**"Ya Devi Stuyate Nityam Vibhuhairvedaparagaih
Same Vasatu Jihvagre Brahmarupa Saraswati"**

Saraswati, the goddess of knowledge, is praised by the intelligent who have mastered the Shastra (scriptures). She is the wife of the Creator. May she live on my tongue.

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Why do people want power? Because whatever they are doing is not respected. A shoemaker is not respected like the president of a country. In reality, he may be better as a shoemaker than the president is as a president. Abraham Lincoln's father was a shoemaker and Lincoln became the US president.

The first speech that Lincoln delivered on the inauguration of his first term was interrupted right at the beginning. A man stood up and showing his shoes said, "Mr. Lincoln, you have become the president by accident. But never forget that your father was a shoemaker. In fact, in my family, your father used to come to make shoes for everybody. The shoes I am showing you were made by your father."

The whole Senate laughed. They thought they had humiliated Lincoln. But with tears in his eyes, Lincoln said, "I am immensely grateful to you for reminding me of my father. He was a perfect shoemaker, and I know I cannot be that perfect a president. I cannot beat him. I will try my best to at least reach close to his greatness. As for your family and the shoes my father has made, I can inform the whole Senate that there may be other aristocratic families that my father used to make shoes for. He has taught me a little bit of the art of shoemaking too. If his shoes are not working well, if they pinch you, if they are too tight, or too loose, I can always mend them. Of course, it will not be the same as my father, but he is dead."

Financial Market Structure and its Impact on Economic Growth

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Abstract

The process of economic growth is complex and depends on various factors. Macroeconomics places an important role on capital formation, i.e. physical investments. The process also involves progress in human capital, technology and knowledge. It also requires a stable regulatory and financial system in the country. The financial system acts as the main catalyst in the process of channelling of funds from surplus to deficit units. The fact that there is a relationship between financial development and growth is very highly debated. The broad consensus is that finance acts as a crucial channel in the process. An area of inquiry lies in the question of whether the structure of the financial system has any effect on the overall economic growth process. This involves the mix of banks and stock markets in the economy. Therefore, the basic question that this paper will attempt to answer is: does having a bank-based or market-based financial system matter for economic growth? The approach will involve basic causality tests using time-series data for the Indian economy.

Keywords: Financial development, Financial structure, Economic growth.

1. Introduction

For any country the process of economic growth is complex and multidimensional. The role of capital formation is considered quite important and it involves progress in human capital, technology and knowledge. Natural resources are also an equally important part of the process. Ultimately, it also depends on how the researchers measure economic growth. The most common approach is measuring changes in national income.

For GDP to increase in a country, the important aspect is a stable regulatory and financial system. The financial system acts as the main catalyst in the process of channelling of funds from surplus to deficit units. There have been theoretical models which showed that monetary variables and real variables are separate. Yet, money does play a crucial role in facilitating transactions and speeding up economic activity. The fact that there is a relationship between financial development and growth is very highly debated. The broad consensus is that finance acts as a crucial channel in the process. There are three main hypotheses in this relationship, which focus on unidirectional, bidirectional and no causality.

Another debate in the same inquiry asks whether the structure of the financial system has any effect on the overall economic growth process. The structure refers to what the financial markets in a country consist of. This involves the mix of banks and stock markets in the economy. For instance, developing and underdeveloped countries may require an initial intervention and support from the banking sector. But after a stage of development, capital markets are required to have more vibrancy in the economy. In most underdeveloped and developing countries, the banking sector has a major role to play in the overall development of the economy. It may be required to provide loans and advances to priority sectors, such as agriculture, in an effort to strengthen the economy. More so, public banks play a vital role in this aspect. These activities may not interest participants in capital markets, who are primarily looking for returns on their investment.

Hence, the mix of banks and stock markets are quite important, especially while studying the finance-growth relationship. Thus, this paper attempts to study the dynamics for the Indian economy.

2. Literature Review

Current reviews suggest that the study by Bagehot (1873) is one of the earliest works that link financial development and economic growth. His study gave illustrations of how money market developments in England aided the flow of capital towards productive industries. The study also articulated the relation between finance, trade and growth. Further, Schumpeter (1912) described how financial intermediation is the centre of economic development. Several other prominent economists have studied this relation and made immense theoretical and empirical contributions [Patrick (1966), Goldsmith (1969), McKinnon (1973) and Shaw (1973)].

In the earliest studies, only descriptive and narrative analyses were made. However, these early studies form the basis of much of current understanding. Great economists like Bagehot, Schumpeter, McKinnon, Shaw, among others, have written on the role of finance in growth. The topic is too important to be taken lightly. The exact mechanism of understanding the process requires an understanding of growth theory. There has been a gradual transition from believers of classical schools of thought and the newer theories of growth.

Over the years, new theories of economic growth were developed. The most recent theory of endogenous growth very appropriately blends the concept of financial development with economic growth. The prominent initial contributions in this area were by Greenwood and Jovanovic (1990), Pagano (1993) and King and Levine (1993). Their research shows that financial development does have a positive impact on economic growth through investment, saving, productivity of capital and effective management of information.

Further, there is no particular differentiation needed between the proportion of banks or stock markets in the economy. Although this argument still goes on, it is believed that both banks and stock markets behave as complementary, rather than rivals in the finance-growth nexus. This is shown by Boyd and Prescott (1986), Boyd and Smith (1998) and Blackburn and Capasso (2005).

The techniques used for econometric analysis have also evolved over the years. From basic descriptive analyses, to cross sectional studies, the focus has now gradually shifted to multivariate models. In recent years, researchers have used techniques of time-series analysis.

3. Methodology

To address the issue of structure of the financial system, this study uses data from the World Bank development indicators. The time period chosen is from the year 1989 to 2012. The three main variables used are: Stocks traded, total value (% of GDP), Domestic credit provided by banking sector (% of GDP) and GDP Per Capita growth.

The variables are defined as follows:

Stocks traded: The total value of shares traded during the period, as a ratio of GDP.

Domestic credit provided by the banking sector: Includes all credit to various sectors. The banking sector includes monetary authorities and deposit money banks, as well as other banking institutions.

Annual percentage growth rate of GDP per capita: GDP per capita is gross domestic product divided by midyear population.

The econometric tests used are basic tests of stationarity followed by cointegration test, linear regression and the granger causality test. Many current studies have employed cointegration and granger causality tests. Time-series analysis of data requires various diagnostic checks. For non time-series data, the researcher can directly proceed to the data analysis technique. However, for time-series data, the very first check is that of stationarity. The main objective behind this is to test whether the basic properties of the data, such as mean and variance, are constant over time.

The Augmented Dickey-Fuller test is employed here (see table1). The test estimates the following three equations:

$$\Delta Y_t = \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t \qquad —(1)$$

$$\Delta Y_t = \beta_1 + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t \quad —(2)$$

$$\Delta Y_t = \beta_1 + \beta_2 t + (\delta) Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t \text{ - (3)}$$

The null hypothesis for the ADF test is that $\delta = 0 \, (or \, \rho = 1)$ which means that the series has a unit root (non-stationary). The alternative hypothesis, that $\delta < 0$ indicates that the series is stationary. This leads to rejection of the null hypothesis.

The test is conducted assuming a time series with an intercept, and a times series with an intercept and trend component. It is done at both level and first differences of the time series.

The Granger Causality Test is used to investigate the direction of causality between two variables. The test involves the following bi-variate regression model:

$$Y_t = \alpha_0 + \sum_{i=1}^{m} \alpha_i Y_{t-i} + \sum_{j=1}^{n} \beta_i X_{t-1} + \varepsilon_{1t} \; — \; (4)$$

$$X_t = \omega_0 + \sum_{i=1}^{m} \gamma_i Y_{t-i} + \sum_{j=1}^{n} \theta_i X_{t-1} + \varepsilon_{2t} \; — \; (5)$$

where it is assumed that the error terms are uncorrelated. If all the coefficients of X in the first regression equation are significant, then the null hypothesis that X does not cause Y will be rejected. If all the coefficients of Y in the second regression equation are significant, then the null hypothesis that Y does not cause X will be rejected.

Thus, this test is a simple way to check for long term predictive power that one time series variable shares with another. It is basically an OLS technique, applied to time series data, after having fulfilled the basic condition of stationarity.

4. Results and Discussion

The first test applied was that of stationarity using the Augmented Dickey Fuller method. Results of the test are included in table 1 below.

Table 1 : Tests of stationarity

	ADF stat			
	Levels		First difference	
Variable	C	C&T	C	C&T
G	-3.27***	-4.58**	-	-
ST	-1.81	-2.06	-4.22***	-4.22***
DC	-1.63	-1.59	-3.53**	-4.96***

***, **, * indicates test value is significant at 1%, 5% and 10% level of significance respectively; For ADF constant model, critical values at 1%, 5% and 10% level of significance are, -3.77, -3.04 and -2.64 respectively; For ADF constant and trend model, critical values at 1%, 5% and 10% level of significance are -4.44, -3.63 and -3.25 respectively; C refers to constant, C&T refers to constant and trend.

For the sake of brevity, GDP Growth is abbreviated as G, Stocks Traded ratio as ST and Domestic Credit as DC throughout the remaining of the text. It is observed here that G is stationary at levels, while the other two variables are stationary at first differences. This is expected, as these variables progress with time. To remove the time component, first order differencing may be required.

Table 2: Statistics to check for cointegration

Null	Alternate	Trace Statistic	Max-eigen Value Statistic
r=0	r=1	53.83 (29.79)**	40.85 (21.13)***
r<=1	r=2	12.99 (15.49)	11.95 (14.26)

Figure in parenthesis is critical value; *** denotes rejection of hypothesis at 0.01 level, ** denotes rejection at 0.05 level.

The test of cointegration reveals that there is one cointegrating equation. The null hypothesis that there is no relationship between the three variables is rejected. It is accepted that there indeed is a long run relationship between the three variables.

Based on the above cointegrating relationship, the vector that is generated is:

Normalized ECM: $G = 0.001 DC – 0.31 ST$

The effect of credit on growth appears to be very negligible, while the effect of stocks traded appears to be negative. To verify this, a simple linear regression test is applied.

The dependent variable in this regression is growth. The independent variables are stocks traded ratio and domestic credit ratio. It must be noted here that there are many more variables that affect growth. This fact is not denied, but those other variables are not taken into consideration here to isolate the effects of these two variables. Table 3 below presents the results of regression analysis.

Table 3 : Regression Analysis

	Dependent Variable: Growth	
Independent Variables	Coefficient (std. error)	T-statistic
C	-2.54 (3.72)	-0.68
DC	0.14* (0.07)	1.73
ST	-0.00 (0.02)	-0.00
R-Squared: 0.21; F-statistic: 2.57*		

The effect of domestic credit on growth appears to be significant at the 10% level. The effect of stocks traded is insignificant and negative. The R-squared and F-statistic values for the model are satisfactory, though they could be improved by including more variables that actually explain growth. Next, the granger causality test is applied.

It appears that domestic credit may have an impact on economic growth.

Table 4 : Granger Causality Test

*** denotes rejection of hypothesis at 0.01 level, ** denotes rejection at 0.05 level

It is observed that there is bidirectional causality between growth and domestic credit, which complements the earlier finding. There is unidirectional causality from growth to stocks traded. There is also unidirectional causality from stocks traded to domestic credit.

When there is economic growth, there is an increase in economic activity. Consumption, investments (by businesses), government expenditures and net exports, all rise simultaneously, though not always in the same ratio. This is a stimulus and it requires more funds with economic agents. They once again look to sources of raising funds. Traditionally, banks have been the most common avenue for any business to raise finance (ignoring the effects of the unorganised sector which cannot be quantified). Off late, the stock market has achieved significance. The findings above clearly show that the stock market is still not large and liquid enough to affect the economic activities, though it does act as a channelling and stimulating agent.

Further, the finding that there is unidirectional causality from growth to stocks traded implies that as the economy grows and money is borrowed from banks, this money will be channelized towards productive uses. The surplus may be parked in stock markets and other exchanges. This is done with a view to maximize earnings.

Here, an important point to remember is that during periods of economic growth, most industries are looking to expand operations, for which they borrow money. During periods of slow economic growth, if banks and other financial institutions provide funds at attractive rates, it is bound to act as a catalyst to raise economic growth. Similarly, once adequate growth is achieved, it will lead to further expansion of the banking sector itself, and lead to a greater availability of industrial credit. There will also be a more diverse range of financial instruments and arrangements that crop up to meet the increased demand for credit. There are many businesses that are not publicly listed. These are in fact a major part of our economy, especially the MSME sector. They still rely heavily on banks and other financial institutions.

5. Conclusion

In a growing economy, the need for bank credit rises. Businesses are looking to expand and consumers also borrow money for their purchases. Access to liquidity, which is reliable and available, makes the whole process much easier. This stimulates more economic activity. Further, when the economy grows and per capita incomes rise, individuals tend to transact more on capital markets as well, which is shown from the unidirectional causality. When people transact on stock markets and make gains, they park their surplus funds in various avenues offered by the financial sector. They may invest back in the economy, borrow more funds and expand the scope of their economic activity. Hence in this case, it is seen that domestic credit provided by banks does have a relationship with growth, but stocks traded (representing capital market activity) may not necessarily directly be linked with economic growth.

The study can be further built upon by including variables such as interest rates and more indicators of finance. As mentioned earlier, the relationship is very complex. The model included in this study is quite simplistic, but it was designed to be so. A state-wise case study approach can also be used however data on stock markets is not uniformly available at the state level.

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Optimal Portfolio Construction in Banking and Pharmaceuticals Sectors in India : An Empirical Study

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Abstract

The main focus of this research is to construct an optimal portfolio in Indian stock market with the help of the Sharpe single index model. Portfolio construction is an important process of the investors for investment in the equity market. A good combination of portfolio will give maximum return for a particular level of risk. In this research, 13 selected stocks from the two sectors like 7 from Banking and 6 from Pharmaceuticals have been taken into consideration and these stocks are constituent of the NSE Nifty index. The proposed method formulates a unique cut off point (Cut off rate of return) and selects stocks having excess of their expected return over risk free rate of return surpassing this cut-off point. Percentage of investment in each of selected stocks is then decided on the basis of respective weights assigned to each stock depending on respective beta value, stock movement variance, unsystematic risk, return on stock and risk free return vis-a-vis the cut off rate of return. The study finds that five company stocks i.e three from pharma (Glaxo, Sunpharma, Dr.Reddy) and two from banking sectors(Axis Bank and Bank of Baroda) constitute the optimum portfolio with ideal proportion of investment of 0.60% ,50.14%,22.31%,11.28% and 15.67% respectively. This research findings and suggestions would be helpful to investors.

Keywords: Beta, Risk and return trade off, Market variance, Residual variance, Portfolio construction, Single index model, Optimal portfolio, Nifty.

1. Introduction

As the number of financial assets is ever increasing in today's market, investors are exposed to great opportunities for improving their portfolio performance. The fact that these securities have different risk return characteristics enables investors to accordingly meet their goals and risk profiles. This in turn confirms the need for a mechanism or selection technique that can select assets from different available options and their respective optimal proportions in order to create a portfolio. Portfolio is a combination of securities such as stocks, bonds and money market instruments. The process of blending together the broad asset classes so as to obtain optimum return with minimum risk is called portfolio construction. A portfolio tries to trade off the risk return preferences of an investor by not putting all eggs in a single basket and thus allows for sufficient diversification. Harry Markowitz (1952), the father of modern portfolio theory, suggests that there is a trade-off between return of an asset or a portfolio and the respective variance. His paper, Portfolio Selection, reveals that it is possible to compute the optimal weights of a portfolio of risky securities, given the corresponding historical returns and variance-covariance matrix of the securities in the portfolio through the use of a suitable model. This portfolio approach won him Nobel Prize in 1990. The work done by Markowitz was extended by William Sharpe. He simplified the amount and type of input data required to perform portfolio analysis. He made the numerous and complex computations easy which were essential to attain optimal portfolio. This simplification is achieved through single index model. This model proposed by Sharpe is the simplest and the most widely used one.

The study focuses on finding out an optimal portfolio using Sharpe's single index model. This paper is built around building up an optimal portfolio by balancing the positive and negative correlation existing between the securities and in turn getting returns closer to the anticipated results. For this study, the stocks from two sectors viz Banking and Pharmaceuticals are included since these sectors are of prime importance for real growth of an economy.

2. Objectives of the Study

The primary objective is to construct an optimal stock portfolio among selected stocks from the banking and pharmaceuticals sectors in India.

The specific objectives are:

- To present a review of past works relating to optimum portfolio construction and analysis.

- To build an optimum stock portfolio among selected stocks belonging to the banking and pharmaceuticals sectors in India, using Sharpe Single Index model.

- To calculate the proportion of investment to be made into each of the stock that is included in the optimal stock portfolio constructed by Sharpe single index model.

3. Review of Literature

In an earlier study Ward, David, Gary (1993) explained how well an investor should invest mainly focusing on investment in defaulted bonds and how appropriately they should be diversified to earn higher rate of expected returns. Such kind of a portfolio attracts investors by giving higher returns but on the contrary will also increase the level of unsystematic risk. Hence, investors have to examine the risk and return factors carefully, as they offer higher returns than equities and normal bonds.

The study of Klein & Bawa (1997) determines the effect of estimation risk on optimal portfolio choice under uncertainty. In most realistic problems, the parameters of return distributions were unknown and were estimated using available economic data. Traditional analysis neglects estimation risk by treating the estimated parameters as if they were the true parameters to determine the optimal choice under uncertainty. We show that for normally distributed returns and 'non-informative' or 'invariant' priors, the admissible set of portfolios taking the estimation uncertainty into account is identical to that given by traditional analysis. However, as a result of estimation risk, the optimal portfolio choice differs from that obtained by traditional analysis.

Stutzer (2000) explore the potential usefulness of a non-parametric approach to portfolio construction and performance measurement. The Portfolio Performance Index (PPI) is based on the notion that investors associate risk with the failure to achieve a target return. He proposed that portfolio construction and performance measurement be approached by calculating the decay rate in the probability that a given portfolio will underperform its designated benchmark. By comparing the PPI and Sharpe ratio metrics, this paper presents preliminary evidence of the economic significance of non-normalities in Australian equity returns, and documents the impact of such on portfolio construction and performance evaluation practice.

Campbell, Husiman and Kodedijk (2001) viewed that optimal stock portfolio is one which allocates financial assets by maximizing expected return subject to the constraint that the expected maximum loss should meet the Value at Risk limits set by the risk manager. Similar to the mean-variance approach a performance index like the Sharpe index is constructed. Furthermore when expected returns are assumed to be normally distributed,

it is shown that the model provides almost identical results to the mean-variance approach. Liow (2001) in his research work examined the investment performance of Singapore real estate and property stocks over the past 25 years. The analysis made using coefficient of variation (CV) and Sharpe Index (SI) suggest that real estate outperformed property stocks on a risk-adjusted basis. Results also indicate that risk adjusted investment performance for residential properties remained superior to performance for other real estate types and property stocks.

Haslem and Scheraga (2003) in their study used Data Envelopment Analysis (DEA) to identify the large-cap mutual funds in the 1999 Morningstar 500 for efficient or inefficient funds. An attempt is made to identify the financial variables that differ significantly between efficient and inefficient funds and to determine the nature of these relationships. According to study findings, there are identified input/output and profile variables that are significantly different between the 1999 Morningstar 500 large-cap mutual funds that are DEA performance-efficient and inefficient. The Sharpe index represents the DEA output variable. The findings indicate the variables that are significantly different between performance efficient and inefficient funds and the nature of their relationships. The variable values associated with efficient funds are relatively conservative in nature, not aggressive. Andrea, Wilfred and Jean (2003) suggest empirical evidence on the efficiency and effectiveness of hedging U.S. based international mutual funds with an ASIA-Pacific investment objective. The case for active currency risk management is examined for a passive and a selective hedge, which is constructed with currency futures in the major currencies. Both static and dynamic hedging models are used to estimate the risk-minimizing hedge ratio. The results show that currency hedging improves the performance in internationally diversified mutual funds. Such hedging is beneficial even when based on prior optimal hedge ratios and efficiency gains from hedging, as measured by the per cent change in the Sharpe Index, are greatest under a selective portfolio strategy that is implemented with an optimal constant hedge ratio.

Moreno, Macro and Olmeda (2005) analyzed, from an investors perspective, the performance of several risk forecasting models in obtaining optimal portfolios. Specifically, it studies whether ARCH-type based models obtain portfolios whose risk-adjusted returns exceed those of the classical Markowitz model. The same analysis is performed with models based on the Lower Partial Moment (LPM) which take into account the asymmetry in the distribution of returns. The results suggest that none of the models achieve a clearly superior average performance. It is also found that models based on semi variance perform as well as those based on the variance, but not better than, even if the evaluation criterion is based on the Reward-to-Semi variance ratio. Ebner and Neumann (2008) explained the correlation instabilities in US stock returns and used three different estimation approaches to overcome the problem : (1) moving window least squares, (2) flexible least squares

and (3) the random walk model. The results suggest that a time-varying estimation of return correlations fits the data considerably better than time invariant estimation and thus, increases the efficiency of risk estimation and portfolio selection. Nateson and Rajesh (2010) constructed optimal portfolio using Sharpe's Single Index Model consisting of eight stocks from Nifty Nifty stocks six stocks selected from Nifty Junior. The respective portfolio beta's were calculated and capital allocation for each stock was also determined. Thus, the analysis of the portfolio provides the rationale for forming an optimal portfolio of the securities instead of buying only a single security.

In the Indian scenario, Varadharajan (2011) constructed an optimal equity portfolio with the help of Sharpe Index model. The study was conducted with the financial data from April 2006 to March 2011. The sample size was limited to 19. He took these companies from Banking and Information Technology. The portfolio was constructed with the top 5 stocks that meet the criteria to be included in the portfolio according to Sharpe Index Model. The portfolio predominantly consisted of stocks from the banking sector, and one stock from IT sector.

In a recent study Saravanan and Natarajan (2012) attempted to construct an optimal portfolio by using Sharpe's Single Index Model. For this purpose NSE Nifty Index has been considered. The daily data for all the stocks and index for the period of April 2006 to December 2011 have been considered. They formulated the cut-off point and selected stocks having excess of their expected return over risk free rate of return surpassing this cut-off point. Percentage of investment in each of selected stocks is then decided on the basis of respective weights assigned to each stock depending on respective beta value, stock movement variance unsystematic risk, return on stock and risk free return vis-à-vis the cut off rate of return. From the empirical analysis, it was concluded that returns on either individual securities or on portfolio comprises of securities of different companies listed in Nifty 50 stocks under various sectors are asymmetrical and heterogeneous. The optimal portfolio consists of four stocks selected out of 50 short listed scrips, giving the return of 0.116. Further it helps to elicit that return on securities of different portfolio is independent of the systematic risk prevailing in the market.

Varadharajan and Ganesh (2012) have selected companies from three sectors namely power sector, shipping sector and textile sector for construction of optimal portfolio. From each sector six companies were selected, so a total of eighteen companies. They selected these companies on the basis of market capitalization. From the analysis, they found out optimal portfolio consisting of five companies.

4. Research Methodology

This is a descriptive study of the construction of portfolio of stocks. The data taken for the study is secondary in nature. The data has been collected from the official website of National Stock Exchange (NSE), namely www.nse-india.com. The study is conducted with the financial data for the past six years from January 2008 to November 2013. The sample size of the study is limited to daily stock price series of 13 selected stocks that belong to the Banking and Pharmaceuticals sectors and these stocks are also part of the 50 stocks that constitute NSE Nifty. The sampling technique adopted is purposive sampling.

4.1 Return

The daily return on each of the selected stocks is calculated with the following formula.

$$R_{it} = \frac{P_{it}}{P_{it-1}} - 1$$

where P_t, P_{it-1} are the share price at time t and t-1 for security i.

4.2 Standard Deviation

The second phase in the context of testing of Sharpe's model for selection of appropriate securities in portfolio is used, the average returns of individual returns or portfolio are adjusted to that of risk free return (here 6.5 percent is considered as risk free rate based on the portfolio on 91-day Government of India treasury bills). Therefore to estimates the coefficients with risk free adjusted average return on individual / portfolio and on market risk, the following model is used. The selection of any stock is directly related to its excess return – beta ratio:

$$\frac{\left(R_i - R_f\right)}{\beta_i}$$

where R_i = the expected return on stock i; R_f = the return on a riskless asset and $â_i$ = the expected change in the rate of return on stock i associated with one unit change in the market return.

The excess return is the difference between the expected return on the stock and the riskless rate of interest such as the rate offered on the government security or Treasury bill. The excess return to beta ratio measures the additional return on a security (excess of the riskless assets return) per unit of systematic risk or non-diversifiable risk. This ratio provides a relationship between potential risk and reward.

Ranking of the stocks is done on the basis of their excess return to beta. Portfolio managers would like to include stocks with higher ratios. The selection of the stocks depends on a unique cut –off rate such that all stocks with higher ratios of (R_i - R_f)/ $â_i$ are included and the stocks with lower ratios are left out. The cut- off point is denoted by C*.

$$C_i = \frac{\sigma_m^2 \Sigma^N_{i=1} \left(\frac{R_i - R_f}{\sigma_{ei}^2} \right) x \beta_i}{1 + \sigma_m^2 \Sigma^N_{i=1} \left(\frac{\beta_i^2}{\sigma^2_{ei}} \right)}$$

The highest C_i value is taken as the cut – off point C^*. The stocks ranked above C^* have high excess return to beta than the cut – off C_i and all the stock below C^* has low excess returns to beta. If the number of stock is large, there is no need to calculate the C_i values for all the stocks after the ranking has been done. It can be calculated until the C^* value is found and after calculating for one or two stocks below it the calculations can be terminated.

The C_i can be stated with mathematically equivalent way:

$$C_i = \frac{\beta_{ip}\left(R_i - R_f\right)}{\beta_i}$$

where âip = The expected changes in the rate of return on stock i associated with 1 per cent in the return on the optimal portfolio; Rp = The expected return on the optimal portfolio and âip and Rp cannot be determined until the optimal portfolio is found. To find the optimal portfolio, the formula in above should be used. Securities are added to the portfolio as long as:

$$\frac{R_i - R_f}{\beta_i} > C_i$$

Now,

$$R_i - R_f > \beta_{ip}\left(R_p - R_f\right)$$

The right hand side is the expected excess return on a particular stock based on the expected performance of the optimum portfolio. The term on the left hand side is the expected excess returns on the individual stock. Thus, the portfolio manager believes that a particular stock will perform better than the expected return base on its relationship to optimal portfolio.

4.3 Construction of the Optimal Portfolio

After determining the securities to be selected, the investors should find out how much should be invested in each security. The percentage of funds to be invested in each security can be estimated as follows:

$$X_i = \frac{Z_i}{\Sigma^N_{i=1}\left(Z_i\right)}$$

$$Z_i = \frac{\beta_i}{\sigma^2_{ei}}\left(\frac{R_i - R_f}{\beta_i} - C^*\right)$$

The first expression indicates the weights on each security and they sum up to one. The second shows the relative investment in each security. The residual variance or the unsystematic risk has a role in determining the amount to be invested in each security.

5. Findings & Analysis

The results of the Sharpe Single index model for each of the 13 selected stocks are presented in table-1. It can be seen from the table that Axis Bank yielded the maximum return (0.20960) among the companies selected and Ranbaxy yielded lowest return of -0.12230. The results of the Sharpe Single index model for each of the 13 selected stocks are presented in table-1.

