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Risk-Return Analysis of Stocks of Nifty50 Companies

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Dr. Satyendra P. Singh **

Abstract

Nifty50, a benchmark diversified index of National Stock Exchange, is a prominent stock market index not only in India but across the globe. Nifty50 is popularly known as Nifty, and Nifty and Sensex put together are known to be barometers of Indian stock market. The constituent companies of this prestigious index are considered to be blue chip companies and thus these stocks are expected to be relatively less volatile and offer a rather steady return. Since the constituent stocks of Nifty50 belong to different sectors, they show quite a diversified behavior as far as their price movements are concerned. Thus, the returns offered by these stocks as well as the risk associated with them are also found to be quite varied in nature. Similarly, the beta factors of these stocks too are found to be pretty wide ranging.

This study is an attempt to analyze the 50 constituent stocks of Nifty50 on the basis of the returns generated by them; risk associated with these returns and their beta factors. Researchers have calculated the returns of these stocks, risk associated with these returns, and beta coefficients of these stocks and tried to find out whether these stocks are similar in terms of these three parameters or not. The study shows that these 50 stocks are significantly different as far as their risks and returns are concerned. On the other hand, they are not significantly different in terms of their beta coefficients. Researchers have also endeavored to categorize these 50 constituent stocks of Nifty50 in different clusters.

Keywords: Nifty50, Return, Risk, Beta Factor, Cluster Analysis, t-Test, Cluster Analysis, R-Programming

Introduction

Nifty50, a benchmark diversified index of National Stock Exchange, is a prominent stock market index not only in India but across the globe. Nifty50 is popularly known as Nifty, and Nifty and

Sensex put together are known to be barometers of Indian stock market. Nifty50 is a diversified and free float market capitalization based index consisting of stocks of 50 companies representing 12 sectors of Indian economy. NIFTY 50 is owned and managed by India Index Services and Products Ltd. (IISL). IISL is India's specialized company focused upon the index as a core product. Nifty50 was launched on April 22, 1996. It has a base date of November 03, 1995 and base value of 1000.

The constituent companies of Nifty50 are leaders in their sectors and considered to be blue chip companies and thus these stocks are expected to be relatively less volatile and offer a rather steady return. Since the constituent stocks of Nifty50 belong to different sectors, they show quite a diversified

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behavior as far as their price movements are concerned. Thus, the returns offered by these stocks as well as the risk associated with them are also found to be quite varied in nature. Similarly, the beta factors of these stocks too are found to be pretty wide ranging.

- **Return**

Return is the gain or loss on a security in a particular time period. Return on stock consists of two components: Dividend and Capital Gain, and it is usually quoted as a percentage. The general rule is that the more risk you take, the greater is potential for higher returns.

- **Risk**

Risk and return are the two most important aspects of investment. In fact, they are two sides of same coin. The term risk in investment simply means the possibility that actual return will be less than the expected return. In other word, risk denotes the possibility of realized returns being different from expected returns. It is measured in terms of volatility or variability of returns. Generally, standard deviation (or variance) of values of periodic returns is used to denote the total risk of any financial asset. Higher is the volatility, more is the associated risk and vice-versa. Total risk associated with a stock is broadly divided in two components: Systematic Risk and Unsystematic Risk.

- **Beta Coefficient (β)**

Analysis of beta factor is another way of understanding the risk associated with a stock. Beta is an indicator of systematic risk of a stock i.e. it represents the non-diversifiable risk associated with a security. Beta value indicates how the price of a security responds to market forces. Beta represents the % change in the price of a security due 1% change in the market (index). The more responsive is the price of a security to the change in the market, the higher will be the value of beta for that security and higher will be the risk.

The beta value for market (market index) is 1 and the other beta values are viewed in relation to this value. Value of beta can be positive as well negative. Positive value of beta indicates direct relationship between the return of market and return of security while the negative value of beta reflects an inverse relationship between the two.

ta for a security is calculated with the help of following formula:

$$\beta = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2}$$

x = return on market (representative index)

y = return on stock

n = number of data

Review of Literature

A large number of researchers and analysts have conducted various studies related to analysis of risk and return associated with stocks. Some important studies are mentioned below:

Poornima and Swathiga (2017) conducted a study on relationship between risk and return of selected stocks of NSE using capital asset pricing model. They analysed selected stocks from Automobile and IT sectors. The study revealed that automobile sector showed positive return and low risk while IT sector showed negative return and high risk during the period of study. Sinha (2013) conducted a study of risk and return in the area of equity investment of the stocks of banking sector. Sinha analyzed the risk and return in banking stocks vis-a-vis non-banking stocks. The study compared the performance of banking equity with two major sectors i.e. Real Estate and IT. Sinha used t-test for the purpose of analysis. Rajan and Saranya (2013) attempted to measure the volatility or systematic risk of selected shares of information technology sector through estimating their beta factors.

Vaibhav Vishal (2012) performed sartorial risk analysis of Nifty Junior in respect of systematic risk and beta. He analysed the companies on the basis of sector wise risk and segmented various industries according to choice of investors for their risk taking ability so that they can prepare their own portfolio. Karthika and Karthikeyan (2011) compared stocks of selected companies from different sectors like Automobiles, Banking, Information Technology, Oil, and Pharmaceuticals in the form of their risk, return and liquidity. They also discussed the trade-off by using beta, standard deviations, coefficient of correlation etc. and provided a method for quantifying risk. Jaiswal (2001) in his study evaluated the implications of 'Equity Risk Premium'. He emphasized that investor's look for a certain level of return for assuming the 'risk of equities' volatile return' which can be measured through the equity risk premium. He observed that the risk premium have drastically increased towards the end of the last decade. He suggested that equity investments are not for the weak hearted investors as the equity holders cannot escape the impact of the movements in capital market.

Mitra (2000) observed that sharp volatility has become a regular feature of capital markets worldwide, resulting in frequent, sharp, downward corrections. In this scenario it is difficult for investors to have long term time horizon for investment. Yasaswy (1993) mentioned in his study that turnaround stocks have potential for big profits because of being under-priced but at the same time they involve higher risk as well. So, investors should consider both the aspects and accordingly take the decision to invest in such stocks. Yasaswy (1993) evaluated the risks involved in different categories of stocks. He suggested that risk is lowest in defensive stocks followed by growth stocks where the risk is medium while the cyclical stocks involve higher risks. Accordingly, the return also varies for these stocks. Cyclical stocks provide higher reward compared to the growth stocks while the returns are relatively lower but steady for defensive stocks.

Mandell (1992) revealed that the nature of market risk is global i.e. these risks affect the entire

investment market. Market risk is the systemic risk that affects all securities simultaneously and it cannot be reduced through diversification. Stocks of all companies including the well-managed companies face market risk. He also mentioned that market risk is influenced by factors like economic conditions, political events; mass psychological factors etc. and these factors cannot be predicted accurately. Randal (1992) in his study emphasized that to be successful investors should never be pessimists. He insisted that patient investors have consistently made money in the equities market irrespective of the fact that there was major economic crisis almost every year. He emphasized that investing in the stock market should be an un-emotional endeavour and concluded that investors should own a stock only if they believe it would perform well. Jain (1992) gave specific tips for buying and selling of shares. He advised that investors should buy shares of fast growing sector of the economy and also should diversify their investment amongst number of growth companies operating in different sectors. For selling of shares he suggested that investor should sell the shares the moment company has or almost reached the peak of its growth.

Scott and Edward (1990) analysed the important risks of owning shares and how these risks can be minimized. According to them financial risks can be minimized by investors by sticking to shares of companies that employ small amounts of debt. For reducing business risk investors should select shares of firms that are diversified in several unrelated industries and for ensuring some degree of liquidity investors should restrict investment in stocks having a history of adequate trading volume. Singh (1986) in her study mentioned that risk is an integral part of any investment decision and investor should understand and measure the risk attached to the investment while taking such decision. According to her most investors are risk averse and thus will try to take minimum risk. The additional risk will only be taken with the expectation of higher return.

Objectives of Study

1. To calculate the return, risk and beta factor of the constituent stocks of Nifty50.
2. To find out whether the return of all constituent stocks of Nifty50 are statistically equal to standard value of return.
3. To find out whether the risk associated with these constituent stocks of Nifty50 are statistically equal to standard value of risk.
4. To find out whether the beta coefficient of all the constituents stocks of Nifty50 are statistically equal to standard value of beta.
5. To classify the stock of Nifty50 in clusters (groups) on the basis of the risk, return and beta coefficient.

Research Methodology

The stock index selected for the study is Nifty50 of National Stock Exchange (NSE). Stocks of fifty prominent companies listed at National Stock Exchange are part of the Nifty50. The study demands use of secondary data and this data has been collected from the official website of National Stock Exchange. Weekly data of one year of all these fifty stocks has been collected for the study. Weekly (Friday) closing prices of shares of the companies and corresponding closing values of Nifty50 from January 01, 2016 to December 31, 2016 have been used in the study. Return, Risk (measured in terms of variance) and Beta value (1) of Nifty50 have been taken as standard value for the purpose of the study.

Calculation of Risk, Return & Beta Coefficient

As mentioned above, weekly closing prices (Friday closing) of the stocks of Nifty50 companies at NSE and weekly closing values of Nifty (Friday closing) for the selected period have been taken for calculating various required parameters of Nifty stocks i.e. returns, risks associated with these returns and beta factors.

With the help of these weekly closing prices weekly returns have been generated for these stocks with the help of following formula:

$$y_i = \frac{(P_{i+1} - P_i) * 100}{P_i}$$

Where,

- y_i = Weekly return on the stock
 P_{i+1} = Price (Friday closing) of the stock in (i+1)th week
 P_i = Price (Friday closing) of the stock in ith week

Similarly, weekly returns were generated for Nifty50 index the help of weekly closing values of Nifty50 by using following formula:

$$x_i = \frac{(P_{i+1} - P_i) * 100}{P_i}$$

Where

- x_i = Weekly return on Nifty
 P_{i+1} = Closing value of Nifty in (i+1)th week
 P_i = Closing value of Nifty in ith week

These two sets of weekly returns i.e. return on index (Nifty50) and return on concerned stock have been used for calculating various required parameters for all the stocks. Following methodology has been used for calculating the required parameters:

- a) Return:** The weekly percentage returns have been converted into annual figures to find out the

annual percentage return generated by each stock as well as the index. Annual percentage return has been taken as return on stock as well as index.

