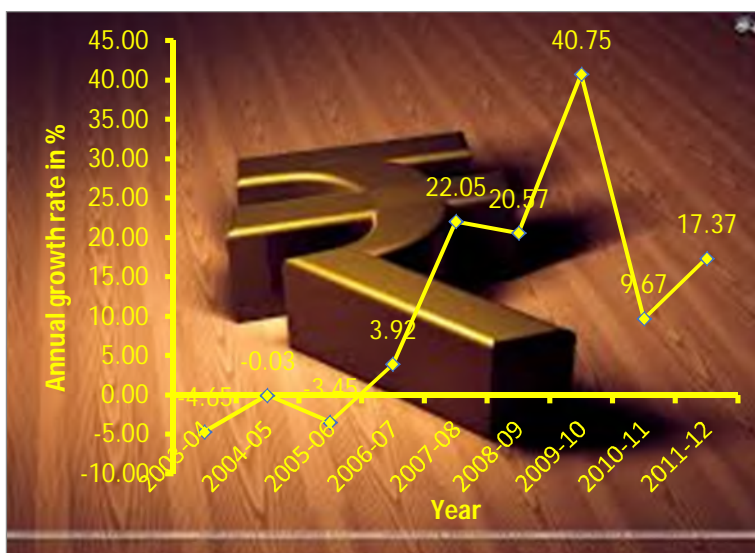


Figure 4.1: Trend of Fixed deposits during 2002-03 to 2011-12

SAVING DEPOSITS:

Saving deposits is the most common type which caters to the needs of almost all sections of customers. It inculcate thrift and saving habits among the public clientele of the central cooperative banks belong to the lower middle and upper middle class. The surplus earned is deposited in the form of saving deposits. The bank mobilizes saving deposits mainly from individuals and cooperative societies.

The details of saving deposits collected by Dharmapuri District Central Cooperative Bank during the period from 2002-03 to 2011-12 are presented in Table 4.2

TABLE 4.2
TREND OF SAVINGS BANK DEPOSITS DURING 2002-03 TO 2011-12
(Rs. In Lakhs)

Year	Savings bank deposits	AGR	CAGR
2002-03	3,120.01	-	
2003-04	3,289.17	5.42	
2004-05	3,669.23	11.55	
2005-06	4,453.46	21.37	

2006-07	5,980.22	34.28	
2007-08	6,627.10	10.82	
2008-09	7,415.52	11.90	
2009-10	7,617.42	2.72	
2010-11	9,048.32	18.78	
2011-12	10,577.05	16.90	14.51%

Source: Annual Reports of Dharmapuri District Central Co-operative Bank Ltd
From 2002-2003 to 2011-2012

Table 4.2 shows the savings bank deposits, Annual growth rate of savings bank deposits and Compounded growth rate of savings bank deposits in Dharmapuri central co-operative bank during the study period 2002-03 to 2011-12. The savings bank deposits was Rs. 3,120.01 lakhs during the first year 2002-03 and the growth in the rest of the years in the study period is in the increasing trend. The maximum growth in the savings bank deposit occurred in the year 2006-07 (34.28%) and the lowest growth occurred during the year 2009-10 (2.72%). The overall compound annual growth rate was 14.51% regarding savings bank deposits in the Dharmapuri central co-operative bank.

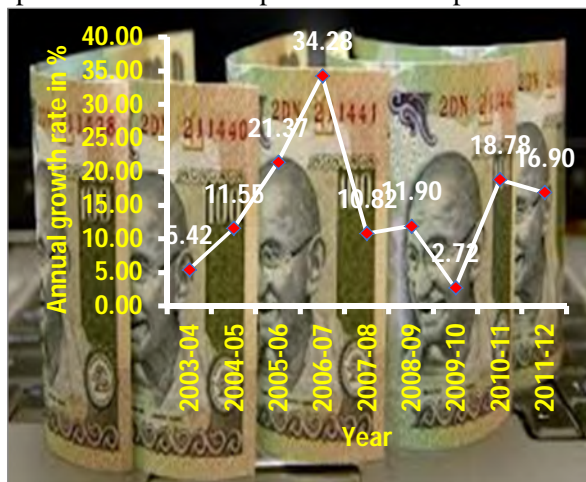


Figure 4.2: Trend of Savings bank deposits during 2002-03 to 2011-12

CURRENT DEPOSITS:

Current deposits cater to the needs of business people who make use of cheque facilities extensively and also receive cheques in their favour from



others. This is just to facilitate the business men dealing frequently with the account in the course of business which may necessitate withdrawing their funds at short notice and also frequently depositing their surplus funds. However, there is no restriction that only business people should open current account. The banks accepts current deposits from individuals, cooperative societies, government institution, local bodies, other central cooperative Banks and the like.

The details of current deposits collected by Dharmapuri District Central Cooperative Bank Limited during the period from 2002-03 to 2011-12 are presented in Table 4.3.

TABLE 4.3
TREND OF CURRENT DEPOSITS DURING 2002-03 TO 2011-12
(Rs. In Lakhs)

Year	Current deposits	AGR	CAGR
2002-03	1,401.45	-	
2003-04	1,461.32	4.27	
2004-05	1,160.77	-20.57	
2005-06	,714.68	-38.43	
2006-07	1,604.68	124.53	
2007-08	1,914.84	19.33	
2008-09	1,880.95	-1.77	
2009-10	3,343.84	77.77	
2010-11	2,682.15	-19.79	
2011-12	3,612.46	34.69	11.08%

Source: Annual Reports of Dharmapuri District Central Co-operative Bank Ltd From 2002-2003 to 2011-2012

Table 4.3 shows the current deposits, Annual growth rate of current deposits and Compounded growth rate of current deposits in Dharmapuri central co-operative bank during the study period 2002-03 to 2011-12. The current deposits during the first year of study period 2002-03 is Rs.1,401.45 lakhs and the growth trend of current deposits shows improvements and decline throughout the study period. Increase in the growth has happened in the years 2003-04, 2006-07, 2007-08, 2009-10 and 2011-12. Decline in current deposits has happened in the years 2004-05, 2005-06, 2008-09 and 2010-11. The maximum growth in the current deposits occurred in the year 2006-07 (124.53%) and the lowest growth occurred during the year 2003-04 (4.27%). The overall compound annual growth rate was 11.08% regarding current deposits in the Dharmapuri central co-operative bank.

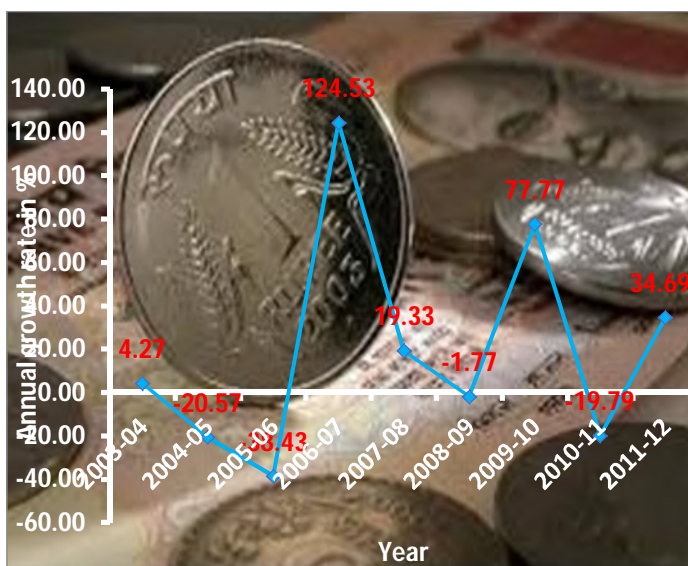


Figure 4.3: Trend of Current deposits during 2002-03 to 2011-12

SOURCE – WISE ANALYSIS OF DEPOSITS:

In this section an attempt has been made to analysis the deposits collected by Dharmapuri District Central Cooperative Bank from various sources. The bank mobilizes deposits from member cooperative societies and individuals. The deposits of individuals include deposits from the general public, clubs, educational institutions, local bodies and corporate bodies.

CONSLUSION

In this chapter the researcher has analysed the mobilization of deposits in terms of type-wise deposits and source-wise deposits. It was found that nearly 65 to 85 percent of fixed deposits dominate the total deposits followed by saving deposits and current deposits during the study period. Nearly three-fourths of the fixed deposits and saving deposits were held by individual.

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1. H. R. Mukhi op.cit p 154
2. B. Krishnasamy “Deposit mobilization why and here” Indian Banking Today & Tomorrow, Nov 1983 p19
3. R. D. Bedi op.cit p250



A STUDY OF INTERNET USAGE AMONG SECONDARY SCHOOL ADOLESCENTS IN RELATION TO THEIR GENDER

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Abstract:

Internet addiction has been emerged as a rampant problem in contemporary world. Internet has converted the classically segregated world into virtual village. However, gender gap still exists in its usage, especially in developing and under developed countries. Adolescents are the main users of new technologies and social net-working sites. Keeping in view, the present study was intended to investigate the level of internet usage of secondary school adolescents in relation to their gender. Internet Usage Scale (IUS) developed by Shaloo Saini and Parminder Kaur was used for data collection. 100 respondents were selected by using random sampling technique with due representation of male female dichotomy. The collected data was statistically analysed by using descriptive as well as inferential statistics. The results subsequently, indicate that male adolescents were observed with high level of internet usage as compared to female adolescents. In addition to this, the study revealed that the impact of gender was found significant on the level of internet usage.

Key words: Internet Usage, Secondary school Adolescents, Gender

1.1: INTRODUCTION: In the contemporary world, “*Internet*” plays a vital role in the teaching, research and learning process. Society is more obviously considered the “*web of social relationship*”, however in the present era this web of social relationship is more facilitated through the process of internet usage. The human work culture has even evolved from complex to simple; this ample simplification has been done through the process of information and communication technology. The backbone of the information and communication technology is purely dependable on internet usage. It is assumed that Indian youth feel more dependent on the Internet for gaining their day to day fulfilment especially in education, business, communication, health and social interaction. For instance, we will observe that the concept of flipped classroom, digital learning, virtual teaching, digital libraries, e-learning and open and distance learning is that dream of developed and under developed countries, which they want to achieve through the tool of internet. Internet usage has delimited all those boundaries, where each nation is making security through physical deputation of security personals, there internet has delimited those international boundaries by converting a world into a global village. Internet has brought a new type of “social engagement” which is limitless and where geographical boundaries hardly matters. Sociologically speaking, internet has brought such type of interaction in which one can share interactions with family members, peers, and members of their social or personal communities and have the result of forming a cohesive group that makes the individuals feel a sense of belonging, despite of his physical separation. So, in this era, internet is beneficial for each and every stakeholder of the society, especially teachers and students can carry forward their work on the Internet in ways that are similar to and tightly intertwined



with the traditional ways that they learn, teach and study in libraries, classrooms, laboratories, seminars, conferences, etc. The Internet can provide access to essentially unlimited resources of information not conventionally obtainable through other means. In connection to same, Liu and Wilson (2001) argued that information technology has taken the world by storm and is changing the way businesses learn, consequently rushing their development across the globe; it cannot be denied that the entire generation that is growing up with new technology is likely to have different expectations and experience towards the use of digital media. Therefore, the role of Information and technology (ICT) in human development has received momentum due to growing propagation of the Internet. Information and Communication Technology (ICT) has been viewed as a cluster of associated technologies defined by their functional usage in information access and communication of which one embodiment is the Internet Ogunsola & Aboyade, (2005). Being a newly established dimension of modern technology in the contemporary world, Internet plays a vigorous role in the change and evolution of lives of the people in present society.