Table 1: Calculated values of Return, Beta & Excess return to Beta ratio for the selected stock in the Indian Banking and Pharmaceuticals sectors

Company scrip	Return (R_i)	Beta (β)	Excess Return to Beta ratio (R_i-R_f/β_i)
GLAXO	0.11549	0.32563	0.34435
AXIS BANK	0.20960	0.99979	0.06582
SUN PHARMA	0.02451	0.54808	0.02765
DR REDDY	0.07672	0.74916	0.02160
BANK OF BARODA	0.13060	0.90231	-0.06412
LUPIN	0.08632	0.42475	-0.06507
ICICI BANK	0.11735	1.15328	-0.07989
KOTAK BANK	0.08678	0.90868	-0.09905
PNB	0.07463	0.91886	-0.14233
SBI	0.09391	1.04156	-0.14650
CIPLA	0.01214	0.55327	-0.18371
HDFC BANK	0.12469	0.79893	-0.45020
RANBAXY	-0.12230	0.65829	-0.57114

The returns on stock investment are negative only for one company and positive for the remaining twelve. Further, beta is a measure of the systematic risk associated with stock returns and higher beta value signify that the volatility in stock return is high and thus not always desirable. It can be seen from table-1 that with the exception of ICICI Bank (1.15328) and SBI (1.04156) with beta of higher than1and the other beta values are less than 1.0. The lowest beta is observed for Glaxo with value of 0.32563.

According to the Sharpe model the excess return of any stock is directly related to its excess return to beta ratio. It measures the additional return on a security (excess of the risk less asset return) per unit of systematic risk. The ratio provides a relationship between potential risk and reward. For the calculation of this ratio, the risk free return (R_f) is taken as the rate of return on the 91- days Treasury bill which is found to be 6.5% for the period under study.

Ranking of the stocks are done on the basis of their excess return to beta. Based on the excess return to beta ratio the scrip's are ranked from 1 to 13, with Glaxo being in the first rank and Ranbaxy being in the last.

5.1 Cut-off point

The selection of the stocks depends on a unique cut-off rate such that all stocks with higher ratios of excess return to beta are included and stocks with lower ratio are left out. The cumulated values of C_i start declining after a particular C_i and that point is taken as the cut-off point and that stock ratio is the Cut-off ratio C. The highest value of C_i is taken as the cut-off point that is C^*. From table-2 it is seen that Bank of Baroda has the highest cut-off rate, C^*= 0.246. All the stocks having C_i greater than C^* can be included in the portfolio. With this criterion, only five stocks namely Glaxo, Axis Bank, Sun Pharma, Dr Reddy and Bank of Baroda qualify to be included in the optimal portfolio.

Table 2 : Calculated Values of Cut-off point for the selected companies

COMPANY	R_i-R_f/β_i	$(\delta m)^2$	$\beta_i^2/(\delta ei)^2$	$\{R_i-R_f/(\delta ei)^2\}/\beta_i$	$? \{R_i-R_f/(\delta ei)^2\}/\beta_i$	$?\beta^2/(\delta ei)^2$	Ci
GLAXO	0.34435	0.00050	-293.05867	-100.91338	-100.91338	-293.05867	-0.058
AXIS BANK	0.06582	0.00050	320.10924	21.06932	-79.84407	27.05057	-0.039
SUN PHARMA	0.02765	0.00050	220.59788	6.10025	-73.74382	247.64844	-0.032
DR REDDY	0.02160	0.00050	-3540.51538	-76.46029	-150.20411	-3292.86693	0.118
BANK OF BARODA	-0.06412	0.00050	530.12500	-33.99057	-184.19469	-2762.74193	0.246
LUPIN	-0.06507	0.00050	-487.64054	31.72865	-152.46604	-3250.38247	0.123
ICICI BANK	-0.07989	0.00050	176.86560	-14.12893	-166.59496	-3073.51687	0.157
KOTAK BANK	-0.09905	0.00050	-1332.16275	131.95109	-34.64387	-4405.67962	0.014
PNB	-0.14233	0.00050	285.50000	-40.63423	-75.27810	-4120.17962	0.035
SBI	-0.14650	0.00050	-19312.625	2829.23889	2753.96079	-23432.8046	-0.129
CIPLA	-0.18371	0.00050	565.52370	-103.89106	2650.06973	-22867.2809	-0.127
HDFC BANK	-0.45020	0.00050	25579.99736	-11516.1869	-8866.11724	2712.71644	-1.88
RANBAXY	-0.57114	0.00050	4749.31085	-2712.51678	-11578.6340	7462.02729	-1.22

5.2 Construction of optimal portfolio

After determining the securities to be included in the optimal portfolio, we have to determine the proportion of investment in each of these stocks. Only those stocks with Excess return to beta ratio (Column -2 to Table-2) more than C^* (0.246) are to be selected in the optimal portfolio. It can be observed from table-2 that only five stocks qualify to be included in the optimal portfolio on this criterion. These are Glaxo, Axis Bank, Sun Pharma, Dr Reddy and Bank of Baroda with cut-off point (C_i) of -0.058, -0.039,-0.032,0.118 and 0.246 respectively as displayed in table-3.

Table-3: Values of cut-off point and Investment proportion for the stocks included in the Optimal portfolio

By using Sharpe index model, we are able to find out the proportion of investments to be made for each of the five stocks included in the optimal portfolio. The maximum investment should be made in Sun Pharma with a proportion of 50.14%, followed by Dr Reddy and Bank of Baroda with investment proportion of 22.31 % and 15.67% respectively and the minimum investment should be on Glaxo with 0.60%. Among five securities selected for the investment three companies belongs to pharmaceuticals sector and two companies are from banking sector. Evidently, the companies chosen for the investments are growing at a steady rate in the recent years.

6. Concluding Remarks

Risk and return play an important role in making any investment decisions. This study aims at analyzing the opportunity that are available for investors as per as returns are concerned and the investment of risk thereof. Out of 13 companies taken for the study, only 1 company is showing negative return and the other 12 companies are showing positive returns. With regard to beta values, out of 13 companies selected, only two companies stock showed beta above 1, indicating that the investments in this stocks are outperforming than the broader market. Finally out of the Banking and Pharmaceuticals sector stocks that are included in NSE Nifty, five stocks namely Axis Bank, Bank of Baroda, Glaxo, Sun Pharma and Dr Reddys are included in the Optimal Portfolio constructed in this study with maximum suggested investment in Sun Pharma (50.14%). Our study is based on the Sharpe Single index model and thus limited to the lacunas of this model.

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A Study of Relationship between Exchange Rate Volatility and Banking Indices (BANEX) - An Indian Perspective

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Abstract

There has been an extensive debate on measuring the sensitivity of returns of stocks. Particularly some Internal and External conditions are involved in measuring the sensitivity of returns of stocks like; industrial Production, money Supply ,Foreign exchange Rate, Interest rate, gold prices, GDP and oil prices in the world economy are involved in external conditions whereas dividend policy, earning per share etc are the contributors of internal factors. This paper examines the impact of Macro (External) factor i.e. Exchange rate on BSE Bankex. Macroeconomic indicators are already exhibiting signs of deterioration as Rupee is depreciating against dollar. Especially, an attempt has been made to explore the relation between stock market performance and exchange rate. The results are mixed but interesting whereas, there is significant correlation between stock market and exchange rate.

Keyword: Stock Market, macro economic variables- exchange rate, BSE-Bankex

1. Introduction

In the era of globalization, stock market plays a crucial role in countries economic growth and development. It has been considered a healthy and flourishing stock market is essential for national economic growth by channelizing funds towards different sectors. An economy is said to be efficient ifit has a good banking system and good stock market exhibiting upward trend (Kumari Jyoti, 2011). It is obvious that the performance of any business organization get influenced not only by the domestic factors but also by the international factors, in this condition the most easily available indicator of firm performance i.e. stock indices may also get influenced by the international macro-economic factors. Under this assumption the researcher has taken the current research topic.

India has experienced a transformation of its exchange rate regime during the past several decades. From 1947 to 1991, the fixed exchange regime was adopted; under this the Indian rupee was initially pegged to gold, then to the British pound sterling in December 1971 and to a basket of currencies in September 1975. Subsequently, against the background of the balance of payment crisis in June 1991, India implemented economic and financial liberalization, as a part of which it decided to shift to the market- determined level against the dollar for a while

thereafter, however, it has only been since 1995 that the rupee has begun to exhibit relatively volatile two-way movements. Under the managed float regime, the Reserve Bank of India (RBI), announced that the exchange rate is largely determined by the demand and supply conditions in the market (Jalan 1999, 1126).

The Government of India framed its policies in the year 1991-92, keeping in view the benefits of liberalization. It was expected that in the process of opening up its economy to the outside world, increased competition could turn the banks more efficient, bring about improvement and ultimately benefits the customers (ICFAI, 2004). Although globalization helped banks to improve in a number of ways but it has also brought international risk exposure to the banks.

Banks, actively deal in foreign currencies holding assets and liabilities in foreign denominated currencies, are continuously exposed to Foreign Exchange Risk. Foreign Exchange risk arises when a bank holds assets or liabilities in foreign currencies which impact on the earnings and capital of bank due to the fluctuations in the exchange rates. It is difficult to predict the fluctuations in exchange rate- it can move in either upward or downward direction regardless of what the estimates and

predictions were. This uncertain movement poses a threat to the earnings and capital of bank. The bank is exposed to foreign exchange risk only upto the extent to which it has not hedged or covered its position. Wherever there is any uncertainty that the future exchange rates will affect the value of financial instruments, there lies the foreign exchange risk of a bank. Foreign Exchange risk does not lie where the future exchange rate is predefined by using different instruments and tools by the bank.

Banks are the major part of any economic system. These banks provide a strong base to Indian economy. Even in share markets also, the performance of bank shares is of great importance. It can be justified only looking at the indices change in both BSE and NSE for banking Sector Shares. So far as our study concern we have taken only BSE Bankex. Thus, the performance of share market, the rise and fall of market is greatly affected by the performance of Banking Sector Shares and this paper analyzes the impact of exchange rate on BSE Bankex.

1.1 BSE BANKEX

Bombay Stock Exchange Limited launched "BSE BANKEX Index" on 23rd June 2003. This index consists of major Public and Private Sector Banks listed on BSE. The BSE BANKEX Index is displayed online on the BOLT trading terminals nationwide.

1.1.1 Features of Bankex

A few important features of the BANKEX are given below:

- Bankex tracks the performance of the leading banking sector stocks listed on the BSE.

- Bankex is based on the free float methodology of index construction.

- The base date for Bankex is 1st January 2002. The base value for Bankex is 1000 points. BSE has calculated the historical index values of Bankex since 1st January 2002.

- Date of launch is 23rd June, 2003.

- 14 stocks which represent 90 percent of the total market capitalization of all banking sector stocks listed on BSE were included in the index.

- The index is disseminated on a real time basis through BSE online trading (BOLT) terminals.

- Initially 12 stocks were included in the BSE Bankex. The stocks in the index were Andhra Bank, Bank of Baroda, Bank of India, Canara Bank, Corp Bank, HDFC Bank. ICICI Bank Ltd ,ING Vysya , Oriental Bank of Commerce, Punjab National Bank, SBI and Union Bank of India Ltd.

- But later on a number of replacements took place and now finally these 14 stocks are a part of BSE Bankex. Bank Ltd, Bank of Baroda, Bank of India Ltd, Canara Bank, Federal Bank Ltd, HDFC Bank Ltd, ICICI Bank Ltd, IDBI Bank Ltd, Indusind Bank Ltd Axis, Kotak Mahindra Bank Ltd, Punjab National Bank, State Bank of India, Union Bank of India, Yes bank.

2. Literature Review

The existence of a relationship between stock prices and exchange rate has received considerable attention. Early studies (Aggarwal, 1981; Soenen and Hennigar, 1988) in this area considered only the correlation between the two variables-exchange rates and stock returns. Theory explained that a change in the exchange rates would affect a firm's foreign operation and overall profits which would, in turn, affect its stock prices, depending on the multinational characteristics of the firm. Conversely, a general downward movement of the stock market will motivate investors to seek for better returns elsewhere. This decreases the demand for money, pushing interest rates down, causing further outflow of funds and hence depreciating the currency. While the theoretical explanation was clear, empirical evidence was mixed. It was Maysami-Koh (2000), who examined the impacts of the interest rate and exchange rate on the stock returns and showed that the exchange rate and interest rate are the determinants in the stock prices. It was in 1992 that Oskooe and Sohrabian used Cointegration test for the first time and concluded bidirectional causality but no long term relationship between the two variables. Najang and Seifert(1992), employing GARCH framework for daily data from the U.S, Canada, the UK, Germany and Japan, showed that absolute differences in stock returns have positive effects on exchange rate volatility. Ajayi and Mougoué in 1996 picked daily data from 1985 to 1991 for eight advance economic countries; employed error correction model and causality test and eventually discovered that increase in aggregate domestic stock price has a negative short-run effect and a positive long-run effect on domestic currency value. On the other hand, currency depreciation has both negative short-run and long-run effect on the stock market. Abdalla and Murinde(1997) used data from 1985 to 1994, giving results for India, Korea and Pakistan that suggested exchange rates Granger cause stock prices. But, for the Philippines the stock prices lead the exchange rates. Furthering into Indian context, work in this area for the Indian Economy has not progressed much. Abhay Pethe and Ajit Karnik (2000) has investigated the inter – relationships between stock prices and important macroeconomic variables, viz., exchange rate of rupee vis - a -vis the dollar, prime lending rate, narrow money supply, and index of industrial production. The analysis and discussion are situated in the context of macroeconomic changes, especially in the financial sector, that have been taking place in India since the early 1990s.

(Oguzhan Aydemir, 2009) Investigates the causal relationship between stock prices and exchange rates; using data from 23 February 2001 to 11 January 2008 about Turkey. The major investigating Question was that whether a connection between the exchange rate and the stock prices exists or not. To perform the study, work of many prior related researches was considered and mostly secondary data was collected whose dates are mentioned above. To find the observed results Augmented Dickey-Fuller (ADF), Phillips- Perron (PP) and KPSS tests were run. The main variables used in the research

are turkey stock exchange index National 100, services, financials, industrial, and technology indices are taken as stock price indices. The outcome of empirical study specifies that there is bi-directional causal association between exchange rate and all stock market indices. While the negative causality exists from national 100, services, financials and industrials indices to exchange rate (sustaining portfolio balance approach), there is a positive causal relationship from technology indices to exchange rate. On the contrary, negative causal relationship from exchange rate to all stock market indices is determined.

(Charles Adjasi, 2008) Investigates the relationship among the Stock Market and the Foreign exchange Market and determined its impact upon the Ghana Stock Exchange. The study was conducted keeping in mind two main research questions. The first was to determine whether exchange rate volatility has an impact on the Ghana stock market. Second main research question was to determine if other macroeconomic variables effect stock market volatility in Ghana. The variables used to form the model for testing were Exports and Imports, Treasury bill rates, money supply, foreign exchange rates, Trade deficit and Ghana stock exchange indices. To determine the relation among the variables, the method of "The Exponential Generalised Autoregressive Conditional Heteroskedascity (EGARCH)" was used. This is majorly used to model the conditional variance in the financial market and is given preference over GARCH model. Prior to running the regressions, a stationary test was run to eliminate any suppression in the model. The results found that there exists a negative relation between the exchange rate volatility and stock market returns. If the local currency depreciates, the stock market returns increase in the long run whereas in the short run, the returns are reduced.

Stavarek, Daniel (2008) This paper has examined the relation between the stock prices and the exchange rate with their mutual interactions in the USA and European Union. To find relations among certain sorts of variables in the financial markets, the previous scholars have run unit root tests to reduce the problems in the regression because of these non stationary macroeconomic variables in a time series. Four old, four new EU countries and USA were chosen for the samples of the variables. Nominal Exchange rates and real Exchange rates were incorporated in monthly form of data. The local stock indices embodied into monthly data lead to some confusion due to the fact that different countries calculated the stock indices differently; hence to reduce the confusion national stock indices with uniform methodology was used. The sample period for each country varied depending upon the availability of the data. NEER, for Austria, France, Germany, UK, and the USA the sample period is December 1969 till December 2003; for Poland December 1993 till December 2003; for the Czech Republic December 1994 till December 2003; for Hungary January 1995 till December 2003 and for Slovakia June 1995 till December 2003. For the Real Exchange rates, sample period for the first group of the countries is January 1978 till December 2003 for others

it is the same as the data for nominal exchange rates. To test the said variables first of all the stationery test and co integration analysis was run. The results showed that exchange rates and stock market indices proved to be co integrated in six out of nine analyzed countries. The time series for Hungarian and Poland are identified to be 0, hence the such results are termed as invalid and do not involve into further analysis. Hence then a Vector Error Correction and Granger Causality Test was run to identify the problematic areas in the regression model and to know what causes what in the model on the said variables. As the time period is divided into two categories, the first being 1970–1992 and the second being 1993 to 2003, in the first category the long run relationship between the said variables did not exist, reason might be due to the under estimation of the prevailing exchange rate arrangements in the developed countries. Under the Brettonwood system there was little fluctuations within a tightened frame in the nominal Exchange rate which provided little space for exchange rate volatility. In the second period from 1993-2003 shows much stronger long run causalities in the developed countries. In four out of the nine selected economies, co integration between the stock prices and the exchange rate existed. The nature of the relationship however was not consistent in all the cases. In case of United Kingdom and United States of America, there was evident movement in the stock market as a result of exchange rate developments.

Muhammad (2001), in his article has examined whether stock prices and exchange rates are associated to each other or not. The investigation is based upon secondary data which is collected on South Asian countries, including Pakistan, India, Bangladesh and Sri- Lanka, for the period January 1994 to December 2000 on a month-on-month basis. The methodology used for this study is co-integration, vector error correction modelling technique and typical Granger causality tests to observe the long-run and short-run association between stock prices and exchange rates. Variables used for this study are key stock price indices of these countries and the exchange rates between the currencies of these countries with respect to the U.S. dollar. Outcome shows no long run and short-run association connecting stock prices and exchange rates for Pakistan and India. This can be associated to the manipulation in trading activities in these emerging markets in the form of insider trading and manipulated annual reports. No short-run association was also found for Bangladesh and Sri- Lanka. However, there seem to be a bi-directional long-run causality between these variables for Bangladesh and Sri Lanka.

Most past studies on the relationship between stock prices and exchange rates are based on bivariate estimation. However, the theoretical explanations indicate the existence of some other variables, which may interact with exchange rates and stock prices. Thus, multivariate estimation is necessary. In fact, further studies have been carried out employing a multivariate framework

3. Rationale of the Study:

Number of macro economic indicators which influence stock markets have been analyzed in past and recent empirical literature.

Most of the previous studies only focused on the stock market as a whole ignoring the effects of these variables on different sectors of the economy (Ahmed et al.,2010, Hussain, Mahmood, 2001), while this is significant but investor must understand that different sectors of the economy react differently to changes in macro economic variables.

The present study is an endeavour to analyze the relationship between exchange rate volatility and banking indices (Bankex) movement in India. The analysis on stock markets has came to the fore since this is the most sensitive segment of the economy and it is through this segment that the country's exposure to the outer world is most readily felt. This paper attempts to examine how changes in exchange rates and Bankex are related to each other over the period July 2012- February 2014.

4. Objectives & Hypothesis of the Study:

Research study aimed at understanding and revealing the relationship between exchange rate and Bankex. More precisely it has been stated below:
1. To investigate the impact of exchange rates on Banking Index.
2. To know the intensity of relationship between exchange rate and BSE Bankex.

In order to achieve the above objective the following hypothesis was drawn.

H_1: There exist a positive relationship between exchange rate and Bankex.

5. Data and Methodology:

The data consist of monthly time series observation regarding the macroeconomic variables namely exchange rate and Bankex covering a period from 1st July 2012 to 28th February 2014. This data has been taken from S&P BSE BANKEX. Only Indian Rupee -US Dollar exchange rates has been taken for the analysis. Frequency of data are kept on daily basis.

Table - 1 : Methodology in Nutshell

Particulars	Descriptions
Research Design	Exploratory research design
Sampling Design	Secondary data acquired from BSE website and Investing.com
Sample selection	The sample selection for this study will include all the banking companies listed on the BSE Bankex
Sample Size	520
Data Collection	The study will be using mainly secondary data. 1. Information relating to the value of BSE Bankex has been obtained from http://www.bseindia.com/indices/indexarchivedata.aspx 2 .INR-USD exchange rate data is collected from http://www.investing.com/currencies/usd-inr-historical-data
Time Period	1st July 2012 to 28th February 2014

Source: Authors' work

5.1. Tools & Techniques used:

The data thus collected were classified according to the categories, counting sheets & the summary tables were prepared. Below mentioned Statistical tools were used for data analysis like; Mean, standard deviation, correlation Analysis, covariance analysis & regression Analysis.

6. Data Analysis

We study the trend of INR-USD Rate and BSE Bankex with the help of graphs presented in figure 1 & 2 by using monthly data.

Fig. 1: Trend of INR - USD Rate

INR-USD rate
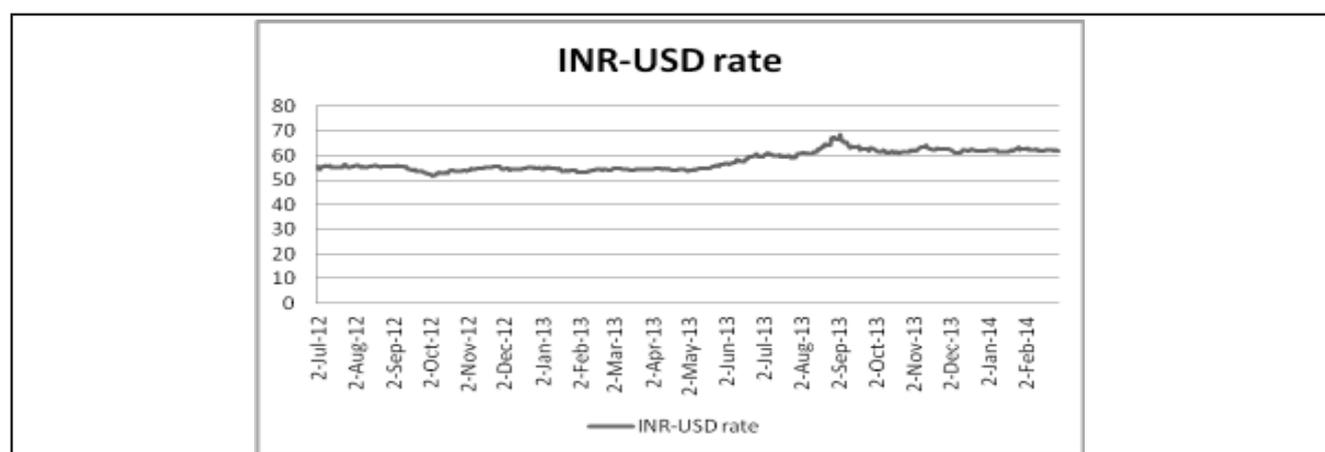
Fig. 2: Trend of BSE BANKEX
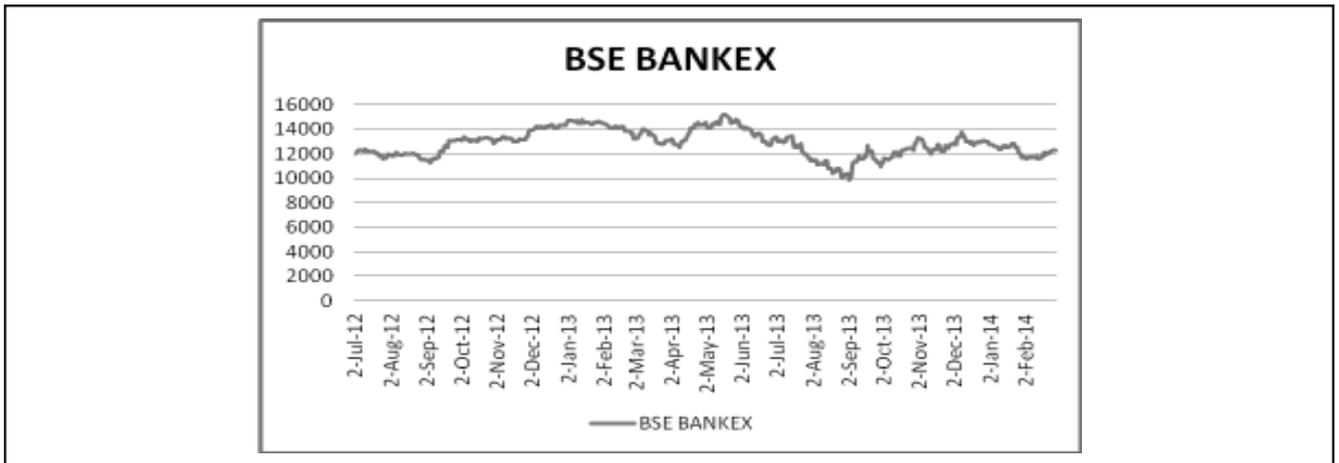
Table 2: Descriptive Statistics

Source: Complied & Computed

From Table No. 1, it can be read that the mean value of Bankex & exchange rate are 12879.37692 & 57.746325 with standard deviation 1092.712963 & 3.841868052 respectively. The coefficient of variation is highest in case of Bankex in comparison to Exchange rate as 8.48% & 6.65% respectively.

Table 3 : Correlation Matrix

Pearson Correlation	Stock Prices (BANKEX)	Exchange Rates
Stock Prices (BANKEX)	1.00	
Exchange Rates	-0.62159	1.00

Source: Complied & Computed

Table No. 2 shows correlation of the Bankex with the exchange rate. Exchange rates are negatively related to the Bankex. But this is showing strong negative correlation between these two variables.

Table 4 : Covariance Matrix

Covariance	Stock Prices (BANKEX)	Exchange Rates
Stock Prices (BANKEX)	1190961	
Exchange Rates	- 2602.04	14.71352

Source: Complied & Computed

From the above table covariance between exchange rate and banking sector stock price is -2602.04 which is showing negative relationship between these two variables. It simply reveals the fact that both the variables are move in same direction justifying a close negative association between the two.

To know the concrete relationship among the variables researcher has tried with regression analysis in two phases introducing the time factor into it. The long term regression summary is shown below.

Table 5: Regression Model Summary (Long – Term)

Regression Statistics	
Multiple R	0.62315303
R Square	0.3883197
Adjusted R Square	0.38713885
Standard Error	855.435248
Observations	520

Source: Complied & Computed

Here, the data has been taken for the long term analysis witch spread over from 2nd July 2012 to 28th Feb 2014.It has been observed from the above table, R^2 is 38.8% showing that exchange rate has only 38.8% impact on banking sector stock price, so there is no significant relationship between exchange rate and Banking sector stock price in the long term. Adjusted R^2 (sometimes written as) is a modification of R^2 that adjusts for the number of explanatory terms in a model. The adjusted R^2 can be negative and will always be less than or equal to R^2. Adjusted R square in the table is 38.7% which is less than R square.

Table 6 : Regression Model Summary (Short – Term)

Regression Statistics	
Multiple R	0.796693308
R Square	0.634720226
Adjusted R Square	0.633626574
Standard Error	672.228565
Observations	336

Source: Complied & Computed

So far as the short-term is concerned the data has been taken from 1st Feb 2013 to 28th Feb 2014 and the result has been shown above. Describing it in the same line as above the R^2 value is 63.4%, this shows that exchange rate has 63.4% impact on banking sector stock price, so there is a significant relationship between exchange rate and Banking sector stock price in the short term. Adjusted R square in the table is 63.3% which is less than R square.

Coming to the hypothesis "there exist a positive relationship between exchange rate and Bankex", the researcher reached at a conclusion basing on the covariance, correlation and regression that both are more or less moving in same direction.

7. Conclusion

This research empirically examines the causal relationship between Rupee-Dollar exchange rates and banking sector stock prices. In this study, correlation and regression model is employed to test for the effects of exchange rate on banking sector stock price for the period July 2012 to Feb 2014 on daily basis. For the purpose of conducting research, banking sector stock price are used as dependent variables, while the exchange rates are used as independent variables.