- b) **Risk:** Variance of weekly returns of each stock (σ^2) has been calculated to measure the total risk associated with the stocks. Similarly, the variance of index (σ^2) has been calculated to measure the risk associated with the index i.e. Nifty50.
- c) **Beta Factor (β):** β values of Nifty stocks have been calculated with the help of following formula:

$$\beta = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2}$$

Where, x = return on index, y = return on stock and n = number of data

Beta value of Nifty50 has been taken as 1.

Statistical Tests Used in the Study

R-Programming has been used for data analysis in the study. Descriptive statistics of all the three variables have been presented. One sample t-test is used for testing the hypotheses and cluster analysis is used for the purpose of classification of the stocks.

Hypotheses in the study

Following are the hypotheses for the study:

1. There is no significant difference in the returns of stocks of all the companies from the standard value of return.
2. There is no significant difference in the risk associated with stocks of all the companies from the standard value of risk.
3. There is no significant difference in the beta factor of stocks of all the companies from the standard value of beta factor.

Findings and Analysis

Table 1: Return, Risk and Beta Factor of Stocks of Nifty50 Companies and Nifty50 Itself

Sr. No.	Company (NSE Symbol)	Return (%)	Total Risk (Variance)	Beta Factor
1	ACC	0.13	12.64	1.02
2	ADANI PORTS	12.24	45.18	2.23
3	AMBUJACEM	4.22	15.08	1.01
4	ASIANPAINT	4.05	10.13	0.64
5	AUROPHARMA	-21.57	22.51	1.21



6	AXISBANK	5.37	20.74	1.06
7	BAJAJ-AUTO	7.08	10.15	0.95
8	BANKBARODA	7.52	43.76	1.66
9	BHEL	-23.82	39.31	1.82
10	BPCL	-11.44	61.65	0.41
11	BHARTIARTL	-7.53	12.47	0.52
12	INFRATEL	-17.60	15.92	0.37
13	BOSCHLTD	11.15	14.98	1.08
14	CIPLA	-11.73	9.25	0.42
15	COALINDIA	-8.11	10.15	0.67
16	DRREDDY	4.28	21.71	0.96
17	EICHERMOT	27.48	18.40	0.47
18	GAIL	22.14	19.14	0.91
19	GRASIM	-67.01	133.06	0.63
20	HCLTECH	1.05	12.06	0.58
21	HDFCBANK	11.59	5.07	0.80
22	HEROMOTOCO	16.80	16.69	1.24
23	HINDALCO	70.93	40.33	1.77
24	HINDUNILVR	-1.39	8.48	0.81
25	HDFC	3.50	12.14	1.03
26	ITC	-22.60	26.01	0.76
27	ICICIBANK	5.81	34.81	2.03
28	IDEA	-59.35	22.67	0.57
29	INDUSINDBK	17.19	12.50	1.23
30	INFY	-6.47	9.43	0.59
31	KOTAKBANK	1.60	10.12	1.07
32	LT	9.09	18.07	1.51
33	LUPIN	-17.56	14.76	0.46
34	M&M	-4.13	9.39	0.64
35	MARUTI	17.94	16.02	1.16
36	NTPC	16.00	10.74	0.72
37	ONGC	-11.93	38.10	0.94
38	POWERGRID	28.42	7.91	0.56

39	RELIANCE	8.57	8.26	0.70
40	SBIN	18.12	34.62	1.88
41	SUNPHARMA	-22.00	14.13	0.47
42	TCS	1.25	12.85	0.77
43	TATAMOTORS	22.51	24.87	1.82
44	TATAPOWER	13.06	13.24	0.88
45	TATASTEEL	50.95	35.36	1.67
46	TECHM	-2.20	15.51	1.08
47	ULTRACEMCO	17.42	12.75	1.01
48	WIPRO	-13.82	8.04	0.65
49	YESBANK	50.51	18.82	1.21
50	ZEEL	8.18	13.98	1.09
51	NIFTY50 Index	4.075	5.07	1

Source: These are the results based on calculations with the help of weekly data for the selected time period (January 01, 2016 to December 31, 2016)

Table 2: Descriptive Statistics of Variables

<i>Variable</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Standard Deviation</i>
<i>Risk</i>	<i>5.074</i>	<i>133.057</i>	<i>21.536</i>	<i>19.865</i>
<i>Return</i>	<i>-67.01</i>	<i>70.931</i>	<i>3.392</i>	<i>23.012</i>
<i>Beta</i>	<i>0.368</i>	<i>2.233</i>	<i>1.006</i>	<i>0.466</i>

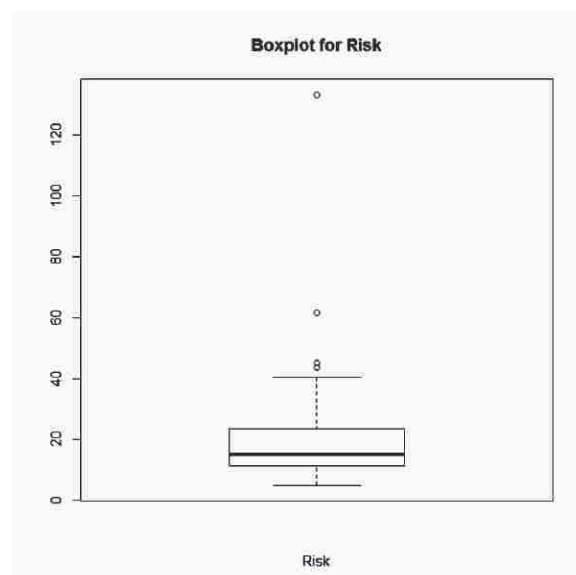


Figure 1: Boxplot for Risk of the Shares

Table 2 shows the minimum value of risk is 5.074 while the maximum value of risk as 133.057. From figure 1 it is clear that the maximum risk is around 40. There is presence of few outliers in the risk, due to which table 1 shows maximum value of risk as 133.057. It also shows that the average risk of all the shares is around 21.536 with standard deviation 19.865.

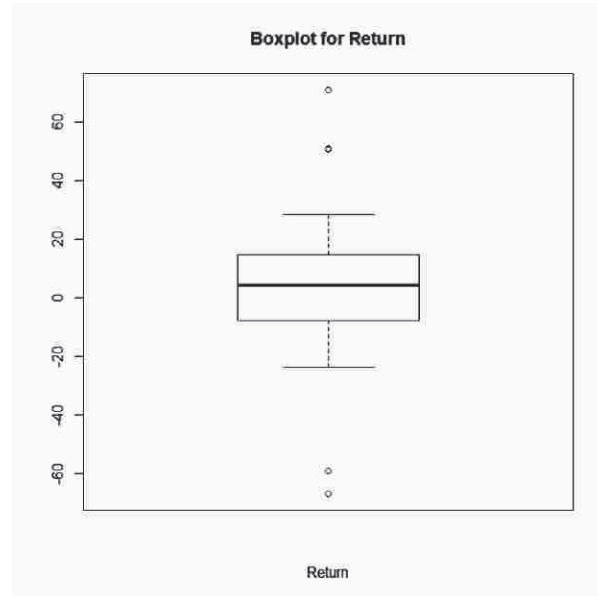


Figure 2: Boxplot for Return of the Shares

Table 2 shows the minimum value of return is -67.01 and maximum value is 70.931, again this is due to presence of outliers in the return. From figure 2, it is clear that there are outliers on both the sides of the median. It shows the minimum return is around -25, also the maximum return is around 25. The average return is 3.392 with standard deviation 23.012



Figure 3: Boxplot for Beta Value of the Shares

From table 2, it is clear that minimum value of Beta is 0.368 while maximum is 2.33. Figure 3 shows that there is an outlier above median, and no outlier below median. It shows the maximum value of Beta is around 2. The average value of beta is 1.006 with standard deviation 0.466. It is found the standard values of Risk, Return and Beta (Values of the Index i.e. Nifty50) are 5.07, 4.075 and 1 respectively.

One sample t-test is applied to test whether the observed values of the variables of these fifty shares are significantly different from the standard values or not. The following result has been obtained using R-programming:

Table 3: One Sample t-Test Results of the Variables

Variable	N	t-value	p-value
Risk	51	5.92	2.927×10^{-07}
Return	51	5.34	2.255×10^{-06}
Beta Factor	51	0.87	0.9304

Table 3 shows that risk associated with the stocks are significantly different from the standard value i.e. 5.071767 at 5% level of significance. Also it shows that returns of the stocks are significantly different from the standard value i.e. 4.075 at 5% level of significance. But for beta factor, there is no significance difference in the beta value of the stocks from the standard value i.e. 1 at 5% level of significance.

Further, the stocks are classified into five groups on the basis of similarities in their risk, yearly returns and beta values by k-means clustering method using R-programming. The average values of Risk, Return and Beta for all the five clusters are as follows:

Table 4: Average Values of Variables for Various Clusters

Cluster	Risk	Return	Beta
I	11.617	-5.938	0.693
II	133.057	-67.01	0.629
III	35.042	-25.117	0.953
IV	19.293	13.302	1.188
V	31.504	57.464	1.55

From Table 4, it is clear that returns are maximum from the shares of cluster V with high risk. Shares of cluster IV are providing good returns with less risk. While share of cluster II has maximum risk and minimum returns. Shares of cluster I has minimum risk but returns are negative. Beta value is maximum for Cluster V and minimum for cluster II.