1.2: NEED AND IMPORTANCE OF THE STUDY: The internet is the 21st century gateway of opening the intellectual aspirations of young people. The role of computer and internet as the means for socializing with others, education, access to information, entertainment, shopping and communication is growing spectacularly in the life of youth. Subsequently, internet has left world in such situation as now it is difficult to remain without its usage. Marginalised and non-marginalised societies are dependable upon internet. Internet is becoming basic requirement of students, academicians, business professionals and housewives. It provides extensive information for products, courses or whatever is needed. The Internet is a fascinating world to visit. The ever increasing number of people accessing Internet coupled with recent explosion of information resources on the Internet may have considerable implications for teaching, learning and research. Teachers and students are depending more and more on the Internet for their various educational purposes. Internet sites put forward entertainment, knowledge, advice, great shopping, and a whole social world. Students may work out several problems visiting Internet website. Internet can manage socio-economic strength of the society. Internet and youth become intimate. Liu and Wilson (2001) argued that information technology has taken the world by storm and is changing the way businesses learn, consequently rushing their development across the globe; it cannot be denied that the entire generation that is growing up with new technology is likely to have different expectations and experience towards the use of digital media. Gender differences in internet usage and web information seeking behaviours have attracted considerable interests among researchers. Liu and Huang (2008) study on male/female differences in web searching materials by focusing on the online reading environment shows that there is a significant difference between genders in which female readers have a strong preference for paper as a reading medium than male readers. On the other hand male readers have greater sense of satisfaction with online reading. Thus the study reported that there are some significant differences between male and female behaviour in the online reading environment. Lin and Yu (2008) found that boys tended to spend a little more time than girls in terms of weekly use of the



Internet. They also differed significantly in their top three online activities: the percentages of time girls spent searching for homework information and using e-mail were higher than those of boys; in contrast, boys played games more often than did girls. Hanauer et al. (2004) surveyed a diverse community college to assess the use of the Internet by the students for health-related information. The survey showed that although all the students surveyed had free Internet access through their community college, yet only 97% of the students reported having access to the Internet. The survey showed that 83% Internet users had access to the Internet at their home and 51% of the respondents accessed Internet at college or library. Internet has brought change in the psychological structure of an individual. In connection to same, Griffiths (2009) the ever-increasing dependence on the social networking sites can alter the way teenagers mind work and bring about changes in the psychological structure. Park & Choi, (2007) found that male students use more internet than female students. Gender differences in Internet usage has remained a matter of concern to researches are another attractive concern of the research studies (Hupfer & Detlor, 2006). Jackson et al. (2001), Odell et al. (2000), Nachmias et al. (2000) Schumacher et al. (2001) & Durndell & Haag (2002) does not provide consistent evidence for the presence or otherwise of a gender gap in Internet use across different groups of males and females. Some studies indicate male domination in terms of usage and attitude towards, the Internet and some studies indicates females. Nachmias & Shemla (2000) reported that gender differences exist in the use of the Internet with a higher and more extensive usage by males when compared to females. It has been found that a number of studies revealed certain types of gender differences in various domains of the life. In Kashmir valley the “gendering internet” has remained main concern, because prevalence of conservative attitude towards technology is still existing. Keeping the above mentioned studies under consideration, the investigators perceive that there is need felt to carry below mentioned study:

1.3: STATEMENT OF RESEARCH PROBLEM: The statement of the problem leads as:

“A Study of Internet Usage Among Secondary School Adolescents in Relation to Their Gender”

1.4: OPERATIONAL DEFINITIONS OF TERMS AND VARIABLES: The operational definition of terms and variables is given as under:

- A) Internet Usage (IU):** Internet usage in the present study refers the score obtained by respondents on Internet Usage Scale (IUS) developed by Shaloo Saini and Parminder Kaur (2008)
- B) Secondary School Adolescents:** Secondary School Adolescents in the present study refers those students who are reading in 12th class S. P. Higher Secondary Srinagar and Kothi Bagh Girls Higher Secondary Srinagar.
- C) Gender:** Gender in the present study refers the dichotomy made on the basis of sex. In the present study due representation of male and female was taken into consideration.

1.5: OBJECTIVES OF THE STUDY: The present study was carried with the intention to study the internet usage of adolescents; accordingly present study consists of below mentioned objectives:



- 1) To study the level of frequency of internet usage among Secondary School Adolescents (SSA).
- 2) To explore the impact of gender differences on the dimensions of internet usage of the Secondary School Adolescents (SSA).

1.6: HYPOTHESES OF THE STUDY: Following hypothesis has been formulated for the present study:

- 1) There exists no significant difference between male and female secondary adolescents on their attitude towards using internet.

1.7: METHODOLOGY: Keeping in view, the research feasibility, objectives and hypotheses, the researcher found it suitable to go through descriptive survey method. Thus, present study was carried with descriptive survey method with below mentioned parameters:

1.7.1 Data Collection: 100 (Hundred) Secondary School Adolescents (SSA) were selected by using random sampling technique with below mentioned representation:

Table: 1.1: Showing the sample bifurcation used in the study.

Category	MSSA	FSSA
Number	50	50
Total	100 (Hundred)	

1.7.2 Sampling Technique: The researcher observed the complete homogeneity of the sample, subsequently in the present study whole data was selected with the help of Random Sampling Technique (RST).

1.7.3 Sampling Sites: In order to avoid the extraneous effects on the study, the researcher minimised the effect of residential dichotomy and in the present study it was perceived that network facility may emerge as an extraneous effects on the result of the respondents, according the investigator selected whole sample from the S. P. Higher Secondary Srinagar and Kothi Bagh Girls Higher Secondary Srinagar. However, the effect of demographic variable was minimised again by selecting only urban background students with arts stream.

1.7.8 Instruments used: In the present study below mentioned researcher instrument were used for data collection.

- ❖ **Information Blank:** Information Blank was constructed by investigators to locate the Internet user. The purpose behind this information blanket was to locate internet users and have at least two years' experience of Internet usage. Apart from this the researchers made an ample efforts to nullify the effect of extraneous variables by using this information blanket.
- ❖ **Internet usage Scale (IUS):** Internet usage Scale (IUS) developed by Shaloo Saini and Parminder Kaur (2008) was used for data collection.

1.8: SCOPE OF THE STUDY: The scope of the present study is limited to the following:

- a) The study is delimited to secondary school adolescents reading in 12th class with arts stream.
- b) The study was delimited to 100 respondents only.



1.9: ANALYSIS OF THE DATA: The data has been subjected to statistical treatment by using below mentioned SETs.

- ❖ 1.9.1 SET-I Descriptive Analysis:
- ❖ 1.9.2 SET-II Comparative Analysis:

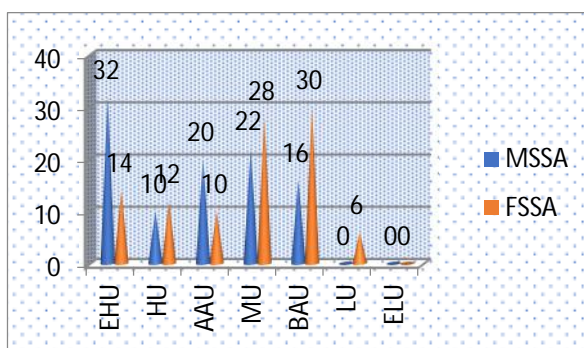
1.9.1 SET-I Descriptive Analysis: In this SET-I, The collected data has been analysed statistically with the help of frequency distribution and percentage. The in this SET-I data has been analysed as per the norm of the Internet Usage Scale (IUS). Keeping in the detailed analysis is given as under:

Table 1.2: Showing Frequency and Percent wise distribution of Male and Female Secondary School Adolescents on Various Levels of Internet Usage Scale (IUS).

Category	MSSA		FSSA		Composite Score	
	Frequency	%	Frequency	%	Frequency	%
EHU	16	32	7	14	23	23
HU	05	10	6	12	11	11
AAU	10	20	5	10	15	15
MU	11	22	14	28	25	25
BAU	08	16	15	30	23	23
LU	00	00	3	06	3	3
ELU	00	00	00	00	0	0
Total	50	100	50	100	100	100

Index:

- ❖ MSSA= Male Secondary School Adolescents.
- ❖ FSSA= Female Secondary School Adolescents.
- ❖ EHU= Extremely High Usage
- ❖ HU= High Usage
- ❖ AAU=Above Average Usage
- ❖ MU= Moderate usage
- ❖ BAU= Below Average usage
- ❖ LU= Low Usage
- ❖ ELU= Extreme Low Usage





Index:

- ❖ *MSSA= Male Secondary School Adolescents.*
- ❖ *FSSA= Female Secondary School Adolescents.*
- ❖ *EHU= Extremely High Usage*
- ❖ *HU= High Usage*
- ❖ *AAU=Above Average Usage*
- ❖ *MU= Moderate usage*
- ❖ *BAU= Below Average usage*
- ❖ *LU= Low Usage*
- ❖ *ELU= Extreme Low Usage*

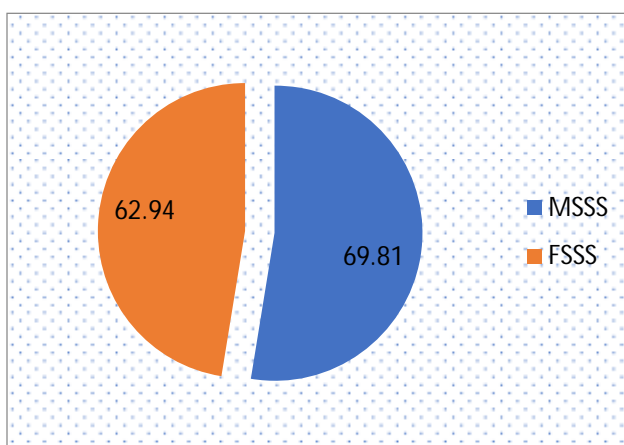
Fig. 1.2 Showing Graphical Distribution of Male and Female Secondary School Adolescents on Various Levels of Internet Usage Scale.

1.9.2 SET-II Comparative Analysis: In this **SET-II**, the collected data has been analysed statistically with the help of independent 't' test. Keeping in the detailed analysis is given as under:

Table 3: Showing Mean Significance of Difference Between Male and Female Secondary School Adolescents on Various Levels of Internet Usage Scale.

Variable	MSSA		FSSA		't' value
IU	Mean	SD	Mean	SD	3.99**
	69.81	8.14	62.94	9.15	

- ❖ **Index:**
- ❖ *IU= Internet usage*
- ❖ *MSSA= Male Secondary School Adolescents*
- ❖ *FSSA= Female Secondary School Adolescents*
- ❖ ***=significant at 0.01 level of significance*





Index:

- ❖ IU= Internet usage
- ❖ MSSA= Male Secondary School Adolescents
- ❖ FSSA= Female Secondary School Adolescents

Fig. 1.3: Showing Graphical representation of Male and Female Secondary School Adolescents on their Level of Internet Usage (IU).