To begin with, absolute values of data have been taken from internet. Then, the coefficient of correlation between the two variables was computed, which indicated slight negative correlation between them. Regression statistics was applied on the data, which shows that exchange rate affects the BSE BANKEX in the short- run and exchange rate has a significant impact i.e. 63.3% on banking sector stock prices but this is not the case in the long run as other major macro-economic variables play significant role in the long run.

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P/E Ratio Effect on the Stock Returns in the Banking Industry – An Empirical Study in National Stock Exchange, India

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Abstract

Economists around the world have always tried to find out the presence of anomalies in the stock market. With a view to earn a quick buck in the market, investors always search for alternatives. An investment strategy based on purchasing low price-earning stocks is said to help in beating the index. This so called price-earning effect is such an anomaly. The purpose of this study is to verify the impact of price-earning ratio on the stock returns in the banking industry. This paper tries to find out answer to the question "Whether one can make abnormal returns by taking advantage of price-earning ratio effect in the banking industry? The stock returns are calculated and compared by using certain statistical tools. The stocks are divided into three categories based on price-earning ratio (i.e. Low = 0 to 10, Mid = 10 to 20 and High = More than 20). After this all the three portfolios are compared by using ANOVA and Correlation analysis to study the presences of the P/E ratio effect in the banking industry in Indian stock market (i.e. National Stock Exchange). However, the result of the study reveals the absence of P/E ratio effect on the stock returns in the banking industry.

Keywords: Bank, P/E ratio, Price, Return.

1. Introduction

During the last decade, the Indian stock market has shown metamorphic changes. This has motivated academicians and practitioners to find out ways to get more return from the market. Certain studies have shown the presence of anomalies in the stock market and it is also sometime found that there is an absence of any particular anomaly. The P/E ratio effect is one of the most popular effects in the market. One of the groups of researchers believes that price-earning ration are indicators of the future investment performance of a security. Proponents of this P/E ratio hypothesis claim that low P/E securities will tend to outperform high P/E stocks. In other words, prices of securities are biased, and the P/E ratio is an indicator of this bias. According the efficient market hypothesis stock market is efficient. This study questions the efficient market hypothesis and tries to find out whether the market is efficient or not by using P/E ratios of the companies in banking industry. One of the most enduring anomalies is the 'size effect', the apparent excess expected returns that accrue to stocks of small-capitalization companies – in excess of their risks – which was first discovered by Banz (1981). The 'firm size effect was documented by Banz (1981) and Reinganum (1981). According to their studies, small

firms have higher average returns than larger firms, even after adjusting for market risk beta. A massive body of literature has developed around estimating the CAPM for a sample of assets and testing for alpha by sorting assets into portfolios by various factors such as illiquidity, market value, beta, book to market value, price-earnings ratios, and many other parameters. (Amihud, 2002; Banz, 1981; Basu, 1977; Fama and French, 1992). Reinganum (1981), whose paper was published simultaneously with Banz (1981), challenges Ball's (1978) E/P effect by providing evidence of the superiority of the size effect over the E/P effect. The E/P effect, also called price/earnings ratio anomaly, states that stocks trading on a high E/P ratio (low price/earnings ratio) outperform the market averages. To answer the question as to whether the E/P and market value of a firm are related or independent, Reinganum classifies firms by both the market values of the common stock and E/P ratios. Twenty-five portfolios are formed, in ascending order, from the lowest MV and E/P to the highest. Then mean excess returns and betas for these portfolios are estimated. All E/P portfolios within the lowest MV quintile have positive excess returns. However, not all of the MV portfolios within the lowest E/P quintile

have positive excess returns. Thus, portfolios formed on MV are more powerful in explaining excess returns compared to those formed on the basis of E/P ratios. Therefore, Reinganum classifies the CAPM as misspecified and defines the size, rather than E/P ratio, as more closely related to equilibrium pricing. Possible explanations emerged as soon as the size anomaly was documented. Reinganum (1981) has demonstrated that firm-size data can be used to create portfolios that earn 'abnormal' returns of up to 40 per cent annually. In particular, the smaller a firm's capitalization, the greater the apparent abnormal returns.

The relationship between stock prices and earnings per share is called a P/E ratio and is one of the most widely used key performance indicators by investors. Stocks that have low P/E ratios, also known as multiples, are considered to be cheap or undervalued and the opposite holds true for high ratios. The lower the multiple, the less one pays for every rupee of earnings. The price-earning effect is based on the principle of investing in undervalued stocks. This investment strategy consists of constructing a portfolio merely on stocks with low multiples in the belief of obtaining abnormal returns.

2. Research Methodology

In this paper last five year returns from the 50 banking stocks have been considered. The price-earning ratios of all the 50 banking companies have been grouped in the following way:

P1 = Low = P/E ratio between 0 to 10
P2 = Mid = P/E ratio between 10 to 20
P3 = High = P/E ratio = More than 20

The portfolio's returns are calculated on a monthly basis for the period of April 2010 to Nov 2015. The returns of these stocks are compared by using statistical tools like ANOVA and Correlation analysis. The ANOVA tries to explain differences in the behaviour of the different stocks. Correlation analysis is used to find the relationship among the different groups of stocks.

3. Data Analysis and Interpretation:

Table-1:

Descriptive Statistics of the Stock Returns of the Various Portfolios

Portfolios	N	Mean	Std. Deviation	Std. Error
P/E = 0 to 10	70	-.8872744942	9.91348728840	1.18488836254
P/E = 10 to 20	70	-.5075532805	8.10601013455	.96885352204
P/E = More than 20	70	.1781831738	9.39695006354	1.12315035564
Total	210	-.4055482003	9.13708681715	.63051889252

Table-1 above shows the descriptive statistics of the stock returns of the various portfolios. Here we can see that the monthly mean return of the category P3 stocks have shown more positive return as opposed to the literature that advocates that the stocks having low P/E ratio normally gives better return. In the banking industry this shows a mild difference between the stocks. However the risks of every category of stocks are same and this proves that the behaviour of the stocks of each and every category is similar. The following table makes a more elaborative study that shows the ANOVA between the different kinds of stocks. This table tries to find out the presence of difference in the stock returns.

Fig-1: Means Plots
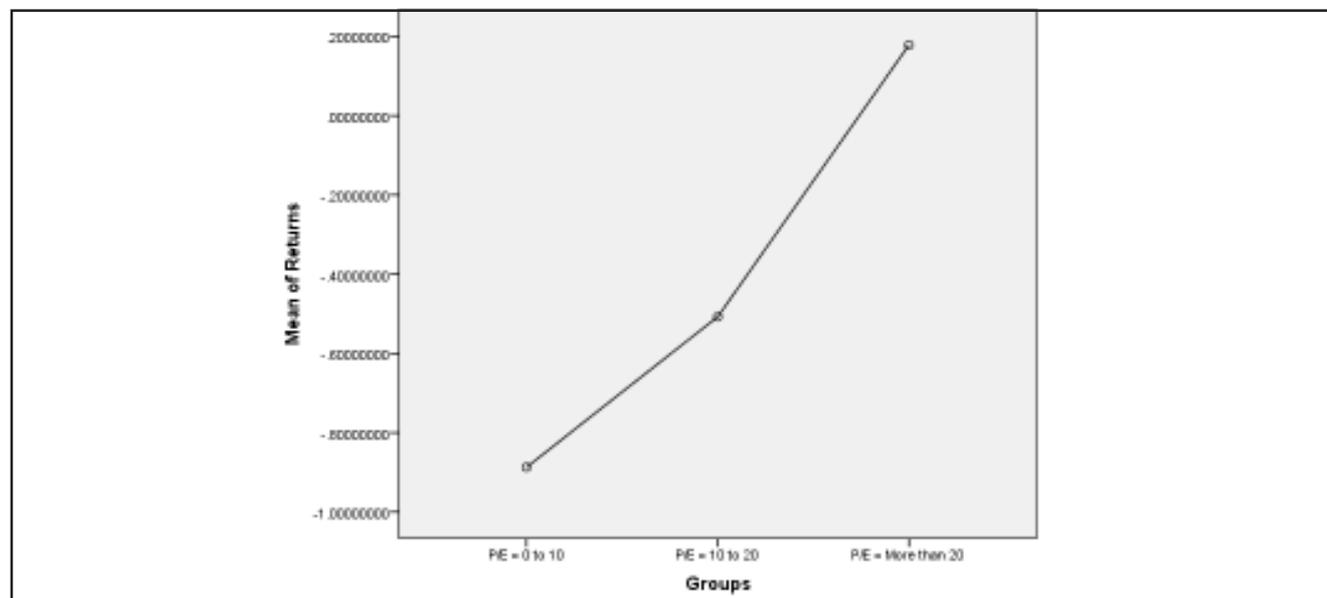
Tabel-2: ANOVA of the Different Kinds of Stocks

Groups of Stocks	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	40.825	2	20.412	.243	.785
Within Groups	1707.824	207	84.096		
Total	17448.648	209			

Table – 2 above displays the ANOVA of the different kinds of stocks. We can see that the significance level is 0.785 which is much above the p-value 0.05. This proves that there is no significant difference among the behaviour of monthly return across companies belonging to different P/E ratio groups of companies. We can conclude that the behaviour of the banking stocks in National Stock Exchange is not affected by their Price-Earning ratios. In other words we can say that the stock price behaviour is independent of its price-earning ratios.

Tabel-3: Correlations

Portfolios		Low P/E=0 to 10	Mid P/E=10 to 20	High P/E= More than 20
Low P/E=0 to 10	Pearson Correlation	1	.863[**]	.643[**]
	Sig. (2-tailed)		.000	.000
	N	70	70	70
Mid P/E=10 to 20	Pearson Correlation	.863[**]	1	.604[**]
	Sig. (2-tailed)	.000		.000
	N	70	70	70
High P/E=More than 20	Pearson Correlation	.643[**]	.604[**]	1
	Sig. (2-tailed)	.000	.000	
	N	70	70	70

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

The co-efficient of correlation between the Low P/E and Mid P/E ratio is 0.863, between Low and High P/E is 0.643 and between High P/E and Mid P/E ratio is 0.604. This shows that the correlations among the groups of stocks is high and shows that during this period the performance of the banking industry did not show any kind of anomalies related to P/E ratio. However the mean return of the High P/E ratio stocks related to banking companies have shown higher return as compared to the other ratios. The risks of all the three categories of stocks are similar with standard deviation of 9.91, 8.10 and 9.39 respectively. This shows that the performance of the banking industry is uniform and is not affected by the P/E ratios. Though all the categories of stocks have shown similar risk but it is slightly low in Mid P/E ratios so one can think of investing in these categories of banking stocks. If we look at the return part the High P/E ratio firms have shown highest return. Aggressive investors can go for investing in the stocks belonging to this category because the difference in the risk is not very high.

4. Conclusion

Researchers often proved that a great deal of anomalies exist in the stock market. P/E ratio is one of them. However during this study we have found the absence of P/E ratio effect on the stock returns in the banking industry.. The stock price behaviour is independent of the P/E ratio of the stocks. However the correlation of the High P/E ratio stocks with other types of stocks is lower as compared to the other correlations. Here we can conclude that during the period of the study there is absence of P/E ratio effect in the banking industry in the National Stock Exchange. This shows that the banking stocks in the National Stock Exchange are efficient. However further research is required to prove the presence of abnormal return in this industry. The same can also be proved by taking other industries into consideration to find out the market efficiency. Here we can conclude that getting more return by designing portfolios with stocks from the banking Industry based on P/E ratio may not give better result.

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Impact of Marketing Mix Elements on Brand Equity of Healthcare Equipment – A Case Study

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Abstract

Brand equity generally means the relative popularity, success & additional market share which the firm realizes in comparison with other substitute brands available in the target market. So, every company must invest heavily & design the market strategies accordingly to catch the lion share of the market. General Electric is one of the leading medical equipment manufacturers have adopted various strategies to develop brand equity in healthcare market. The present research is carried out to estimate the contribution of marketing mix elements towards brand equity of GE healthcare. The data were collected from different hospitals & diagnostic centres, who are the major users of health care instruments by using a structured questionnaire. The result revealed that irrespective of other variables of marketing mix, technical support & product innovation played a major role in the industry for determining brand equity.

Keywords: Brand equity, Healthcare equipment

1. Introduction

The wide acceptance of brand in the marketing world gives rise to the concept of brand equity. Brand equity is "a set of assets or liabilities linked to a brand's name and add symbol that adds to or subtracts from the value provided by a product or service to a firm's customers" **(Aaker, 1996).** Aaker also suggested five brand equity constructs such as brand awareness, brand perceived quality, brand association, brand loyalty and other proprietary brand's asset such as patent trademarks and channel relationships etc. Brand equity if build-up and nurtured properly provides uninterrupted benefit to the marketers as well as consumers in terms of probability of brand choice, brand performance, cash flow, and willingness to pay a premium, marketing productivity, and product positioning and brand knowledge in consumer's minds **(Kapferer, 2004; Keller, 1993)**

Most research focus on developing the elements and tools that determine the brand equity for a particular product or industry as a whole. This paper tries to explore the impact of marketing mix elements on brand equity of healthcare equipment industry which is a completely unexplored area. Marketing mix is a set of marketing tools used by the marketer to ensure customer satisfaction and pursue its marketing objective in the target market. The challenge here is to find the best combination of marketing activities to suit the particular business at a particular time and also to use it correctly to achieve desired goal by ensuring customer satisfaction.

2. Dimensions of Brand Equity

A review of literature has revealed various dimensions of brand equity which are used in the conceptual model as dependent variables. Each factor is discussed below:

2.1. Brand Awareness

It refers to whether consumer can recall or recognize a brand, or simply whether or not consumers know about a brand (Keller, 2008). Brand awareness refers to the strength of brand's presence in the consumer's mind **(Aaker, 1996). Keller (2003)** defines awareness as "the customer's ability to recall & recognize the brand as reflected by their ability to identify the brand under different conditions and to link the brand name , logo, symbol and so forth to certain associations in memory" Brand awareness is defined as the percentage of consumer's that recognize a brand. It is the root to develop brand equity in the target market.

2.2 Brand Loyalty

Brand loyalty is defined as "a deeply held commitment to re buy or repatronizes a preferred product/ service consistently in the future, thereby causing repetitive same brand or same brand set purchasing,

despite situational influences and marketing efforts having the potential to cause switching behaviour" **(Oliver, 1999)**. According to Aaker, 1991, brand loyalty was defined as the attachment a customer has to a brand. Marketers are managing their brand with the intention to create brand loyalty. This not only ensures a consistent profit flow but also reduces threat of rivalry to some extent.

2. 3 Perceived Quality

Perceived quality is defined as "the consumer's personal judgement about the overall quality or excellence of a product or service" **(Zeithmal, 1988)**.

2.3.1. Marketing Mix Elements

"The marketing mix refers to the appointment of efforts, the combination, the designing and the integration of the elements of marketing into a program or mix which on the basis of an appraisal of the market force will best achieve the objective of an enterprise at a given time" **(Borden, 1993)**.

There are literally dozens of marketing tools. McCarthy popularized a four factor classification of these tools called as 4Ps, such as product, price, place & promotion.

*Product***:** Product is something that possesses utility. Product concept holds that consumers will favor those product that offer most quality, performance or innovative features.

Price: Price is the money valuation placed upon the product by offerer. It is the most important tool of marketing mix as it generates revenue for the marketers. It deals with price competition.

Place: Distribution is basically concentrated on how to deliver the right product to the right customer at the right place or market. It is the last frontier in the supply chain which creates customer satisfaction by creating time & place utility.

Promotion Mix: Promotion is the persuasive communication about the product by the marketer to the prospect. Largely it deals with non-price competition.

2.4. Healthcare Equipment Industry - An Introduction

The Indian healthcare market is the most emerging & fastest growing industry which is fuelled by not only the demand from major cities of India but also by attracting medical tourist from all over the world by providing accessible, affordable & best quality healthcare services. Medical technology has played a major role in this persistent effort of providing healthcare services to different categories of requirement & expectations. The term medical technology encompasses a wide range of healthcare products (devices, equipments as well as consumables/ supplies) that are intended by its manufacturer to be used specifically for diagnostic and/ or therapeutic purposes. It encompasses any instrument, apparatus, appliance, software, material or other article, which is used, alone or in combination, for different purposes like Diagnosis, prevention, monitoring, treatment or alleviation of disease. This research includes all diagnostic and life saving equipments like; Ultrasound, X-ray, CT-scan, MRI scan, Cathlab, Ventilator etc. used in hospitals as well as in diagnostic centres to facilitate and enhance the scope of healthcare services.

Many national and international companies working in this domain wanted to capitalize the opportunity available in India as a healthcare hub. **GE healthcare** is one of them which strives to serve people with assured quality of services and at a reducing cost.

2.4.1. GE HEALTHCARE SYSTEM, INDIA :

Over centuries GE Healthcare, strive to see life more clearly their "healthymagination". Vision for the future invites the world to join hands on their journey to continuously develop innovations focused on reducing healthcare costs, increasing access, and improving quality and efficiency around the world. As a global leader, GE can bring together the best in science, technology, business, and people to help solve one of the world's toughest challenges and shape a new age of healthcare. Something remarkable happens when it brings together people who are committed to making a difference – they do.

Contribution towards customer satisfaction & healthy India:

Irrespective of *product innovation GE healthcare proves optimum service support as its core competency / USP (unique selling proposition) to ensure customer satisfaction.* GE Healthcare Services is dedicated to partnering with customers to address their healthcare system growth, quality, and operational excellence. GE provides the support services which helps to customers to meet their business objectives. It has adopted the following strategies to ensure its service excellence.

1. The ISO certified healthcare services team in South Asia.

2. Focused customer service delivered through a large team of service engineers

3. Service transformation from reactive fix to proactive & predictive system maintenance.

4. On watch predictive services - A support that never sleeps.

5. GE Inside On - Demand 24*7 automated monitoring, trending & correction

6. Partnership in customer education

3. Objective of the Study

The aim of this paper is to critically evaluate the influence of marketing mix element on determination of brand equity in healthcare equipment industry with reference to GE.

4. Research Methodology

4.1 Sampling

The target units consist of different diagnostic centers, private hospitals, corporate hospitals as well as Govt. hospitals established in different cities, which are using different kinds of healthcare equipments in their process

of treatment. The author intends to use simple random sampling so that every member of the population has an equal chance of selection. The sample size of the present study is 100.

4.2 Data & Measurement Scale

For this paper, a questionnaire was prepared based on likert 5 point scale.

4.4. Research Model: By analyzing the available literature, a research model was constructed which justify the relationship between brand equity and marketing mix elements, and also analyse the influencing factors which affects the brand decision in healthcare sector.
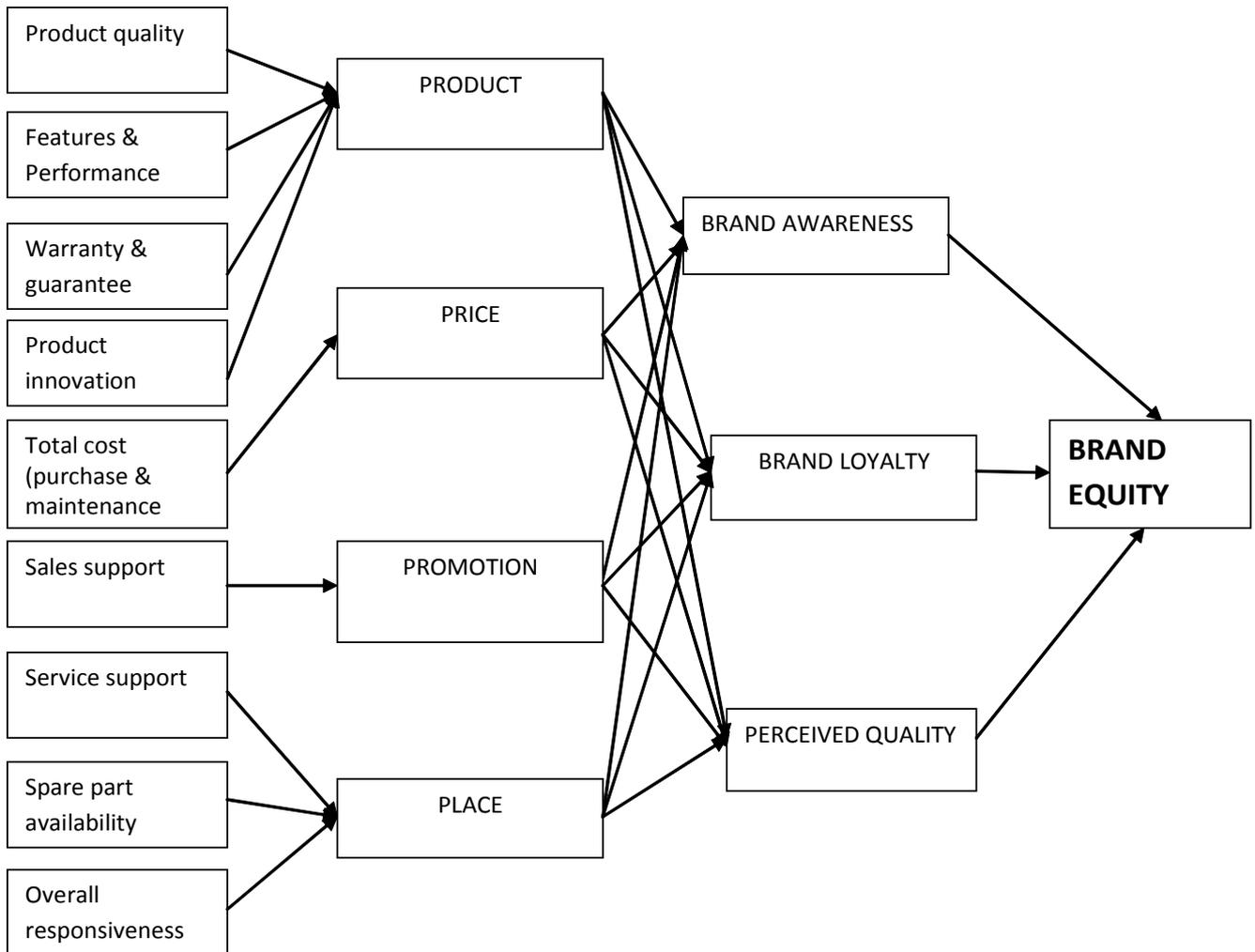
Figure 4.1: Different determinants of brand equity in healthcare equipment industry

The above figure explained various constructs taken under four Ps like Product, price, place and promotion and tries to establish the relation of four Ps with different dimensions of brand equity, which has been analyzed and proved in the context of healthcare equipment industry.

5. Data Analysis

5.1: Test of Reliability

In order to the measure the reliability (internal consistency) of the questionnaire, the Cronbach's Alpha technique has been used. The following table contains the summarized result of reliability test for different constructs considered as influencing brand equity.

Table 5.1: Reliability Statistics for constructs:

Reliability Statistics	
Cronbach's Alpha	N of Items
.918	10

Scale Statistics			
Mean	Variance	Std. Deviation	N of Items
41.5278	58.028	7.61760	10

According to the study results (available in Table 5.1), the coefficients of Cronbach's Alpha test is .918, which indicates a very high level of reliability of the constructs used. This result proves that the questionnaire can be considered as a reliable measure to collect data for the study.

5.2. Multivariate Correlation and Regression Analysis. (*Level of Significance:* á% is 5%.)

Multivariate correlation and Regression used to identify and analyze the existence of association or degree of relationship between the dependent variable like brand equity and independent variables like quality of product, spare part availability, features and performance of the equipment, warrantee and guarantee, product innovation, total purchase and maintenance cost bear by the company, sales and service support, spare part availability and over all responsiveness of the company people questioned through the questionnaire. The result of this is presented in the following table.

Table-5.2 : Multiple Correlations of 10 Variables of Brand Equity

From Table 5.3; it is observed that brand equity and after sales technical support given by the service engineer are positively correlated in high degree. Irrespective of that overall responsiveness of the company executive towards customer queries & feedback are also positively correlated with brand equity.

Model Summary[b]					
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**Durbin-Watson**
1	.921[a]	.848	.795	.48550	2.384
a. Predictors: (Constant), RANDDINNO, PRICE, QUALITY, WARRANTY, SALESSUPPORT, FETUPER, SPARAVA, TECHNICALSUPPORT, OVERALLRESPONS					
b. Dependent Variable: Brand equity					

Table: 5.4 represents the $R^2 = 0.848$ which shows that 84.8% of the variation in brand equity can be explained by the independent factors like quality of the product, availability of spare parts, features of the medical equipments, prices offered by the company, warranty facility & terms & conditions, technical support given during machine break down, overall responsiveness towards customer query and grievances and innovation carried out for making value addition to the product & services. Accordingly, the equation given below may be treated as an acceptable forecasting model to judge the brand equity in consideration of the probable influential factors like x1, x2 …..

Table 5.5: Multiple regression analysis

a. Dependent Variable: brand equity

Level of Significance: á% =5%.

Table: 5.5. Shows the multivariate regression equation

$$y = -0.664 + 0.071x_1 - 0.102x_2 + 0.042x_3$$
$$+ 0.011x_4 - 0.004x_5 + 0.604x_6$$
$$- 0.036x_7 + 0.116x_8 + 0.441x_9$$

where y is the brand equity, x_1 is the independent variable like quality, x_2 is other independent variable like spare part availability, x_3 is the feature & performance of the brand, x_4 is the price, x_5 is the warranty, x_6 is technical support, x_7 is sales support, x_8 is overall responsibility, and x_9 is innovation. It shows the variables like x_6 (technical support) and x_9 (innovation) are statistically significant for the regression model and considered to be more influential because the t-values mentioned against them are 3.488 and 3.385 respectively. Irrespective of that other variables like quality, feature & performance, overall responsiveness and price are also influenced brand equity in the medical equipment industry. The above analysis clearly reveals that the regression model fits well to this concern case. Hence using this model the brand equity of health care equipment can be estimated.

6. Managerial Implication

During the keen competition, it is extremely important for the company to solidly assess determinants that are not only significant in building powerful brand equity but also support them for reaching consumer loyalty and satisfaction. As these products belongs to healthcare sector where doctors are dealing with human life, so better innovation for updating medical equipments and swift technical support during the time of problem or break down is entailed to ensure customer satisfaction ,brand loyalty and finally brand equity.

7. Conclusion

This research concluded that the marketing mix elements implemented by GE; influence the brand equity of healthcare equipment. Here ten supportive elements or factors have been taken under four Ps (Product, Price, Promotion & Place) which enhances brand awareness, develops brand loyalty and transform the customer's perception in favour of GE, which ultimately augmented brand equity of the concern company. As the brand equity lies in customer satisfaction marketers bring into play various elements of marketing mix for ensuring customer satisfaction. In the above analysis out of ten supportive variables technical support given by the service people & innovations carried by General Electric (GE) for developing more customize product are statistically more significant which indicates the variation in brand equity can be explained by these independent variables.

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M-Commerce in India: An International Buzzword

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Abstract

The telecom story in India has been a huge success when we talk of m-commerce. A 100 million plus mobile users is a dream came true for marketers. If that's not all the number of users is growing by as much as 3 million a month. The number is hugely in favor of m-commerce. So m-commerce is relatively new topic in the Indian market where a lot of research is to be conducted. The article primarily emphasizes on the global perspectives of m – commerce business in Indian market.

Keywords: M-commerce, i-Mode, iPhone, Smart money, Mobile wallet

1. Introduction

M-commerce (mobile commerce) is the buying and selling of goods and services through wireless handheld devices such as cellular phone and personal digital assistants (PDAs). Known as next-generation e-commerce, **m-commerce** enables users to access the Internet without needing to find a place to plug in. The emerging technology behind **m-commerce,** which is based on the Wireless Application Protocol (WAP), has made far greater strides in Europe, where mobile devices equipped with Web-ready micro-browsers are much more common than in any other country.