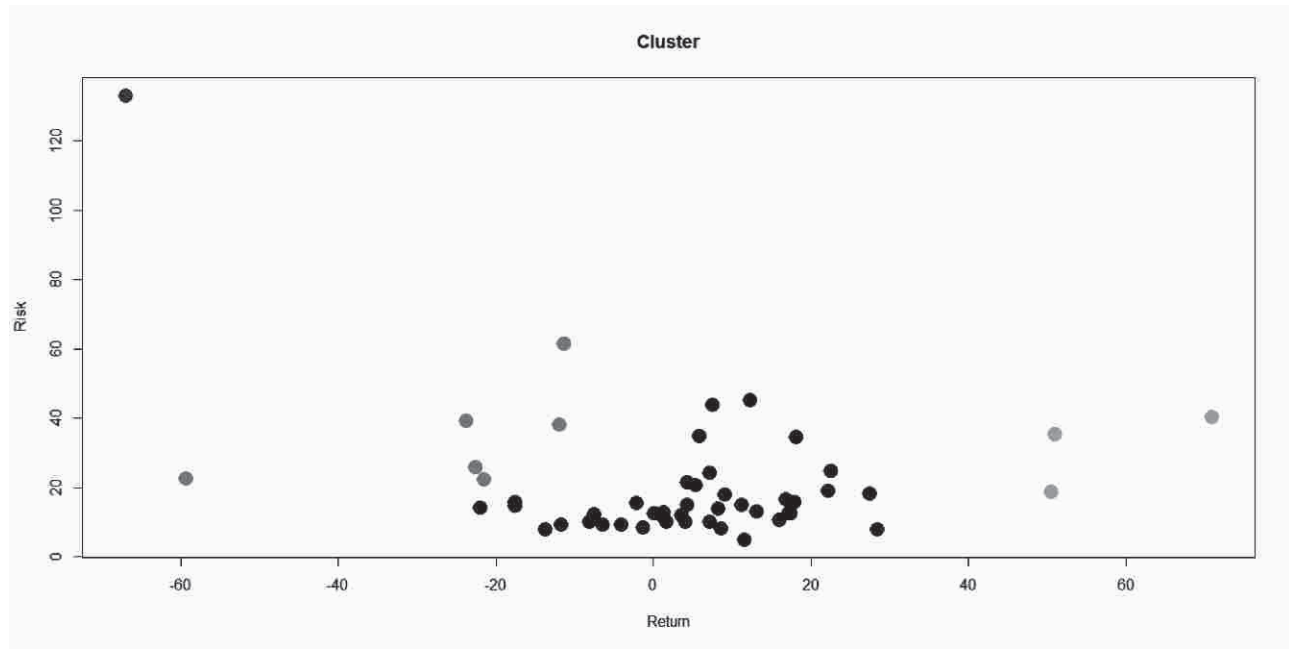


Figure 4: Graphical Representation of Classification of Shares in Five Clusters

Figure 4 shows the graphical representation of shares in five clusters. These is heterogeneity among the clusters and homogeneity within the clusters. Table 3 shows the classification of all the fifty shares in five clusters on the basis of similarity in risk, yearly return and beta values.

Table 5: Classification of Shares in Five clusters

Cluster	Shares of Companies	No. of Companies
I	ACC, ASIANPAINT, BHARTIARTL, INFRATEL, CIPLA, COALINDIA, HCLTECH, HINDUNILVR, HDFC, INFY, KOTAKBANK, LUPIN, M&M, SUNPHARMA, TCS, TECHM, WIPRO	17
II	GRASIM	1
III	AUROPHARMA, BHEL, BPCL, ITC, IDEA, ONGC	6
IV	ADANI PORTS, AMBUJACEM, AXISBANK, BAJAJ-AUTO, BOSCH LTD, BANKBARODA, DRREDDY, EICHERMOT, GAIL, HDFCBANK, LT, NTPC, HEROMOTOCO, ICICIBANK, INDUSINDBK, MARUTI, POWERGRID, RELIANCESEBIN, TATAMOTORS, TATAPOWER, ULTRACEMCO, ZEEL	23
V	HINDALCO, TATASTEEL, YESBANK	3

From figure 4 and table 5, it is clear that there is only one share in cluster II which is Grasim. It is not advisable to invest in this share as risk is maximum and returns are minimum. Cluster I has 17 shares. Risk is minimum for the shares of this cluster but returns are not good. Cluster III has six shares. Risk is high and returns are low for the shares of this cluster. Cluster IV has 23 shares. This is the best cluster since risk is low and returns are moderate. It is advisable to invest in the shares of this cluster. Cluster V has only three shares. Risk is high in this cluster but returns are also very high from the shares of this cluster. So one can calculatively invest in the shares of this cluster.

Conclusion

The study reveals that the constituent stocks of Nifty50 are significantly different in terms of the returns they generate for the investors as well the risks associated with these returns. On the other hand, they are not significantly different in terms of their beta coefficients. In other words we can say that they are similar in terms of their beta factors. These 50 shares can be divided in five clusters on the basis of their risk-return pattern. Each cluster contains similar stocks (based on their risk-return profile). These clusters are:

- a) Cluster I: It contains shares which have low risk but at the same time they offer low/very low returns. This cluster has 17 shares.
- b) Cluster II: This cluster has just one share. Surprisingly, this share has maximum risk but minimum return.
- c) Cluster III- This cluster has six shares. This cluster is marked by high risk and low returns.
- d) Cluster IV: This cluster has 24 of shares. This cluster has shares with low risk and moderate returns. Therefore, this cluster seems to be most attractive and advisable for investor.
- e) Cluster V: It has only three shares. This cluster is marked by high risk and high returns. It seems to be an attractive choice for aggressive investors.

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Undervalued Rupee and Indian Exports: A Fresh Empirical Analysis

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Abstract

The exchange rate economically plays a very important role in a country's trade performance. Standard theoretical models predict that domestic depreciation reduces export prices in a foreign currency which leads to more exports. Theoretically, India is an agri-dominant and labor-abundant country hence avails comparative advantage in primary products and labor intensive products (H-O Theorem). However, it has been seen that primary products have low price elasticity, so a decline in their prices tends to reduce revenue rather than increase it. India's leading trade partnership is with USA as its 16.5 per cent of total exports goes to USA while 7.6 per cent of total imports come from USA. Therefore, any distortion in the path of this trade process will have repercussion on Indian economy. Concerning the same issue, this paper is articulated to assess the impact of undervalued rupee on Indian exports with USA since India's largest exports partner is USA. The results show that undervalued elasticity of exports is found highly elastic and negative indicating that regularly undervaluing degree of rupee hits the Indian exports significantly. Precisely, currency valuation is a still bothersome issue for developing nation. that developing nations could be able to take actively participation in globalization process.

Keywords: Degree of Undervaluation; Exports; Elasticity; Comparative Advantage

Introduction

The waves of free trade again came along actively in the developing economies through the door of globalization during 20th century and relive the theories assuming free trade prevails in an economy. First and foremost classical theory holds the condition of free trade and signifies the importance of International trade rationally was postulated by economist David Ricardo (1817). The theory of comparative cost advantage states that a country boosts its economic growth the most by focusing on the industry in which it has the largest comparative advantage comparatively. Comparative advantage is when a country produces a good or service for a lower opportunity cost than other countries.

In connection to it, modern theory of International trade propounded by Heckscher and Ohlin (1967) who went deeper and identified the causes which creates differences in comparative costs. They explained that differences in factor endowments and different factor-proportions needed for producing different commodities that account for difference in comparative costs among countries. In simple words, the model is explaining that countries export what they can most efficiently and plentifully produce. The model places emphasis on the exportation of goods requiring factors of production that a country has in abundance and the importation of goods that a nation cannot produce as

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efficiently. All in all, both the theories suggest that one country should focus on manufacturing of those goods which can be produced cheaply and efficiently within the economy.

According to these theories, developing nations like India avails comparative advantage in primary and low technological products while developed nations have comparative as well as competitive advantage in high technology products and manufactured products.

On the contrary, Leontief (1945) controverted this theory on the basis of his empirical research in which he estimated factor-intensity of a representative bundle of US exports and import. He found that U.S.A. being relatively capital abundant and relatively labor deficient country and its exports embodied less capital and more labor while import industries required more capital relative to labor. The Leontief conclusion contradicted the widely accepted view derived from the H-O theory and commonly known as the Leontief Paradox (1945). Similarly, at present India is exporting its IT services throughout the globe since its availing comparative advantage in IT sectors. In the past, comparative advantages occurred more in goods and rarely in services. That's because goods are easier to export. But telecommunication technology like the internet is making services easier to export.

Although, then Leontief himself made an attempt to resolve this paradox by claiming that US labor was far more productive than that of the countries from which US got its imports. But this phenomenon is not widely accepted. Moreover, the reason behind the India's high tech IT exports is not the relative comparative advantage however the availability of labor at cheaper cost due to labor abundance. By linking the historical critique in current context, it has noticeably been realized that during colonization India was exported raw cotton and imported textile material in the sense India was fetching current account deficit by purchasing its processed raw materials at higher prices from foreign country likewise at this time India's skilled labor is extensively working for MNC's at cheaper wage rate so called exporting IT services and again purchasing the same softwares covered with patent at higher prices what encrypted in our own country.

Pertaining the same issue in economic sense, Hans Singer and Raúl Prebisch (1998) during 1948–49, argues that the price of primary commodities declines relative to the price of manufactured goods over the long term, which causes the terms of trade of primary-product-based economies to deteriorate. A common explanation for this supposed phenomenon is that manufactured goods have a greater income elasticity of demand than primary products. Therefore, as incomes rise, the demand for manufactured goods increases more rapidly than demand for primary products. In addition, primary products have a low price elasticity of demand, so a decline in their prices tends to reduce revenue rather than increase it therefore economies that time followed import substitution policies for developing the edge in technological production. Though, it is not effortless task for any economy to transform itself structurally in less competitive sector by mobilizing the resources from gainful to needful domain. But this process can be functionalizing with the passage of time through **Foreign Repercussion or Backwash Effect**. This effect is linked with foreign trade multiplier. The process of foreign trade multiplier works when increasing exports of the country enhances the exporter's income. For accruing more profit from the foreign market, they will engage more factors of production to produce more to meet the

foreign demand. This will raise the income of the owners of factors of production. This process will continue and the national income increases by the value of the multiplier. The value of the multiplier depends on the value of MPS and MPM. This analysis explains the case of one small country. In reality, countries are linked to each other directly as well indirectly. A country's exports or imports affect the national income of the other country which, in turn, affects the foreign trade and national income of the first country. This is nothing but the **Foreign Repercussion**.

Apart from that, exchange rate plays a very important role in a country's trade performance. In fact, the effects of undervalued currency on prices are similar to those of an export subsidy and import tax. Standard theoretical models predict that currency changes pass through into consumer prices. A domestic depreciation reduces export prices in a foreign currency and increases import prices in the domestic currency, which leads to more exports and less imports. This is the expenditure switching effect of currency depreciation (Obstfeld and Rogoff 2007). Basing his analysis on the above reasoning, Krugman (2015, 2016) and Kawadia, Neha (2017) predict that the recent exchange rate movements will have a strong effect on trade.