1.10: INTERPRETATION OF THE DATA: The collected result has been interpreted as under:

1.10.1 CAPTION-I: Interpretation on the basis of Descriptive analysis: In this caption efforts has been made by the investigators to interpret the data, which has been obtained in *SET-I (Descriptive Analysis)*. Apart from this, in this caption data has been interpreted as per the norm of the scale. Thus, according is elucidated as under:

The examination of the table 1.2 (*Please Refer Fig: 1.2*) gives evidence about the percent wise distribution of male and female secondary school adolescents on various levels of internet usage attitude (IU). The calculated data indicate that 32% (F=16) male secondary school adolescents possess extreme high level of internet usage and 10% (F=05) were observed with High level of internet usage. In addition to this among male secondary school adolescents 20% (F=10) were observed with above average level of internet usage. However, 22% (F=11) male secondary school adolescents were observed with moderate level of internet usage. Apart from this, it was observed that 16% (F=08) male secondary school adolescents use internet with below average level. The calculated data revealed that 00% (F=00) male secondary school adolescents were observed with low level of internet usage. Additionally, it was found that 0% (F=0) male secondary school adolescents were found with extreme low level of internet usage. Coming towards their counterparts (female secondary school adolescents) in the same table, it was found that 14% (F=07) were observed with observed extreme high level of internet usage and 12% (F=06) were observed with high level of internet usage. The perusal of the results indicate that among female secondary school adolescents 10% (F=05) were seen with above average level of internet usage. Besides, the results indicate that 28% (F=14) female secondary school adolescents use internet with moderate level. The calculated results indicate that 30% (F=15) female secondary school adolescents were reported with below average level of internet usage. Moreover, it was revealed that 06% (03) female secondary school adolescents use internet with low level. The same table reveals that again 0% (F=00) female secondary school adolescents were found with extreme low level of internet usage. While analysing both male and female secondary school adolescents on composite score, it was found that 23% (F=23) male and female secondary school adolescents possess extreme high level of internet usage and 11% (F=11) were observed with high level of internet usage. The same table reveals that among male and female secondary school adolescents 15% (F=15) were observed with above average level of internet usage. However, 25% (F=25) male and female secondary school adolescents were observed with moderate level of internet usage. Apart from this, it was observed that 23% (F=23) male secondary school adolescents use internet with below average level. The calculated data revealed that 03% (F=03) male and female secondary school adolescents were observed with low level of internet usage. Additionally, it was found that 0%



(F=0) male and female secondary school adolescents were found with extreme low level of internet usage. Thus, from the above discussion the level of frequency of internet usage among Secondary School Adolescents (SSA) has been explored as per the norm of the scale used in the present study. According the investigators feel pertinent to mention that the objective NO. 1, has been investigated, which reads as:

OBJECTIVE-1:“To study the level of frequency of internet usage among Secondary School Adolescents (SSA)”.

1.10.2 Caption-II: Interpretation on the basis of comparative analysis: In this caption efforts has been made by the investigators to interpret the data, which has been obtained in **SET-II** (Comparative Analysis). Thus, according is elucidated as under:

The perusal of the table 1.3 (*Please refer Fig 1.3*) gives mean significant difference between male and female secondary school adolescents on their level of internet usage. The obtained results indicate that there is significant difference between male and female secondary school adolescents. The mean score of male secondary school adolescents was reported to be higher (M=69.81) as compared to female secondary school adolescents (M=62.94). As per the calculated results, it has been revealed that mean significant difference favours male adolescents. The calculated ‘t’ value came out to be 3.99, which is significant at 0.01 level of confidence. Thus, from the above results it can be revealed that male adolescents were observed with high level of internet users as compared to female adolescents. Therefore from the above mentioned results, it has been observed that there exists a significant difference between male and female adolescents on their level of internet usage. Keeping results under consideration, it has been found that hypothesis which reads as “*There exists no significant difference between male and female secondary students on their attitude towards using internet*”, stands *rejected*. The results are carried in consonance of the host of the researchers like; (Clemente, 1998; Imhof, Vo Umeyer, & Beierlein, 2007; Odell, Korgen, Schumacher, & Delucchi, 2000). Whereas more female adolescents use the Internet to search for information (Chen & Peng, 2008; Lin & Yu, 2008; Odell et al., 2000) and (Chen & Peng, 2008; Lin & Yu, 2008; Odell et al., 2000; Sherman et al., 2000), more male adolescents use the Internet to play games (Chen & Peng, 2008; Griffiths, Davies, & Chappell, 2004; Lin & Yu, 2008; Odell et al., 2000; Sherman et al., 2000), Park & Choi, (2007). These studies report that gender gap in computer use is closing among adolescents, boys and girls still differ greatly in what they do online. However, majority them revealed high frequency is inclined towards male internet users.

Indeed, the null hypothesis has been rejected. However, apart from this, from the above discussion the level of internet usage among Secondary School Adolescents (SSA) in relation to their gender has been analysed with amplification According the investigators feel pertinent to mention that the objective NO. 2, has been investigated, which reads as:

OBJECTIVE NO-2:“To explore the impact of gender differences on the dimensions of internet usage of the Secondary School Adolescents (SSA)”.



1.11: CONCLUSION: Present study was intended to explore the level of internet usage among male and female secondary school adolescents. Keeping in view, the conclusions of the study indicate that there exists significant difference between male and female secondary school adolescents on their level of internet usage. Male adolescents were observed with high level of internet usage as compared to female adolescents. Thus in the present study impact of gender was found significant on the level of internet usage. The results may attribute to this fact that due to male avail more leisure time as compared to female respondents; subsequently they utilize their leisure time in internet usage.

1.12: SUGGESTION FOR FURTHER INTERNET USAGE: The present study was planned to explore internet usage among secondary school adolescents. Keeping in view, below mentioned suggestions are incorporated with regard to internet usage.

- 1) Efforts should be made to teach cyber ethics to secondary school adolescents. So that minuses of internet cannot take place.
- 2) Seminars and conferences should be organised on “internet Usage”. So that with the help of experts students may learn the academic and social values of internet and may act accordingly.
- 3) The contents regarding information and communication technology should be integrated with the existing syllabus, so that any kind of social problem may not take place with the help of internet usage.
- 4) Unlimited internet usage should not be allowed during adolescents. As observed by Chen et al., found that neuroticism in gamers had a negative influence on life satisfaction. Neuroticism also has a significant damaging impact on subjective wellbeing in teen gamers. An undesirable relationship between web surfing frequency and life contentment has also been found. So in consonance to same dreadful games must be banned during adolescence stage like Pub gee etc.
- 5) Cybercrime laws should be inculcated among adolescents. So that they can adopt internet and social networking usage under legal ways and social crimes like defamation, cybercrimes etc. may not take place.

1.13: CONFLICT OF INTERESTS: Keeping the results of the present study under consideration, the investigators have not declared any conflict of interests.

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EXPLICIT STUDY ON ATTITUDE TOWARDS USING CYBER RESOURCES IN CONTEXT OF INFORMATION TECHNOLOGY

Ab Rouf Bhat

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Abstract:

The presented study was intended to explore the gendering cyber resources in context of information technology. Cyber resources scale developed by S. Rajaseka (2018) was used for data collection. Stratified cum random sampling technique was used for collection the data. The present study consists of 800 undergraduate students of Kashmir. Whole sample was selected from four Districts of Kashmir e.g., Baramulla, Banidipora, Kupwara and Srinagar. The results of the study indicate that there exists significant difference between two categories of male and female undergraduate students on their attitude towards using cyber resources. More favourable attitude was observed among male undergraduate students as compared to female undergraduate students towards using cyber resources.

Key words: Attitude Towards Cyber Resources, Male Undergraduate Students, Female Undergraduate Students.

1.1: INTRODUCTION: In the last few years tremendous enhancement in information and communication technology has taken place. Information and Communication Technology (ICT) has delimited the national and international boundaries of the world and classically segregated world has been converted into aggregated world by becoming a virtual village. All possible tools of Information and Communication Technology (ICT) such as; smart mobile phones, computers, social networking sites etc. are starting to assist human being in multiple spheres of life like education, business, politics, health, social relations etc. Information and Communication Technology (ICT) has made world fertile by contributing through the process of cyber resources. Information and Communication Technology (ICT) is changing people lives everywhere. The internet usage has brought the flow of relevant information as well as requisition in the contemporary world. No matter who the person is they will have come into contact with Information and Communication Technology (ICT) and it will have helped them in some way. Information and Communication Technology (ICT) has made our life better for people because before this technology people couldn't keep in touch easily and it could cost quite a lot of money to do so. Now we can communicate where ever we are. The bad points about this technology are the fact that people who do not have access are left out. The different cyber resources have widened the intellectual horizon of the individual. The utilization of educational blogs, e-mail, e-books, and e-contents, social net-working sites has enriched the knowledge and awareness domain of humans upto maximum extent. In present era, Internet is a very important tool used by the students for education and also other various purposes like entertainment. Many academic and research institutions provide internet service to students, teachers as well as researchers. Nowadays students access to the internet more frequently to collect information for their homework. Thus, internet has become very popular among the students. Internet also increases the skills and capabilities of the students that can facilitate their studies and professional life.



Therefore, we need to acquire much information about internet to explore the relations with other variables regarding educational contexts which are significant for students. Internet should be ensured for both students and teachers to facilitate research, teaching and communication. Students also use the internet greatly to enrich their academic work. With the help of internet usage, cyber resources like educational blogs, e-contents, e-learning, social networking sites, digital libraries, e-mail, searching engines, browsers etc. these resources are gaining rampant importance day by day. With the help of these cyber resources, human mind is evolving knowledge explosion day by day. However, in the under developing or under developed countries classical attitude is still prevailing towards Information and Communication Technology (ICT).

1.2: NEED AND IMPORTANCE OF THE STUDY: Internet is a clustering of network on the computer; these networks are independent of one another but are based on the same interface and system of interactions. Using cyber resources through the process of internet usage is need of an hour. Maximum and ethical use of cyber resources has contributed towards enhancement human resources. Sharing interaction, executing social relations, making social community, establishing social engagement, propagating virtual world, converting classical socially into digitalised society, enriching human mind, bringing knowledge revolution, sharing platform for one's intellectual property, cyber resources are essential. The progress of any nation depends on effective and maximum utilization of cyber resources. Subsequently, the concept of cyber resources has dragged the attention of large number of researchers. Since the 1980s, much research has been done on the relationship between computer attitudes and gender (e.g. Cooper, 2006; Jenson & Rose, 2003). It is generally accepted that girls and women have a less positive attitude towards computers than boys and men (Cooper, 2006). Computers are perceived as belonging to the male domain of mathematics, science, electronics, and machinery (Jones, 1986). A major concern has been the gender gap in computer attitudes and its implications for the exclusion of women from areas of the workforce (Balka & Smith, 2000; Sainz & López-Saez, 2010) and from the benefits available from the use of computers in domestic and leisure settings (Vekiri & Chronaki, 2008). The findings of several studies confirm the existence of gender differences in computer use (Goode, 2010; Meelissen & Drent, 2008; Sáinz & Lopez-Saez, 2010; Tondeur, Valcke & van Braak, 2008). Research in a number of countries has found that females still hold less favourable attitudes towards computers than males (e.g. Bovee et al., 2007). Although much of the research has been conducted in the United States, data from other nations show a similar gender divide. Researchers in Sweden and Japan (Makrakis & Sawada, 1996), the Netherlands (Meelissen & Drent, 2008), and Belgium (Tondeur, van Braak & Valcke, 2008) all come to the same conclusion. Cooper (2006) argues that there is little question that a stereotype exists that links the use of computers to gender. As early as 1985, Hawkins argued that the design, development, and repair of technical equipment, have been stereotyped as masculine. In that same year, Hess and Miura (1985) state that “women have related to these areas of activity as consumers, driving cars they did not repair and using typewriters they did not design” (Hess & Miura, 1985). Thus, large numbers of researcher are engaging their intellectual potentialities towards cyber resources. Some has shown interest towards



gendering cyber resources, some internet usage on the basis of gender. Keeping in view, the investigator carried below mentioned study.