Tiwari and Buse (2007) define **m-commerce** as any transaction, involving the transfer of ownership or rights to use goods and services, which is initiated and/or completed by using mobile access to computer-mediated networks with the help of an electronic device.

One of the basic examples of **m-commerce** has to do with receiving sales promotions via the hand held device. The most common application would involve the service provider sending **text messages** to the subscriber that promote new product offerings, free trials on additional services, or other types of **promotional campaigns.** The subscriber is not charged a fee for the text message, and often can respond with a return text message without incurring any type of fee. Several major cellular services offer subscribers to opt into this type of m-commerce, or be excluded from receiving the messages.

Offers received through the use of m-commerce may be accepted and paid for using the hand held device. For example, if a customer chooses to respond to an offer, there are usually several payment options available. The most common option is adding a charge to the monthly invoice for services rendered. However, many companies that engage in m-commerce also offer the option of paying for the item by the use of a credit card that is linked to the SIM card on the hand held device.

2. History and Development of M-commerce

Mobile commerce was born in **1997** when the first two mobile-phone enabled Coca Cola vending machines were installed in the Helsinki area in Finland. The machines accepted payment via SMS text messages. The first mobile phone-based banking service was launched in **1997** by Merita Bank of Finland, also using SMS. In **1998,** the first sales of digital content as downloads to mobile phones were made possible when the first commercial downloadable ring tones were launched in Finland by Radiolinja. Two major **national commercial platforms** for mobile commerce were launched in **1999: Smart Money** in the Philippines, and NTT DoCoMo's **i-Mode** Internet service in Japan. **i-Mode** offered a revolutionary revenue-sharing plan where NTT DoCoMo kept 9% of the fee users paid for content, and returned 91% to the content owner. Mobile-commerce-related services spread rapidly in early **2000.** Norway launched mobile parking payments. Austria offered train ticketing via mobile device. Japan offered mobile purchases of airline tickets.

The first conference dedicated to mobile commerce was held in London in July **2001.** The first book to cover mobile commerce was Tomi Ahonen's M-profits in 2002. The

first university short course to discuss mobile commerce was held at the University of Oxford in 2003, with Tomi Ahonen and Steve Jones lecturing. As of 2008, UCL Computer Science and Peter Bentley ran dedicated courses in mobile commerce at the Dept. of Computer Science, University College, London.

PDAs and cellular phones have become so popular now that many businesses are beginning to use mobile commerce as a more efficient way to communicate with their customers. In order to exploit the potential mobile commerce market, mobile phone manufacturers such as Nokia, Ericsson, Motorola, and Qualcomm are working with carriers such as AT&T Wireless and Sprint to develop WAP-enabled **smart phones,** which offer fax, e-mail, and phone capabilities.

Since the launch of the **iPhone,** mobile commerce has moved away from SMS systems and into actual applications. SMS has significant security vulnerabilities and congestion problems, even though it is widely available and accessible. In addition, improvements in the capabilities of modern mobile devices make it prudent to place more of the resource burden on the mobile device.

3. Review of Literature

To date, major e-commerce journals and some business journals have published special editions on M-Commerce. The first was in **Electronic Markets** in 2002, followed by **International Journal of Electronic Commerce, Decision Support Systems,** and **Journal of Business Research,** amongst others. The **focus** of these publications varied, from **technical** to **managerial** topics, and exemplified the complex nature of m-commerce cornponents.

A series of papers by **Barnes (2002a, 2002b)** were among the pioneering efforts in mobile research in general. He proposed preliminary frameworks for value-chain creation and wireless advertising, respectively. His works are purely conceptual, but his frameworks provided a useful foundation for those who subsequently undertook empirical explorations.

Needless to say, mobile Internet service adoption has been the most popular topic in the m-commerce research literature. Several empirical studies are available, including **Hung, Ku, and Chung (2003).** They conducted one of the most comprehensive studies of mobile Internet adoption, adopting **Davis's (1989)** Technology Acceptance Model **(TAM)** to **consumers' WAP adoption behavior** in Taiwan. From a theoretical point of view, the **TAM** has been the most frequently used base for m-commerce adoption, followed by the Theory of Reasoned Action **TRA (Fishbein and Ajzen, 1975)** and the Theory of Planned Behavior **- TPB (Ajzen, 1991).**

Nysveen, Pedersen, and ThorbjornserTs (2005) recent exploration become one of the most significant contributions to date on mobile Internet adoption. The study was carried out in Norway to examine cross-service comparisons via multi-group structural equation modeling. SMS-based marketing is another "main stream" of m-commerce research. For example, **Barwise**

and Strong (2002) and **Tsang, Ho, and Liang (2004)** provided solid empirical evidence regarding "permission-based" advertising in the UK and Taiwan, respectively. On the other hand, although sporadic industry reports indicate actual use of **SMS campaigns,** there have been few attempts to investigate multinational firms' strategic perceptions of **mobile marketing.**

Okazaki (2005) has conducted a **qualitative interview** of 54 multinational firms' marketing executives operating in Europe. This study was based on **Roger's (1980)** new technology diffusion model, and found that multinational firms consider **branding** one of the most important attributes of **mobile advertising** adoption.

Few researchers have examined the specific nature of mobile Internet services, and their studies have been published in a rather sporadic way. For example, the literature is available in **mobile banking/finance (e.g., Brown et al., 2003), cross-cultural comparison (e.g., Lee et al., 2002), security issues (e.g., Petty, 2003), and location-based services (e.g., Kumar and Stokkeland, 2004).** Among

Kleijnen, de Ruyter, and Wetzels (2004) have published an interesting study of mobile gaming adoption in the Netherlands. They applied a series of sophisticated multivariate analyses to examine mobile garners', profiles. Their paper is one of the few empirical studies on this topic. In a later study, **Kleijnen (2005)** expanded her expertise into the more psychological aspects of new technology adoption, an approach that seems to provide insightful implications for future m-commerce research.

Research Studies on M-Commerce in India are very few and most of these are based on marketing trends. **Singh and Yammiyavar (2009)** have attempted to understand differences in micro and macro level applications. They observed that due to large cultural difference between India and western countries, implementing a macro level m-commerce product in India would mean excluding a major segment of Indian population. However, most major products launched in India have been implemented at Macro level only. The case studies presented in their paper provide inferences which prove that although macro level framework is focused on larger user segments the frequency of transactions that would be received by a micro level product makes it a better option of generating revenues.

Recently, **IndiQuest Research** conducted a study which reveals that MVAS and m-commerce in India could emerge as lucrative sectors due to factors such as increasing mobile subscriber base, higher disposable incomes, technological innovation, innovative service offerings and consumer preference. **(Acharya, 2010).** Today, consumers are seeking more than just basic services (voice services) from their service operators. The telecom companies, on their part, are attempting to develop offerings aimed at retaining existing

customers as well as attracting new patrons. It predicts that the Indian MVAS segment is expected to be worth USD 5.6 billion by 2011.

4. M-Commerce in India

Mobile phones have a higher penetration rate than the Internet in India and majority of the population are ready to embrace m-commerce in a big way. **Bheda (2010)** vouches that even though Internet has changed our lifestyles, the increasing popularity of the mobile phone and developments in mobile technology have heralded a new era in mass communication and commerce for the masses. A vast segment of the population who neither had a landline nor a bank account against their name has made a generation leap, and not only do they own a mobile handset, but are now well poised to transact on their mobile phone.Mobile Commerce services are evolving rapidly in India due to the coming together of mobile **service providers, banks** and **payment service providers** to offer more products and secure transactions through mobile networks. Mobile Commerce is open to almost everyone with a cell-phone and mobile connection. Mobile Commerce is expected to grow because the mobile usage and ownership penetration is more than 4 to 5 times than a PC and growing at a very fast rate.Increased mobile penetration and use of GPRS on handsets has resulted in the digital downloads market to cross **Rs.2.55 billion** by the end of March 2008. Monetary transfers or transactions through mobile phones are found to be much cheaper than traditional bank transfers as the transaction costs are much lower in the former. Inter-bank transfers services are also on the anvil. ICICI Bank Ltd, India's largest private bank, has already started offering all its services through mobile phones (called **mobile banking)** since January 2008. Standard Chartered bank has launched a service that enables money transfer from any ATM to any mobile phone across the country. The recipient receives a pin number on his or her mobile phone and the sender has to convey the order number to the recipient. Feasibility studies are being conducted to offer mobile commerce to **microfinance** firms to enable them collect payments from remote areas.

However, a few challenges are being faced by M-Commerce in India now. Security of transactions through M-Commerce is the biggest challenge. M-Commerce Services like the **mobile wallet,** which helps make payments at retail outlets through text messages have been hindered by the guidelines issued by the Reserve Bank of India due to security concerns. Mobile Payment Service providers like **Obopay Inc** and **mChek India Payment Systems Pvt. Ltd** are planning on services that would work within the RBI rescribed guidelines like bank account-linked services and mobile debit cards.

5. Uses of M-Commerce

In the current commerce industry, mobile commerce or M-Commerce in India has been entered in finance, services, retails, tele-communication and information technology services. In these sectors, M-Commerce is not only being widely accepted but also it is being more used as a popular way of business/ commerce.

5.1 Finance Sector

Mobile Commerce works vastly in finance sector including all big and major financial institutes, banks, stock market and share brokers. Whenever any user needs money or wants any sort of banking and finance related services, he/she can access the services or register services via voice calling or via Short Message Services (SMS) services. VVAP based mobile handsets allow the user to access the official website of the institute.

User can transact money or transfer money, or pay the bill from its bank account using mobile commerce facilities. Banks also provide round the clock customer care services which can be used any time through voice calling. Some customer care services are also provides non-voice services on mobile that is known as insta-alert facility.

While in the stock market, the user can access the stock market quotes and get in live touch with current trading status on its mobile in two forms either voice (customer assistance') or non-voice (sms alerts) or both. The share broker sends market trends and tips of trading on their clients' mobile. Also broker can suggest the appropriate stock for intra-day trading to their users.

5.2 Telecommunication Sector

Mobile has played a giant role in communication technology through its versatility and superiority. The ubiquity and easy usage has further made it extremely popular across the globe. It has already surpassed the fixed phone in the world. Software platform is essential for operating any mobile and this tool has revolutionized the communication world because of its functioning as a small computer.

The booming popularity has forced the corporate world to develop a new commerce platform that can reach to masses. Mobile commerce has attracted massive traffic because of its unique characteristics. The user can change the service of any financial institute or banks if gets better product and service or user is unsatisfied with the service of the subscribing company. Besides this several bills can be paid using mobile and user can also check the available balance, the status of cheques, the status of requested processing and customer care support.

5.3 Service / Retail Sectors

Service and Retail sectors are also among the leading sectors, which have nurtured most from mobile commerce. M-Commerce has proved a major boon for these sectors. Several business dealings no matter how big or small are being finalized on the mobile phone. Customer would be able to book the order, can hire carrier/courier services and above all could also pay the dues related to it through mobile.

5.4 Information Sector

After the bursting of dotcom bubble, e-commerce has gone downwards to hell. But the evolution of mobile commerce has again worked as ambrosia for them. A separate sector has been evolved to exercise on this field for the IT experts. The webmasters have skillfully exploited this new area of IT-enabled commerce.

In the IT field, mobile commerce has been used massively to deliver financial news, stock updates, sports figures and traffic updates and many more onto a single handheld device 'mobile'.Despite of huge popularity of mobile

commerce, it is yet in the initial stage and can be further expand in to all the fields, which affect the human life. The assumption of mobile commerce is not so young as it mushroomed so early from adopting this technology. It initially begins with the use of wireless POS (Point Of Sale) swipe terminals and has since then made its way into cellular phones and PDA's (Personal Digital Assistants). The first enabling m-commerce technologies were presented through Wireless Application Protocol (WAP) and i-mode mobile Internet service. WAP builds on digital phone technology and first emerged on 2.5 G phone technology that allowed users to browse the Internet. This technology cemented the way of m-commerce, which has strongly developed on 3G-phone technology. Nokia has first introduced m-commerce application software Nokia toolkit version 4.0.

The future of m-Commerce seems extremely bright because several experiments are going on to introduce the upgraded version of mobile likely to emerge with the evolution of 4G mobile technology.

6. Conclusion

The telecom story in India has been a huge success when we talk of m-commerce. A 100 million plus mobile users is a dream come true for marketers. If that's not all the number of users is growing by as much as 3 million a month. The numbers are hugely in favor of m-commerce.

A small text message has changed it all. When mobile phones were introduced not even the biggest telecom experts had predicted the impact of sms on Indian life. Relationships to reporting to just about every small communication is now textual. Now even payments and transactions through the sms. The future is here. So we can conclude m-commerce is the next future of India.

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Influence of Corporate Social Responsibility on Brand Building - A Holistic Approach

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Abstract

This study is a deliberate exertion to find out the role of corporate social responsibility (CSR) on brand building, with the sample being a select group of multinational FMCG companies operating in Odisha state with the best global brands. On the basis of instrumental stakeholder theory, we contrive that CSR is a legible source of cryptic competitive advantage. It has not been used, however, to its full potential, given that CST has lesser role on economic performance than that of the size of the company and other classical financial emblem. We contented that this undervaluation is due to nonalignment of CSR initiative with corporategame-plane. The vale addition of this study in terms of methodology is the ascendant employment of the panel data technique and the introduction of brand building as a measure of corporate game-bit. We also provide empirical evidence of the long-term cosmology of the CSR acumen of the enduring nature of the impact of CSR agile on corporate performance.

Keywords: Social responsibility, Brand value, Stakeholder theory,Fixed panel data.

1. Introduction

With the advent of the era of globalization and cut-throat competition concern of the companies has shifted to Corporate Social Responsibility. "Doing good" seems to be the new slogan for many brands in 2010. After a year economic misery and banking crisis, consumers want to get associated with the brands that believe more than a profit.

Brand Equity is one of the factors that increased the financial value of a brand to the brand owner. Elements that can be included in the valuation of brand equity include: changing market share, profit margins, consumer recognition of logos and other visual elements, brand language associations made by consumers, consumers perceptions of quality and other relevant brand values. Survival of the company depends upon how responsible the company is towards society. More concerned a company is, it is easier for it to create the positive brand image in the minds of the consumer that leads to working towards building brand equity.

The awareness that brands are one of a firm's most valuable resources (Srivastava,Fahey, and Christensen, 2001), branding has emerged as a top management priority in the past decade. In this context, corporate branding strategies are gaining more and more importance. Corporate brand (CB) is thereby understood as being a product of top management and its ability to propagate this vis-à-vis its stake- and shareholders so as to form the interface between self-portrayal and external perception of the organization (Kiriakidou and Millward, 2000; Balmer,

2001).Given its highly competitive nature, much has been written about corporate brand management (CBM) and its impact on consumer behaviour (e.g., Yoon, Gürhan-Canli, and Schwarz, 2006).

An internationally standardized CB may be perceived differently by individuals, resulting in differences in their behaviour. In particular, this fact is gaining more and more importance in the FMCG sector. A growing number of these firms use corporate branding as an endorsement to their product brands (PBs). Extending the findings of previous studies and addressing relevant questions for marketing practitioners, we present and apply an approach with which to analyse the reciprocity of corporate and product branding cross-nationally.

After reviewing the practical and theoretical relevance of such studies, we formulate three cardinal hypotheses based on postulated relationships. In the course of the analysis, we focus on a detailed presentation of the conceptual framework and our empirical results before addressing a brief conclusion.

2.   Research Objectives

The general objective of this study is to examine the effect of Corporate Social Responsibility in general on brand image of a company. But specifically, the study sought to achieve the following objectives:

1.   To find out how CSR activity of a company influences the market image of fast moving consumer goods (FMCG) industry.

2.   To find out the challenges faced by FMCG companies n implementing CSR programmes.

3.   To investigate whether Corporate Social Responsibility guarantee customer's confidence and security of depositor's fund.

3.   Justification for the Study

The study is expected to make contribution to knowledge in the following areas:

Provide information about CSR in relation to corporate institution especially the FMCG sector. It is also to be a fundamental material for scholarly discourse in management science relating to Corporate Social Responsibility. The study will provide information on the impact of CSR on the profitability of MNCs operations in India. Finally, the research work will provide information on the challenges of CSR in the fast moving consumer good(FMCG) sectors with recommendations.

4.   Scope and Limitation of the Study

The study is focused on FMCG companies operating in India only. It critically examines what impact Corporate Social Responsibility has on the profitability of some reputed FMCG companies of the country. However, the study is limited to finding out how much in monetary terms companies commit towards corporate social responsibility programmes yearly.

5.   Methodology of the Study

The entire paper has a strong theoretical base, the remarks and findings are inferred from literature reviews during Ph.D. course work .I have taken help from professors and highly posted professionals from companies to get the real scenario of CSR activities done by companies as well as the intention to do so.

6.   Literature Review

Majority of the private companies say they embrace corporate social responsibility not only because it is the right thing to do, but also because it strengthens their brands. The percentage of brand value represented by corporate social responsibility is tending upward but all other identifiable contributors to corporate brand value-advertising, market cap, and the industry in which a company competes – appear to be declining.

The relationship between brand image and Corporate Social Responsibility is strongest for familiarity, not for favourability. That is, if the company is wellknown in its community, its Corporate Social Responsibility activities will strengthen its brand image more than they would if the company were less well known.

According to a study by financial paper, The Economic Times, donations by listed companies grew 8% during the fiscal ended March 2009. As many as 108 companies donated up to 20% more than the previous year.

Consumers increasingly expect companies to make a broader contribution to society. The business benefits of doing are not evident. Prior studies conclude that consumers' purchase decisions are positively influenced by socially responsible initiatives.

According to the research carried by Cone Inc., in 2009, 79% of consumers would switch to a brand associated with a good cause. Bharat Petroleum and MarutiUdyog came on top with 134 points each, followed by Tata Motors (133) and Hero Honda (131). The study was based on a public goodwill index and India received 119 points in the index against a global average of 100. Thailand was at the top slot with 124 points. Malini Mehra, founder and CEO of Social Markets, an organization that works towards transition to sustainable development and realisation of human rights and social justice, explains, "There is minimalist version, Corporate Social Responsibility is little more than a philanthropic activity-tree planting, schools and health clinics. In the maximalist version, Corporate Social Responsibility is about character and conduct, where integrity and responsibility run right through every seam of the firm's activities and ethos.

External Relations Director Lee Bansil of Procter and Gamble explains: co-donation and cause-related marketing help promote competition, which in turn leads to corporate innovation. He believes this is essential for developing sustainable products and promoting sustainable consumption.

7.   Promoting Brand Image with the Help of Corporate Social Responsibility: The Indian Scenario

The 2010 list of Forbes Asia's 48 heroes of Philanthropy contains four Indians. Nearly all leading corporate in India are involved in Corporate Social Responsibility programmes in areas like education, health, livelihood creation, skill development and empowerment of weaker sections of society. Notable efforts have come from the Tata Group, Infosys, Bharti Enterprises, ITC Welcome group, IOC among others. For brands, it is an excellent way to show they care, taking the lead with innovative "giving back" schemes. Few ways by which Procter and Gamble did in the past was, that they teamed up with UNICEF to introduce Nutristar-a powdered drinking product that addressed micronutrient malnutrition in some populations and by acquiring the PuR brand to bring low-cost water purification technologies to consumers in developing markets. The company also promoted better hygiene in at-risk communities and in return had the benefit of forming new markets for its products like soap and toothpastes.

A recent initiative of Corporate Social Responsibility by Procter and Gamble is that it joined hands with the International Olympic Committee (IOC) jointly announced a sponsorship scheme wherein Procter and Gamble's

portfolio of brands will sponsor "Proud Sponsor of Moms" campaign globally. To celebrate the dedication and sacrifices of moms, families and Olympians, Procter and Gamble will produce a documentary video series called "Raising an Olympian" that will provide the insight into the experiences of mom of an Olympian which will guide and improve the lives of forthcoming athletes. Mr.Sunil Mittal, chairman and managing director of Bharti Enterprises, runs the country's largest affirmative action project imparting quality education to 30,000 underprivileged children in rural India across five states. The initiative is housed under the Bharti Foundation.

Idea is a telecom service provider, which historically lacked the market leaders in terms of performance. With its new campaign, which sets the tagline, „What an idea in the landscape of rural India, it has managed to become a stronger and more credible player. The advertising focuses on stories that demonstrate how the mobile phone helps education and democracy to rural India, not to mention solving the caste problem.

Another instance is that of a leading tea brand from India's most respected business house, Tatas. Tata Tea uses the tag line "Jaago re" (wake up) and its advertising shows its protagonists handing out cups of tea to young people in college insisting that they are asleep and need to "wake up". The waking up in question involves their going out and voting. In this case, the advertising leads us to a website which actually allows people to register on-line as voters.

Corporate companies like ITC have made farmer development a vital part of its business strategy, and made major efforts to improve the livelihood standards of the rural communities. Unilever is using micro enterprises to strategically augment the penetration of consumer products in rural markets.

IT companies like TCS and WIPRO have developed software to help teachers and children in schools across India to further the cause of education. The adult literacy software has been a significant factor in reducing illiteracy in remote communities. Banks and insurance companies are targeting migrant labourers and street vendors to help them through micro credits and related schemes.

As in the West, Indian companies are also waking up to the realisation that Corporate Social Responsibility is not just an external philanthropic activity, but an internal responsibility as well. In fact, as Paul Abhram, COO, Induslnd Bank, puts it, "If you don t start from within, the entire Corporate Social Responsibility programme would turn out to be meaningless." The concept of solar ATMs and encouraging customers to choose e-statements over traditional paper statements has been a part of InduslndBank s broader Corporate Social Responsibility initiatives.

8. Government Initiatives to Promote Corporate Social Responsibility among Companies

Although corporate India is involved in Corporate Social Responsibility activities, the central government is working on a framework for quantifying the Corporate Social Responsibility initiatives of companies to promote them further. According to Minister of Corporate Affairs, Mr.SalmanKhurshid, one of the ways to attract companies towards Corporate Social Responsibility work is to develop a system of Corporate Social Responsibility credits, similar to the system of carbon credits which are given to companies for green initiatives.

Pharmaceuticals Company Jubilant Organosys Ltd., already runs an anti-tuberculosis programme with the government of Uttar Pardesh. Apart from schools and hospitals that are run by trusts and societies, the government too is exploring to widen the scope of public-private partnerships to build and maintain schools and hospitals in return for a fixed annuity payment.

Besides the private sector, the government is also ensuring that the public sector companies participate actively in Corporate Social Responsibility initiatives. The Department of Public Enterprises (DPE) has prepared guidelines for central public sector enterprises to take up important Corporate Social Responsibility projects to be funded by 2-5 per cent of the company's net profits.

9. Understanding the Effect of Corporate Social Responsibility in Creating Brand Image

Exposure to any type of well-conceived promotional initiative for a brand leads to more positive feelings and judgements about the brand in a consumer's mind. A promotional initiate emphasizing a brand's affiliation with a social cause has a high degree of affinity. How much a given initiative will help or hurt a given brand will depend on the characteristics of its target markets. A high degree of affinity can enhance the effectiveness of a promotional initiative that increases the likelihood of consumers treating the initiative as an important and positively weighted attribute of the brand. However, when a promotional initiative does not mention an affiliation, consumers may weight a brand's style of marketing as a negative attribute. Consumers would weigh the style of marketing as positive with those types of affiliations that have affiliation with a cause like cancer research, environmental protection or disaster relief. Moreover, a social-cause affiliation could also have a "halo effect" on how a brand is seen on other attributes, such as trustworthiness or quality.

Those initiatives in which the logic behind the brand's affiliation can be easily recognized by most consumers – typically produce a more positive effect on consumer brand judgements and feelings than initiatives with weaker fit. When a brand promotes a high-fit social-cause, it may be more likely to be viewed by some consumers as opportunistic and seeking commercial gain.

Whether to pursue affinity marketing in general or societal marketing in particular, the companies should recognize that every brand is different. While, for example, a low-fit societal marketing initiative might work best for one brand, it might do less for another brand's image. It is recommended to do careful experimental research to refine and test ideas for affinity marketing

initiates against one another and against other kinds of marketing initiatives.

The management of socially responsible behaviour is important because of its impact on the perception of the brand image. Enriching a brand with ethical and social questions increases its value. These associations influence the consumer in their assessment of products and increased brand loyalty. Many proactive corporations monitor customer satisfaction closely and as a result individuals may express their trust and appreciation of the Corporate Social Responsibility efforts by continuing to buy its products. Thus, the familiarity or the degree of general user knowledge of a company resulting from their experiences with that firm and their loyalty may lead to conditioning the perception of corporate behaviour. Customers experience could allow them to develop strong beliefs and a more elaborate cognitive structure which implies possible reference schemes to make different appraisals, as compared to the customers at a lower awareness level.

Companies that have made Corporate Social Responsibility a central part of their businesses are reaping the benefits as improved brand image. It works best for those companies in which responsibility is a core company value and informs all aspects of the business.

Corporate Social Responsibility initiatives are not only about philanthropy but translating these ideas into practical business strategies. Corporate Social Responsibility driven efforts does not only relate to donating money but it talks about integrating social and ethical practices into business strategies that help the consumer in creating a positive brand image. With the increase in Corporate Social Responsibility awareness some companies promote a very elementary understanding of corporate governance and ethical standards.

Another important aspect of Corporate Social Responsibility is that it channelizes funds of socially responsible investors in promoting Corporate Social Responsibility among investors. The content of Corporate Social Responsibility creates an emotional connection with consumers and builds connections between the brand, its Corporate Social Responsibility initiatives and the viewers. Promoting brand image with the help of Corporate Social Responsibility initiatives encourages positive comments and ultimately has a positive effect on the brand, because the company is being transparent about its external communications and internal practices which show alignment. The benefits of using Corporate Social Responsibility in branded content are endless; foremost it helps to build a brand's reputation and is a point of differentiation.

10.   Conclusion

The benefits of using Corporate Social Responsibility in branded contextare endless. The most important one is that it helps to build a brand's reputation and is a point of differentiation. It also encourages consumer trust and loyalty. If the consumers see that brands are addressing the issues that are important to them, it follows that they are likely to continue to buy their products.

Corporate Social Responsibility initiatives can be extremely effective at forging deep meaningful connections with its consumers that transforms the loyalty of the consumer to them as a promoter of the company within their social networks.

The social canvas becomes a means of amplifying the largeness of the brand's message. In a country like India, there seems to be a great opportunity for brands to find larger canvases for their brands. Perhaps more brands need to wake up to that.

Corporate Social Responsibility is not a marketing gimmick but one way in which responsible companies can use advertising and buying to help play their part in promoting sustainable behaviour. It's a great contribution in which consumers, stakeholders and companies can take small steps to improving lives."

The need for more emphasis on the Corporate Social Responsibility concept and its company-to-consumer communication is mandatory. Though a number of companies websites and their annual reports include information on these practices but it is seen that either this information does not reach the consumers or the current communication strategy is not strong enough to link the Corporate Social Responsibility actions to brands. "Everyone wants to make a difference and this goes some small way in allowing us all to make a contribution. Yes, it is shopping. Yes, it is advertising. No one is saying it's the answer to everything, but it's a small step that allows all of us to make a difference"

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Horticulture Trends in Gujarat

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Abstract

Over the years, horticulture has emerged as an indispensable part of agriculture, offering a wide range of choices to the farmers for crop diversification. Its role in the country's nutritional security, poverty alleviation and employment generation programmes are becoming increasingly important. It offers not only a wide range of options to the farmers for crop diversification, but also provides ample scope for sustaining large number of agro-industries which generate huge employment opportunities. Gujarat has a wide variety of soils, rainfall pattern, temperature regimes, and irrigation availability. This diverse agro-climatic situation across the state holds promise for development of the horticulture sector in a significant way. The paper explores such horticultural trend over the period of seven years. Based on the trend it also tries to suggest the top five crops in each segment like fruits, vegetables, spices and flowers, for pursuing entrepreneurial opportunities.