Bussière et al. (2016) argue that exchange rate changes can play an important role in addressing global trade imbalances by estimating trade elasticities for systemically important economies. Others argue that there is a disconnect between exchange rates and trade. Recent studies by Ollivaud, Rusticelli, and Schweltnus (2015) and Ahmed, Appendino, and Ruta (2016) suggest that the increased participation in global value chains (GVCs) is a source of the apparent disconnect.

The smaller the country is in relation to other trading partner, the negligible is the foreign repercussion. India's overall trade openness ratio is significantly increased from 17 per cent to 55 per cent during liberalization period. India's leading trade partnership is with USA as its 16.5 per cent of total exports goes to USA while 7.6 per cent of total imports come from USA. Hence, it can be asserted that any distortion in the path of this trade process will have repercussion on Indian economy. Taking all things into considerations, this research work is articulated to know the income and price elasticity of India trade with USA for assessing the Singer-Prebisch (1998) Hypothesis in Indian context keeping backwash effect in mind. The remainder of this paper is organized as follows. Section 2 presents the adopted methodology while section 3 presents some descriptive statistics and the econometric results. Section 4 concludes.

Research Methodology

This particular study is entirely based on secondary data sources. Required GDP at constant price (base year 2010); and Export Import data consisting technological composition of trade is availed by WITS_ <http://wits.worldbank.org/WITS/WITS/Default-A.aspx?Page=Default>. Moreover, CPI and PPP Values are extracted from World Bank Data Group. By using these data necessitates parameters have been calculated the Degree of under valuation and Inflation differentials is computed by using following formulas:

$$\text{Degree of under valuation}_{\text{India_USA}} = \frac{CPI_{\text{India}}}{CPI_{\text{USA}}}$$

$$\text{LogY} = \beta_0 + \beta_1 \text{D}_{09} + \beta_2 \text{Time} + \beta_3 (\text{D} * \text{T}) + \mu_t$$

Natural logarithmic is applied on all selected variables for finding the elasticity signified by L. In this paper L HT Ex represents the log high technological Indian exports to USA. Similarly L MT Ex; L LT Ex; L PP Ex; L RB Ex represents log medium tech exports; log low tech exports; log primary products exports; and lastly log resource based exports. GDP is here reflecting the Income of the country. For assessing the income and undervalued elasticity of Indian imports and exports, double log regression model is used. The model was then test for the presence of g autocorrelation and heteroscedasticity.

$$\begin{aligned} \log Y = & \beta_0 + \beta_1 \log (\text{Degree of Undervaluation}) + \beta_2 \log (\text{GDP})_i \\ & + \beta_3 \text{ Inflation Differential}_{ij} + \mu_t \end{aligned}$$

The, Prais–Winsten and Cochrane–Orcutt Transformation model is applied for removing the methodological fallacy. After applying this transformation if the model and parameter found insignificant, then the heteroscedasticity is checked and for removing heteroscedasticity the Newey–West Standard Error model is employed. These all models are employed using Stata 11 statistical software

Technical Specification of Indian Exports to USA

As afore documented that developing nations avail comparative advantage in primary products and low tech products thus made exports of these products to developed nations in exchange of high tech products. The following graph 1 depicts the India exports technical specification with USA during the period of trade liberalization. By screening the graph subtly, it can markedly be seen that after the year 2004 the total trade with all its technical categorization has steeply been growing up. Thus, the year 2004 is identified as the shift period implying that liberalization took a decade for complete diffusion in export sector. The year 2004 is also remarkably known for initiation of inclusive growth in Indian economy. Pursuing the same, Table 1 reports the pre and post 2004 analysis of exports technical specification. The analytical reports signifies that average value of all sorts of Indian exports of manufacturing products namely low tech; medium tech and high tech has moved up. The largest upsurge reported High tech exports' mean value mounted by 1.91 per cent during 2004-2016 and followed by low tech and medium tech exports accounting around .90 per cent rise in their mean value.

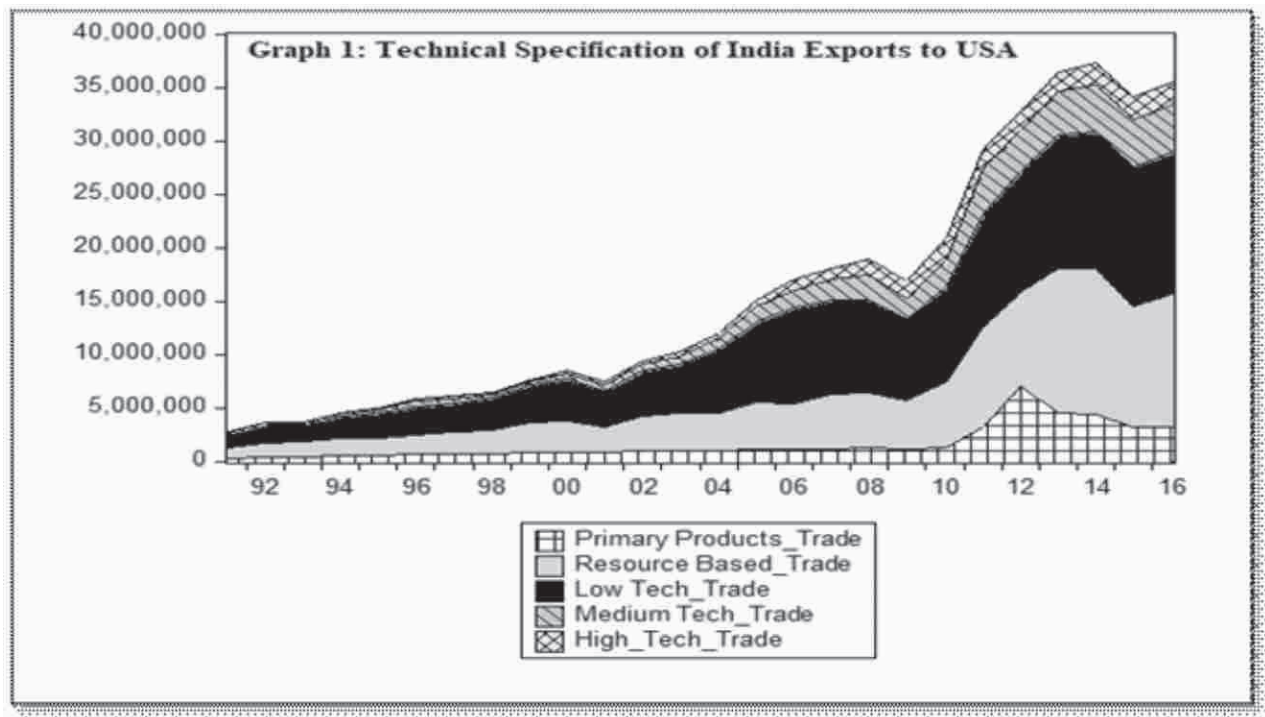


Fig 1: Indian Exports Technical Specification with USA (1991-2016)

On the other hand, the mean value of primary products and resource based exports are sunk by 1.29 and 0.47 per cent respectively. The high tech exports are increased with the pace of 19 per cent per annum significantly which is largest among other specification. This is followed by medium tech exports while low tech; primary product and resource based exports grown up by 10 per cent per annum. Barely the primary product's pace has improved during post 2004 period significantly whereas high; medium and low tech exports have risen with diminishing rate after 2004. It might be the case that rate of reduction during global financial crisis and during global sluggish demand periods overweigh the average growing rate hence the slope coefficients are coming out negative mathematically. Taking all things into consideration, it can be inferred that after 2004 there is enhancement in the mean level of manufacturing products exports but not found change in their pace, while primary and resource based products exports' rate of increasing has grown up but the mean values were declined. Though, the export scenario situation is not found glossy-rosy as it was expected, that means other economic variables scarring the export. In order to know the causes which distort Indian exports, regression analysis has been employed with taking degree of under valuation as one of the major explanatory parameter to assess the impact of external price instability over export performances.

Table 1: ANCOVA Regression Outputs

Independent Variables	Dependent Variable				
	L H T E _x	L M T E _x	L L T E _x	L P P E _x	L R B E _x
Dummy_2004	1.91*	0.90*	0.93*	-1.29*	-0.47***
Time (Trend)	0.19*	0.15*	0.10*	0.09*	0.09*
Interaction Term (D*T)	-0.10*	-0.03**	-0.05*	0.07*	0.03***
Constant	10.57*	11.66*	14.08*	12.71*	13.86*
R-squared	0.96	0.98	0.99	0.87	0.97
Prob(F-statistic)	0.00	0.00	0.00	0.00	0.00
Durbin-Watson stat	0.74	1.10	1.54	0.92	1.76
*; **; *** significant at 1 %, 5 %,10% level of significance respectively. Author's Calculation					

Table 2, reports the regression analysis results with the autocorrelation and heteroscedasticity detection values. As it can easily be seen that Breusch-Godfrey LM and Durbin's alternative values are greater than critical value 3.84(Chi-square value on given degree of freedom at 5 per cent level of significance), as a result alternative hypothesis serial correlation exist is accepted, whereas for Primary Products Export model the Breusch-Pagan and White Test values are also larger than critical value, therefore there is risk in accept the null hypothesis and alternative hypothesis *heteroscedasticity* exist is accepted. Accordingly, the first three manufacturing exports model are gripped under endogeneity problem, while regression model of primary products exports is autocorelated as well as heteroscedastic. The last resource based exports regression model is free from the problems of autocorrelation and heteroscedasticity. Following table 3 presents the coefficients' values transformed by using Prais–Winstenwith Cochrane–Orcutt Transformation and Newey- West Standard Error model for removing the problem of autocorrelation and heteroscedasticity.