1.3: RESEARCH PROBLEM: The investigator assumed that gap is existing in the field of cyber resources. That gap is the gap of gender. So keeping in view the investigator consider that a research problem should be selected in which gendering cyber resources may be explored. Accordingly, the investigator selected the below mentioned research problem:

“Explicit Study on Attitude Towards Cyber Resources by Using Internet”

1.4: OBJECTIVES OF THE STUDY: The present study consists of below mentioned objectives:

- 1) To explore the attitude of students towards using cyber resources
- 2) To study the attitude of male and female undergraduate students (MFUGS) towards using cyber resources.

1.5: HYPOTHESIS: Keeping the previous experience of the investigator under consideration, below mentioned hypothesis has been formulated for the present study:

- 1) There exists no significant difference between male and female undergraduate students (MFUGS) on their attitude towards using cyber resources.

1.6: OPERATIONAL DEFINITIONS OF TERMS AND VARIABLES: The operational definitions of terms and variables are as under:

- a) **Attitude towards using cyber resources (ACR):** Attitude towards using cyber resources in the present study refers score obtained by the respondents on Attitude towards using cyber resources scale developed by S. Rajaseka (2018).
- b) **Male undergraduate students:** Male undergraduate students in the present study refers those students who are reading in selected colleges and are pursuing academic and professional Bachelor's Degrees.
- c) **Female undergraduate students:** Female undergraduate students in the present study refers those students who are reading in selected colleges and are pursuing academic and professional Bachelor's Degrees.

1.7. SCOPE OF THE STUDY: Keeping budget, time, resources under consideration conditions under consideration the scope of the present study is limited:

- 1) The present study was limited to 800 undergraduate students of North Kashmir.
- 2) The present study will be delimited four Districts of Kashmir e.g., Baramulla, Banidipora, Kupwara and Srinagar.

1.8: METHODOLOGY AND PROCEDURE: Present study was carried with help of descriptive survey method. Below mentioned perimeters were performed in present study.

- 1) **Sample:** The present study consists of 800 undergraduate students of north Kashmir. Whole sample was selected from four Districts of Kashmir e.g., Baramulla, Banidipora, Kupwara and Srinagar.



- 2) **Sampling Technique:** Stratified cum random sampling technique was used for collection the data, initially the respondents were stratified on the basis of gender.
- 3) **Research instrument:** After evaluating the number of researcher tools the researcher found it suitable to use Cyber Resources Scale (CRS) developed by S. Rajaseka (2018).

1.9: STATISTICAL TREATMENT: The collected data was put to suitable statistical treatment by using descriptive and comparative analysis. Accordingly, these two SETs are itemized as under:

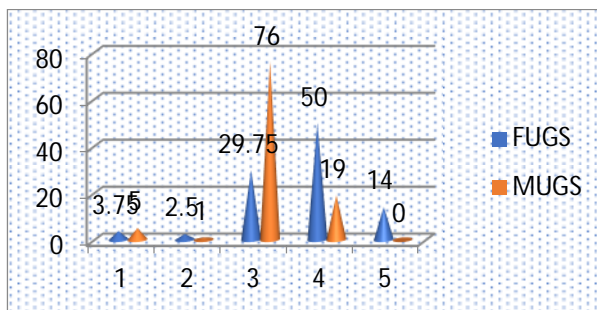
1.9.1 SET-I: Descriptive analysis: In this SET-I (**Descriptive analysis**), the data was put to suitable statistical treatment by using percentage and Frequency distribution. More obviously it is given as under:

Table: 1.1: Showing Frequency and Percent Wise Distribution of Cyber Resources Among Male and Female Undergraduate Students. (N=400 Each)

LCAS	MUGS		FUGS	
	Percentage	Frequency	Percentage	Frequency
HUA	3.75	15	5	20
UA	2.5	10	1	04
N	29.75	119	76	304
FA	50	200	19	76
HFA	14	56	0	0
Total	100	400	100	400

Index:

- ❖ LATCR= Levels of attitude towards cyber resources
- ❖ MUGS= Male Undergraduate Students
- ❖ FUGD= Female Undergraduate Students
- ❖ HUA= Highly Unfavourable Attitude
- ❖ UA= Unfavourable Attitude
- ❖ N=Neutral
- ❖ FA= Favourable Attitude
- ❖ HFA= High favourable Attitude



Index:

- ❖ LATCR= Levels of attitude towards cyber resources



- ❖ MUGS= Male Undergraduate Students
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- ❖ HUA= Highly Unfavourable Attitude
- ❖ UA= Unfavourable Attitude
- ❖ N=Neutral
- ❖ FA= Favourable Attitude
- ❖ HFA= High favourable Attitude

Fig: 1.1: Showing Graphical Representation of attitude towards using Cyber Resources Among Male and Female Undergraduate Students.

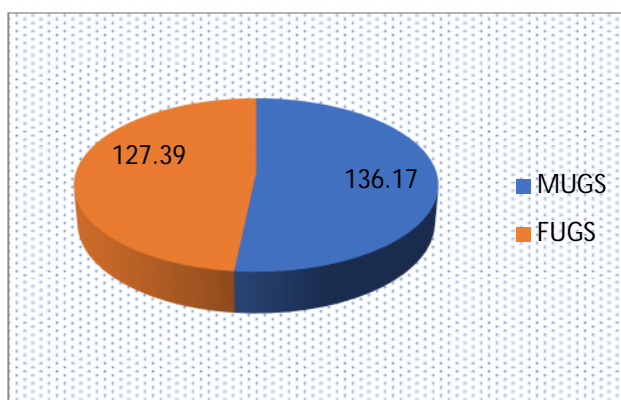
1.9.2 SET-II: Comparative analysis: In this SET-II, the data has been analysed comparatively. Mean and standard deviation were calculated comparatively. Subsequently, hypothesis was tested on the basis of level of significance. The treatment of the data is given as under:

Table: 1.2: Showing Mean Significance Difference Between Male and Female Undergraduate Students on Cybercrime Awareness. (N=400 Each)

ACR	MUGS		FUGS		't' value
	Mean	SD	Mean	SD	
	136.17	33.10	127.39	29.26	

Index:

- ❖ ACR= Attitude towards using cyber resources
- ❖ MUGS= Male Undergraduate Students
- ❖ FPUGS= Female undergraduate students
- ❖ @= Significant at 0.01 level of confidence



Index:

- ❖ MUGS= Male Undergraduate Students
- ❖ FPUGS= Female undergraduate students



Fig: 1.2: Showing Graphical Representation of Male and Female Undergraduate Students on their attitude towards using cyber resources.

1.10: INTERPRETATION OF THE DATA: The collected data has been interpreted as per the statistical treatment given to the data in pursuance to this the data has been interpreted as under:

1.10.1: SET-I: Interpretation on the basis of Descriptive analysis: The results presented in table 1.1, **(Please refer Fig 1.1)** gives information about the frequency and percent wise distribution of male and female undergraduate students with regard to their attitude towards using cyber resources (CR). As per the obtained results, it was found that 3.75% (F=15) male undergraduate students (MUGS) were observed with highly unfavourable attitude (HFA) towards cyber resource. The results indicate that 2.5% (F=10) male undergraduate students (MUGS) were observed with unfavourable attitude (UA) towards using cyber resources. In addition to this, it was found that 29.75 % (F=119) male undergraduate students (MUGS) were observed with neutral attitude towards using cyber resources in their day to day life. The calculated results in the same table indicate that majority of the respondents 50% (F=200) (male undergraduate students) possess favourable attitude towards using cyber resources. In addition to this, it was found that 14% (F=56) male undergraduate students (MUGS) were perceived with high favourable attitude towards using cyber resources. The descriptive analysis in the same table indicates that 5% (F=20) female undergraduate students (MUGS) were observed with high attitude towards using cyber resources. Further, the calculated results indicate that 1% (F=04) female undergraduate students (FUGS) were found with unfavourable attitude towards using cyber resources like e-mail, educational blogs, educational websites, etc. In addition to this, it was observed that 76% (F=304) female undergraduate students (FUGS) were found with neutral attitude towards using cyber resources. Additionally, it was found that 19% (F=76) female undergraduate students were observed with favourable attitude towards using cyber resources. Moreover, from the calculated results, it was revealed that only 0% (F=0) female undergraduate students were seen with high favourable attitude using cyber resources.

1.10.2: SET-II: Interpretation on the basis of Comparative analysis: The comparative analysis of male and female undergraduate students was reported in table 1.2. **(Please refer Table 1.2, Fig 1.2).** The results indicate that there is significant difference between the two groups of students (Male and female undergraduate students) under discussion. The results indicate that the mean score of male undergraduate students (MUGS) was reported to be higher (M=86.89) as compared to mean score of female undergraduate students (FUGS) (M=77.15). The calculated 't' value came out to be 8.31, which is significant at 0.01 level of confidence. Thus, from the above results it can be inferred that impact of gender seems to be significant on their inclination towards using cyber resources. Further, it was observed that professional undergraduate students were observed more inclined towards cyber communication system. They perceive that cyber educational blogs are emerging more helpful for individuals for education system and day to day activities. Male undergraduate students perceive that educational websites are more helpful for in sharing and browsing



knowledge and up to date information. They were found keen interested in using different search engines for searching knowledge and information. Male undergraduate students avail cyber space for preservation of their important and confidential information. Hence, the above results indicate significant difference between male and female undergraduate students on their attitude towards using cyber resources. Therefore, from the above results significant difference was observed among male and female undergraduate students. Keeping the view, the hypothesis No-I (**Please refer H_{01}**) which reads as “**There exists no significant difference between male and females undergraduate students on their attitude towards using cyber resources**” stands rejected. The results are supported by the host of the researchers, notable among them are: **Sharehu, Aminu Ladan; Emmanuel, Achor Edoja (2015), Nwosu, Jonathan. C., Adebawojo Bolanle, & Ifeoma Helen Ayeni (2017), Shristopher M. Donner (2016) Magliano, Stephen J. (2013)**

Chhavi Chadha (2018) explored a study “A Study of B.Ed. Students’ Attitude towards Using Cyber Resources” and results revealed that the Male B. Ed. students have shown better attitude towards using Cyber Resources but location does not have any effect on attitude towards using Cyber Resources. **Sharehu, Aminu Ladan; Emmanuel, Achor Edoja (2015)**, found that teachers and pupils in urban schools claimed and also demonstrated higher ability to use mobile devices to teach/learn compared with those in rural schools. However, there was a remarkable difference in what both urban and rural school teachers and pupils claimed they could do and what they actually demonstrated. In addition to this impact of gender was also found significant among respondents. Male respondents were observed more inclined towards ICT as compared to female respondents. **Nwosu, Jonathan. C., Adebawojo Bolanle, & Ifeoma Helen Ayeni (2017)** found that that there is a significant gender difference in undergraduate computer science students' intent to engage in cybercrime. Further male respondents were observed high level of cyber engagement as compared to female counterparts with a mean score of 43.493. The implication of this is that male students have higher intention of involving cybercrime compared to their female counterpart.