Keywords: Agripreneurship, Food Processing, Firming Practices

JEL Classification: N5, P32, Q1, O13

1. Introduction

Agriculture sector is considered to be the backbone of Indian economy and contributes substantially to the GDP of India. In recent times, the landscape of agriculture has changed from subsistence farming to commercial farming, import oriented to export oriented sector, supply driven technology to demand driven technology etc. (Mishra, et al, 2013). Due to these reforms, agriculture has evolved in to agribusiness and includes a comprehensive system to include all those who are involved in bringing food and fiber to consumers (Baruah, n.d.). The Oxford Dictionary defines agribusiness as the group of industries dealing with agricultural produce and services required in farming. In developing countries like India, agribusiness is a generic term that refers to the various businesses involved in food production, including farming and contract farming, seed supply, agrichemicals, farm machinery, wholesale and distribution, processing, marketing, and retail sales (Mishra et al, 2013).

Agriculture and allied industry is further divided into several segments such as horticulture and its allied sectors (including fruits and vegetables, flowers, plantation crops, spices, aromatic and medicinal plants); fisheries sector; animal husbandry and livestock; and sericulture. India's varied agro-climatic conditions are highly favourable for the growth of large number of horticultural crops. The Government of India has recognized horticulture crops as a means of diversification in agriculture in an eco-friendly manner through efficient use of land and optimum utilization of natural resources. Horticulture seeks to create ample opportunities for employment, particularly for unemployed youths and women folk. The paper explores horticulture trend and entrepreneurial opportunities based on trend, in Gujarat.

2. Review of Literature

As discussed earlier, horticulture is a part of agriculture and allied sector. While going through the literature on horticulture, it was observed that majority of the research was based upon secondary information and presented in the form of reports highlighting in India and Gujarat, the horticulture developments, infrastructure for horticulture, year wise information pertaining to area and production for fruits and vegetable crops etc. The research in the area of entrepreneurship in horticulture is few and far between. The available literature for entrepreneurship in agriculture and horticulture is summarized as below:

Alsos et al (2003) conducted an exploratory study to find out why farmers start additional business activities. The researchers conducted in-depth interviews with the Norwegian farm households. They applied three different perspectives i.e. rural sociology perspective, opportunity perspective and the resource based perspective. The study found three types of farmer entrepreneurs i.e. the puriactive farmer, the resource exploiting entrepreneurs and the portfolio entrepreneurs. They differ in their motivation to start the new business activity.

Campos-Climent et al (2012) had undertaken a strategic review of horticultural cooperatives and applied Delphi method to get a view of the strategic situation of horticultural cooperatives in Spain. The findings of the study revealed that agricultural cooperatives helped in addressing the crisis situation of agriculture. It was suggested that cooperatives should make an effort in improving their management, building on their strengths (traditional image and strong roots in the area) and their opportunities (greater potential for cooperation) to address their weaknesses (scattered agricultural offer) and threats (the stronger bargaining power of the distribution companies).

Mulder et al (2007) conducted a study on competence assessment on ten small business entrepreneurs in innovative horticulture where those competencies were rated by the entrepreneurs themselves, their employees and external consultants. The findings revealed that competencies were being rated differently. The top competence strength had been a learning orientation. A total of 99 learning activities were found embedded in the innovative work processes of the entrepreneurs. The top three learning activities were reflection, observation and experimentation.

From the discussion, it may be noted that the research in the area of entrepreneurship in agriculture and horticulture is focused on examining the skills, competencies and identities of farmers as entrepreneurs. This paper seeks to practically address the opportunities for starting business for farmers in horticulture by examining the scope based upon secondary information.

3. Farming Practices

India is a country with diversified topography. Apart from the variations in landform, varieties of climatic conditions, soil types, availability of irrigation, use of machinery, modern agricultural inputs, insecticides and pesticides have played a role in the evolution of different farming practices in India. The characteristics of various farming practices are summarized in Table 1.

4. Research Objectives

Following objectives were set for the study.

1. To highlight the different practices adopted by farmers in agriculture.

2. To understand the concept of horticulture and its importance in Gujarat.

3. To empirically evaluate the secondary data on horticulture and identify the crop specific trend over the period of seven years.

4. To explore the entrepreneurial opportunities in horticulture based on the evaluation of trend.

5. Research Methodology

The study is based upon the descriptive research design to empirically test the entrepreneurial opportunities in horticulture. The study is based on the secondary data collected from the Directorate of Horticulture Department, Gandhinagar. The data were collected from the websites as well as through personal visit of the said organization. Time series data across 26 districts of Gujarat were collected for seven years starting from the year 2005-06 to 2011-12 for 42 types of crops and it was collected on two parameters i.e. area of cultivation and production. The detailed explanation is presented in Table 2. Approximately, 15,288 data values were used in the research.

Thus, sample size consisted of various horticulture crops grown across 26 district of Gujarat. Sampling duration consisted of one month i.e. 1st November, 2014 to 30th November, 2014, in which, the data elements were gathered starting from the year 2005-06 to 2011-12. Sampling technique used was area sampling. Sampling unit was the office of Directorate of Horticulture and sampling element were details of the horticulture crops. Sampling area was 26 districts of Gujarat.

The data were managed through Microsoft excel programme and it was analyzed and interpreted with the help of SPSS 19 programme. For data analysis, frequency distribution, descriptive statistics such as mean, maximum, minimum, range, rank and percentage were used. Percentage change was also computed by taking the difference in the output of latest year (2011-12) and oldest year (2005-06). As the data pertains to all the 26 districts of Gujarat, the mean computed could be treated as the population mean. In order to get the correct results for descriptive statistics, a special care was taken in which the missing value was inserted for the cells of area and production, where the cultivation of item was not done. Missing value facilitated in avoiding the pulling of mean towards the higher or lower cell count. Inferential statistics such as Analysis of Variance (ANOVA) test was applied for more meaningful analysis.

6. Concept and Importance of Horticulture

Horticulture, the term is derived from latin word hortus: garden plant; cultura: culture denotes culture of garden plants. Traditionally, horticulture involved four areas of study namely, Pomology (fruit culture), Olericulture (vegetable culture), Floriculture (culture of ornamental crops), and Post Harvest Technology (management of produce after harvest). However, over the years, the scope of the above field has been expanded to include other crops like mushroom, bamboo, plantation crops like tea, coffee, and rubber. In view of the above developments, horticulture can now be redefined as the 'Science of growing and management of fruits, vegetables including

tubers, ornamental, medicinal and aromatic crops, spices, plantation crops their processing, value addition and marketing' (Report of the Working Group on Horticulture, Plantation Crops and Organic Farming for the XI Five Year Plan: 2007-12, 2012).

In mid eighties the Govt. of India identified horticulture crops as a means of diversification for making agriculture more profitable. The cultivation of such crops offered number of advantages such as efficient land use, production of higher biomass than field crops per unit area resulting in efficient utilization of natural resources (soil, water and environment), highly remunerative for replacing subsistence farming and thus alleviate poverty in varied agro-ecosystems like rainfed, dryland, hilly, arid and coastal, creating skilled employment for rural masses especially women folk, potential for value addition and resulted in environment friendliness (Report on Horticulture Development, 2001). Further, the horticulture sector is supplier of large number of agro based industries which has high avenues for generation of skill, full employment and self employment opportunities both in rural and urban areas (National Horticulture Mission Revised Action Plan for Gujarat, 2005).

The horticulture sector has been a driving force in stimulating a healthy growth trend in Indian agriculture. Focused attention to horticultural research and development has resulted into increased production and productivity and enhanced exports. As per the report on State of Indian Agriculture: 2012-13, India is producing 257.2 million tonnes of horticulture produce from an area of 23 million hectare. The higher growth rate in horticulture was brought about by improvement in productivity of horticulture crops, which increased by about 28% between 2001-02 and 2011-12. Not only have these impressive production figures ensured a steady supply for the domestic market, but they have also made Indian horticulture exports globally competitive. Over the last decade, there has been a significant improvement in export earnings in horticulture from Rs. 5677.50 crores in 2001-02 to Rs. 13792.20 crores in 2010-11, registering a growth of 142.9%. The horticulture division is working closely with Agricultural & Processed Food Export Development (APEDA) and State Governments to ensure that infrastructure and institutional support for export is available so that farmers' can leverage export markets for higher incomes. Of the 60 agri export zones in India 52 are focusing on horticultural crops.

With the increase in the growth of production of horticulture crops, the 'demand' side is also keeping a pace. As the increase in income level and health consciousness, households are spending significantly higher amounts of their expenditure on fruits and vegetables. The availability of fruits and vegetables has kept pace with the growing demand. In the case of fruits, the per capita availability increased from 114 grams/day in 2001-02 to 172 grams/day in 2011-12. Similarly, the per capita availability of vegetables increased from 236 grams/day to 350 gram/day during this period (State of Indian Agriculture: 2012-13, 2013).

Realising the importance of horticulture as a means of diversification, National Horticulture Board (NHB) was set up by the Government of India in 1984 as an autonomous society. The Central Government has started National Horticulture Mission from the year 2005-06 for the holistic growth of horticulture. NHB provides a plethora of incentives for establishing of infrastructure and facilitate integrated development of horticulture. Various such schemes have been highlighted briefly in Table 3.

The Gujarat Government has also registered "Gujarat Horticulture Mission" under the Chairmanship of Principal Secretary of Agriculture. The work of Horticulture Mission is being done in the State by this registered Mission. Gujarat has 69,84,000 registered farmers which is (12%) of the State's total population of 57 million. For horticulture, there are 6,50,000 farmers registered of which 2,80,000 (43%) received Government subsidies in 2009 10 (Domadiya, 2010). The State has strong cooperative credit and marketing structure, alongwith 213 cold storages having 9.50 lakh mt. storage capacity. About 42 fruit and vegetable co-operative marketing societies and 197 Agriculture Produce Market Committees (APMCs) are dealing with selling and buying of horticulture produce in the State. The area & production of horticulture crop was 5.89 lakh ha (5 %of total cropped area) & 59.49 lakh tons in 1998-1999 which increased up to 14.04 lakh ha. and 180.16 lakh tons respectively in 2010-11. Agriculture Export Zone for dehydrated onion and zone for fruits - vegetables has been established, which will be the back bone to boost horticultural development in the state (Official Gujarat State Portal: Horticulture, n.d.).

Gujarat has a wide variety of soils, rainfall pattern, temperature regimes, and irrigation availability. This diverse agro-climatic situation across the state holds promise for development of the horticulture sector in a big way. As per the report on horticulture in Gujarat 2010-11, state occupies prominent position in fruits and vegetables in terms of productivity. The average productivity of onions and potatoes is highest then the national average. Further, state enjoys a monopoly in processing of Isabgol and is well known for "Kesar" and "Alphonso" brands of mangoes. Date Palm (kharek) production has come up rapidly in Kutch. The spices like cumin, fennel and garlic are having an excellent potential for export. As per the data on official webportal of Gujarat State for Horticulture, Gujarat is one the major banana growing states and ranks 2nd in exports of bananas in India with exports of 1430 tonnes to Middle East in April-June 2009.

7. Findings of Secondary Data Analysis

The findings of the secondary data are divided into three sections viz., Section I describes the descriptive statistics details. Section II describes the inferential statistics. Section III describes the entrepreneurial opportunities in horticulture sector.

7.1 Section I

Descriptive Statistics

The descriptive statistics details of fruits, vegetables, spices and flowers are described as under.

7.1.1 Fruits

Considering the details of Table 4 of Exhibit, it may be inferred that in the all the seven years, the highest average production was of Banana at 3,85,502 (MTs). Starting from the year 2005-06 to 2011-12, an exponential mean increase in the production of Papaya was found from 28,089 (MTs) to 81,605 (MTs). Mean production of Mango stood highest at 71,552 (MTs). Average production of Citrus was found to be marginally low from 34,095 (MTs) for the year 2010-11 to 34,008 (MTs) for the year 2011-12. Mean production of Chicku in the seven years period, hovered in the range of 18,129 (MTs) to 22,867 (MTs). The highest mean production (28,381 MTs) of Dates was for the year 2007-08. Around 13% reduction in mean production of Ber was noticed in the tenure of seven years. 17% increase in Guava's mean production was noticed. Mean production for fruits like Pomegranate, Custard, Cashew-Nut, Coconut and others improved gradually over the period of seven years. Fluctuation in mean production was noticed in the case of only Aonla fruit.

As per Table 5 of Exhibit, Amerli, Dang, Junagadh, Panchmahal, Dahod, Rajkot, Valsad and Navsari were leading districts producing Mango. Production of Citrus was found highest in Ahmedabad, Banaskantha, Gandhinagar, Mehsana and Patan. Maximum amount of Banana was grown in Bharuch, Narmada, Surat, Baroda and Tapi. Jamnagar, Porbandar and Rajkot were largest producer of Papaya. Farmers of districts like Bhavnagar, Kutch, Kheda, Anand, Sabarkantha kept on experimenting by growing different fruit crops. So consistency in production was difficult to observe. Surendranagar was the sole highest producer of Ber. Lowest production was depicted for Cashew crop, may be due to climatic condition, issue of appropriate soil, or yield reasons. Tapi district was formed in 2007-08, so none of the production data was found for that district of preceding years.

7.1.2 Vegetables

Table 6 of exhibit depicts that highest average production of Potato had increased from 1,55,504 (MTs) to 4,79,107 (MTs) in the duration of seven years. Mean production of Onion was found 2,60,367 (MTs) in the year 2011-12. 24% and 56%, respective, increase in average production of Brinjal and Tomato was found during the seven years tenure. Cultivation of Okra and Cucurbit steadily increased to reach the average amount of 53,130 (MTs) and 68,677 (MTs) respectively. Mean increase in production of Cabbage was 64% in the time phase of seven years. Absolute average increase in production of other vegetables, during seven years, stood at 8,333 (MTs). An incremental, mean rise in the production of Cauliflower (30%), cluster bean (based on 2006-07-2011-12's data) (55%) and Cow Pea (39%) was depicted in the seven years duration.

From Table 7 of exhibit, it may be inferred that Amerli, Bhavnagar, Jamnagar, Junagadh, Porbandar, Panchmahal and Rajkot were highest producer of Onion. Potato was produced by Banaskantha, Gandhinagar, Kheda, Anand, Mehsana and Sabarkantha. Dual crop rotation pattern was seen in Ahmedabad district (Tomato and Cucurbits) and Bharuch (Brinjal and Cucurbits).

Respective largest producer of Cucurbits and Brinjal were found for districts like Narmada, Valsad, Navsari, Surat, Surendranagar, Baroda and Tapi. Farmers of Dang, Kutch and Dahod grew variety of vegetables like Brinjal, Cucurbit, Okra, Tomato, Onion and Cabbage. Patan was the only district to grow other vegetables. In order to derive remunerative prices and to meet the changing demand, farmers changed the vegetable cropping pattern leading to minimum production of different variety of vegetable crop in different districts.

7.1.3 Spices

From table 8 of exhibit, the average production of Garlic in the year 2005-06 was 21,219(MTs) which rose to highest 46,243 (MTs) in the year 2011-12. Mean production of Cumin and Fennel in the duration of seven years was in the range of 14,761 (MTs) to 33,330 (MTs) and 8,806 (MTs) to 10,535 (MTs) respectively. An excessive rise in the average production of Chilly and Turmeric was found at 706% and 104%, respectively, in the span of seven years. With a considerable level of ups and downs Coriander's mean production in the year 2011-12 stood at 2,693 (MTs). 35% rise in the mean production of Ginger was noticed in the seven years duration. For the year 2011-12, the highest mean production for Fennel, Isabgul, Ajawan and Suva was 1,269 (MTs), 4,854 (MTs), 769 (MTs) and 8,453 (MTs) respectively. Lot of rise and fall in the production of other spices was noticed in the span of seven years, finally the latest production for 2011-12 for spices stood at a meager level of 50 (MTs).

From Table 9 of exhibit, it was noticed that during the entire seven years a consistent highest production in spices was noticed for district like Ahmedabad, Porbandar and Surendranagar for producing Cumin; Bharuch, Narmada, Dang, Gandhinagar, Anand and Tapi for production of Chilly; Amerli, Jamnagar, Junagadh and Rajkot stood ahead in production of Garlic; Mehsana, Patan, Dahod, Navsari and Kutch were highest in the production of Fennel, Cumin, Ginger, Turmeric and Coriander respectively. Different varieties of highest production were witnessed for Banaskantha (Fennel and Cumin), Bhavnagar (Cumin and Chilly), Kheda (Fennel and Chilly), Panchmahal (Garlic and Ginger), Sabarkantha (Fennel and Chilly), Surat (Ginger and Chilly) and Baroda (Ginger and Chilly). For the consistent seven years, different varieties of spices like Turmeric, Chilly and Ajawan was found only for Valsad district.

7.1.4 Flowers

From Table 10 of exhibit, the average production of Marigold was noticed highest for the year 2011-12 at 4,374 (MTs). Respective 144% and 613% rise in mean production of Rose and Lily was noticed from 2005-06 to 2011-12. The average production of Mogra was found lowest at 70 (MTs) in the year 2005-06 and highest stood at 266 (MTs) in the year 2011-12. The range of other flowers cultivated were 350 (MTs) in the year 2006-07 and 1,322 (MTs) for the year 2010-11. Starting from the year 2005-06 to 2011-12, approximately, 125% rise was noticed in the production of other flowers.

From Table 11 of exhibit, it was noticed that consistently highest production of Rose was found in Amerli, Bhavnagar, Junagadh and Kutch. Consistent large

producer of Marigold was Ahmedabad, Banaskantha, Narmada, Gandhinagar, Jamnagar, Panchamal, Rajkot, Sabarkantha, Baroda and Tapi. Bharuch, Mehsana, Patan, Dahod and Surat were found as largest growers of Rose and Marigold flowers in different years. As bracketed, district like Dang (Rose, Marigold and Lily), Porbandar (Others and Marigold), Kheda (Marigold, Lily and Rose), Anand (Rose, Lily and Marigold), Surendranagar (Marigold and Rose) and Valsad (Rose, Marigold and Lily) grew different maximum number of flowers in different years. Navsari was the only district which grew the maximum amount of Lily.

7.2 Section II

Hypotheses Testing

In order to run the ANOVA, the data file was bifurcated year wise. ANOVA test was applied on two parameters viz., total area available for cultivation and total production cultivated in all the 26 districts. Total area consisted of that area available for cultivation of various crops in the specific district in particular and across all 26 districts. Total production referred to the output of various types of crops produced to together in specific district in particular and across all 26 districts.

$H_0 1$: *There is no significant difference between the total cultivable areas of fruit, vegetable, spices and flower production across all 26 districts. $H_1 1$: There is a significant difference between the total cultivable areas of fruit, vegetable, spices and flower production across all 26 districts.*

From Table 12 of exhibit, it could be inferred that H_0 is rejected for Sig. p-values less than or equal to 0.05, which implies that there is a significant difference between the total cultivable areas of fruit, vegetable, spices and flower production across all 26 districts. For the Sig. p-values greater than 0.05, H_0 is not rejected, which implies that there is no significant difference between the total cultivable areas of fruit, vegetable, spices and flower production across all 26 districts. A significant difference may arise due to two reasons either there is a barren land which is brought into cultivation or there is sale of agricultural land for non-agricultural purpose, which means there will be shrinkage in the cultivable area.

$H_0 2$: *There is no significant difference between the total production of fruit, vegetable, spices and flower output across all 26 districts. $H_1 2$: There is a significant difference between the total production of fruit, vegetable, spices and flower output across all 26 districts.*

From Table 13 of Exhibit, it could be inferred that H_0 is rejected for Sig. p-values less than or equal to 0.05, which implies that there is a significant difference between the total production of fruit, vegetable, spices and flower output across all 26 districts. For the Sig. p-values greater than 0.05, H0 is not rejected, which implies that there is no significant difference between the total production of fruit, vegetable, spices and flower output across all 26 districts. A significant difference may arise i.e. increase in output might have risen due to usage of good quality fertilizer and seeds which lead to increase in the yield of the output. The output might have fallen due to improper care of the plant or poor quality seeds and fertilizers.

7.3 Section III

Entrepreneurial Opportunities in Horticulture Sector

All the horticulture crops have a lower shelf life. The biggest problem associated with such crop is the spoilage and rotten state of product after a considerable time. Such agricultural wastage can be curtailed by adopting proper food processing technique. Moreover, the money received by farmers by selling the produce in existing state is meager, when compared to produce sold after value addition. Thus, value addition in the farm produce not only ensures curtailment of agro-wastage, spoilage but also guarantees remunerative prices for farm-gate products. Value addition to raw food material in India is only 7 per cent while it is 23, 45 and 188 per cent in China, Philippines and UK, respectively (National Academy of Agricultural Sciences, 2002). A summary of the various entrepreneurial opportunities which can be ventured through food processing technique is listed in Table 14.

Thus, considering Gujarat, with respect to the trend study of horticultural crops cultivated over the period of seven years, the best entrepreneurial opportunity is described in the table 15.

8. Conclusion

The paper presents the sectoral overview of horticulture in the state along with some entrepreneurial opportunities for farmers. The analysis of secondary data on cultivation of vegetables, fruits, spices and flowers across 26 districts of Gujarat highlighted that there is a significant increase in the production of all the horticulture crops over a period of seven years. In consonance with increase in horticulture production, sustaining the growth rate will be a challenge. It requires various interventions aimed at productivity enhancement, availability of quality planting material of improved high yielding varieties, reducing post harvest losses of perishable commodities, particularly fruits and vegetables and creation of effective supply chain.

The study suggests that value addition for horticultural crops is essential as it reduces post harvest losses, increases the availability of food, benefits the farmers and consumers, better nutrition, generates high employment opportunities, increases export trade and foreign exchange etc. Hence, the paper concludes with the scope of value addition through adoption of food processing technique and thereby some entrepreneurial opportunities for various such crops in the state.

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EXHIBITS

Table 1: Types of Farming and their Characteristics

Arable farming	Ploughing of the land and the growing of crops
Pastoral farming	Rearing animals
Mixed Farming	Raising crops and rearing animals, Arable and Pastoral farming together, Subtypes: Dairy farming, Hill Sheep farming, Horticulture
Subsistence Farming	Farming for own consumption, entire production is largely consumed by the farmers and their family and they do not have any surplus to sell in the market, small and fragmented landholdings, simple and primitive cultivation techniques, absence of use of modern equipments and farm inputs
Commercial Farming	Opposite of subsistence farming, most of the produce is sold in the market for earning money, use of high yielding varieties of seeds.
Extensive Farming	Low inputs and low yields (large areas), Use of use large patch of land for cultivation
Intensive Farming	High inputs and high yields per unit area, availability of land is limited.
Nomadic Farming	Farmers move seasonally with their herds
Sedentary Farming	Farmers remain at the same place
Plantation Farming	A single cash crop is grown for sale.
Organic Farming	Relies on crop rotation, green manure, compost, biological pest control, and mechanical cultivation to maintain soil productivity and control pests, excluding or strictly limiting the use of synthetic fertilizers
Poly house Farming	Cultivating crops under protected conditions. It can provide higher temperature and/or humidity than are available in the environment.

Source: The Young Farmer, (n.d.) Retrieved June 2014 from http://www.theyoungfarmer.com/farm Types.php, Agriculture, (n.d.) Retrieved June 2014 from http://www.ssag.sk/SSAG%20study /GEO/Agriculture, %20 farming %20as%20a%20system,%20types%20of%20farming.pdf,Agriculture in India, (n.d.) Retrieved June 2014 from www.nios.ac.in/media/documents/SecSocSciCour/English/Lesson-12.pdf

Table-2 : Details of Data Collection

Details of	Number	Description	Short Nomenclature
Year	07	2005-06, 2006-07, 2007-08, 2008-09, 2009-10, 2010-11, 2011-12	A, B, C, D, E, F, G
District	26	Ahmedabad, Amreli, Banaskantha, Bharuch, Narmada, Bhavnagar, Dang, Gandhinagar, Jamnagar, Junagadh, Porbandar, Kutch, Kheda, Anand, Mehsana, Patan, Panchmahal, Dahod, Rajkot, Sabarkantha, Surat, Surendranagar, Baroda, Valsad, Navsari and Tapi	Ahd, Amr, Ban, Bha, Nar, Bhav, Dan, Gan, Jam, Jun, Por, Kut, Khe, Ana, Meh, Pat, Pan, Dah, Raj, Sab, Sur, Sure, Bar, Val, Nav and Tap
Fruits	14	Mango, Chiku, Citrus, Ber, Banana, Guava, Pomegranate, Dates, Papaya, Custard, Aonla, Cashew-nut, Coconut and Others	Man, Chi, Cit, Ber, Ban, Gua, Pom, Dat, Pap, Cus, Aon, Cas, Coc, Oth
Vegetables	11	Potato, Onion, Brinjal, Cabbage, Okr, Tomato, Cauliflower, Clusterbean, Cowpea, Cucurbit and Others	Pot, Oni, Bri, Cab, Okr, Tom, Cau, Clu, Cow, Cuc, Oth
Spices	12	Cumin, Fennel, Chilly, Garlic, Coriander, Ginger, Turmeric, Fenugreek, Isabgul, Ajawan, Suva and Others	Cum, Fen, Chi, Gar, Cor, Gin, Tur, Fen, Isa, Aja, Suv, Oth
Flowers	05	Rose, Marigold, Mogra, Lily and Others	Ros, Mar, Mog, Lil, Oth
Total Data Cells		**15,288** (26 districts* 42 Crops*2 Parameters *7 years)	

Source: Author's Compilation

Table 3: A Summary of various schemes of NHB

Source: NHB Schemes. (n.d.). Retrieved December 29, 204 from, http://agri.gujarat.gov.in/nhb-schemes.htm

Table 4 Mean Production of Fruits in all Districts (Production in MTs)

Year	Man	Chi	Cit	Ber	Ban	Gua	Pom	Dat	Pap	Cus	Aon	Cas	Coc	Oth
A	59395	18129	26377	13452	263029	11613	4242	26537	28089	3432	9206	6453	14122	3090
B	64176	19227	28491	14682	264780	11375	5584	26968	34853	3442	9894	4677	14249	3203
C	68899	19176	30019	14030	300737	13109	5960	28381	37615	4502	10890	4206	14631	2521
C	22209	18918	28208	11458	324691	14421	4136	26988	55515	4217	9319	2872	14992	2734
	63462	20104	32436		359082	42401	4797	27442	64069	4610	10054	3195	16425	2936
	67504	21323	34095	12241	378859	13704	6351	24993	74921	4450	10126	3558	19593	3179
	55	22889	34008	11873	385502	13595	6971	25069	81605	4620	9766	25156	20751	5168
Change	20	26	29	-13	47	17	64	-6	191	35	6	-36	47	67
Rank	8	7	6	12	4	9	3						4	2

Sl.	Scheme	Financial Assistance
1	Development of commercial horticulture through production and post harvest management. The NHB schemes are varied and depend upon whether the project is production/ processing/marketing related and range from bee-keeping to Bio technology, horticulture covering a vast spectrum of components (such as herbs, aromatic, medicinal plants, biotechnology tissue culture, bio pesticides, organic foods, pre-cooling units, cool stores, reefer vans, containers, retail outlets, auction platform, Horticulture ancillary units etc)	Back-ended subsidy varies from 20 % of the project cost with a maximum of Rs 25 lacs. In collaboration with NABARD & NCDC
2	Capital investment subsidy for construction/ modernization/ expansion of cold storage and other storages for horticulture produce.	projects up to 5000 MT capacity and not exceeding Rs. 2 crore with 25% promoter's contribution, 50% term loan & 25% capital investment subsidy.
3	Technology development and transfer. This includes introduction of new technologies, expert services from abroad, seminars, study tours etc.	100 %financial assistance up-to Rs. 10 lacs/ project for production related and Rs. 25 lacs to R&D efforts and actual/ limited reimbursement of expenses.
4	Establishment of nutritional gardens in rural areas. Distribution of fruit plant & vegetable seeds in minikits etc	Rs. 250 fee per minikit per family. 100% financial assistance
5	Market Information Service for Horticultural crops. Information of wholesale prices, arrivals, trends.	100% financial assistance
6	Horticulture promotion service. Techno-economic feasibility studies, develop strategies etc.	100% financial assistance for studies through professional consultants.