Table 2: Regression Results

	Dependent Variable				
	L H T E _x	L M T E _x	L L T E _x	L P P E _x	L R B E _x
L Degree of Undervaluation	-5.44	-6.17	-2.27	-4.34	-2.69
L GDP_USA	6.15	4.6	3.34	3.4	2.69
L GDP_India					-2.76
Inflation Differential	0.09	0.76	0.22	4.19	1.87
C	-149.25	-99.34	-75.73	-70.14	-39.75
R-squared	0.95	0.98	0.99	0.9	0.98

Prob(F-statistic)	0	0	0	0	0
Durbin-Watson stat	0.98	1.11	1.19	0.548	1.78
Breusch-Godfrey LM Test*	4.6	3.87	3.09	14.29	0.01
Durbin's alternative*	4.53	3.67	2.83	26.87	0.09
Df	1	1	1	1	1
Breusch-Pagan#				9.51, (1)	1.4, (1)
White Test#				12.51, (5)	11.62, (9)
* H0 : No Serial Correlation					
#H0 : Constant Variance/ Homoscedasticity					
Chi-Square degrees of freedom stated in bracket					
*; **; *** significant at 1 %, 5 %, 10% level of significance respectively.					
Author's Calculation					

It is clear from the table that undervalued currency growing food inflation hits the primary products exports most accommodating around 11 per cent deterioration. Though, the model was not found significant with income as an explanatory variable, hence the value of r square is too less i.e. 26 per cent rendering 74 per cent variation is still uncaptured. More specifically, undervalued currency has merely 26 per cent power in determining the primary products exports. On the flip side, it can be inferred that growing food inflation in domestic market may allure exporters to sell primary products in home market on more profit than export on low prices or exporter may divert their primary products trade to the country where the currency is overvalued.

Owing to undervalued currency medium tech and high tech exports also get detriment of 6.5 and 4.9 per cent respectively. India's laborer services are cheaper all across the globe as a result of labor abundant. In fact, Indian high tech exports contain services. As the currency undervalued, a service exporter firm could not able to sustain below its current cost, ultimately the exports fall down. Low tech and resource based products also face negative effect of currency undervaluation.

Income elasticity is found all along positive ranging from 3 per cent to 6 per cent. The highest American income elasticity of Indian exports is found in high tech products i.e. 5.5 indicates America look for skilled labor intensive work from India. Though, the international repercussion of USA's income on India is seen positive with all sorts of exports. That is to say, growing American GDP demands more Indian products significantly.

Table 3: Transformed Regression Results

Model	Prais–Winsten and Cochrane– Orcutt Transformation			Newey- West Standard Error
	LHTE _x	LMTE _x	LLTE _x	LPPE _x
L Degree of Undervaluation	(-4.87)**	(-6.5)*	(-2.3)*	(-10.9)**
LGDP_USA	5.5*	4.14*	3.51*	
Inflation Differential		(.83)**		
C	(-132.46)*	(-84.05)*	(-80.69)*	60.98
R-squared	0.77	0.95	0.96	.26
Prob(F-statistic)	0	0	0	0
Durbin-Watson stat	1.6	1.83	1.75	
Iteration	47	8	13	
*, **, *** significant at 1 %, 5 %,10% level of significance respectively. Author's Calculation				

An argument in support to developing nations always stated in theoretical arena that growing trade openness by increasing export share in foreign demand constantly leads improvement in country's income, balance of payments, terms of trade and most importantly in currency valuation. Technically, rising exports of the country fosters its currency demand in global market in the wake of it currency will appreciate. That is to say, not only undervalued currency has impact on trade flows but the exports also have repercussion on currency valuation. Concerning the same, orthogonal regression with taking undervaluation degree as a dependent variable regressed over all sorts of technological exports. The base line regression was auto correlated as well as heteroscedastic. For escaping the spurious results, Newey-West St. Errors model has been applied by removing the variables which were found insignificant namely primary products exports and resource based exports, outputs of the same are visualized in the following table 4.

Table 4: Orthogonal Regression Results

Regression with Newey-West Standard errors
Maximum lag : 4

Number of obs = 26
F(5, 20) = 48.14
Prob > F = 0.0000

l degree_or~n	coef.	Newey-west std.err.	t	p> t	(95% conf.	Interval)
l high_tech~e	.940819	.0229555	4.10	0.001	.0461975	.1419663
l lowtech_t~e	.235026	.0365321	6.43	0.000	.1588214	.3112307
l mediumtec~e	-.1864286	.026284	-7.09	0.000	-.241256	-.1316011
l gdp_india	-.3804647	.0758212	-5.02	0.000	-.5386249	-.2223045
cpi_ind	.0028452	.0003704	7.68	0.000	.0020725	.0036179
_cons	12.32465	1.53735	8.02	0.000	9.117797	15.53151

From the above table, it can be inferred that increasing economic growth improves the nation's image at International platform thereby rupee value appreciates by .38 per cent significantly. Alongside, exports of medium tech exports also improve the undervalued rupee by .19 per cent since India is currently doing well in medium tech production and enjoying comparative advantages in it. Though, the mounting trend of low technological exports signifies the country's status as under developing, while the exports of high tech services at cheaper rate connoting Indian engineers as a Software Koolie hence fostering the rupee undervaluation.

Conclusion

From our ongoing analysis, it has seen that regularly undervaluing degree of rupee is hitting the Indian exports rather than improving. However, the income elasticity of all sorts of exports is found positive and highly elastic significantly. That is to say, growing USA's GDP demands more Indian products while continuous undervalued rupee hits the exports and in reality both are happening together that's why it can evidently be seen that pace of all sorts of manufacturing products and services namely high tech; medium tech and low tech exports is reduced during 2004-16, though the mean exports has grown up because the income elasticity is higher than undervalued elasticity in these cases. Sideways, Primary and resource based products' trend mounted up after 2004 but the mean level has moved downward due to higher undervaluation elasticity than income elasticity. Lastly, it has found that only medium tech exports have repercussion effect in improving the rupee value along with economic growth of the nation.

To sum up all, it can be asserted that Indian economy should promote its medium tech industries by using its primary and natural resources to emerge as a super economy. By doing so, the economy gradually will develop supremacy in production of high tech goods that needs skilled youth and will reduce the unemployment. In this manner, overall economic growth of the nation is going to be enhanced ultimately which will improve the rupee's undervaluation status. However, the mechanization of this process is not so smooth to implement because of bullying strategies and dominating power of developed nation.

All in all, it is clear that currency valuation is a still bothersome issue for developing nation but there is no rule and clause mentioned at International level for the same. This research work thus suggest to policy practitioner that there should be framework or limits within which a currency can be undervalued or overvalued so that developing nations could be able to take actively participation in globalization process which is currently in danger zone because of de-globalization waves.

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Predictive Analytics based Entrepreneur and HR Recruitment Decisions – An Exploratory Study of Culture Fit Tools

Shameen Warsi*, Dr. N. K. Totala**

Abstract

“Entrepreneur” the word itself gives imagination of someone who is the key person to be praised or blamed for the right or wrong decisions in the organization. The entrepreneur’s tag itself carries the ownership of various decisions taken or not to be taken in the organization. Among the various decisions one crucial decision is the recruitment of key personnel who are culturally fit to the entrepreneurial organization. The same ownership of decisions applies to the HR professionals as well. The entrepreneurs and HRs seek for individuals who stay more connected with organization’s vision, mission, objectives and goals so as to really perform accordingly. In the present age of big data and predictive analytics subjective judgment by interviewer is not enough for determining culture fit ratio of prospective employees, this is exactly where the world of predictive analytics is stepping in to overcome the lacking of traditional recruiting. One of the most imperative vicinity for analytics to play a big role is in evaluating candidate’s culture fit ratio. By indulging analytics into assessments, organizations can improve the recruitment process. This research paper is intended to explore the possibilities of overcoming the problem and to flash some light on how entrepreneurs and HRs can improve their hiring decisions with the help of predictive analytics. The approach is to do an exploratory study of available culture fit tools and provide recommendations. This will help entrepreneurs and HRs to take appropriate hiring decisions which are backed with analytics rather than gut feelings.

Keywords: HR Decisions, Entrepreneurial Decision, Recruitment, Culture Fit, Predictive Analytics.

Introduction

• Entrepreneurs

An entrepreneur provides investment funds and works as thrill-seeker, scrutinizes and reins the business activities. The entrepreneur is typically a solitary owner, a collaborator, or the one who

owns the greater part of shares in a business enterprise (Business Dictionary, 2017). An entrepreneur is an individual who, rather than working as a member of staff, runs a company and presumes all the risk and rewards of that company, thought, or goods and services presented for sale. The entrepreneur is universally seen as a business head and trendsetter of new thoughts and business procedure. Entrepreneurs play a key role in any economy. These are the ones who have the talent and initiative essential to take good new thoughts to market and to make the accurate decisions that lead to productivity. The prize for taking the risk is the financial profits that entrepreneur earns (Investopedia, 2017). Since the middle of the 18th Century, the word entrepreneur has been used to refer to a kind of

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businessman in English language. It was also used of a go-between or a person during the 19th Century, who commences any kind of doings as opposed to just a business. By the early 20th Century entrepreneur appears to have taken on the undertone of go-getter when applied to a self-regulating business possessor, a quality that may also be found in the phrase entrepreneurial spirit, which began being used at about the same time (Merriam–Webster, 2017).

- **Decision Making**

It is the thought process that includes taking a logical choice from the existing alternatives. When attempting to make a decision, a person should consider the positives and negatives of each alternative, and consider all the options. A person should be able to forecast the outcome of each option as well, and based on all these items, determine which option the best for that particular situation, for effective decision making (Business Dictionary, 2017).

- **Entrepreneur Decision Making**

Effectual and proficient decision making is at the core competency for any entrepreneur's success. Few decision making styles of entrepreneurs are - Collective Reasoning: Entrepreneurs with this approach logically gather a group of views before making any decision. Group agreement and buy-in from everyone directs each step further; Data Driven: Hard data, especially numbers, are the basis of these individual's decisions. They take time to research, organize and consider before moving forward; Gut Reaction: These entrepreneurs rely on feelings to make quick decisions. They do not bother taking risks and move boldly forward through life; List Approach: Entrepreneurs with this approach after systematically considering the pros and cons of any decision only move ahead. Their researched lists give them self-assurance and a pre-planned path for the future; Spiritually Guided: Staying close to God or religious beliefs and paying attention for a clear voice of direction is the process employed by these entrepreneurs. Prayer, seclusion and recoil are their key methods of deciding; Story Living: These entrepreneurs make decisions based on the tale they will get to tell afterwards. They want to go to new places, try unworkable things and tell the world; Passive Undecided: Entrepreneurs with this mentality are happy to move forward with almost any decision as long as they do not have to make it. They avoid argument and choose by following others (Burstein, 2015).