1.11: CONCLUSION: The presented study was intended to explore the gendering cyber resources. According the researcher concluded that there exists significant difference among male and female undergraduate students on their attitude towards using cyber resources. More favourable attitude was observed among male undergraduate students as compared to female undergraduate students. Subsequently, impact of gender was found significant on the level of attitude towards using cyber resources of respondents.

1.12: RECOMMENDATIONS OF THE STUDY: The study made the following recommendations:

- 1) The study generalised that there is the impact of gender on availing cyber resources, so in order to neutralise this gap classical approach towards weaker sections of the society should be minimised.
- 2) Cyber ethics should be imparted among students who are reading g at different; levels of education like elementary level, primary level, secondary level and college level.



- 3) The concept of cyber security should be inculcated among children right from the beginning of the elementary level.
- 4) Seminars and conferences should be organised in which awareness should be imparted reading cybercrimes and the applicability of cyber resources should be discussed properly. In these activities the concept of cyber security resources should be imparted. So that female folk may not face the fear of sexual abuse during using cyber resources.
- 5) In the study, it was perceived that cybercrime threats are the main reasons which hindered the availing of cyber resources on part of female users, so in this regard high cyber security should be provide to all cyber resources, social networking sites, websites, social accounts etc.

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LIFE SATISFACTION AND PSYCHOLOGICAL WELL-BEING AMONG YOUNG ADULTS

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Abstract

The present study is undertaken to examine the life satisfaction and psychological well-being of students and young teachers in Loyola College of Education, Namchi, South Sikkim. For this purpose, standardized tools of the Life Satisfaction Scale and Psychological Well-being Scale were utilized. This study found most of the young adults to be above average satisfied in life satisfaction scale and the majority of young adults were found to be moderate in level of psychological well-being. Further, this study found a moderate positive correlation between the two variables.

Keywords: Life Satisfaction, Psychological Well-being, Young Adults

Introduction

Life satisfaction is a positive assessment of conditions of life which indicates the emotional interaction of a person to his/ her life which is defined as a job, leisure time and work time. The individual who is satisfied in his/ her life will be psychologically healthy as psychological well-being signifies being mentally healthy which again means that a person is happy and satisfied in his/ her life. In today's competitive world everyone is rushing to achieve better in education, in lifestyle, in relationships, achievements, livelihood, etc. which results in immense hardship, fatigue and highs, and lows. These situations sometimes are difficult for us to pass, and we find ourselves dissatisfied despite the perseverance.

Life satisfaction

Scholars have defined life satisfaction in various ways, "life satisfaction is the degree to which a person positively evaluates the overall quality of his/her life as a whole. In other words, how much the person likes the life he/she leads"¹. Life satisfaction is "an overall assessment of feelings and attitudes about one's life at a particular point in time ranging from negative to positive"². Another definition states that it is "a cognitive assessment of an underlying state thought to be relatively consistent and influenced by social factors"³.

From the above definitions, it can be understood that life satisfaction is subjective and it depends on a person's positive judgment to what extent his/her life is satisfying. It is a feeling and attitude (negative or positive) of an individual towards his/her own life.

¹ Ruut Veenhoven, 1996

² Buetell, 2006

³ Ellison et al, 1989



Since the assessment and judgment have to be made by the person himself/herself, therefore, it is a cognitive process as well where these assessments are made in the influence of various social factors. In other words, social norms do matter in considering oneself satisfied with his/her life.

An individual's personality also matters while he/she evaluates his/her standard of satisfaction. The trait also has a great influence on how one absorbs a particular situation and develops an attitude towards it.

Psychological Well-being

Psychological well-being refers to the extent to which people consider themselves to be satisfied and happy with/in their life. Like life satisfaction, this is also subjective feelings that one experiences. Positive experiences may lead to contentment whereas negative may result in distress, dissatisfaction, and annoyance. Therefore negative experiences in one's life will affect his/her quality of life, level of satisfaction, sense of achievement, etc.

Psychological well-being as a broad construct, encompasses four specific and distinct components including (a) pleasant or positive well-being (e.g., joy, elation, happiness, mental health), (b) unpleasant effect or psychological distress (e.g., guilt, shame, sadness, anxiety, worry, anger, stress, depression), (c) life satisfaction (a global evaluation of one's life) and (d) domain or situation satisfaction (e.g., work, family, leisure, health, finance, self).⁴

There is an extensive meaning of psychological well-being, it may be recognized as the absence of anxiety, depression, tension, suicidal thoughts; it includes significance in life, self-esteem, positivity, personal control, social support, and general efficiency.⁵ However psychological well-being can be explained in five different components, they are satisfaction, efficiency, sociability, mental health, and interpersonal relations.

Review of Related Literature

The literature review is a major component of the research. It is analyses of relevant publications that help set the context for and define the research topic. The review always oriented towards narrowing the field to provide a research problem that can guide operational research.⁶

Some of the closely related literature is reviewed in the following paragraphs:

Erol Demirbatir, Ayhan Helvacı, Nilufer Yilmaz, Gulnihal Gul, Ajda Senol & Nazan Bilgel (2013) found a significant relationship between economic status and life satisfaction. Tariq Mehmood and Maryam Shaukat (2014) found depression and self-esteem to be the predictors of life satisfaction and their study also found no difference in life satisfaction in terms of perceived family income and age of young adult female university students. Jinmoo Heo, Sanghee Chung, Sunwoo Lee & Junhyoung Kim (2016) conferred that older adults who have experienced cancer and maintained a positive outlook on their lives and engaged in personally meaningful activities tended to experience psychological well-being and life satisfaction. Sharon Horwood & Jeromi Anglim (2018) found that problematic Smartphone usage was correlated with lower

⁴ Diener and Smith, 1999

⁵ Bhogle and Prakash, 1995

⁶ Gerard Guthrie, "Basic Research Methods", p. 28



well-being on almost all scales. Jia Li & Qui Wang (2019) inferred that marital satisfaction was associated with depression and life satisfaction for both husbands and wives.

The above reviews state that life satisfaction is related to economic status, positivity, depression, and self-esteem whereas psychological well-being is experienced when one has a positive outlook towards life.

The Rationale of the Study

Anxiety, depression, self-doubt, mental-fatigue are common problems that every young adult encounters. Individuals from a different background may have different ways to deal with their problems that arise in their academics and work situations which is competitive and conflicting. It is a challenge for young adults to remain calm and content while they are dealing unease from within. Life satisfaction or dissatisfaction may affect the psychological well-being of every individual. This study puts an effort to inquire about the correlation between life satisfaction and psychological well-being of young adults.

The operational definition of key terms used

- i. **Life satisfaction:** It involves a favorable attitude towards one's life rather than an assessment of current feelings. Life satisfaction has been measured with economic standard, degree of education, experiences, residence, among many other topics. Life satisfaction is a key part of subjective wellbeing.
- ii. **Psychological well-being:** Psychological well-being consists of positive relationships with others, personal mastery, autonomy, a feeling of purpose and meaning in life, and personal growth and development. Psychological well-being is attained by achieving a state of balance affected by both challenging and rewarding life events.
- iii. **Young adult:** In this study young adult belongs to the age group between 21 and 40 years.

Objectives of the Study

- i. To find out the level of satisfaction in life among young adults.
- ii. To find out the level of psychological well-being among young adults.
- iii. To assess the level of psychological well-being among young adults concerning its five aspects viz., Satisfaction, Efficiency, Sociability, Mental Health, and Interpersonal Relations.
- iv. To find out the degree of the relationship between life satisfaction and psychological well-being among young adults.
- v. To draw out probable suggestions and implications.

Null Hypothesis

- i. There is no significant correlation between life satisfaction and psychological well-being among young adults.

Delimitation of the Study

This study is delimited to the students and young teachers of Loyola College of Education, Namchi, South Sikkim.

Population and Sample of the Study



The total number of students studying I semester and III Semester of BEd course and young teachers consisted of the population 173 for the study. A sample of 114 was drawn out by applying a random sampling method from the population.

Tools used

For the present study following tools were used to collect data and methods were adopted to analyze the data:

- i. Life Satisfaction Scale (LSS-_{OH}) constructed by Hardeo Ojha (2015).
- ii. Psychological Well-being Scale developed by Devendra Singh Sisodia and Pooja Chaudhary (2012).

Methodology

Depending upon the nature of data and techniques, quantitative descriptive research has been used in this study. In this type of research method quantitative (statistical) methods are used in describing, recording, analyzing and interpreting conditions that exist at present. It attempts to draw comparisons or contrast and discover relationships between existing non-manipulated variables.⁷

Data Analysis and Interpretation

i. Life Satisfaction Scale LSS-_{OH}

The tool has 30 items that indicate past, present and future orientation. The items were written both in directions of satisfaction as well as dissatisfaction. The items of the scale were so constructed that they suit to measure life satisfaction, personal health satisfaction as well as satisfaction with social situations. The items were framed in the manner that they were applicable for persons of all ages viz., young, middle and old.⁸

Table: 1
Life Satisfaction of Young Adults

CI	F	Statistics	Range of Scores	Grade	No.	%	Level of Satisfaction
90 – 99	1	N = 114 M = 68.48 SD = 9.05	+2.01 & above	A	1	0.88	Extremely Satisfied
80 – 89	11		+1.26 to +2.00	B	14	12.28	Highly Satisfied
70 – 79	44		+0.51 to +1.25	C	55	48.25	Above Average Satisfied
60 – 69	40		-0.50 to +0.50	D	42	36.84	Average Satisfied
50 – 59	14		-1.25 to -0.51	E	2	1.75	Below Average Satisfied
40 – 49	4		-2.00 to -1.26	F	0	0	Highly Dissatisfied
			-2.01 & below	G	0	0	Extremely Dissatisfied
i= 10	114				144	100	

**As per the manual*

⁷ Lokesh Koul. "Methodology of Educational Research". p. 106.

⁸ Prof. Hardeo Ojha. "Life Satisfaction Scale LSS-_{OH}". National Psychological Corporation, Agra, India. 2015.