Source: Computation from Secondary Data

Table 5 Maximum & Minimum Production of Fruits in all Districts (2005-06 to 2011-12) (Production in MTs)

District	A Maxi	A Mini	B Maxi	B Mini	C Maxi	C Mini	D Maxi	D Mini	E Maxi	E Mini	F Maxi	F Mini	G Maxi	G Mini
	Aon	Dat	Ber	Coc	Ber	Dat	Cit	Dat	Dat	Dat	Dat	Dat	Cit	Dat
	7618	51	18365	50	21760	10	9668	5	12980	5	13555	10	13770	8
	Man	Pom	Man	Pom	Man	Cas	Man	Cas	Man	Oth	Man	Pom	Man	Pom
	35520	18	36186		36606		18441		37290	84	40500		43647	62
Ban	Cit	Gua	Cit	Coc	Cit	Coc	Cit	Cas	Cit	Coc	Cit	Cas	Pap	Cas
	15188	70	17500	35	17829	55	18018	2	19000	2	19357	3	21620	3
Bha	Ban	Cas	Ban	Cas	Ban	Cas	Ban	Cas	Ban	Cas	Ban	Cas	Ban	Cas
	701800	6	818940	10	855138	40	882222	60	936288	60	990280	68	1042423	74
Nar	Ban	Oth	Ban	Gua	Ban	Cus	Ban	Cus	Ban	Cus	Ban	Coc	Ban	Cus
	270000	55	278400	50	301350	6	337900	12	362250	13	384000	15	488400	20
Bhav	Gua	Aon	Gua	Oth	Pap	Aon	Pap	Aon	Pap	Pom	Pap	Pom	Ban	Pom
	43856	1976	52061	2185	65580	2302	90,000	2390	96100	3280	85250	2700	93968	2760
Dan	Man	Aon	Man	Aon	Man	Aon	Man	Aon	Man	Aon	Man	Aon	Man	Aon
	6600	35	9200	49	13310	49	8310	70	18000	77	19800	77	22260	77
Gan	Cit	Dat	Cit	Dat	Cit	Dat	Cit	Dat	Cit	Dat	Cit	Dat	Cit	Dat
	21690	5	21678	5	22885	5	23080	5	24192	5	24,360	5	24516	5
Jam	Pap	Aon	Pap	Cas	Pap	Gua	Pap	Cas	Pap	Cas	Pap	Cas	Pap	Cas
	21420	240	26036	2	24012	32	25484	1	27800	2	27385	2	26595	2

District	A Maxi	A Mini	B Maxi	B Mini	C Maxi	C Mini	D Maxi	D Mini	E Maxi	E Mini	F Maxi	F Mini	G Maxi	G Mini
Jun	Man 79149	Oth 504	Man 103545	Oth 1140	Man 112840	Pom 165	Ban 77400	Pom 165	Man 139744	Cas 2	Man 157700	Cas 2	Man 156020	Cas 2
Por	Chi 1404	Aon 20	Pap 6600	Aon 41	Pap 7000	Aon 41	Pap 8200	Aon 41	Pap 8385	Aon 40	Pap 7871	Dat 8	Pap 6900	Dat 10
Kut	Dat 92197	Pom 135	Dat 93597	Pom 450	Dat 98623	Oth 1385	Pap 123000	Cus 16	Pap 167724	Cus 18	Pap 221040	Cus 18	Man 59338	Cus 18
Khe	Cit 24119	Coc 30	Aon 27630	Coc 30	Aon 30440	Coc 42	Ban 35100	Coc 48	Ban 35820	Coc 48	Pap 37754	Coc 48	Pap 41838	Coc 36
Ana	Ban 454750	Pom 102	Ban 526185	Pom 140	Ban 585360	Pom 240	Ban 796500	Pom 312	Ban 860220	Pom 336	Pap 130865	Coc 533	Pap 106863	Pom 348
Meh	Cit 71820	Pom 320	Cit 78866	Cus 50	Cit 78930	Cus 60	Cit 80,190	Cus 60	Cit 83510	Cus 60	Cit 91000	Cus 70	Cit 93393	Cus 70
Pat	Cit 5220	Coc 30	Cit 5852	Coc 40	Cit 5832	Coc 40	Cit 6058	Coc 43	Cit 6,160	Coc 52	Cit 6578	Coc 68	Cit 8344	Coc 70
Pan	Man 10938	Oth 377	Man 11898	Oth 445	Man 12420	Pom 500	Ban 6900	Pom 475	Man 13200	Pom 400	Man 13800	Pom 405	Man 14558	Pom 525
Dah	Man 3713	Chi 51	Man 5213	Ban 75	Man 16350	Ban 75	Aon 12050	Cas, Chi 95	Man 11400	Chi 125	Man 13158	Cas 189	Man 13965	Gua 765
Raj	Man 3036	Coc 24	Man 3050	Coc 24	Pap 5500	Coc 30	Pap 14000	Dat 21	Pap 17600	Dat 21	Pap 9240	Dat 21	Pap 20900	Dat 21
Sab	Pom 27482	Ban 2250	Pom 32218	Gua 260	Pom 33840	Gua 3900	Pap 40000	Oth 426	Pap 53340	Oth 613	Pap 80,600	Oth 682	Pap 89040	Oth 1073
Sur	Ban 572825	Cus 60	Ban 651000	Anola 49	Ban 622200	Aon 42	Ban 631440	Cas 40	Ban 670530	Aon 70	Ban 719040	Cas 75	Man 63200	Oth 362
Sure	Pap 20000	Coc 53	Ber 21795	Coc 30	Ber 23805	Cas 49	Ber 24242	Cas 49	Ber 24481	Coc 52	Ber 26174	Cus 30	Ber 25899	Cus 30
Bar	Ban 365196	Oth 130	Ban 414018	Coc 790	Ban 459702	Coc 800	Ban 516200	Coc 850	Ban 553758	Coc 905	Ban 74259	Coc 925	Ban 583598	Coc 932
Val	Man 196000	Cus 105	Man 203112	Cus 140	Man 219830	Cus 140	Man 48480	Cus 105	Man 150840	Cus 105	Man 154875	Cus 142	Man 168000	Cus 179
Nav	Man 137038	Cus 25	Man 140060	Oth 441	Man 158365	Oth 451	Chi 45520	Cas 132	Man 152480	Cas 240	Man 177837	Cas 403	Man 201600	Gua 22
Tap	NA	NA	NA	NA	Ban 83800	Aon 28	Ban 78400	Aon 28	Ban 77500	Cas 60	Ban 88000	Cas 64	Pap 105400	Aon 64

Source: Computation from Secondary Data

Table 6 Mean Production of Vegetables in all Districts (Production in MTs)

Year	Pot	Oni	Bri	Cab	Okr	Tom	Cau	Clu	Cow	Cuc	Oth
A	155504	170600	75586	26339	26950	52001	23149	-	15427		31188
B	191384	112937	71832	27202	28163	54092	23675	15684	14469	31354	10627
C	186738	179064	73167	30474	27101	54782	26184	13317	13483	30457	8973
D	181103	112766	77501	31120	30155	55274	25692	14452	13291	38898	10313
E	207126	86287	84714	36443	34537	62319	28540	16240	14429	49120	13421
F	221389	121127	91575	42581	43890	72477	29801	20997	18360	56767	72131
G	479107	260367	94116	43134	53130	80925	30016	24445	21475	68677	39521
% Change	208	53	25	64	97	56	30	NA	39	NA	27
Rank	*1*	*5*	*9*	*3*	*2*	*4*	*7*	*NA*	*6*	*NA*	*8*

Source: Computation from Secondary Data

Table 7 Maximum & Minimum Production of Vegetables in all Districts (2005-06 to 2011-12)
(Production in MTs)

District	A Maxi	A Mini	B Maxi	B Mini	C Maxi	C Mini	D Maxi	D Mini	E Maxi	E Mini	F Maxi	F Mini	G Maxi	G Mini
Ahd	Tom 29239	Pot 60	Tom 32481	Cow 410	Cuc 37848	Cow 440	Cuc 33149	Cow 392	Cuc 41520	Cow 554	Oth 109692	Cow 670	Cuc 98600	Clu 14050
Amr	Oni 61200	Cow 2100	Oni 38850	Oth 120	Oni 182300	Oth 1278	Oni 110500	Oth 1944	Oni 82350	Oth 1950	Oni 195000	Cau 4750	Oni 138000	Oth 3784
Ban	Pot 470250	Oni 4158	Pot 613620	Oth 2240	Pot 1002000	Oth 1610	Pot 784000	Oth 2170	Pot 826500	Oth 2734	Pot 923800	Oni 7125	Pot 1260630	Oth 6556
Bha	Bri 14245	Cau 1750	Cuc 22720	Cau 1246	Bri 15939	Cau 210	Cuc 24251	Cau 213	Cuc 25092	Cau 229	Cuc 30531	Cau 290	Cuc 31588	Cau 319
Nar	Oth 10962	Cau 1040	Cuc 14835	Cau 1260	Cuc 17870	Pot 300	Cuc 23334	Pot 200	Cuc 24840	Pot 126	Cuc 28500	Pot 198	Cuc 31815	Cau 2576
Bhav	Oni 1059057	Cow 1545	Oni 499112	Cowpea 2184	Oni 1173900	Oth 2275	Oni 782600	Oth 1748	Oni 444600	Cow 3200	Oni 655600	Cow 3280	Oni 462000	Cow 4240
Dan	Bri 3900	Okr 2100	Bri 4550	Oth 120	Bri 4680	Oth 270	Bri 4650	Oth 198	Cuc 7432	Oth 250	Cuc 8598	Cow 510	Okr 11100	Cow 595
Gan	Pot 99472	Tom 2891	Pot 101220	Tom 2050	Pot 131502	Oth 551	Pot 132060	Oth 766	Pot 145431	Oth 1006	Pot 160819	Clu 2418	Pot 263406	Clu 3136
Jam	Oni 49640	Oth 2000	Oni 43049	Oth 48	Oni 55878	Cow 2296	Oni 50832	Cow 3268	Oni 57603	Cow 3219	Oni 66740	Oth 1264	Oni 119850	Oth 1046
Jun	Oni 194625	Cab 8320	Oni 199625	Oth 2400	Oni 182850	Oth 5030	Bri 116088	Cau 3150	Bri 125391	Cau 3411	Bri 124662	Cau 6708	Oni 294000	Cau 6724
Por	Oni 59640	Cow 575	Oni 70000	Cow 710	Oni 212400	Cau 260	Oni 34400	Cab 80	Oni 36900	Cau 87	Oni 37213	Cau 54	Oni 79600	Cau 87
Kut	Bri 12288	Oni 2000	Tom 14554	Oni 2000	Tom 14906	Oth 2100	Cuc 15096	Cow 60	Cuc 16302	Cow 65	Tom 21574	Cow 325	Oni 83031	Cow 1118
Khe	Pot 147780	Okr 17281	Pot 165000	Oth 8000	Bri 50240	Oni 2800	Pot 97335	Oni 3000	Pot 136260	Oni 3160	Pot 153216	Oni 3240	Pot 84400	Oth 12133
Ana	Pot 166260	Okr 7182	Pot 188940	Clu 3879	Tom 53400	Pot 2178	Pot 145000	Clu 4702	Pot 198000	Clu 4840	Pot 193600	Clu 4400	Pot 131610	Clu 4968
Meh	Tom 73625	Oth 3250	Pot 83600	Oni 3800	Pot 116600	Cow 4880	Pot 101300	Cow 5440	Pot 107948	Cow 6337	Pot 115500	Cow 6497	Pot 149455	Oni 3880
Pat	Oth 21000	Okr 240	Oth 25500	Cucs 450	Oth 26660	Oni 120	Oth 26160	Oni 220	Oth 21615	Oni 276	Oth 68340	Oni 220	Oth 32281	Tom 784
Pan	Oni 11317	Pot 1300	Oni 12540	Oth 440	Oni 14060	Oth 656	Oni 13500	Oth 113	Oni 14220	Oth 187	Oni 15300	Cow 1076	Bri 7150	Oth 950
Dah	Bri 16796	Okr 3872	Bri 20019	Cow 2034	Bri 16290	Pot 500	Cab 18465	Pot 640	Bri 21600	Pot 800	Bri 19250	Pot 738	Oni 26860	Cow 1300
Raj	Oni 322850	Cau 4575	Oth 273219	Oni 1800	Oni 307724	Oth 8512	Cow 232080	Oth 1535	Oni 231208	Oth 5056	Oni 222980	Oth 6760	Oni 325128	Cow 6880
Sab	Cau 305000	Oni 15240	Pot 129704	Oth 240	Pot 159000	Clu 660	Pot 150000	Pot 1400	Pot 189680	Oth 4918	Pot 406335	Oth 7862	Cow 462496	1312
Sur	Bri 21922	10675	Bri 176191	22284	Bri 55684	Oth 5568	Bri 29430	Oni 2943	Bri 184??	Oni 3950	Bri 53??	Oni 14492	Okr 5??	Clu
Sure	Bri 333064	Cau 101505	Bri 360427	Cau 546243	Bri 348593	Pot 288	Bri 137696	Pot 106301	Bri 260180	Pot 8300	Bri 756062	Pot 84300	Bri 507200	5797
Bar	Bri 111600	Oni 8800	Bri 117826	Oth 4500	Bri 126502	Oth 4800	Bri 130055	Oth 4820	Bri 145120	Oth 4960	Bri 163590	Oth 16500	Bri 164500	Oth 12431
Val	Oth 44100	Cau 100	Cuc 47960	Cab 200	Cuc 52910	Cab 170	Cuc 54230	Cab 180	Cuc 56896	Cau 158	Cuc 63473	Cau 170	Cuc 70400	Cau 200
Nav	Bri 48025	Cow 2000	Cuc 70596	Cab 300	Cuc 64328	Clu 50	Cuc 110528	Clu 120	Cuc 112200	Clu 150	Cuc 124890	Cow 508	Cuc 132250	Cau 2090
Tap	NA	NA	NA	NA	Bri 76275	Oni 150	Bri 57192	Oni 366	Bri 58800	Oni 1550	Bri 60800	Pot 250	Okr 80400	Cab 3520

Source: Computation from Secondary Data

(Overlaid second table, partially legible)

Year	Cum/Feb	Chi/Mar	Cor/Apr	Tur/May	Reh/Isa	Aja/Suv	Oth
A							
B							
C							
D							
E							
F	130150 900	93990 3575	114075 450	90356 1182	97887 1200	102959 4385	122271 10121
G							
% Change							
Rank							

Table 8 Mean Production of Spices in all Districts (Production in MTs)

Source: Computation from Secondary Data

Table 9 Maximum & Minimum Production of Spices in all Districts (2005-06 to 2011-12) (Production in MTs)

District	A Maxi	A Mini	B Maxi	B Mini	C Maxi	C Mini	D Maxi	D Mini	E Maxi	E Mini	F Maxi	F Mini	G Maxi	G Mini
Ahd	Cum	Fen	Cum	Fen	Cum	Fen	Cum	Gar	Cum	Gar	Cum	Gar	Cum	Fen
	11298	3	12116	22	8109	30	10581	25	5508	20	6472	22	9044	85
Amr	Gar	Isa	Gar	Isa	Gar	Isa	Gar	Isa	Gar	Suv	Gar	Suv	Gar	Tur
	12995	7	5765	7	23733	8	13775	3	6600	10	20124	3	13460	36
Ban	Fen	Aja	Fen	Aja	Fen	Tur	Fen	Tur	Cum	Tur	Cum	Tur	Cum	Tur
	20160	14	27710	16	58625	16	55250	24	30150	24	34960	24	57812	40
Bha	Chi	Fen	Chi	Cor	Chi	Aja	Chi	Aja	Chi	Aja	Chi	Aja	Chi	Aja
	741	46	1056	10	11533	20	6892	35	7057	39	8063	43	6583	50
Nar	Chi	Cum	Chi	Aja	Chi	Aja	Chi	Aja	Chi	Aja	Chi	Aja, Suv	Chi	Aja
	610	4	710	1	7245	1	9125	2	10640	3	12000	8	13892	10
Bhav	Cum	Suv	Cum	Fen	Chi	Fen	Cum	Fen	Chi	Fen	Chi	Fen	Chi	Aja
	5923	8	4506	9	9787	35	7104	18	9750	20	10400	24	12155	79
Dan	Chi	Tur	Tur	Gar	Chi	Gar	Chi	Gar	Chi	Gar	Chi	Gar	Chi	Gin
	396	200	480	80	1092	100	1082	120	10350	200	11655	210	11670	519
Gan	Chi	Cor	Chi	Cor	Chi	Cor	Chi	Cor	Chi	Cor	Chi	Aja	Chi	Aja
	2666	13	3275	13	8330	13	8393	14	29302	16	31275	11	32681	13
Jam	Cum	Aja	Gar	Chi	Gar	Isa	Gar	Tur	Gar	Suv	Gar	Suv	Gar	Gin
	8885	168	52920	1188	50715	45	56620	21	56874	243	68434	239	62450	4
Jun	Gar	Fen	Gar	Fen	Gar	Fen	Gar	Isa	Gar	Fen	Gar	Fen	Gar	Isa
	62300	401	77190	480	106366	405	57488	295	62067	180	57770	30	70505	90
Por	Cum	Fen	Gar	Fen	Cum	Fen	Cum	Fen	Cum	Fen	Cum	Fen	Cum	Fen
	4475	108	4810	180	13153	502	18000	130	23760	150	20460	431	22428	461
Kut	Cor	Fen	Cor	Fen	Cor	Fen	Cor	Fen	Cor	Fen	Cor	Fen	Cum	Fen
	7061	75	10591	114	10640	137	10104	180	10914	195	11480	469	14040	500
Khe	Fen	Aja	Fen	Cor	Chi	Aja	Chi	Aja	Chi	Aja	Chi	Aja	Chi	Aja
	3614	25	3800	25	4880	10	4880	8	6500	8	7475	1	7625	1
Ana	Chi	Cor	Chi	Cor	Chi	Cor	Chi	Cum	Chi	Cum	Chi	Cum	Chi	Oth
	4470	120	4279	62	15691	78	4830	25	16625	28	16870	26	17500	50
Meh	Fen	Oth	Fen	Oth	Fen	Suv	Fen	Suv	Fen	Suv	Fen	Suv	Fen	Cor
	16668	75	30435	10	31500	240	31875	260	39060	260	43750	364	23232	350
Pat	Cum	Chi	Cum	Aja	Cum	Aja	Cum	Aja	Cum	Aja	Suv	Aja	Cum	Cor
	24038	100	25740	30	17311	56	14500	74	15472	85	25060	72	29190	20
Pan	Gar	Oth	Gar	Aja, Suv	Gin	Cor	Gin	Cor	Gin	Cor	Gin	Cum	Gin	Cor
	4530	5	4560	2	12000	15	13000	16	14200	20	30600	42	32500	87
Dah	Gin	Oth	Gin	Fen	Gin	Fen	Gin	Fen	Gin	Fen	Gin	Fen	Gin	Fen
	15660	103	15000	11	16115	8	15752	10	13200	12	16125	20	17740	215
Raj	Gar	Gin	Gar	Isa	Gar	Isa	Gar	Isa	Gar	Tur	Gar	Fen	Gar	Fen
	56850	10	60630	21	120435	27	85505	9	96040	200	70200	437	94580	420
Sab	Fen	Cor	Fen	Gar	Fen	Aja	Chi	Aja	Chi	Aja	Fen	Aja	Chi	Aja
	11338	63	13200	16	14170	25	6840	24	7388	28	10578	34	21120	12
Sur	Gin	Aja	Gin	Oth	Chi	Aja	Chi	Oth	Chi	Oth	Chi	Oth	Chi	Fen
	5600	90	5920	30	6877	30	6785	8	9088	16	9929	25	13266	62
Sure	Cum	Fen	Cum	Fen	Cum	Fen	Cum	Aja	Cum	Aja	Cum	Aja	Cum	Aja
	19635	19	21344	13	44175	22	83805	18	58050	8	59017	11	65739	20
Bar	Gin	Fen	Gin	Cor	Chi	Cor	Chi	Cor	Chi	Cor	Chi	Cor	Chi	Cor
	7568	197	5368	71	19350	100	21875	63	26357	69	30261	172	30530	185
Val	Tur	Corainder	Chi	Cor	Chi	Cor	Chi	Cor	Chi	Cor	Chi	Cor	Aja	Cor
	780	25	887	24	4294	25	903	25	998	25	1121	28	1680	50
Nav	Tur	Gin	Tur	Oth	Tur	Cor	Tur	Cor	Tur	Cor	Tur	Cor	Tur	Aja
	2887	1125	2100	387	2175	8	2432	21	2464	24	2864	32	13000	21
Tap	NA	NA	NA	NA	Chi	Gar	Chi	Gar	Chi	Suv	Chi	Suv	Chi	Aja
	NA	NA	NA	NA	20317	48	22942	50	18270	20	22470	30	45375	66

Source: Computation from Secondary Data

Table 10 Mean Production of Flowers in all Districts (Production in MTs)

Source: Computation from Secondary Data

Table 11 Maximum & Minimum Production of Flowers in all Districts (2005-06 to 2011-12) (Production in MTs)

District	A Maxi	A Mini	B Maxi	B Mini	C Maxi	C Mini	D Maxi	D Mini	E Maxi	E Mini	F Maxi	F Mini	G Maxi	G Mini
Ahd	Mar	Lil	Mar	Lil	Ros	Oth	Mar	Oth	Mar	Oth	Mar	Oth	Mar	Oth
	2086	130	1896	187	2360	291	2070	292	2085	303	2704	390	2900	425
Amr	Ros	Mar	Mar	Oth	Ros	Lil	Ros	Mog	Ros	Mog	Ros	Oth	Ros	
	32	12	44	28	170	16	210	21	184	24	211	32	223	
Ban	Mar	Lil	Mar	Lil	Mar	Mog	Mar	Lil	Mar	Lil	Mar	Lil	Mar	Lil
	377	4	765	4	900	15	1100	24	1200	16	1480	24	1838	20
Bha	Ros	Mog	Mar	Oth	Oth	Lil	Oth	Mog	Oth	Mog	Oth	Mog	Ros	Mog
	1470	287	1750	500	3348	36	3800	598	4053	640	8190	787	6157	1579
Nar	Mar	Mog	Mar	Oth	Mar	Mog	Mar	Lil	Mar	Lil	Mar	Lil	Mar	Lil
	390	50	366	16	432	40	585	20	840	18	875	23	1028	30
Bhav	Ros	Oth	Ros	Lil	Ros	Mog	Ros	Mog	Ros	Lil	Ros	Lil	Ros	Mog
	632	75	912	2	1840	35	1235	34	1152	6	1216	6	1382	26
Dan	Ros	No	Ros	Mar	Mar	Ros	Mar	Lil	Lil	Oth	Mar	Oth	Mar	Oth
	113	No	161	130	260	160	195	65	476	78	384	8	536	17
Gan	Mar	Lil	Ros	Mog	Mar	Mog	Mar	Mog	Mar	Lil	Mar	Oth	Mar	Mog
	3480	16	3680	18	3888	28	4090	30	4060	31	4293	30	4577	30
Jam	Mar	Lil	Mar	Lil	Mar	Lil	Mar	Lil	Mar	Lil	Mar	Mog	Mar	Mog
	324	2	2440	2	354		465	144	712	334	877	350	1030	3
Jun	Oth	Ros	Ros	Mog	Ros	Mar	Ros	Mar	Ros	Mar	Ros	Lil	Ros	Lil
	124	36	836	80	280		288	152	272		608	70	644	90
Por	Oth	Mar	Oth	Ros	Oth	Ros	Oth	Ros	Oth	Mar	Mar	Ros	Oth	Ros
	77	32	145	76	200	56	256	77	268	86	348	102	290	128
Kut	Ros	Lil	Ros	Lil	Ros	Oth	Ros		Ros		Ros	Oth	Ros	Oth
	336	64	964	64	600		680	189	734		755		830	146
Khe	Mar	Mog	Mar	Mog	Lil	Mog	Ros	Mog	Ros	Mog	Ros	Mog	Mar	Mog
	5173	35	4200	35	3069		3720		3904		4184	21	4260	21
Ana	Ros	Mog	Ros	Mog	Lil	Mog	Ros	Mog	Ros		Mar	Mog	Mar	Mog
	2355	50	3031	75	4740	53	3616	59	4150	65	5665	54	6179	54
Meh	Ros	Oth	Ros	Oth	Ros	Oth	Ros	Oth	Ros	Oth	Mar	Oth	Mar	Oth
	120	28	144	42	200	63	126	63	139	70	178	70	189	93
Pat	Mar	Ros	Mar	Lil	Ros, Mar		Ros	Mar	Ros	Mar	Ros	Mar	Ros	Mog
	59	8	54	2	40		63	24	150	54	140	71	172	16
Pan	Mar	Lil	Mar	Lil	Mar	Lil	Mar	Lil	Mar	Lil	Mar	Lil	Mar	Mog
	115	2	127	12	400	18	560	16	720	40	805	56	1200	30
Dah	Ros	Mog	Ros	Mog	Ros	Mog	Ros	Lil	Ros	Lil	Mar	Lil	Mar	Lil
	460	72	632	18	1600	48	880	23	460	12	870	10	1150	11
Raj	Mar	Lil	Mar	Lil	Mar	Lil	Mar	Oth	Mar	Oth	Mar	Oth	Mar	Oth
	288	4	312	6	420	40	456	40	1728	120	2064	176	2280	203
Sab	Mar	Ros	Mar	Ros	Mar	Ros	Mar	Oth	Mar	Oth	Mar	Oth	Mar	Oth
	52	8	210	8	240	50	330	4	356	10	455	21	476	54
Sur	Ros	Oth	Mar	Lil	Mar	Oth	Mar	Lil	Ros	Lil	Oth	Lil	Mar	Lil
	2106	1986	2244	140	1650	92	2094	405	2958	129	4050	150	5027	264
Sure	No	No	Mar	No	Ros, Oth		Mar	Ros	Mar	Ros	Mar	Ros	Mar	Ros
	No	No	12	No	16		16	13	32	25	40	35	128	48
Bar	Mar	Lil	Mar	Lil	Mar	Mog	Mar	Lil	Mar	Lil	Mar	Lil	Mar	Lil
	2718	150	4610	240	5450	700	5750	230	5830	288	6121	312	6410	315
Val	Ros	Oth	Ros	Oth	Ros	Oth	Mar	Oth	Mar	Oth	Lil	Oth	Lil	Oth
	604	14	1226	40	2328	48	2240	48	2800	60	10126	103	10045	250
Nav	Lil	Ros	Lil	Oth	Lil	Oth	Lil	Oth	Lil	Oth	Lil	Oth	Lil	Mog
	3000	375	3250	80	8040	100	8184	140	9768	162	11270	233	12152	20
Tap	NA	NA	NA	NA	Mar	Lil	Mar	Lil	Mar	Mog	Mar	Mog	Mar	Mog
	NA	NA	NA	NA	858	280	896	378	1232	12	1792	16	3105	20

Source: Computation from Secondary Data

Table 12 Test Statistic for ANOVA (Area)