- **Analytics**

Analysis of data can expose correlations and patterns with quicker and more influential computers flourishing opportunities for the use of analytics and big data. Analytics is an encompassing and versatile field which uses mathematics, statistics, predictive modeling and machine-learning techniques to find significant patterns and facts in the recorded data whether it is developing new medicines, preventing fraud, determining credit risk, finding more efficient ways to deliver products and services, uncovering cyber threats or retaining the most valuable customers, analytics help in understanding the organization and the world around it (SAS, 2017).

- **Predictive Analytics**

Predictive analytics is the practice of determining fascinating and important patterns in data. It draws from several related regulations, some of which have been used to determine patterns in data for more than hundred years, including statistics, pattern recognition, artificial intelligence, data mining, machine learning etc. Predictive analytics is data-driven, meaning that algorithms derive key characteristic of the models from the data itself rather than from assumptions. Data-driven algorithms induce models from the data. The induction process can include identification of variables to be included in the model, parameters that define the model, weights or coefficients in the model, model complexity, etc. Predictive analytics algorithms mechanize the process of ruling the patterns from the data. Decision trees algorithms, find out which of the candidate inputs best predict a target variable in addition to recognizing which values of the variables to employ in building predictions (Abbott, 2014).

Predictive analytics brings equally superior analytics capabilities spanning ad-hoc data mining, text analytics, statistical analysis, entity analytics, real-time scoring, predictive modeling, optimization, machine learning, etc. Predictive analytics has been revealed as transformer of professions and industries through improved use of data. When an organization is able to arrange predictive intelligence at the point of brunt, the value of analytical projects are augmented and assure of predictive alteration can be realized (IBM, 2016). Predictive analytics is a process of digging up useful information from present data sets to determine patterns and come up with future outcomes and trends. Predictive analytics does not tell what will happen in the future; It forecasts and produces probabilistic approximate about what might happen in the future with an acceptable level of reliability and includes supposing scenarios and risk assessment (Beal, 2015).

- **Culture Fit**

Skills can be taught and improved but the making someone able to adapt according to organization's vision and culture is really a tough job. Like in marriage people do not look for a perfect person; rather they look for a person who is perfect for them, the same applies for entrepreneur's task force as well. Hence, organizations are bound to think about the culture fit at least at the time of recruitment. The goal of using culture fit analytics in recruiting process is to increase the quality, and avoid wasting time evaluating candidates who are a poor fit. This is the highest leverage point in recruitment process. By improving the inputs at the beginning of process HR can ensure a much higher probability of successful recruitment (Spence, 2015). Importance of culture fit increase according to increase in managerial hierarchy.

Objectives of Study

One crucial decision is recruitment of key personnel who are culturally fit to the organizations. Entrepreneurs and HRs seek individuals staying more connected to vision, mission, objectives and goals of the organization to perform accordingly. Subjective judgment by interviewer is not enough for determining culture fit ratio of prospective employees; the imperative vicinity of predictive analytics is

stepping in, to overcome lacking of traditional recruiting. Entrepreneurs and HRs can improve the recruitment process by indulging predictive analytics into the assessments of prospective employees. This research paper intends to explore and flash light on how hiring decisions can be improved by using different methods including predictive analytics as a prominent one.

Present Scenario

Entrepreneurs and HRs do wish to hire candidates who are culturally fit and apt for their organization but at the same time managers always face the pressure of hiring candidates in as less time period as possible. The managers often lack the skills for assessing culture fit; many a times skills are there but because of pressure they are to ignore the culture fit assessment. The entrepreneurs often have cost limitations in case of hiring external agencies for assessment of culture fit. The present scenario may be summarized as “knowing but not working accordingly”. This can be understood by a live example of non – founder CEO appointment at Infosys; the CEO Mr. Vishal Sikka resigned in just three years of his tenure at Infosys. Sikka was the first non – promoter CEO of Infosys. It is said that culture fit was one of the issue.

Review of Literature

- **Types of Entrepreneur Decisions**

The major decisions which an entrepreneur has to take are mentioned as - *To Turn Idea into a Reality or Not*: The main decision on which the other decisions depend upon is whether to start a particular business or not. This can include giving up a reliable, full-time income, or it can mean to scale back at work for pursuing desired dream; *Expanding or Keeping the Status Quo*: Small business may look handier and less uncertain; but, the lure for expanding can be strong. Sometimes it is the attraction of new income, or sometimes it is only the potential for something new and thrilling; *Whether to Quit*: A new business is tough work and it puts mildly, the hard work may not pay off until far into future. The financial struggle may lead to give up or de-motivation due to unfavorable business results; *In-House Hiring or Outsourcing*: The need for additional resources is mandatory for every growing business, the decision at this stage is about need of hiring new resource or outsourcing; *Pricing of Product or Service*: Price of product or service communicates the perceived value of the same and it helps in positioning in marketplace against competitors (Demers, 2014).

- **Culture Fit**

Cultural fit explains about how an employee fits in with the culture of any organization; the values, characteristics, language and that exist within the organization. Entrepreneurs require candidates whose beliefs, values, behavior and outlook fit in with the organizational culture. An employee who is excellent cultural fit works well within the company environment. Organizations which seek to achieve good performance out of their employees are majorly moving towards culture fit in their recruitment campaigns (University of Kent, 2016). Culture fit is the bond that binds an organization together. It is gaining importance day by day in recruitment. First thing is to define the

organizations culture, its goals, values and practices and include the same in the recruitment process. Cultural fit is the probability that employees will replicate and/or be able to adjust to the main attitudes, values, and behaviors of any organization (Bouton, 2015).

- **Integrating Culture Fit into Recruitment Process**

There are two ways to integrate culture fit into recruitment process. First can be the self-selection system; where the career portal, job advertisements, and general candidate communications of the organizations are flooded with cultural/values information about the organization and the job profile. It is expected from the candidates to go through these items and to decide if they like this job profile. The second method is to evaluate for culture fit through personality assessments which many organizations prefer in using. Although, there are no distinct steps on using personality assessments to measure culture fit; the following implication are best practices which are fairly sensible to include in any organization: Defining the Culture in Behavioral stipulations: Culture can be a vague and skewed concept; most traditional measures result in uncertainty and doubt. Culture-fit assessment works best when there are clear, behavioral definitions of what is obligatory in the job. Identify some of the behaviors which bring organizations values alive. An example of giving some observable shape to ‘integrity’ is by defining it with behavior like ‘does not share confidential documents with any unauthorized person’; In-order to Define the Personality Profile Conduct a Validity Study that Fits the Culture: Once it is defined it states what it means for given organization; the need is to understand what kind of personality profile will fit to given culture. Recruiters are often left to their own means to interpret the fitment of the different combination of personality characteristics. Validity studies generally include correlating assessment scale scores with some form of criteria e.g., supervisor ratings on the organizations core values. The validity study will help define the profile that includes the personality scales that will be used to make selection decisions, specifically scales that demonstrate predictive validity of culture fitment. The point of emphasis is that there are several options that allow for the proper validation of personality assessments for measuring culture/values. The most effective approach to selecting for culture fit is combining self-select and personality assessments to achieve a more highly engaged and productive workforce (Sachdeva, 2015).

- **Predictive Analytics for Culture Fit**

The latest hype in data-driven predictive analytics is making strategic hiring a reality. Predictive analytics use data to assess skills, competencies, culture fit and much more. And while the human element will always have a place in hiring, the use of data can help replace gut feelings with critical information that can filter searches, identify better candidates, retain top performers, and save valuable time and money in the process (Moran, 2016).

Data are collected and analyzed at each stage of the recruitment process, providing unique insight into how well a candidate will mesh with both the job competencies and the company's culture. A closer look at how that happens is as follows – *Predictive Analytics in Competency Assessments*: While

companies have used behavioral and personality tests for years, now they are now refining these assessments to generate data that identify the best applicants with better precision. The importance of culture fit and soft skills have become easier to evaluate and quantify. The programs are now designed specifically around a company's workplace and culture, and, therefore, they can focus on the characteristics needed to predict job success. These analytics can also be used to forecast candidates who might pose a turnover risk or otherwise be a challenge after their hire; *Predictive Analytics in Interviewing*: The face-to-face interview between a company and a candidate is one of the most vital aspects of the hiring process. But sitting down for a chat with a set of loosely structured questions opens up a margin for error that can lead to bad hires. Predictive interviewing programs increase hiring efficiency without eliminating the experience of the one-on-one conversation. Using a structured and scoring interview guide enables a consistent interview process with reliable measures that make it easy to compare candidates. Additionally, questions are structured to forecast a candidate's future success within organization, rather than simply re-hashing prior experience; *Predictive Analytics in Keeping Star Employees*: Analytics are an ideal way to stay on top of workplace trends and employee satisfaction in an ever-changing marketplace. Data can predict if an employee is getting burned out or ready to quit arming HR with knowledge that will keep internal operations humming at top speed, and assisting in circumventing internal threats as HR develop a loyal employee base; *Predictive Analytics in Improving Competitiveness*: Data can also be used to stay in step with what is happening outside doors, including identifying the best recruitment sources where the highest-quality candidate pools are likely to be found. With analytics, just as HR can identify which of the current employees is on track to become a leader within the company, HR can also predict who their organization's top competition might be. Establishing such benchmarking can be critical to the success of an organization (Moran, 2016).

Culture Fit Tools

- **Cognitive Computing**

Cognitive computing is also used as an instrument to find culture fit of any organization. In cognitive computing, there are two faces i.e., science face and an engineering face. The global workspace theory of consciousness is carried by the science face into a full cognitive model about functioning of mind and architectural designs for software information agents and cognitive robots are carried by the engineering face of cognitive computing which promise for more flexible and more human-like intelligence within their domains. HR professionals can utilize the data-driven cognitive system that can recognize traits, attributes, and characteristics in candidates, applicants, and employees that create an idealistic fit within the organization. To validate the selection of potential employees over other applicants, cognitive learning and big data can help to find out how their professional styles fit together with the workplace culture instead of relying on intuition alone. It facilitates strategic HR professionals to visualize concepts, materialize that idea into logic and perception. It also enables in developing practical or strategic processes, and determining which functional tasks transform concept to reality. Interestingly, all can be done simultaneously throughout an organization (Siddique, 2014).