The above table shows that:

1. Only 0.88% of young adults are extremely satisfied.
2. There are 12.28% of young adults who are highly satisfied.
3. Comparatively, 48.25% of young adults are above average satisfied.
4. There are 36.84% of young adults who are averagely satisfied.
5. None of the young adults are highly dissatisfied or extremely dissatisfied.

ii. Psychological Well-being

This scale comprised of 50 statements to measure several aspects of well-being life Satisfaction, Efficiency, Sociability, Mental Health, and Interpersonal Relations. This scale is considered likely to be useful in a variety of research and applied settings such as quality of index, a mental health status appraisal, and a measure of psychotherapy outcome evaluation and a social indicator of measuring population changes in sense of well-being over time.⁹

Table: 2
Psychological Well-being of Young Adults

CI	F	Statistics	Limits of Scores	No.	%	Level of Psychological Well-being
226 – 235	3	N = 114 M = 185.29 SD = 19.967	242 – 250	0	0	Very High
216 – 225	7		217 – 242	9	7.89	High
206 – 215	10					
196 – 205	13		83 – 217	105	92.11	Moderate
186 – 195	18					
176 – 185	21					
166 – 176	26		58 – 83	0	0	Low
156 – 165	10					
146 – 155	5					
136 – 145	0		50 – 58	0	0	Very Low
126 – 135	1					
i=10	114			114	100.00	

**As per the manual*

The above table shows that:

1. The majority of young adults (92.11%) are having a moderate level of psychological well-being.
2. Only 7.89% of young adults are having a high level of psychological well-being.
3. None of the young adults were found to have very high, low or very low levels of psychological well-being.

⁹ Dr. Devendra Singh Sisodia & Ms. Pooja Chudhary. “Psychological Well-Being Scale”. National Psychological Corporation, Agra, India. 2012.



ii(a). *Psychological Well-being in respect to Satisfaction*

Table: 2(a)
Psychological Well-being in respect with Satisfaction of Young Adults

CI	F	Statistics	Limits of Scores	No.	%	Level of Psychological Well-being
50 – 54	1	N = 114 M = 37.67 SD = 5.06	48 – 50	1	0.88	Very High
45 – 49	11		43 – 48	15	13.16	High
40 – 44	24		16 – 43	98	85.96	Moderate
35 – 39	48					
30 – 34	24		12 – 16	0	0	Low
25 – 29	6		10 – 12	0	0	Very Low
i=5	114			114	100.00	

*As per the manual

The

above table shows that:

1. The majority of young adults (85.96%) are having a moderate level of psychological well-being concerning Satisfaction.
2. Whereas 13.16% of young adults are having a high level of psychological well-being concerning Satisfaction.
3. Only 0.88% of young adults are having a very high level of psychological well-being concerning Satisfaction.
4. None of the young adults were found to have low or very low levels of psychological well-being concerning Satisfaction.

ii(b). *Psychological Well-being in respect to Efficiency*

Table: 2(b)
Psychological Well-being in respect to the Efficiency of Young Adults

CI	F	Statistics	Limits of Scores	No.	%	Level of Psychological Well-being
50 – 54	3	N = 114 M = 39.52 SD = 5.23	48 – 50	6	5.26	Very High
45 – 49	18		43 – 48	27	23.68	High
40 – 44	33		16 – 43	81	71.05	Moderate
35 – 39	44					
30 – 34	12		12 – 16	0	0	Low
25 – 29	4		10 – 12	0	0	Very Low
i=5	114			114	100.00	

*As per the manual

iii(b).



The above table shows that:

1. A large number of young adults (71.05%) are having a moderate level of psychological well-being concerning Efficiency.
2. Whereas 23.68% of young adults are having a high level of psychological well-being concerning Efficiency.
3. Only 5.26% of young adults are having a very high level of psychological well-being concerning Efficiency.
4. None of the young adults were found to have low or very low levels of psychological well-being concerning Efficiency.

ii(c). Psychological Well-being in respect to Sociability

Table: 2(c)
Psychological Well-being in respect with Sociability of Young Adults

CI	F	Statistics	Limits of Scores	No.	%	Level of Psychological Well-being
45 – 49	5	N = 114 M = 35.57 SD = 5.20	48 – 50	0	0	Very High
40 – 44	20		43 – 48	11	9.65	High
35 – 39	44		16 – 43	103	90.35	Moderate
30 – 34	30		12 – 16	0	0	Low
25 – 29	15		10 – 12	0	0	Very Low
i=5	114			114	100.00	

**As per the manual*

The above table shows that:

1. The majority of young adults (90.35%) are having a moderate level of psychological well-being concerning Sociability.
2. Whereas only 9.65% of young adults are having a high level of psychological well-being concerning Sociability.
3. None of the young adults were found to have low, very low or very high levels of psychological well-being concerning Sociability.



ii(d). *Psychological Well-being in respect to Mental Health*

iii(d).

Table: 2(d)

Psychological Well-being in respect with Mental Health of Young Adults						
CI	F	Statistics	Limits of Scores	No.	%	Level of Psychological Well-being
45 – 49	2	N = 114 M = 32.39 SD = 5.96	48 – 50	2	1.75	Very High
40 – 44	12		43 – 48	3	2.63	High
35 – 39	31					
30 – 34	31		16 – 43	108	94.74	Moderate
25 – 29	30		12 – 16	1	0.88	Low
20 – 24	8		10 – 12	0	0	Very Low
i=5	114			114	100.00	

iv(d).

**As per the manual*

The above table shows that:

1. The majority of young adults (94.74%) are having a moderate level of psychological well-being concerning Mental Health.
2. A minimum of 2.63% of young adults is having a high level of psychological well-being concerning Mental Health.
3. A least 1.75% of young adults are having a very high level of psychological well-being concerning Mental Health.
4. Only 0.88% of young adults are having a low level of psychological well-being concerning Mental Health.
5. None of the young adults were found to have a very low level of psychological well-being concerning Mental Health.

ii(e). *Psychological Well-being in respect to Interpersonal Relations*

Table: 2(e)

Psychological Well-being in respect with Interpersonal Relations of Young Adults						
CI	F	Statistics	Limits of Scores	No.	%	Level of Psychological Well-being
50 – 54	4	N = 114 M = 40.04 SD = 4.73	48 – 50	6	5.26	Very High
45 – 49	19		43 – 48	23	20.18	High
40 – 44	36					
35 – 39	41		16 – 43	85	74.56	Moderate
30 – 34	13		12 – 16	0	0	Low
25 – 29	1		10 – 12	0	0	Very Low
i=5	114			114	100.00	

iii(e).

**As per the manual*



The above table shows that:

1. A great number of young adults (74.56%) are having a moderate level of psychological well-being concerning Interpersonal Relations.
2. There are 20.18% of young adults who are having a high level of psychological well-being concerning Interpersonal Relations.
3. Only 5.26% of young adults are having a very high level of psychological well-being concerning Interpersonal Relations.
4. None of the young adults were found to have low or very low levels of psychological well-being concerning Interpersonal Relations.

iii. *Relationship between Life Satisfaction and Psychological Well-being*

To analyze the relationship between emotional intelligence and emotional maturity following null hypothesis was formulated:

H₀ 1: There is no significant correlation between life satisfaction and psychological well-being among young adults in Loyola College of Education.

Table: 3

Coefficient Correlation between Life Satisfaction and Psychological Well-being of Young Adults

Variable Involved	Sample Size (N)	Computed Value of <i>r</i>	Table Value of <i>r</i>	df	Level of Significant
Life Satisfaction X Psychological Well-being	144	.713	.210	142	.01

The above table shows the H₀ is rejected. There is a moderate positive correlation between the two variables, which means there is a tendency for high life satisfaction scores to go with high psychological well-being scores and vice versa.

Discussion

In light of the above tables, it can be said that the young adults of Loyola College of Education, Namchi, South Sikkim are moderately satisfied in their life. Their level of psychological well-being is moderate and they have higher levels in all dimensions of psychological well-being. Also, the correlation between life satisfaction and psychological well-being was found to be moderate positive.

The young adults of this institute are satisfied as per the level of their psychological well-being. Satisfaction is both intrinsic and extrinsic aspect but psychological well-being is an intrinsic aspect. One needs to be satisfied in/with their life to have psychological well-being.



Suggestions

- Prayers/ securely attachment to God can improve psychological well-being.
- Usages of the Smartphone can be made the minimum.
- Avoid being sad and depressed by engaging oneself into productive activities/ hobbies, this also helps in creating a positive attitude towards life.

Conclusion

For the positive growth of an individual in any institute, the role of the environment should not be ignored. People should understand the values of others and help them to promote their daily struggles. Once one is satisfied in/with life, he/she will be psychologically healthy.

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SUSTAINABLE DEVELOPMENT GOALS AND ROLE OF ARTIFICIAL INTELLIGENCE (AI): AN ANALYSIS

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ABSTRACT

Artificial Intelligence has the potential to cause innovative disruption in almost all spheres of human life. In field of Environment and Sustainable Development, use of artificial intelligence could help in a great deal to achieve the United Nations Sustainable Development Goals (SDG's).

This research paper is an attempt to analyse the present use of Artificial Intelligence for environment protection and sustainable development. It has also covered UN Sustainable Development Goals (SDG) that are relevant in environment protection and can be achieved by use of artificial intelligence.

Keywords: Artificial Intelligence, Environment, Sustainable Development, United Nations

“If we properly incorporate artificial intelligence, we can achieve a revolution with regard to sustainability. AI will be the driving force of the fourth industrial revolution.”

-Hendrik Fink

INTRODUCTION

In recent times the world has seen some serious environmental changes resulting in catastrophes. Current deforestation rates in the Amazon Basin could lead to an 8% drop in regional rainfall by 2050, triggering a shift to a ‘Savannah state,’ with wider consequences for the Earth’s atmospheric circulatory systems.ⁱ 3% temperature rise from average temperature in April 2019 in many parts of India and unusual heavy rainfall, extended monsoon and rise in typhoons in Indian oceans, is the very recent example. Around twenty per cent of species currently face extinction, and that number could rise to 50 per cent by 2100. And even if all the world economies keep their Paris climate pledges, by 2100, it’s predicted that average global temperatures will be 3°C higher than in pre-industrial times, making it an invincible environmental catastrophe.ⁱⁱ

These environmental challenges have posed a serious challenge before world economies. Major portion of the national fund is utilised for restoration, rehabilitation and compensating the people affected by natural calamities.ⁱⁱⁱ In 2016 the world suffered 772 geophysical, meteorological, hydrological and climatological ‘natural loss events’ – triple the number suffered in 1980.^{iv}



Around 7 million people die annually from exposure to air pollution – one death out of every eight globally.^v

This has underlined the need for urgent steps to protect the environment and call for invention to combat and minimise the impact of natural and industrial disasters. Artificial Intelligence in recent times has proved to provide the solution to these needs. This research paper attempts to analyse how AI could be useful in environmental protection and in achieving the sustainable development goals identified by the United Nations.

WHAT IS ARTIFICIAL INTELLIGENCE (AI)?

Artificial Intelligence (hereafter referred to as AI) is a constellation of technologies that enable machines to act with higher levels of intelligence and emulate the human capabilities of sense, comprehend and act.¹ Thus, computer vision and audio processing can actively perceive the world around them by acquiring and processing images, sound and speech. The natural language processing and inference engines can enable AI systems to analyse and understand the information collected. An AI system can also take action through technologies such as expert systems and inference engines or undertake actions in the physical world.^{vi} In simple words, it is the ability of machine to learn and act (like humans) with intelligence.