Fruits						
Year		Sum of Squares	df	Mean Square	F	Sig.
2005-06	Between Groups	1300	24	54.17	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1300	24			
2006-07	Between Groups	1288	23	55.98	4.48	0.36
	Within Groups	13	1	12.50		
	Total	1300	24			
2007-08	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2008-09	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2009-10	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2010-11	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2011-12	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
Vegetables, Spices						
Year		Sum of Squares	df	Mean Square	F	Sig.
2005-06	Between Groups	1300	24	54.17	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1300	24			
2006-07	Between Groups	1300	24	54.17	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1300	24			
2007-08	Between Groups	1488.462	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488.462	25			
2008-09	Between Groups	1300	24	54.17	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1300	24			
2009-10	Between Groups	1488.462	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488.462	25			
2010-11	Between Groups	1488.462	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488.462	25			
2011-12	Between Groups	1488.462	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488.462	25			

Source: SPSS Output

Table 13 Test Statistic for ANOVA (Output)

Flowers

Year		Sum of Squares	df	Mean Square	F	Sig.
2005-06	Between Groups	1314	23	57.13	0.66	0.76
	Within Groups	175	2	87.25		
	Total	1488	25			
2006-07	Between Groups	1456	24	60.69	1.90	0.53
	Within Groups	32	1	32.00		
	Total	1488	25			
2007-08	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2008-09	Between Groups	1404	24	58.50	0.69	0.76
	Within Groups	85	1	84.50		
	Total	1488	25			
2009-10	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2010-1	Between Groups	1410	23	61.30	1.56	0.46
	Within Groups	79	2	39.25		
	Total	1488	25			
2011-12	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			

Fruits

Year		Sum of Squares	df	Mean Square	F	Sig.
2005-06	Between Groups	1300	24	54.17	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1300	24			
2006-07	Between Groups	1300	24	54.17	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1300	24			
2007-08	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2008-09	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2009-10	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2010-11	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2011-12	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			

Vegetables, Spices						
Year		Sum of Squares	df	Mean Square	F	Sig.
2005-06	Between Groups	1300	24	54.17	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1300	24			
2006-07	Between Groups	1300	24	54.17	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1300	24			
2007-08	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2008-09	Between Groups	1300	24	54.17	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1300	24			
2009-10	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2010-11	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2011-12	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
Flowers						
Year		Sum of Squares	df	Mean Square	F	Sig.
2005-06	Between Groups	1314	23	57.13	0.66	0.76
	Within Groups	175	2	87.25		
	Total	1488	25			
2006-07	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2007-08	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2008-09	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2009-10	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2010-11	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			
2011-12	Between Groups	1488	25	59.54	0.00	0.00
	Within Groups	0	0	0.00		
	Total	1488	25			

Source: SPSS Output

Table 14: Entrepreneurial Opportunities in Horticulture Products Processed Through Food Processing

Item	Value Added-Products and By-Products
Fruits	
Mango	Fruit leather (fruit roll, papad), pulp, pudding, beverages (nectar), mango slice, canned slices, jam, chutney, puree, juice, particulates (additives in dairies and bakery), pickles, frozen mango, dried mango product, jelly, syrup, canned mango, powder, murabba, aam papri, milkshake, toffee, amchur, chutney, squash, ready-to-serve drink, starch from mango kernel, mango concentrate, dehydrated mango, alcoholic beverage.
Chiku	Blend mashed in bread, muffins, pancake, sweet sauce, jam, milkshake, pulp, powder, juice, squash, syrup, toffee, candy, dried fruit scrap, ice-cream
Citrus	It includes lemon, lime, orange and grapes. Juice, cooking ingredient, carbonated beverages, canned fruit, frozen fruit, lemon puree, lemon juice concentrate, lemon pickle, orange juice concentrate, orange puree, orange wine, cold pressed lemon oil, cold pressed orange oil, dried lemon peel, dried orange peel, grapes wine, raisin, grape jam, vinegar, marmalade, cordial, peel waste as cattle food.
Ber	Pickle, dehydrated, fermented products of ber, candy, juice, pulp, preserve, canned ber, jam.
Banana	Chips, juice, milkshake, powder, baby food, biscuits, cake, flavor, puree, jelly, sweet coat banana, flour, concentrate, pulp, wine, beer, wafers (chips), pickles from flower, powder, juice, candy from centre core stem, sauce, drink, vinegar, root juice, canned banana, dried banana, brandy, chutney, jam, toffee, banana cake, banana fiber products like saree, cloth etc.
Guava	Pectin, jam, jelly, pickle, powder, puree, peru khand, beverages, ethanol, cheese, toffee, nectar, canned guava, squash, vinegar, juice, pulp, production, wine, paste.
Pomegranate	Juice, jelly, syrup, squash, nectar, anar rub, anar crush, dried pomegranate (anar dana), powder, wine.
Dates	Dried dates, sweets, dates sugar, dates paste, syrup, vinegar, cull dates, terminal buds as tasty additions to vegetable salads, products from date leaves like mats, screens, baskets, crates and fans.
Papaya	Papain from papaya latex, jam, marmalade, tutty-fruity (candy), pickle, wafers (papad), chocolate, canned papaya, fridge dried papaya, candy, nectar, sauce, jelly slices.
Custard	Powder, pulp.
Aonla	Powder, squash, jam, in ayurvedic medicine, aonla candy, juice, amla supari, jelly, murabba, chutney, pickle, dehydrated aonla.
Cashew-Nut	Roasted cashew nut, salted cashew nut.
Coconut	Coconut oil (cooking oil, body oil, hair oil and soap), desiccated coconut (dry coconut, sweetened coconut, toasted coconut, creamed coconut), dried coconut (copra), kernel (chips, cream, milk powder, cheese, yoghurt), coconut water into vinegar, coconut sugar, coconut leaflets (toothpicks, brooms).
Vegetables	
Potato	In fast food, staple food, french fries, chips, flakes, flour, starch, dehydrated potato products like slices, shreds, papads, extruded potato products, liquid glucose, frozen potatoes.
Onion	Powder, paste, staple food, dehydrated onion, onion salt, onion juice, natural dye, onion pickle.
Brinjal	Staple food, canned, pickle, frozen.
Cabbage	Staple food, vegetable soup mix, leaf powders, frozen.
Okra	Staple food.
Tomato	Paste, juice, puree, dried flakes, sauce, dehydrated, frozen.
Cauliflower	Staple food, dehydrated, frozen.
Cluster Bean	Staple food, cattle food, green manure, guar gum.
Cow Pea	Staple food, dehydrated, frozen.
Cucurbit	Staple food, salad, feed for cosmetics.
Spices & Flowers	
All Spices	As main ingredient in cooking food. Dehydrated spices are converted in powder form and packaged as ready to use masalas in preparation of cuisines. Purees and paste are also made of coriander and ginger.
All Flowers	Garlands, bouquets, as decorative items for home and temples. Extracted nectar from flowers like rose, mogra, lily, and marigold is used as cooking flavours (essence). It is also used for fragrance in soap, cosmetics and perfumes.

Source: Authors' Compilation

Table 15:
Snapshot on Entrepreneurial Opportunity based on Horticulture Trend in Gujarat

Crop	Top Five Crops for Entrepreneurial Venture
Fruits	Papaya, Others, Pomegranate, Banana & Coconut
Vegetables	Potato, Okra, Cabbage, Tomato & Onion
Spices	Suva, Ajawan, Chilly, Garlic & Cumin
Flowers	Lily, Mogra, Marigold, Rose & Others

Source: Secondary Data

Job Satisfaction as a Predictor of Organisational Citizenship Behaviour

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Abstract

Organisational citizenship behaviour refers to individual behaviour that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization. The present study was aimed at studying the relationship between job satisfaction and organisational citizenship behaviour among the employees of a shipyard. A convenience sample consisting of forty three employees working in a shipyard participated in the study. By administering questionnaires organisational citizenship behaviour and job satisfaction among the employees were assessed. The collected data were analysed with various statistical tools. Results indicated that there was a significant difference in organisational citizenship behaviour among the different age groups; among the male and female respondents; among different experience groups and income groups. There was a significant correlation between organisational citizenship behaviour and job satisfaction.

Keywords: Civic virtue, Job satisfaction, Organisational citizenship behaviour, Organisational compliance.

1. Introduction

Dennis Organ and his colleagues (Bateman & Organ, 1983) first coined the term "Organisational Citizenship Behaviour". Organ (1988) defined organisational citizenship behaviour as "individual behaviour that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organisation. Organisational citizenship behaviour includes seven types of behaviour (Podsakoff et al, 2000). These include (1) Helping Behaviour, (2) Sportsmanship, (3) Organisational Loyalty, (4) Organisational Compliance, (5) Individual Initiative, (6) Civic Virtue, and (7) Self Development.

Helping behaviour involves voluntarily helping others with, or preventing the occurrence of work related problems. Organ (1990) has defined sportsmanship as "a willingness to tolerate the inevitable inconveniences and impositions of work without complaining." Organisational loyalty entails promoting the organisation to outsiders, protecting and defending it against external threats, and remaining committed to it even under adverse conditions. Organisational compliance appears to capture a person's internalization and acceptance of the organisation's rules, regulations, and procedures, which results in a scrupulous adherence to them, even when no one observes or monitors compliance.

Individual initiative includes voluntary acts of creativity and innovation designed to improve one's task or the organisation's performance, persisting with extra enthusiasm and effort to accomplish one's job, volunteering to take on extra responsibilities, and encouraging others

in the organisation to do the same. All of these behaviours share the idea that the employee is going "above and beyond" the call of duty. Civic virtue represents a macro-level interest in, or commitment to, the organisation as a whole. This is shown by a willingness to participate actively in its governance (e.g., attend meetings, engage in policy debates, express one's opinion about what strategy the organisation ought to follow, etc.); to monitor its environment for threats and opportunities (e.g., keep up with changes in the industry that might affect the organisation); and to look out for its best interests (e.g., reporting fire hazards or suspicious activities, locking doors, etc.), even at great personal cost. Self-development includes voluntary behaviours employees engage in to improve their knowledge, skills, and abilities.

According to Armstrong (2003), organisational citizenship behaviour (OCB) that helps organisations to be more successful is most likely to happen when employees are motivated, feel committed to when their jobs give them high levels of satisfaction. Job satisfaction is defined as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experience" (Locke, 1976). The relationship between job satisfaction and organisational citizenship behaviour has received a great deal of attention from many researchers (Koys, 2001; Podsakoff, MacKenzie, & Hui, 1993). According to Foote and Li-Ping Tang (2008) the reciprocal relationship between job satisfaction and OCB makes it unlikely that researchers will be able to conclusively determine the direction of causality between job satisfaction and OCB in the near future. Directional causality remains uncertain, but ample

evidence indicates that such a relationship does exist, and it can be concluded that job satisfaction is likely to be highest in organisations where OCB is prevalent (Murphy *et al.,* 2002).

2. Review of Literature

Samanvitha Swaminathan and David Jawahar (2013) conducted a study to determine and establish a relationship between job satisfaction and organizational citizenship behaviour among faculty in higher education institutions. In this study they have employed the Wong's Job Satisfaction and Organ's Organizational Citizenship Behaviour inventories to quantify the JS and OCB levels respectively. Samples from 252 faculty members in Tamil Nadu, were used to obtain the empirical base for the study. Correlation and multiple regression analyses were used to interpret the data. Results demonstrated that there is a positive relationship between job satisfaction and factors that constitute the OCB.

Ung Hee Lee et al (2013) investigated the effects of procedural justice, transformational leadership, and complexity which are directed at the organisation as a whole on OCB. Also investigated was the relationship between OCB and job satisfaction. From a sample of 1,100 employees from 30 companies in the Korea National Industrial Complex, they tested the hypothesized model using structural equation modeling. The findings showed that procedural justice, transformational leadership, and complexity had a positive effect on employees' OCB and that OCB is also positively related to job satisfaction.

Hojops Odoch and Sudi Nangoli (2013) examined the role of Organizational citizenship behaviour towards job satisfaction. A sample was taken from Uganda Colleges of Commerce including both administrative and academic staff. The results showed that organizational citizenship behaviour influences job satisfaction. This study posits that employees of Uganda Colleges of Commerce should be supported to develop their competencies. This should be done by sponsoring staff, especially the academic staff to further their studies. This will help address the issue of inadequate skills. Further, the management of UCCs should implement programmes aimed at improving organizational citizenship. For example using appropriate reward systems and salaries.

Hossein Jenaabadi et al (2013) investigated the gender differences in job satisfaction, organisational commitment and organisational citizenship behaviour among a sample which included 200 male and 200 female teachers of elementary schools in Zahedan. Data was collected by means of questionnaires and was analysed through Factorial Analysis of Variance, Pearson Fisher Correlation, Structural Equations Modeling, and Multiple Regression. The results showed that there was a significant correlation among intrinsic job satisfaction, organisational commitment and organisational citizenship behavior.

3. Objective of The Study

The present study was aimed at studying the relationship between job satisfaction and organisational citizenship behaviour among the employees of a shipyard.

4. Research Methodology

For the purpose of the study a survey design was used. This design is suitable to study the relationships between different variables. A convenience sample consisting of forty three employees working in a shipyard participated in the study. Structured Questionnaires were used to gather primary data. By administering questionnaires organisational citizenship behaviour and job satisfaction among the employees were assessed. The collected data were analysed with Mean, Standard Deviation, Correlation, regression and ANOVA tests.

4.1 Tools used:

4.1.1 Organizational Citizenship Behaviour Scale developed by Podsakoff et al (1990) was used as a check list. The check list contained 24 items. Respondents checked the behaviors they indulge in. The OCB score was arrived at by counting the number of statements checked by the respondent.

4.1.2 Minnesota Satisfaction Questionnaire (MSQ) Short Form was used to assess the level of job satisfaction among the employees. Responses were scored as follows: Very Dissatisfied = 1; Dissatisfied = 2; Neither Dissatisfied Nor Satisfied = 3; Satisfied = 4; Very Satisfied = 5.

4.2 Results and Discussion

This section presents the analysis of the data collected from the respondents.

Table 1 Demographic characteristics of the Sample

Demographic factors	Classification	Number of Respondents	Percent
Age (in years)	Below 30	29	67.44
	30 and Above	14	32.56
Gender	Male	12	27.90
	Female	31	72.10
Experience (in years)	Below 5	17	39.53
	5 - 10	15	34.88
	Above 10	11	25.58
Income (in rupees)	Below 15000	23	53.49
	15000-20000	10	23.25
	Above 20000	10	23.25

Among the 43 respondents, 29 (67.4%) belong to below 30 years age group and 14 (32.5%) belong to 30 and above age group; 31 (72.1%) are female; 17 (39.5%) belong to below 5 years experience group; and 23 (53.49 %) belong to below 15000 income group.

Table 2 Mean and Standard Deviation of research variables by age groups

Age (in years)		OCB	Satisfaction
Below 30	Mean	19.69	76.86
	N	29	29
	Std. Deviation	3.141	8.429
30 & Above	Mean	22.93	73.86
	N	14	14
	Std. Deviation	3.605	7.199
Total	Mean	20.74	75.88
	N	43	43
	Std. Deviation	3.600	8.089

A high level of organisational citizenship behaviour (Mean=22.93) was seen among the age group 30 & above and a high level of job satisfaction (Mean = 76.86) was seen among the below 30 age group.

Table 3 Mean and Standard Deviation of research variables by gender

A high level of organisational citizenship behavior (Mean=22.33) and a high level of job satisfaction (Mean = 76.58) was seen among the male respondents.

Table 4 Mean and Standard Deviation of research variables by experience groups.

A high level of organisational citizenship behaviour (Mean=23.73) was seen among the above 10 years experience group and a high level of job satisfaction (Mean = 77.87) was observed among the 5-10 years experience group.

Table 5   Mean and Standard Deviation of research variables by income groups

A high level of organisational citizenship behaviour (Mean=23.50) and a high level of job satisfaction (Mean = 78.20) was seen among the above 20000 income group.

Table 6 Results of ANOVA test of Research variables and Age

Variable		Sum of Squares	df	Mean Square	F	Sig.
OCB	Between Groups	99.051	1	99.051	9.123	.004
	Within Groups	445.135	41	10.857		
	Total	544.186	42			
SATISFACTION	Between Groups	85.256	1	85.256	1.313	.259
	Within Groups	2663.163	41	64.955		
	Total	2748.419	42			

spondents

Variable		Sum of Squares	df	Mean Square	F	Sig.
OCB	Between Groups	42.036	1	62.036	5.432	.041
	Within Groups	502.151	41	12.248		
	Total	544.186	42			
SATISFACTION	Between Groups	8.147	1	8.147	.122	.729
	Within Groups	2740.272	41	66.836		
	Total	2748.419	42			

There was a significant difference in organisational citizenship behaviour (F=5.432 & p<.05) among the male and female respondents.

Table 8 Results of ANOVA test of Research variables and Experience

Variable		Sum of Squares	df	Mean Square	F	Sig.
OCB	Between Groups	132.836	2	66.418	6.459	.004
	Within Groups	411.350	40	10.284		
	Total	544.186	42			
SATISFACTION	Between Groups	150.685	2	75.343	1.160	.324
	Within Groups	2597.733	40	64.943		
	Total	2748.419	42			

There was a significant difference in organisational citizenship behaviour (F=6.459 & p<.01) among the respondents of various experience groups.

Table 9 Results of ANOVA test of Research variables and Income

Variable		Sum of Squares	df	Mean Square	F	Sig.
OCB	Between Groups	116.034	2	58.017	5.420	.008
	Within Groups	428.152	40	10.704		
	Total	544.186	42			
SATISFACTION	Between Groups	120.719	2	60.359	.919	.407
	Within Groups	2627.700	40	65.692		
	Total	2748.419	42			

There was a significant difference in organisational citizenship behaviour (F=5.42 & p<.01) among the respondents of various income groups.

Table 10 Correlation among research variables

Variable		Job satisfaction	OCB
Job satisfaction	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	43	
OCB	Pearson Correlation	.412[**]	1
	Sig. (2-tailed)	.004	
	N	43	43

There was a significant correlation (r=0.412 & p<.01) between organisational citizenship behaviour and job satisfaction. This finding replicates the findings of the studies conducted by Samanvitha Swaminathan and David Jawahar (2013) and also Ung Hee Lee et al (2013).

Table 13 Regression analysis with organisational citizenship behaviour as dependent variable

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.412[a]	.170	.151	5.407

a. Predictors: (Constant), job satisfaction

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	262.579	1	262.579	8.981	.004[a]
	Residual	1286.399	42	29.236		
	Total	1548.978	43			

b. Dependent Variable: OCB

Regression analysis was conducted with organisational citizenship behaviour as the dependent variable. The F value was 8.981 (p <.01) and significant. The R square was .170. Hence, it was concluded that 17 per cent of the variation in Organisational citizenship behaviour was explained by job satisfaction.

5. Conclusion

Individual behaviour that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organisation is called organisational citizenship behaviour. The present study was aimed at studying the relationship between job satisfaction and organisational citizenship behaviour among the employees of a shipyard. A convenience sample consisting of forty three employees working in a shipyard participated in the study. Structured Questionnaires were used to gather primary data. By administering questionnaires organisational citizenship behaviour and job satisfaction among the employees were assessed. The collected data

Coefficients

a. Dependent Variable: OCB

high level of job satisfaction was seen among the male respondents. A high level of organisational citizenship behaviour and a high level of job satisfaction was seen among the above 20000 income group. There was a significant difference in organisational citizenship behaviour among the different age groups; among the male and female respondents; among different experience groups; and income groups. There was a significant correlation between organisational citizenship behaviour and job satisfaction. It was found that 17 per cent of the variation in Organisational citizenship behaviour was explained by job satisfaction.

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Job Satisfaction of Employees: A Study on State Bank of India, Bhubaneswar

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Abstract

The issue of job satisfaction is widely discussed in the literature on organizational behavior. There is a lot of work on the issue of job satisfaction which reveals that it reduces the rate of absenteeism and turnover. A large number of academicians and researchers agreed on several important determinants of job satisfaction like team work, environment, job autonomy, behavior of leadership, organizational commitment and nature of work. Better human resource management (HRM) practices also play a central role in enhancement of productivity of an organization (Bloom and Van Reenen, 2007). Petrescu and Simmons (2008) found that HRM practices increase satisfaction with pay and their overall job satisfaction. The Banking Sector is considered to be the lifeline of any economic activity as the contribution of this industry to the economic growth is direct, considerable and commendable. It is essential to study the job satisfaction of employees in banking sector.

This spaper presents the analysis of employee's job satisfaction in State Bank of India, Bhubaneswar, Odisha. A sample of 250 employees (151 Officers and 99 Clerks) from different branches of Bhubaneswar were surveyed about their job satisfaction. The findings of this research resulted that old age group are more satisfied than young and middle age group. It is concluded that employees are not satisfied with the factor like salary and pay associated with promotion. The study may serve as a valuable contribution to State Bank of India, Bhubaneswar and may also be useful to many practitioners in industry and companies.

Keywords: Job Satisfaction, Contribution, Nature of work.

1. Introduction

In the present era of globalization, the varied and changing demand of consumers are putting consistent pressure on the employers to satisfy their needs and to be competitive in the business. Furthermore, environmental pressures, rising health costs and various needs of the workforce also pose a challenge for the management. This could be overcome by creating a work environment that maintains employee job satisfaction as well as motivates people towards exceptional performance at the workplace by achieving work-life balance. This paper explains the importance of employee job satisfaction and the possible ways to enhance their performance on a sustainable basis in the organization.

The ascending performance of employee is certainly an outcome of his satisfactory job experience in the organization which can be seen from his contended work life. This is known as job satisfaction. It varies from job-to-job and person-to-person. Truly speaking, job satisfaction depends upon the nature of job, assessment of the employee by our own colleagues at the workplace, attitude and behavior of the said employee in relation to the assigned job. The salesperson derives job satisfaction from nature of his job and work environment which he finds comfortable and rewarding.

Job Satisfaction has attracted the critical attention of researchers for variety of reasons:

- **Impacts mental health:** It has some relation with the mental health of the people. Job satisfaction and life satisfaction are inextricably bound. The spillover effects of many unresolved personality problem, family-related issues and other maladjustments in social life could often be felt on the job. It is important for the psychological adjustment and happy living of a person.

- **Influences physical well-being:** It has some degree of positive correlation with physical health of individuals. People, who like their work, are likely to live longer. Chronic dissatisfaction with work creates stress which in turn, takes its toll on the physical as well as mental health of an individual.

- **Spreads goodwill about the Company:** People who feel positive about their work life are likely to voice favorable opinions about the company to the general public. In the long run, this helps the company to gain a favourable image and attract talent without any difficulty.

- **Allows a person live with the organization:** A happy and satisfied individual can find it easy to live with the company for a long time.

- **Reduces absenteeism and turnover:** A number of research studies indicate a negative relationship between satisfaction and absenteeism. A satisfied employee has a positive attitude towards his work and will try to avoid being absent from work. On the other hand, there is a strong negative correlation between job satisfaction and turnover (Hom and Griffeth).

2. Literature Review

Job satisfaction is a very wide concept. It includes various factors associated with satisfaction of employees. Satisfaction varies from employee to employee. Chahal, Chahal and Chowdhary, (2013) stated that overall satisfaction of bank employees is associated with different factors of job satisfaction which includes nature of job, working environment, salary and incentives linked job, promotional methods, performance appraisal, relationship with other employees and management, and grievance handling etc., While concluding, it could be said that with the change of satisfaction determinants, level of job satisfaction also varies. This study mainly investigated the relation between of job satisfaction with employee's performance and organizational commitment.

The study conducted by Saleem, Majeed, Aziz and Usman (2013) is to identify the determinants of job satisfaction and examine their impact on employees of the banking industry at Bahawalpur district. The results conclude that all the variables organizational policy and strategy, nature of work, communication, job stress, employee personality and recruitment and selection procedures have significant association with employees job satisfaction.

Vij, Suri and Singh (2012) found that there was a significant and positive association between job satisfaction of employees and the organizational culture in both public and private sector banks. Age and length of service were found to have significant relationship with the job satisfaction of employees in public sector banks only. Relationship orientation, task orientation and interpersonal conflict emerged out to be significant determinants of job satisfaction of employees in public and private sector banks. In public sector banks, employees also showed higher satisfaction from their job with higher receptiveness to change, cooperation among peers, team orientation, organizational goal

identity and union management cooperation. In private sector banks it was interpersonal trust that could probably raise the satisfaction from job of employees. The performance of a bank mostly depends upon the level of its customer satisfaction which in turn, results in job satisfaction of officers. So the study conducted by Ahmed and Uddin (2012) revealed that authority should concentrate to build a set of satisfied employees. It must be admitted and appreciated because total success of the bank depends on the employees' performance, efficiency, honesty, diligence and integrity. So special care should be taken to increase and maintain their level of job satisfaction and thereby assist them to increase their efficiency and productivity since they are playing a vital role in the economic development of the country.

Sehgal (2012) explored there is an association of socio-personal factors with job satisfaction. Age and income were found significantly and positively correlated with job satisfaction of employee of both the public and private sector banks. Male employees in both banks are highly satisfied with their job as compared to female employees. The more experienced employees are highly satisfied with their job, as compared to those having less experience or fresher in both the banks. The employees with more or higher educational qualification are very much satisfied with their jobs as their position in the bank are according to their qualification and expectations. But the employees with less educational qualification were dissatisfied with their jobs because of fewer benefits provided to them. This condition is related to both the banks.

Jain and Sharma (2012) indicated that layoff threats, quick turnover, less welfare schemes, and less scope for vertical growth increase job dissatisfaction. On the other hand, secure job environment, welfare policies, and job stability increase the degree of job satisfaction. Efficient human resource management and maintaining higher job satisfaction level in banks determine not only the performance of the bank but also affect the growth and performance of the entire economy. So, for the success of banking, it is very important to manage human resource effectively and to find whether its employees are satisfied or not. Only if they are satisfied, they will work with commitment and project a positive image of the organization.

Nimalathasan (2012) attempted to understand and explain the job satisfaction, which influenced by utilitarian reasons (e.g. to increase productivity and organizational commitment, lower absenteeism and turnover and ultimately increase organizational effectiveness) as well as humanitarian interests (i.e. the notion that employees deserve to be treated with respect and have their psychological and physical well-being maximized). The satisfied workers also tend to engage in Organizational Citizenship Behaviour (OCB) i.e. altruistic behaviours that exceed the formal requirements of a job. Dissatisfied workers show an increased propensity for counterproductive behaviours, including withdrawal, burnout, and workplace aggression. The study has identified eight factors based on factor loadings named as 'better working environment'; officer's view'; 'worked efficiently'; 'present work'; 'improving interpersonal

relationship'; 'bank treatments'; 'colleagues' and 'challenging work'. However only 'colleagues' factor is significantly correlate with overall job satisfaction of bank executives.

With the change of satisfaction determinants, level of job satisfaction also varies. Kamal and Sengupta (2008) observed that as a person ages, his job satisfaction shows an increasing trend. With age, spiritualism of the person increases, but his alternatives for change decreases. Younger employees have more energy, more expectations and more options, and hence have lesser satisfaction with the job.

3. Objectives

- To know the impact of different variables of job satisfaction. In this study the variables which have been taken included are: age, salary and experience.

- To suggest measures that would go a long way in resolving various problems to ensure smooth functioning, growth and development of SBI in the state of Orissa (city of Bhubaneswar) in particular and the country in general.

4. Research Methodology

This research has been pursued with the help of primary data. The total number of respondents (sample) taken is N=250. The dependent measures were JSS, comprises of 9 sub-scales such as Nature of work, Pay, Supervision, Contingent rewards, Promotion, Co-worker, Operating Policies, Benefits and Communication.

4.1 Nature and Sources of the Data

The study is an empirical study and the data have been collected from mainly primary sources. The secondary data has been extracted and compiled to make the study more relevant. The primary data have been collected from 250 bank employees through a well-structured questionnaire. And some open-ended questions were framed for the purpose of the study to get pertinent information from the respondents.