Cognitive computing technologies perform many tasks which were previously considered purely the domain of human beings. Cognitive computing technologies as, computer vision, speech recognition and machine learning are involved in developing machines that can see, listen, talk, read, and even study by watching YouTube videos. HR can drive productivity improvements by staying side by side of changes in cognitive technologies and focusing on strategies to help redesign work, also help people redefine their roles while maximizing the benefits of the technologies (Schatsky and Schwartz, 2015).

- **Branded Tools**

- instaTalent™ - Employee Recruitment Software For Talent Acquisition**

The instaTalent™ is IBM Watson powered culture-fit employee hiring software. Organizations can recognize their candidates' traits better than ever before and that too without an interview. Employers can receive the best-fit talent recommendations suiting to their corporate culture and their industry to hire manpower instantly (Careers Unbound, 2016). Once a job description is uploaded, instaTalent™ Pro instantaneously extracts all appropriate social and web data, analyzes the major job boards, and suggests suitable candidates for that job description. Core components of instaTalent™ Pro's cognitive talent discovery cum recommendation platform are text analytics, graph modeling, web data extraction, hierarchical taxonomies, and cognitive behavioral analytics to make employee recruitment more effective and efficient. Web data extraction deals with searching and accessing a multitude of information sources available on the web for specific data and collating, categorizing and classifying the results into a single coherent information base set. Text analytics detects natural language patterns in any written text. It is the ability of the computers to manipulate text with patterns to create some structured information out of unstructured and often ambiguous texts. Graph modeling is a unique technique that uses graph theory to analyze interconnections and relationships that otherwise not possible previously to be discovered. Taxonomy refers to an organized collection of domain specific information which includes terms that are typically used in the domain and the relationships between the terms. Hierarchical taxonomy helps in bringing out these relationships in a very efficient and direct manner. Cognitive behavior analytics is the analysis of behaviors as they interact with an environment (Careers Unbound, 2016). Entstrat Consulting, Collage Solutions, Synonyms Systems, Kirloskar Ltd., etc. are the notable clients of instaTalent™.

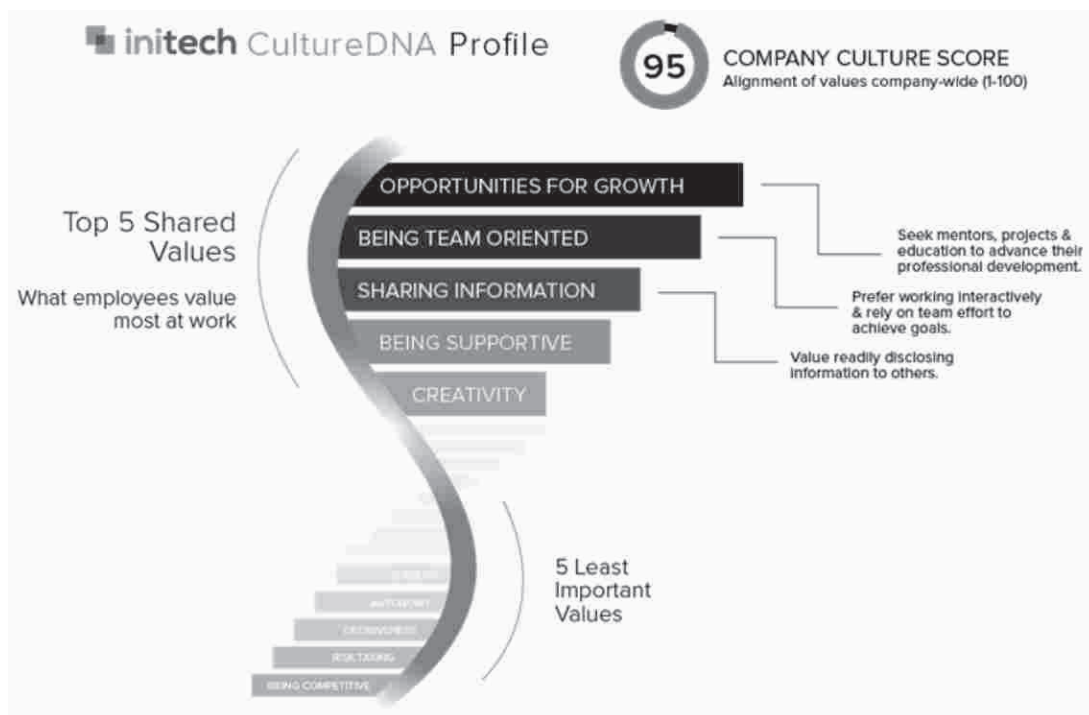
- **Personality Insights Analytics**

Psychology of language in combination with data analytics algorithms leads to development of Personality Insights analytics. The characteristics of them are explained in terms of following three models: **Big Five Personality Characteristics** represent the most widely used model for generally describing how a person engages with the world. The model includes five primary characteristics, or dimensions – *Agreeableness* is a person's tendency to be compassionate and cooperative toward others; *Conscientiousness* is a person's tendency to act in an organized or thoughtful way; *Extraversion* is a

person's tendency to seek stimulation in the company of others; *Emotional Range*, is also referred as *Neuroticism* or *Natural Reactions* which is the extent to which a person's emotions are sensitive to the person's environment; *Openness* is the extent to which a person is open to experiencing a variety of activities. Each of these top-level dimensions has six facets that further characterize an individual according to the dimension. *Needs* explains which aspects of a product will resonate with a person. The model includes twelve characteristic needs: *Excitement, Harmony, Curiosity, Ideal, Closeness, Self expression, Liberty, Love, Practicality, Stability, Challenge, and Structure*. *Values* describe motivating factors that influence a person's decision making. The model includes five dimensions of human values: Self-transcendence / Helping others, Conservation / Tradition, Hedonism / Taking pleasure in life, Self-enhancement / Achieving success, and Open to change / Excitement (Watson Developer Cloud, 2016).

- **Initech Culture DNA**

RoundPegg is a software company that provides software which help to make smarter people decisions. It helps to search and identify the company's DNA, the quantitative insight to the company's culture and find accordingly suitable human resource to synergize.



Source: <http://roundpegg.com/> Round Pegg (2017). Know Our Culture & Engage Your Team. Retrieved on June 15th, 2017 at 4:00 PM from <http://roundpegg.com/>

Initech Culture DNA also helps in assessment of individual culture also; it provides a list of values among which the candidates have to choose their nine most important values and nine least important values. The values are – *Desiring a Well Defined Role, Creativity, Stability, Fairness, Creating Order, Being Supportive, Paying Attention to Detail, Sharing Information Freely, Risk Taking, Decisiveness,*

Not Being Constrained by Many Rules, Informality, Offers Praise for Good Performance, Being People Oriented, Autonomy, Finding Compromise, Being Highly Organized, Achievement Oriented, Being Pragmatic, Rewarding Team Success, Developing Friends at Work, Being Competitive, Seeking Input from Others, High Pay for Good Performance, Achievement Oriented, Being Quick to Take Advantage of Opportunities, Being Distinctive/Different from Others, Being Team Oriented, Being Aggressive, Opportunities for Professional Growth, Confronting Conflict Directly, Tolerance, Being Reflective, Taking Individual Responsibilities, Having High Performance Expectations, Seeking Consensus, Adaptability. Round Pegg does this assessment free of cost and guides to take the assessment of company's culture DNA and after that it compares both and find out the best match between the candidates and the organization (RoundPegg, 2017). The notable clients of Roundpegg include Nike, SendGrid, eBay, Zillow and many more.

- **AudiolyticsTM**

AudiolyticsTM is meant for emotional assessment. It is a disruptive innovation in candidate selection process. It is a new type of assessment, developed by HireIQ Solutions, patents pending, which uses emotional disposition of job candidate's mined from natural language voice interviews to predict the candidate's potential reliably to achieve key business outcomes, such as tenure and job performance. The process used in it is transparent to the candidate and is immune to the gaming tactics to which candidates often employ with traditional behavioral, cognitive, personality and intelligence assessment, so it yields a more accurate and reliable measure of an applicant's potential. *AudiolyticsTM* is advanced voice analysis software application that mines recorded, natural-language candidate interviews for the emotional characteristics and uses them, in addition to other features of the recorded audio, to predict a job applicant's potential to be a high-performing, long tenured employee. It is made possible through usage of advanced machine learning techniques, which imply specially developed models, tuned to render highly reliable outcome results. This machine learning approach continuously adapts the predictive models to reflect updated key performance outcomes that produce results that improve over time and can automatically adjust to new data inputs (Hegebarth, 2015). Arise Virtual Solutions, Interactive Response Technology are the major clients.

- **Corporate Culture Pro Tool Kit**

Corporate Culture Pro is a consulting firm focused on doing culture fit assessment for the organization. It follows a three step process for assessment of culture fit in hiring process itself; *Define Organizational Culture, Screen for Fit, and Tap Successful Employees.* The prestigious client list of Corporate Culture Pro includes Merck and Company, Glaxo Smithkline, Parke-Davis, Guarantee National Insurance Companies, Chase Manhattan Bank, Schering Plough Corporation, First Data Corporation, Tamarack American Insurance Company, Brinks, Prudential, Coastal Carolina National Bank, Blue Cross / Blue Shield of Michigan, Viking Insurance Company, Royal and Sun Alliance, AT&T, Lucent Technologies, US West, Sprint, NYNEX, Avaya, Medical University of South Carolina, The Downtown Medical Center, National Renewable Energy Labs (NREL), Vail Valley Medical

Center, Boeing/Jeppesen Sanderson, Xerox, Johns Manville, Duke Energy, W. R. Grace, Textron Corporation, Nebraska Department of Roads, McDonnell Douglas, Coastal Carolina University, Nike Inc. etc.