ENVIRONMENT AND USE OF AI

Artificial Intelligence, fortunately, has offered some help in tackling environmental challenges. AI has helped environment researchers clinch almost 90 per cent accuracy in spotting climate change factors like tropical cyclones, weather fronts, tidal changes and atmospheric rivers, which can cause heavy precipitation and are often impossible for humans to identify on their own.

In India, AI has helped farmers get 30 per cent higher yields per hectare by providing information on preparing the land, applying fertilizer and choosing sowing dates, as reported by the Government of India in 2018. In Norway, AI has penetrated into the field of policy-making and helped create a flexible and autonomous electric grid, integrating more renewable energy.^{vii}

UNDP has a portfolio of frontier technology experiments. Drones and machine learning have been used for environmental protection in Mongolia, disaster preparedness in the Maldives, and, with UNHCR, the mapping of the Oruchinga Refugee Settlement in Uganda, used for joint development of infrastructure by and for refugees and host communities. MapX, a cloud-based geospatial

¹ University of Pretoria, *Artificial Intelligence for Africa: An Opportunity for Growth, Development, and Democratisation*, Retrieved from, https://www.up.ac.za/media/shared/7/ZP_Files/ai-for-africa.zp165664.pdf



solution developed by UNEP, the World Bank and the Global Resource Information Database, has been a key tool for management of natural resources, leading to the creation of the UN Biodiversity Lab. The Lab, a partnership between UNEP and UNDP, provides a tailored and customizable spatial analysis platform to enhance decision-making on conservation and development worldwide.^{viii}

ROLE OF AI IN ACHIEVING SUSTANABLE DEVELOPMENT GOALS (SDG)

Below listed are few areas wherein AI can play a potential role in environment protection and achieving UN's Sustainable Development Goals (hereafter referred to as SDG's);

- AI may be useful in helping us take better care of the planet in terms of supporting waste and/or pollution management.^{ix}
- Machine-learning-enabled autonomous electric vehicles will improve the efficiency of transport networks as connected vehicles communicate with one another and with transport infrastructure to identify hazards while optimizing navigation and network efficiency. EV charging will become more affordable via demand response software programs enabled by big data (such as Auto Grid).^x AI could help to design sophisticated urban traffic control systems that can optimise signal timings at the intersection, zonal and network level, while also facilitating services such as automatic vehicle detection for extension of red/green phase or providing intermittent priority.^{xi}

AI enabled vehicles and transportation management system will help in achieving the SDG 11, i.e. access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport; sustainable urbanization; municipal and other waste management;

- AI can enhance the predictability of demand and supply for renewables, improve energy storage and load management, assist in the integration and reliability of renewables and enable dynamic pricing and trading, creating market incentives. AI-capable "virtual power plants" (VPPs) can integrate, aggregate, and optimize the use of solar panels, microgrids, energy storage installations and other facilities.^{xii} Real-time AI-optimized energy efficiency can have an immediate and substantial impact on energy consumption. Google, for example, has cut down power use in its data centres by 40% by using DeepMind's reinforcement learning algorithms to optimize cooling.^{xiii}
- Sensors measuring conditions such as crop moisture, temperature and soil composition will give AI the data needed to automatically optimize



production and trigger important actions such as adding moisture.^{xiv} AI may help in achieving precision in cultivation, harvesting by using minimum water resources.

- AI has already started playing a major role in transforming weather forecasting^{xv} (including prediction of extreme events) and in improving the understanding of effects of climate change.^{xvi} AI could help to predict the effects of small-scale extreme weather events like sudden temperature change, storms, floods etc. on humans, allowing better risk management. This will play important role in implementing precautionary principle under environmental Laws.
- AI can be used as expert system advising emergency response teams about how to deal with industrial accidents.^{xvii} AI increases our capacity to predict, and therefore plan for, events and circumstances.^{xviii} This includes (but not limited to) prediction about where it will hit hardest, which defensive systems are likely to fail, and which communities are in the most danger. Unmanned robots are being used to great effect in every aspect of disaster response. They can more accurately gather data about hurricanes without human pilots having to risk getting close; they can enter dangerous areas following a disaster to assess damage and look for survivors; and they can assist in rescue efforts.^{xix}

This capability of AI will be fruitful in achieving SDG 13, i.e. strengthening resilience and adaptive capacity to climate-related hazards and natural disasters.^{xx}

- AI can help a great deal in water resource management.^{xxi} Plenty, the San Francisco based vertical green-house company, uses IoT sensors and machine learning to grow crops vertically indoors using only light, water and nutrients. The company claims it uses only 1 percent of water compared to traditional farming techniques while at the same time growing up to 350 times more produce on one squaremeter.^{xxii} An AI application that combined satellite imagery with object detection software enabled rescue workers to identify safe escape routes for those trapped by the rising waters.^{xxiii}

This will help in achieving the SDG 6, i.e. improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse; implementing integrated water resources management; water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies etc.

- Better urban planning, leading to resilient, human-centric cities with minimal air pollution and environmental impact. AI could also be used to



simulate and automate the generation of zoning laws, building ordinances and floodplains.^{xxiv} Cutting-edge analytics through the GBDX platform of DigitalGlobe^{xxv} can already experimentally combine machine learning with satellite imagery to predict human characteristics of a city, an approach that will ultimately help plan for tomorrow's challenges and make decisions with confidence, for a more resilient society.^{xxvi} AI-derived geospatial data become more important as the amount of Earth Observation (EO) satellites increases, new constellations are deployed and the amount of daily data collected increases exponentially. The only way to exploit all that data in a timely manner will soon be through automation, ML and AI tools.^{xxvii} This will help in achieving the SDG 9, i.e. develop quality, reliable, sustainable and resilient infrastructure, including regional and trans border infrastructure, to support economic development and human well-being...; upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes.^{xxviii}

- SDG 15: poaching and trafficking of protected species of flora and fauna; integrate ecosystem and biodiversity values into national and local planning (This can be done by AI with help of satellite imagery);

Thus AI will definitely play a key role in achieving sustainable development goals of the United Nations.

CRITIQUE

Though AI has great potential in protecting environment and achieving above referred SDG's, scholars have also raised doubts about its possible ill effects on environment. This includes,

- AI driven cars may lead to people making more trips, which could lead to increases in emissions, not decreases.^{xxix}
- Its tools and techniques can be misused by authorities and others—or be subject to unintentional misuse, sometimes harming the very people they are intended to help.^{xxx}
- AI will generate increased e waste. Sources indicate that in North America, over 100 million cell phones and 300 million personal computers are discarded each year due to acceleration of technology.^{xxxi}
- With help of AI, rate of discovery and yielding of natural resources like coal, oil etc. will increase drastically, resulting in environmental degradation.



CONCLUSION

Invention of AI technology is one of the most important development in recent years in technology sector. Though AI cannot provide remedy for all the problems existing in the society and human life, it can certainly play a role in addressing most of them. The issues/challenges addressed under UN's SDG certainly deserve an urgent attention. However, till date the world community has not made satisfactory progress towards achieving these goals. Use of AI in protecting environment, reducing pollution, predicting natural disasters, taking preparatory measures for reducing the impact of disaster, post disaster rehabilitation and restoration, planning and building resilient sustainable infrastructure, etc. will certainly help in achieving these goals in stipulated period of timeframe.

In the words of Mervin Kranzberg (a US historian): *"Technology is neither good, nor bad; nor is it neutral."* The goodness or badness of technology depends upon how we use it. As observed hereinabove, various examples of use of AI for environment friendly sustainable manner, has definitely given a hope of achieving the UN's SDG. In order to achieve this, Nation States and international bodies should work in collaborative manner to promote the research and use of AI in field of environment protection. They should also work upon developing a mechanism for AI education and responsible application of AI. International bodies like United Nations Environment Programme (UNEP) should collaborate for developing the legal regime and ethical standards for regulating and ensuring sustainable use of technology for protection and preservation of environment.

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QUALITY ANALYSIS OF TEA WITH THE HELP OF MACHINE LEARNING ALGORITHMS

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Abstract: Machine learning provides various algorithms to find out the more accuracy in any work. It can take multiple attribute and can work efficiently on large number of data set. The machine learning algorithms are generally used for clustering and classifications. The classification techniques can be applied on the tea dataset to find out the quality level of the tea values and classify them on the basis of their quality. In this research work we are using 9 major attributes and 24 dependent attributes. The research work is carried out by using decision tree, naïve Bayes classifier, support vector machine, random forest classifier.

Index Terms: Naïve Bayes, Decision Tree, Clustering, Support Vector Machine, Random Forest.

1. Introduction

Machine learning emerged from the concept where the present or the past data is used to predict the future. The outputs of commonly used algorithms used discrete or binary type of output (0 or 1, yes or no, true or false). There are several machine learning algorithms like Naïve Bayes, Support Vector Machine, Decision Tree, Clustering etc

A. Decision tree

Decision tree is one of the powerful and popular algorithms in the classification algorithm, it can be used to predict and determine the factor that show major impact in tea quality, the root node of decision tree can act as the major cause in tea quality analysis.

There are three important parts in decision tree

- 1.root node (aroma acts as the root node for green tea whereas touch represents black tea as the root node)
- 2.decision node (splitting of data or creating child nodes)
- 3.leaf node (There won't be any more splitting of data)

To get the decision tree two important things need to be calculated:

1. Entropy:

$$\text{Entropy}(T) = -\sum_{i=1}^c p_i \log_2 p_i$$

2. Information gain:

$$\text{GAIN}(T, X) = \text{Entropy}(T) - \text{entropy}(T, X)$$

If there is an Information gain that exceeds all other information gain, then it will be chosen as a root node.

In decision tree there is a major disadvantage that is over fitting that can be overcome by post-pruning

The major disadvantage of decision tree is over fitting this can be resolved by post-pruning (after the completion of tree identify the unwanted and unused child nodes and remove the nodes from the decision tree).



B. Naïve Bayes

Naïve Bayes is one of the many popular models in machine learning that uses for a probabilistic approach. For predictions several attributes needed to be taken into consideration so posterior probability is taken into account for predictions.

For predicting the probability there are several algorithms like Bayes theorem (cannot classify new instances and generate probability)

$$P(A/B) = (P(B/A).P(A))/P(B)$$

and as for the Naïve Bayes (it is a conditional probability and can be represented as vector)

Vector such as

$$X = (x_1, x_2, x_3)$$

$$P(Bc/A) = (p(Bc)p(A/Bc))/P(A)$$

C. Support Vector Machine:

In supervised learning algorithms Support Vector Machine simply known as SVM is one of the best for knowing the accuracy of the test dataset. This is one of the algorithms that can perform both classification and regression techniques. SVM is mostly used for classification techniques for better results when compared to the regression techniques. It is more effective when number of dimensions is more or less great than the number of samples and it is more effective in high dimensional spaces.