4.2 Selection of Sample

Sample for the study is drawn from 1 local Head office, 1service branch and 1 staff training centre of SBI, in Bhubaneswar. A stratified random sampling technique has been adopted to select 250 bank employees in Bhubaneswar city.

4.3 Techniques Used for Data Analysis

The techniques have been applied for the study are Descriptive statistics, Correlation and Regression analysis. In descriptive statistics the different techniques which have been applied are mean, standard deviation etc

5. Data Analysis and Interpretation

This paper is based on the empirical survey to measure the level of satisfaction. The focus is on the employees of SBI at Bhubaneswar. The total number of respondents (sample) taken is N=250, which includes 151officers and 99 clerical staff. The data collection was conducted by the use of a questionnaire named as Job Satisfaction Survey (JSS) developed by P.E. Spector. It is a multidimensional instrument include nine subheading such are Pay, Promotion, Supervision, Fringe Benefits, Contingent Rewards (performance based rewards), Operating Procedures (required rules and procedures), Coworkers, Nature of Work, and Communication.

Table-1: Job Satisfaction Of Officers And Clerks At Different Age Categories

| Sl. No | Variable | Age Group | | | | | |
| | | Young | | Middle | | Old | |
		Mean	SD	Mean	SD	Mean	SD
1	Nature of work	3.8267	0.59592	4.1867	0.58478	4.1512	0.50404
2	Pay	3.0583	0.69071	3.0357	0.96108	3.1221	0.97975
3	Co-worker	4.0583	0.39764	4.3238	0.54673	4.3198	0.43665
4	Promotion	3.2000	0.94322	3.3833	0.98749	3.2180	0.91539
5	Rewards	3.3583	0.51563	3.8119	0.90528	3.8140	0.65886
6	Operating policies	3.5917	0.41254	3.6786	0.53122	3.5901	0.59274
7	Benefit	3.4533	0.61908	3.4952	0.86041	3.4977	0.64843
8	Supervision	3.2000	0.91303	3.6500	0.87071	3.7297	0.57037
9	Communication	3.0750	0.69527	3.6381	0.71742	3.6541	0.52744
	Total	33.1657	5.03307	32.8924	3.90744	33.0006	4.38013

Analysis of table reveals that by taking into account both officers and clerical group, out of the nine dimensions, co-worker and nature of work contributes to highest job satisfaction for young age group. The mean score of those variables were 4.0583 and 3.8267 respectively and the Standard deviation the same were 0.39764 and 0.59592.

For middle age group, co-worker, nature of work and rewards are the three dimensions that contribute to highest job satisfaction. The mean score were 4.3238, 4.1867 and 3.8119 respectively.

Similarly, for old age group, co-worker, nature of work and rewards are the three dimensions as the mean score

were 4.3198, 4.1512 and 3.8140 respectively which contribute to highest job satisfaction.

It is also seen that young and old age group employees are comparatively more satisfied than the middle age group.

Table-2: Job Satisfaction of Officers and Clerks Having Different Years of Experience

| Sl. no | Variable | Experience (in years) | | | | | | | | | | | | | |
| | | <5 Years | | 5-10 Years | | 10-15 Years | | 15-20 Years | | 20-25 Years | | >25 Years | | Total | |
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1	Nature of Work	3.9689	0.62078	4.2500	0.71880	4.0267	0.67132	4.1765	0.46758	4.1583	0.62964	4.1982	0.49396	4.1392	0.5441
2	Pay	3.1000	0.82984	3.3125	1.62500	3.1000	0.99013	3.0245	0.82652	3.2083	0.93445	3.1441	0.93149	3.118	0.90185
3	Co-worker	4.1389	0.5502	3.8750	0.14434	4.3000	0.50178	4.3186	0.51739	4.3438	0.57489	4.3784	0.43415	4.307	0.49597
4	Promotion	3.3389	1.02546	3.2500	1.67083	3.3833	1.1175	3.3186	0.92206	3.4792	0.71443	3.2185	0.92203	3.296	0.94337
5	Rewards	3.5167	0.76574	3.5625	1.24791	3.5500	0.82484	3.8873	0.74886	3.7604	0.72035	3.8514	0.66775	3.767	0.73425
6	Operating Policies	3.6167	0.50452	3.7500	0.54006	3.8500	0.43095	3.5735	0.57073	3.7188	0.59578	3.6261	0.5818	3.638	0.55785
7	Benefit	3.4978	0.59791	3.4000	1.33666	3.5600	1.0669	3.4706	0.87619	3.7000	0.65408	3.4991	0.6795	3.5144	0.74199
8	Supervision	3.3222	0.91332	3.3125	0.89849	3.6667	1.1127	3.5980	0.82777	3.7187	0.59121	3.7613	0.63995	3.632	0.77781
9	Communication	3.2667	0.79487	3.5000	1.08012	3.5333	0.76103	3.5588	0.58435	3.7812	0.63122	3.7027	0.49488	3.589	0.6328
	Total	31.7667	4.45825	32.2125	8.91089	32.9700	6.02269	32.9265	4.41177	33.8688	3.99646	33.3797	3.94363	33.0006	4.38013

It is found that both officers and clerical group having less than 5 years of experience, out of the nine dimensions, two dimensions such as co-worker and nature of work contribute to the highest job satisfaction as the mean score were 4.1389 and 3.9689 respectively.

Nature of work, co-worker and operating policies are the dimensions which contribute to the highest satisfaction to both officers and clerical group of employees having 5-10 years of experience, where as promotion and pay are the components contributing to lowest job satisfaction.

The dimensions like co-worker, nature of work and operating policies are the three dimensions that contribute to the highest satisfaction of both categories of employees having 10-15 years of experience.

For both clerical and officers group having 15-20 years of experience same three dimensions like co-worker, nature of work and operating policies contribute to the highest level of satisfaction. Again pay, promotion and benefits contribute to lowest job satisfaction.

Similarly, co-worker, nature of work, rewards and operating policies are the dimensions that contribute to highest satisfaction for both the groups having 20-25 years of experience. And both categories of employees having more than 25 years of experience, out of the nine dimensions co-worker, nature of work and rewards contribute to highest satisfaction.

It is also observed that officers and clerical employees having 20-25 years and more than 25 years of experience are more satisfied.

Table-3:Descriptive Statistics

Mean	Standard Deviation
Age divided into categories	2.2760
Salary/Month	3.88
Experience	4.35
Nature of work	4.139
Pay	3.1180
Co-worker	4.3070
Promotion	3.30
Rewards	3.7670
Operating Policies	3.6380
Benefits	3.514
Supervision	3.63
Communication	3,593
Job Satisfaction	139.66

In order to know the impact of different variables like age, salary and experience on different components of job satisfaction as well as overall job satisfaction, the statistical tool like correlations has been used.

Table - 4: Correlation between the Variables of Job Satisfaction with age, salary and experience

Age is correlated positively and significantly at 0.05 level with the dimensions such as nature of work, co-worker and communication. It is positively correlated and significantly at 0.01 level with the variables like: rewards and supervision.

It is also seen that age is correlated positively and significantly at 0.05 level with the total job satisfaction. It is concluded that age has impact on the score of total job satisfaction.

Salary is positively correlated with the dimensions like: nature of work, pay, co-worker, rewards, benefit and communication. It is negatively correlated with the dimensions such as promotion and operating policies. This is positively correlated and significantly at 0.05 level

with the dimension supervision. It is also seen that salary has no impact on the score of total job satisfaction.

Experience is positively correlated and significantly at 0.05 level with the dimension nature of work. It is positively correlated and significantly at 0.01 level with the dimensions like: co-worker, rewards and supervision. It is negatively correlated with the dimensions such as promotion and operating policies. This is positively correlated with the dimensions like: pay, benefit and communication. It is positively correlated and significantly at 0.05 level with the score of total job satisfaction. This is also concluded that experience has impact on the total score of job satisfaction.

There is no overall job satisfaction by taking into account the factors like age, salary and experience.

Correlations

Age, Salary, Experience	Variables of J.S.	Nature of work	Pay	Coworker	Promotion	Rewards	Operating policy	Benefits	Supervision	Communication	Total Job Satisfaction
Age divided into categories	Pearson Correlation	.147*	0.104	.157*	-0.004	.166**	-0.02	0.04		.168**	.292*
	Sig. (2-tailed)	0.02	0.101	0.013	0.949	0.009	0.747	0.525		0.008	0.032
Salary/ month	Pearson Correlation	0.045	0.002	.015	-0.008	0.049	.0048	0.019		-.091	0.013
	Sig. (2-tailed)	0.475	0.974	0.669	0.349	0.444	0.762	0.76		0.018	0.926
Experience	Pearson Correlation	.147*	0.022	.166*	-0.04	.167**	-0.007	0.01		.206**	0.256
	Sig. (2-tailed)	0.102	0.733	0.003	0.484	0.008	0.909	0.872		0.001	0.062

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table-5: Regression Analysis to Show the Impact of Various Components of Job Satisfaction on Job Satisfaction

Description	R	R²	Value of adjusted R²	Value of beta	Value of C
Independent Variable Nature of work, D.V=TJS	.091		.0048	-.091	36.053
Independent Variable pay, D.V=TJS	.475	.225		.475	2.541
Independent Variable co-worker, D.V=TJS	.526	.277	.274	.526	.687
Independent Variable promotion, D.V=TJS	.347	.121	.117	.347	2.831
Independent Variable rewards, D.V=TJS	.569	.324	.321	.569	1.725
Independent Variable operating policy, D.V=TJS	.379	.144	.140	.379	2.030
Independent Variable benefit, D.V=TJS	.418	.175	.171	.418	2.342
Independent Variable supervision, D.V=TJS	.656	.430	.428	.656	1.655
Independent Variable communication, D.V=TJS	.041	.002	-.002	-.041	34.036

It is observed that the independent variable nature of work regressed to the dependent variable total job satisfaction with beta value -0.091 and constant value 36.053. Again the independent variable pay regressed to the dependent variable total job satisfaction with beta value 0.475 and constant value 2.541. The independent variable co-worker regressed to the dependent variable total job satisfaction

with beta value 0.526 and constant value 0.687. Similarly independent variable promotion regressed to the dependent variable total job satisfaction with beta value 0.347and constant value 2.831.

The independent variable reward regressed to the dependent variable total job satisfaction with beta value 0.569 and constant value 1.725.

Another independent variable operating policy regressed to the dependent variable total job satisfaction with beta value 0.379 and constant value 2.030. The independent variable benefit regressed to the dependent variable total job satisfaction with beta value 0.418 and constant value 2.342. Similarly independent variable supervision regressed to the dependent variable total job satisfaction with beta value 0.656 and constant value 1.655. The independent variable communication regressed to the dependent variable total job satisfaction with beta value 0.041 and constant value 34.036.

It is observed from the analysis that the variables like co-workers, rewards and supervision contribute most to total job satisfaction.

6. Suggestions

The policies of HR department in regard to transfer, recruitment must be clear-cut, properly communicated and widely circulated or even a written hand-out may be given to the employees from time to time. Rules relating to training programme needs to be revised as per the changing banking scenario. Choice based selection of trainee is to be avoided. Role specific training may be imparted to the new employee before occupying a particular position. Pay associated with promotion may be enhanced as higher responsibility is associated with higher designation. Grade pay may be introduced for all the employees as per Government rule. Pay parity needs to be maintained properly between both clerical and officers as more risk and challenges are involved with the work of officers.

7. Conclusion

The banking sector has undergone a sea-change over the years, which has put new pressures and realities before the bank employees. So for the success of banking, it is very important to manage human resource effectively and to find whether its employees are satisfied or not. Only if they are satisfied, they will work with commitment and project a positive image of the organization. And to a large extent depends upon the coordination, synchronization and cooperation of the Bank employees.

Age was among the factors found to affect job dissatisfaction. As workers grow older, they tend to be more satisfied with their jobs. Older workers have lower expectations than younger workers and they tend to be better adjusted to the work situation.

In SBI, promotions are only partially linked with performance appraisal and are largely based on defined time schedule. But in case of private sector banks HR practices are well implemented and used as a growth and developmental tool to lay out one's future career plans and also promotion is made on the basis of performance.

Length-wise analysis of job satisfaction has revealed that employees are satisfied with the components like nature of work, co-worker, rewards and supervision. Employees having 20-25 years and more than 25 years of experience are more satisfied.

By income-wise analysis, it is concluded that employees are not satisfied with the pay and pay associated with promotion. Furthermore, employees have stated, "they are receiving less pay than their counterparts in private and foreign banks". This perception creates the state of perceived inequity.

The components like co-worker, rewards and supervision are seen to be key top areas and have major impact on job satisfaction in my study.

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Quality of Work Life - A Study of OP Jindal Group

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Abstract

Quality of Work Life (QWL) is the degree to which employees are able to shape their jobs actively, in accordance with their options, interests and needs. However if the organization provides the appropriate authority to design work activities to the individual employees, then it is highly possible that the work activities can match their employees' needs that contribute to the organizational performance, Beukema (1987). QWL is thus the extent of relationships between individuals and organizational factors that are existing in the working environment. It is focusing strongly on providing a work environment conducive to satisfy individual needs. It is assumed that if employees have more positive attitudes about the organization and their productivity increases, everything else being equal, the organization should be more effective. It is seen from various researches that employees of an organization often take their work to home due to heavy work demands, by which they cannot pay right attention to their family problems, take care of their family members, which ultimately leads to a disturbed and unbalanced work-life. The main purpose of this research is to investigate the overall quality of work life of O. P. Jindal Group, New Delhi. A literature review of previous study is given along with a questionnaire survey has been done using a standard questionnaire. To fulfill the objectives correlation of the factors among each other and also with QWL is calculated. The findings of the study reflect that the QWL of the group is positively influenced by the factors taken for the study.

Keywords: QWL, Organization culture.

1. Introduction

In the earlier days where scientific, administrative, industrial & bureaucratic management policies focused on the prime importance of resources to be utilized effectively & efficiently for organizational goal attainment, where the role of employees is just as a physical working tool of the organization. But after the Hawthorne experiment done by Prof. Elton Mayo and his colleagues at the Western Electric Company's plant from 1927 to 1932 where he stated "The freedom to innovate, flexibility in job, co-operative work procedures in team with individual expertise is more relevant than the physical working condition of the organization for the efficient goal attainment" & Douglas Macgregor's theory X & theory Y, the behavioral approach came to fore for the inclusive development of the employees and treat them as the part of the organizational assets. Now-a-days employees are appraised through the HRA (human resource accounting) process which shows the expenditure made on the recruitment & selection, training & development, health & safety benefits of the employee is the organizational investment over the employees for their job satisfaction, greater work performance, loyalty & commitment towards the organization & individual growth which will ultimately lead to the organizational growth. Here the human beings are treated as the "assets" rather than of their mere presence in the organization.

The consistent & continuous development of the new techniques, procedures and methodologies focusing job satisfaction, growth & development, higher motivational level, work-life balance of employees are for the wholesome development of **QWL (quality of work life)** of the employees. The term QWL gained importance in the late 1960s as a way of concerns about effects of job/work on health and general well-being and ways to positively influence the quality of a person's work experience. Up until the mid 1970s, employer's concern was on work design and working conditions improvement. However, in the next decade of 1980s, the concept of QWL included other aspects that affect employees' job satisfaction and productivity and these aspects are, reward systems, physical work environment, employee involvement, rights and esteem needs (Cummings and Worley, 2005). Origin of Quality of work life is dated back in industrial revolution. When higher productivity is emphasized to such an extent that workers were considered as machines or we can say human factor is totally misplaced. Soon the negative results of this practice became prevalent in the form of absenteeism, low turnover, poor morale and occasional sabotage, boredom, fatigue, accidents resulting from inattention, alcoholism, drug addiction, etc. Therefore in early 20th century Legislation was enacted to avoid job-injuries and

dangerous working conditions. Job security was stressed in the unionization movement (1930-1940), mainly because of the production process and economic gains for the workers. During 1950s and 1960s, various theories were developed by psychologists suggesting a "positive relationship between morale and productivity", and the possibility that improvement in human relations would lead to enhancement of both. This paper investigates the overall quality of work life inO. P. Jindal Group, New Delhi. Also shows the importance of each factor to enhance the quality of work life in JSPL, Jindal SAW and JSL. This will provide a limelight for the future research.

2. Review of Literature:

As the work culture changes drastically in the recent years, the traditional concept of work to fulfil humans' basic needs are also facing out. The basic needs are continued to diversify and change according to the evolution of the work system and standards of living of a workforce. There is a plethora of literature highlighting the factors critical for the assessment of QWL (Calson, 1978; Kalra & Ghosh, 1974; Morton, 1977; Rosow, 1980; Srinivas, 1994; Walton, 1973). Attempts also have been made to empirically define QWL (Levine et al., 1984; Mirvis & Lawler, 1984; Taylor, 1978; Walton, 1975). Comprehensive delineation of the QWL concept is found in three major works: Levine et al. (1984), Taylor (1978) and Walton (1975). Other researchers have attempted to measure QWL in a variety of settings using combinations of various questionnaires such as job satisfaction, organizational commitment, alienation, job stress, organizational identification, job involvement and finally work role ambiguity, conflict, and overload were studied as proxy measures of QWL. There appeared to be no one commonly accepted definition for quality of work life. Heskett, Sasser and Schlesinger (1997) proposed that QWL, which was measured by the feelings that employees have towards their jobs, colleagues, and companies would enhance a chain effect leading to organization's growth and profitability. According to Havlovic (1991), Scobel (1975) and Straw and Heckscher (1984), the key concepts captured in QWL include job security, better reward systems, higher pay, opportunity for growth, and participative groups among others. Walton (1974) proposed the conceptual categories of QWL. He suggested eight aspects in which employees perceptions towards their work organizations could determine their QWL: adequate and fair compensation; safe and healthy environment; development of human capacities; growth and security; social integrative constitutionalism; the total life space and social relevance. In UK, Gilgeous (1998) assessed how manufacturing managers perceived their QWL in five different industries. Despite the growing complexity of working life, Walton's (1975) eight-part typology of the dimensions of QWL remains a useful analytical tool. Thus a definition by Suttle (1977) on the QWL as the degree to which work are able to satisfy important personal basic needs through their experience in the organisation is no longer relevant.

Generally jobs in the contemporary work environment offer sufficient rewards, benefits, recognition and control to employees over their actions. Although to some extent contemporary workforce are compensated appropriately, their personal spending practices, lifestyles, leisure activities, individual value systems, health and so forth can affect their levels of need. It is similar to the argument posted in the Maslow's hierarchy of needs in which each individual has different level of needs because in reality what is important to some employees may not be important to others although they are being treated equally in the same organization. This definition, focusing on personal needs has neglected the fact that the construct of QWL is subjective and continuously evolves due to an ever growing need of each and every employee. Hackman and Oldhams (1980) further highlight the constructs of QWL in relation to the interaction between work environment and personal needs. The work environment that is able to fulfill employees' personal needs is considered to provide a positive interaction effect, which will lead to an excellent QWL. They emphasized the personal needs are satisfied when rewards from the organisation, such as compensation, promotion, recognition and development meet their expectations. Parallel to this definition, Lawler (1982) defines QWL in terms of job characteristics and work conditions. He highlights that the core dimension of the entire QWL in the organization is to improve employees' well-being and productivity. The most common interaction that relates to improvement of employees' well-being and productivity is the design of the job. Job design that is able to provide higher employee satisfaction is expected to be more productive. However, he accepted the fact that QWL is complex, because it comprises physical and mental well being of employees.

Later definition by Beukema (1987) describes QWL as the degree to which employees are able to shape their jobs actively, in accordance with their options, interests and needs. It is the degree of power an organization gives to its employees to design their work. This means that the individual employee has the full freedom to design his job functions to meet his personal needs and interests. This definition emphasizes the individual's choice of interest in carrying out the task. However, this definition differs from the former which stresses on the organization that designs the job to meet employees' interest. It is difficult for the organization to fulfil the personal needs and values of each employee. However if the organization provides the appropriate authority to design work activities to the individual employees, then it is highly possible that the work activities can match their employees' needs that contribute to the organizational performance. In the same vein Heskett, Sasser and Schlesinger (1997) define QWL as the feelings that employees have towards their jobs, colleagues and organizations that ignite a chain leading to the organizations' growth and profitability. A good feeling towards their job employees feel happy doing work which will lead to a productive work environment. This definition provides an insight that the satisfying work environment is considered to provide better QWL. Proceeding to

previous definitions, Lau, Wong, Chan and Law (2001) operationalised QWL as the favourable working environment that supports and promotes satisfaction by providing employees with rewards, job security and career growth opportunities. Indirectly the definition indicates that an individual who is not satisfied with reward may be satisfied with the job security and to some extent would enjoy the career opportunity provided by the organization for their personal as well as professional growth.

The recent definition by Serey (2006) on QWL is quite conclusive and best meet the contemporary work environment. The definition is related to meaningful and satisfying work. It includes (i) an opportunity to exercise one's talents and capacities, to face challenges and situations that require independent initiative and self-direction; (ii) an activity thought to be worthwhile by the individuals involved; (iii) an activity in which one understands the role the individual plays in the achievement of some overall goals; and (iv) a sense of taking pride in what one is doing and in doing it well. This issue of meaningful and satisfying work is often merged with discussions of job satisfaction, and believed to be more favorable to QWL.

This review on the definitions of QWL indicates that QWL is a multi-dimensional construct, made up of a number of interrelated factors that need careful consideration to conceptualize and measure. It is associated with job satisfaction job involvement, motivation, productivity, health, safety and well-being, job security, competence development and balance between work and non work life as is conceptualized by European Foundation for the Improvement of Living Conditions (2002). The term refers to the favorableness or unfavorableness of a total job environment for people. QWL programs are another way in which organizations recognize their responsibility to develop jobs and working conditions that are excellent for people as well as for economic health of the organization. The elements in a typical QWL program are: Open communication, Career development and growth, Flexible work management, Employee motivation, Emotional supervisory support, Work-life balance, Favorable working environment and Strong organizational relations. Evolution of the technological and globalization trends in the organization expand the organizational premise to the extent where it becomes desirable for the organizations to adopt approaches to procure, maintain, develop and retain the talent in & for the organizations. The terms such as job design and redesign, job classification, job definition, job enrichment, job simplification, all are vital parts of QWL. QWL is not only focusing on the single employee benefits but to the overall harmonious relationship within an organization where cooperation & competency working together for the result of greater performance. It describes the impact of the work environment on employees' work life and non-work life benefits.

3. Objectives of The Study

- To determine overall quality of work life of O.P. Jindal Group, New Delhi.

- To study the importance of each factor to enhance quality of work life in Jindal group.

4. Scope of the Study

The study focuses on the Quality of Work Life in O P Jindal group. It includes the executives and the non-executives of the departments of the organization. The views of the employees were taken.

5. Hypothesis Formulation

The hypothesis put forward for the purpose of research is as follows:

H1: *Quality of work life in O P Jindal group on an average is satisfactory.*

6. Research Methodology

The study is designed to conduct an enquiry on the Quality of work life in Jindal group, New Delhi. Data was collected through questionnaire survey, files and documents of organization, interview of prominent executives and observation. Secondary data of the organization is collected from various sources like records, files, journals, organizational profile and other relevant documents of the organization. The research is intended to find out the direct/ indirect impact of the factors on the Quality of Work Life of the organizations. As to fulfill the objectives of the study we need to calculate the correlation of the factors among each other and also with the quality of Work life. On the basis of which impact of each factor is determined that affects each other and the overall quality of work life of the organization. By taking simple correlation among the factors and the factors with quality of work life for each sample company and for the whole group the analysis is being done. Then the through the interpretation details we can analyze the better correlation factors of the companies and also the company which has a better correlated factors. The results of the correlation have to be compared with the standardized values to ascertain the interpreted correlation value. The correlation matrices help to determine how the factors are correlated with QWL and how they are related with each other and the extent to which they are related with each other and affecting each other.

7. Analysis and Interpretation

A one-tailed t-test is performed to examine the overall satisfaction level with the QWL and it was found that there is no significance difference in the imparted QWL as a whole and in the factors affecting QWL individually among the sample companies of Jindal group. As all the calculated t-values of all the different components taken for study are less than the tabulated value i.e. 1.645 (at 0.05 significance level and d.f. 58) as determined and the hypotheses taken for test was accepted. The factors included in the study are work environment, Freedom to Work, Salary and Compensation, Opportunity, Health, safety and Security, Training and Development, performance appraisal and stress management. The correlation matrices help to determine how the factors are correlated with QWL and how they are related with each other and the extent to which they are related with each other and affecting each other.

Table-I Correlations Matrix For O P Jindal Group

Factors	W.E	F.T.W	S & C	Oppr	H.S.S	T & D	P. A.	S.M.	QWL
W.E.	1								0.570356
F.T.W.	0.375523	1							0.58427
S & C	0.214388	0.57138	1						0.638775
Oppr.	0.574185	0.08365	0.16279	1					0.639812
H.S.S	0.27252	0.45715	0.39501	0.42136	1				0.779008
T & D	0.221183	0.50843	0.60087	0.32136	0.754098	1			0.808148
P.A.	0.487188	0.14744	0.28364	0.58985	0.421324	0.41483	1		0.746547
S.M.	O.107402	0.07202	0.21983	0.35635	0.411241	0.45405	0.55081	1	0.596675

The above table shows that the quality of work life is highly correlated with salary & compensation, opportunity, health safety and security, training & development, and performance appraisal. It is moderately correlated with work environment and freedom of work and stress management. Work environment is moderately correlated with opportunity and performance appraisal but poorly correlated with freedom to work, salary and compensation, health, safety, and security, training & development, and stress management. Freedom to work is moderately correlated with salary and compensation, health, safety & Security, Training & Development. It is negatively correlated with opportunity, stress management. Salary & compensation is highly correlated with training development. It is poorly correlated with opportunity and health, safety and security performance appraisal & Stress management. Opportunity is moderately correlated with health, safety & security, and performance appraisal but poorly correlated with training & development, and stress management. Health, safety and security is highly correlated with training development. It is moderately correlated with performance management and stress management. Training & Development is moderately correlated with performance appraisal stress management. Performance is moderately correlated with stress management.

8. Conclusion:

It can be concluded from the findings of the study that satisfaction with the quality of work life is highly satisfactory in the O P Jindal. As on an overall basis the Quality of Work as well as Life of the employee is benefited with the imparted Quality of Work Life in the company. QWL pays prime attention towards the Job Satisfaction, Employee Motivation, Work Culture, Work Environment, Opportunity for Growth, Health, Safety & Security, Trainings and the Stress Reducing Techniques. The Jindal group has proposed a QWL with well designed and structured policy and practices in the organization which starts from fair Recruitments, need specific Trainings, Potential and Self Development Techniques, fair remuneration and compensation policy, leave and Retirement benefits policy, relating pay structure, awards & rewards to the performance of the employee so that they would feel motivated to perform, Welfare Measures, infrastructure policy and a full fledged Knowledge Management system that enable the

employees to get their desired information as per their need from the system. The finding which resembles with the taken objectives concludes that employees of the whole group believe that Provision for opportunity to grow, performance are the key concepts to grow backed by improvised training program. Though Salary plays a paramount role but stress reduction programmes would be more preferable for them as a better QWL. HRD as a specialized Department is desirable for the Organization Development as it carries the Innovative Interventions to make the employees more satisfied and more productive which will help the organizations to reduce its work load and make it cost efficient. The never ending implications of QWL in the organizations should emphasize on Inclusive Growth of the Human Asset. It has not only to be an Organization Centric but also to be Employee Centric. The features as how and whether the employees are benefited through it, can be delineated as Employee Learning, Employee Satisfaction, taking up the Employees' Morale high, Improvement in Employee Standards, dynamic growth prospects etc.

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