The major drawbacks are when the data is large then the training time is also higher and when there is lot of noise in the given data the overall required accuracy is low. Probabilistic values are not produced or generated in support vector machine

D. K-Means Clustering

Cluster is a topic where the data is divided and regrouped in such a way that similar type of objects fall under one group or cluster.

Clusters can be formed by measuring the distance and verifying the mean after every iteration and here is the method that can be used to calculate the distance is Euclidean distance

$$\text{Euclidean distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

Data clustering has much more algorithms available some of them are: K-Means Clustering, Hierarchical Clustering, Mean-Shift Clustering and Density based Clustering.

In K-Means Clustering K itself represents the number of clusters the data need to be grouped with. If the value of K is low, then the accuracy of the K-Means will also be low.

E. Random Forest

It is one of the classification algorithms that works just like the decision tree. In random forest it takes multiple scenarios into account and create several decision trees. Creating multiple decision trees means having multiple root nodes so to avoid this problem a concept is introduced named as Majority voting. In this concept voting is done for root node, the root node with highest number of voting is considered as root node.

Random Forest is mainly used in business sector to verify or to double check the root cause of the given problem. It is mainly used in banking sector, medicine field and stock market.

Tea quality analysis:

For analyzing the tea quality there are 9 important factors that shows the major impact on tea quality[4][5].



The machine learning algorithms we considered are Naïve Bayes, Decision Tree, K-Means clustering, Support Vector Machine and Random Forest.

The attributes we considered are caffeine (high-3, normal- 2, low-1), polyphenolic (high-3, normal-2, low-1), Catechins (high-3,normal-2, low-1), appearance (broken- 2, unbroken-1),aroma (sweet-1, floral fragrance-2, light fresh-3, soothing fragrance-4), touch (feels smooth-1, coarse-2, smooth without crumbles-3, smooth with crumbles-4), types (green tea-1, black tea-2),

Briskness (high-3, normal-2, low-1)

Tea quality (very good-4, good-3, normal-2, notgood-1).

3. Literature review

Different researchers have worked on food and tea quality prediction and used various machine learning algorithms to get the desired output and accuracy.

In this the author briefly discusses about the general approach for fuzzy logic models[1][3] which are based on qualitative modeling and this modeling can be done two practical parts fuzzy linguistic approximation and modeling. Here clustering process can be done to identify the fuzzy model[1][3] and its structure. To give the support for his statements the author provides several examples from modeling such as the human operators control action and the model of dynamical process. The author applied the qualitative models on the data sets water purification model and the trend of stock prices and repeated the function of the model until the desired output is received.

To put it in a nutshell the author wanted to explain how the devices can detect small and specific molecules. In this case of artificial tongue, the process is divided into three process the sample is read by the sensory array and then the process is started by features extraction and end with specific classification.

Kheer Mohan [2] is the popular sweet in the Rajasthan and its life span at room temperature is six days here the author wanted to extend the life span without any change in the taste. So, the author clearly explained what are the factors that effects the lifespan such as Ph, free fatty acid, sensory attributes. There are several packings such as vacuum and nitrogen packing using nylon films. In the vacuum packing the ph. and ffa values decrease rapidly and the nitrogen packing is good, and it resulted in 1.5 times that is 9 days.

For evaluating the sensory quality of food or drink such as tea fuzzy logic [1] can be applied. In fuzzy logic the level of scores is between 0 to 100 and this is very useful when having different factors. So, this can be used for predicting the different factors of tea quality[4][5]. So this kind of fuzzy logic technique[3] can be used other kinds of food and can even be able find the weak and strong factors of the food.

Machine learning emerged from the concept where the present or the past data is used to predict the future. The outputs of commonly used algorithms used discrete or binary type of output (0 or 1, yes or no, true or false). There are several machine learning algorithms like Naïve Bayes, Support Vector Machine, Decision Tree, Clustering etc

4. Present Work

There will not be any dataset without any noise or NULL values so, in the data preprocessing phase these kinds of misleading values will be cleared or be replaced.

In classifying and predicting the tea quality several machine learning algorithms are used:

1. Decision Tree
2. Naïve Bayes
3. K-Means Clustering
4. Random Forest
5. Support Vector Machine (SVM)

Attributes	
Name	Description
Caffeine	High-3 Normal-2 Low-1
Polyphenolic	High-3 Normal-2 Low-1
Catechins	High-3 Normal-2 Low-1
Appearance	Broken -2 Unbroken-1
Aroma	sweet-1 floral fragrance-2 light fresh-3 soothing fragrance-4
Touch	Feels smooth-1 Coarse-2 Smooth without crumbles-3 Smooth with crumbles-4
Types	Green tea-1 Black tea-2
Briskness	High-3 Normal-2 Low-1
Teaquality	Very good-4 Good-3 Normal-2 Not good-1

5. Results

A. Decision tree

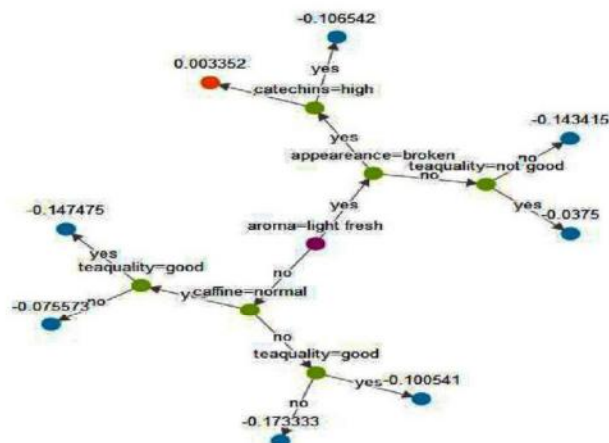


Figure 1: Decision tree for Green Tea

The factor that shows the major impact on the quality of green tea is the Aroma. If aroma is having the light fresh, then it shows even more impact on the tea quality and review given by the customers.

But when it comes to the black tea the factor that shows the impact to the highest degree is touch. Even in touch smooth with crumbles factor is the one that gives the c

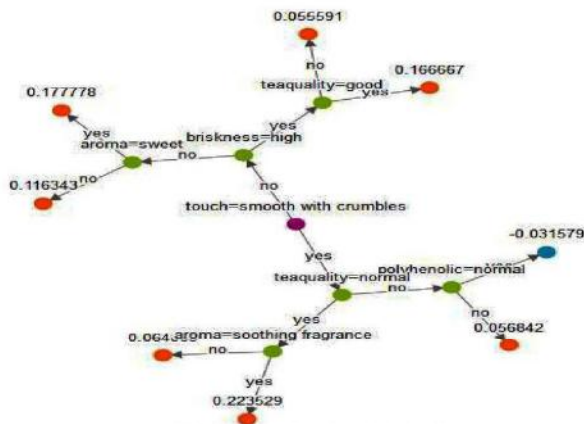


Figure 2: Decision tree for Black Tea

B. Naïve Bayes

```

Naive Bayes Classifier for Discrete Predictors
Call:
naiveBayes.default(x = X, y = Y, laplace = laplace)

A-priori probabilities:
Y
  1      2      3      4
0.08956646 0.23725584 0.36017151 0.31300619
  
```

Figure 3: Predictions for Tea Quality

From the outputs generated by the Naïve Bayes it is crystal clear that the tea quality is very good for almost 31% of the total dataset and good for 36% of the overall data. The tea quality is normal approximately 24% and not good with not even 1% of the overall data.

C. K-Means Clustering

```

k-means clustering with 4 clusters of sizes 1104, 260, 942, 692

Cluster means:
[,1]
1 0.0957808
2 -2.0312626
3 1.1593025
4 -0.9677409
  
```

Figure 4: K-means Clustering

The data of the tea quality analysis is clustered into 4 different groups because tea quality there are 4 different types of responses recorded in the data. So the K-Means clustering is used for prediction of tea quality.

D. Support Vector Machine

In SVM classification technique is used on the tea quality dataset and generated the desired results with an accuracy of nearly 91% and this is done under the condition of having the tea quality more than 1 i.e. the SVM models applies only for sets that consist tea quality normal or above.

```
{'accuracy': 0.9092495636998255, 'confusion_matrix': Columns:
  target_label  int
  predicted_label int
  count         int

Rows: 2

Data:
| target_label | predicted_label | count |
|-----|-----|-----|
| 0           | 1             | 32    |
| 1           | 1             | 521   |

[2 rows x 3 columns], 'f1_score': 0.9524680073126143, 'precision': 0.9092495636998255, 're
```

Figure 5: SVM for quality more than 1

E. Random Forest

Random forest is an algorithm that produces several decision trees, here the random forest is performed with a condition of type is black tea. So, several trees have been generated accordingly, which means there might be several root nodes and so by using the majority voting we can set the root node more precisely. It is evident that the main root node is touch which consist the attribute smooth without crumbles or with crumbles.

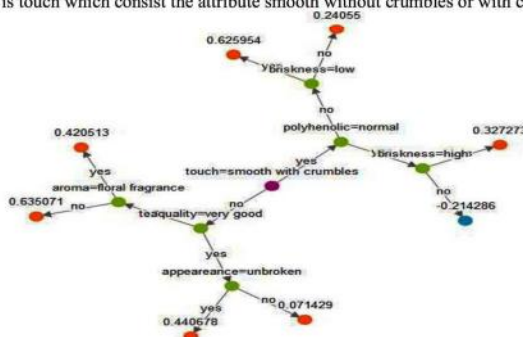


Figure 6: Random Forest(1)

The factor that shows its major impact is touch in decision tree 1.
 The factor that states its self as a root node is caffeine in the decision tree 2.
 The root node in the decision tree 3 is the touch. So, by using the majority voting the root that can be considered as the factor that shows its impact in black tea is touch.

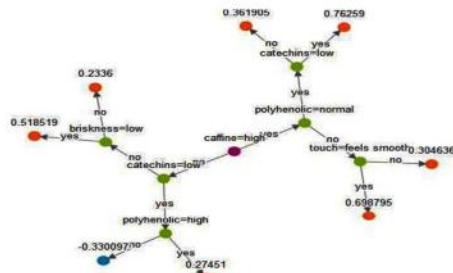


Figure 7: Random Forest(2)

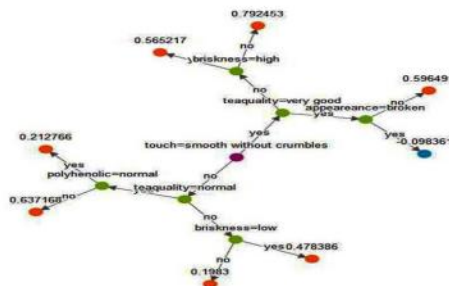


Figure 8: Random Forest(3)

5. Conclusion

By implementing of Random Forest and Decision Tree on the data set of green tea, we got the 'Aroma' as a root node. In Random Forest the root node is elected by the number of majority voting concept. It shows that the feature 'Aroma' puts a major impact on the quality of tea. In aroma we are having nine major attribute and twenty-four dependent attributes the attribute that show much impact is the light fresh on the green tea. In the black tea the attribute that shows its impact is physical appearance by touch of the leaf.

The classification technique in the SVM resulted with an accuracy nearly 91%. In the clustering algorithms there is an accuracy around 84%-86%, which shows classification techniques are much better for analyzing and for forecasting.



6. References

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