- **Fortay's Culture Fit Assessment**

This organizational setup is done by a team of hiring managers. Organizations can scale or evolve company or departmental culture based on company's strategic direction. The founding team determined that the existing set of candidate assessment tools based on persona/psychometric analysis provided inconsistent if not entirely random results. Undaunted, the team leveraged their own extensive experience in hiring candidates and growing teams. Their collective success was centered on correlating the beliefs and values of candidates with the demonstrated culture of a company. They also believed that a company's culture and employee engagement were inextricably linked. Fortay has evolved into a holistic platform to scale a company's culture based on data provided by its best people, its cultural icons. Today, Fortay helps the leadership and management team nurture and improve company culture, engagement and employee retention (Fortay, 2017). The prestigious client list of Fortay includes Top Hat, Statflo, StackAdapt, Fiix Software, Flash Stack, Wave HQ.

- **PRADCO's Quick View Culture Fit Assessment**

PRADCO's Quick View Culture Fit Assessment can be used at all levels of organization to ensure candidates have all those qualities which takes to uphold organizational values and promote company's unique point of view. Immediately upon assessment completion the results from the online culture fit assessment are generated and provide a wealth of data to inform hiring decisions, add focus and depth to interviews and it also provides a first step in a more extensive assessment process. The results are easy to understand and give clarity that save time and energy in hiring process. They provide the insight, objectivity, and accountability for developing talent that fits the culture and helps in achieving the goals. Increased productivity in an organization is often impacted by company culture; that is why Nestlé relies on coaching and employee development solutions of PRADCO. Nestlé being a complex organization, PRADCO has taken the time to learn about what drives success for their team. According to Jenna Nightingale, Human Resource Director, Nestlé R&D Center, Inc., it is the customized approach that PRADCO takes that drives results for their team. Embrace Pet Insurance, a fast-growing company, has changed the landscape of pet insurance during its 10 year's business. Throughout their accelerated growth, the PRADCO team has been helping them better understand the talent they are hiring. Embrace Pet Insurance uses PRADCO's assessments to identify behaviors that will fit their close-knit culture. For more than 70 years, Kaman Corporation has been recognized for its technical breakthroughs and innovative solutions. When it comes to their organizational and employee development, it is a key to identify and nurture the talent that will continue to help its business fly. In the effort, PRADCO has helped to develop a customized plan for identifying behaviors that create a successful culture at Kaman, while providing ongoing talent development coaching and strategies (PRADCO, 2017).

Table - 1 Exploratory Analysis of the Above Mentioned Tools

S. No.	Name of Organization	Name of Tool/ Software	Paid/ Free	Features
1	IBM	instaTalent™	Paid	Based on their social media feeds, i.e., Facebook, Twitter, LinkedIn, etc. instaTalent Culture-Fit hiring software utilizes algorithms powered by IBM Watson to assess a candidates' natural way of writing skills and language. Building on the skill fit, instaTalent Culture-Fit provides the employer a more complete understanding of personality of the applicant. It provides: visualized charts of each candidate's highlighted personality traits, comparison table of the candidate's skill-fit and culture-fit and candidate personality mapping to compare with specific industry and position requirements.
2	RoundPegg	initech Culture DNA	Free	It combines culture science and analytics tools to help demystify company culture and make smarter people decisions. It also helps in assessment of individual culture also; it provides a list of values among which the candidates have to choose their nine most important values and nine least important values.
3	Hire IQ Solutions	Audiolytics™	Paid	It is an advanced voice analysis software application that mines recorded, natural-language candidate interviews for finding the emotional characteristics and uses them in addition to other features of the recorded audio to predict a job applicant's potential to be a high-performing as well as long tenured employee.
4	Corporate Culture Pro	Culture Toolkit	Paid	The culture fit tool kit carries - culture change readiness assessment, thirty question organizational culture assessment, sample focus group questionnaire, sample interview questionnaire, guide to interpreting and sharing culture assessment results, blueprint for

				pinpointing performance enhancing culture habits, instructions for creating culture manifesto, standards for measuring and monitoring change, etc.
5	Fortay	Cultural Assessment	Paid	It provides cultural alignment scores for candidates based on company's culture or the distinct cultural profile of a specific department or location. It follows a three step process for culture fit assessment – Create Internal Cultural Baseline, Invite Candidates to the Cultural Assessment, Interview the Best Candidate.
6	PRADCO	Quick View Culture Fit Assessment	Paid	It is a quick and easy tool used to measure an employee's fit with core values of the company, including integrity, results, teamwork, and other key factors meant to drive success for the organization. They take the time to learn about the organization and provide customized solutions.

Generic Tools

• Behavioral Interview Questions

Organizations often try to assess the cultural competencies via asking behavioral questions in the interview rounds. The behavioral questions may help to some extent but the accuracy is dicey even because of involvement of human judgment. This is cost effective way as it does not involve any software or hiring of any external agencies. The sample questions for behavioral assessment of candidates may be as follows: Have you ever faced with the dilemma of choosing between something ideally right or something in favor of company? Provide two examples and the way those were handled by you; Did you ever take any ethical but tough decision in your career? Please explain; Have you ever gone against the company policies and rules for the betterment of the organization or its employees? Provide example; Are there any policies in your organization which you do not like personally and discussed about the same with your seniors? And so on so forth. Woodbriar, ZipRecruiter, Luther College, etc. are following the Behavioral Interview Questions as a tool for identifying culture fit. The entrepreneurs can suggest the HR team to come up with behavioral questions as per the culture and requirement of the organization and include those in the screening rounds. The correct set of questions may help in getting culturally apt candidates for harmonization.

• Culture Fit Questionnaire

The HR can also prepare a set of questions to be answered by the candidates in initial screening rounds suiting to their own culture. The questionnaire would include personality, attitude, etc. related questions as illustrated and mentioned below in Table 2:

S. No	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	I feel very confident at my work.					
2	I like to persuade people around me at my work.					
3	I like to work in team.					
4	I prefer to follow the rules and regulations of my organization.					
5	I like to discuss my work with my colleagues.					
6	I don't like others to interfere in my work.					
7	I like formal work atmosphere.					
8	I like informal work atmosphere.					
9	I like to have clear instructions and specified work.					
10	I prefer to have independence in my work.					
11	I like to blindly follow the instruction of my seniors.					
12	I appreciate the feedback about my drawbacks at work.					
13	I like the delegation of team tasks that is to be done by team leader.					
14	I always try to be in good books of my team leader.					
15	I am frank enough to share my feedback to seniors upfront.					

These sort of questions may provide an idea about candidate's attitude towards work and colleagues but still the accuracy of results is doubtful as the candidates can provide the answers which are ideal and not about their actual thinking. These questionnaires can help in hiring right candidate but caution is to be taken that structured and validated scaled set of questions and instruments should be used. To illustrate University of Kent, Monster Hiring and Skillmeter are using set of questionnaires for the assessment of culture fit.

- **Behavioral Simulations**

Behavioral simulation is about the behavioral challenges which the employees will be facing in their new organization. Term simulation is basically adopted for pilots and medical practitioners who can get an exact replica of situation in which they will be working, but in a virtual environment. Entrepreneurs and HRs can also include them along with the concept of role play; in which the candidates are asked to play the role of desired job profile and the day to day tasks of that job. Though it is a time consuming and hectic method which requires correct preparations but the method is able to yield good results subject to proper application. The entrepreneurs have to be careful in planning the exact scenario for the aspiring candidates so that they understand the real challenges of the desired job profile and act accordingly. The entrepreneurs can carefully examine the actions and responses of candidates and decide accordingly.

- **Informal Meeting with Team Members**

This involves inviting the desired candidates in office get-together or monthly birthday celebrations, team lunch or any such events. This helps in understanding the behavior and personality attributes of the candidates; also the candidates get to know about the team they could have to work with. The effectiveness of this method depends on lot many things like the candidate get proper chance to express thoughts, the team members' behavior towards the candidate and so on so forth. This method not only insures the culture fit of the probable entrant but it also ensures the adopting capabilities of the team and the organization. By inviting the candidate in get-togethers, the entrepreneurs and HRs can take the decision of hiring of desired candidates who are culturally fit as well as adoptable and acceptable by the team. But entrepreneur and HRs have to provide prior information to the team members about the candidates and things should go in well planned and smooth manner.

- **Reference Checking Against Values**

This method involves a set of questions to be asked in reference checking and background verifications. A proper frame of questions about the behavior of the candidate in his past organizations can help in getting required feedback. Reference checking usually involves feedback about the candidate's job profile, duration of work, proper exit formalities, etc.; but for accessing culture fit the behavioral questions have to be included in the same to be asked to the referred entity. Caution to be taken for the secrecy of the feedback response received and same concern of secrecy is to be communicated to the referee before his response. The entrepreneur has to communicate HR about including behavioral questions in the background verification and the review of behavioral feedback can help entrepreneurs to take the appropriate decision about hiring of the concerned candidate.

Discussion

The choice of value sets depends on the various factors and different types of organizations which may require different values in terms of their own culture. General Startups may look for flexibility in working hours and other related things, freedom to do work as per their wish, opportunities for overall growth, etc. They are the few things which startup entrepreneurs should follow and at the same time should look for people who are more inclined towards these working styles. Manufacturing/labor intensive organizations may prefer to with well defined role, particular order of things, highly organized, pragmatic, team rewards, aggressive, direct conflict resolution, hierarchical ladder, line and staff relations, etc. These are the few characteristics of employees best suited for manufacturing units. IT Industry, as the nature of the industry suggests, it may choose to: not being constrained by many rules, paying attention to detail, informality, developing friends at work, achievement oriented, high pay for good performance, creativity, innovations, etc. because these are the value sets/expectations of the IT employees and industry as well. Government entities, departments, authorities, etc. may have to go with: stability, decisiveness, finding compromise, being quick to take advantage of opportunities, seeking input from others, tolerance, rules compliance, public welfare, etc. These are the expected value sets of government employees and their new entrant entrepreneurs.

Value set understanding is important not only in the hiring process but at the functional level it is also very important and crucial. For example in allocation of internal resources for a particular project or task, it is crucial to have understanding of the value sets of the resources and need is to be matched with them with the project or task requirements. There are employees who do not mingle with team but as an individual their performance is at par, in these sorts of cases HR has to critically analyze the requirements of resource allocation and assign project accordingly. The same process is applicable in case of promotion, transfer and other internal shuffling. In short, it is of key value for HR professionals to keep the record of value set of existing employees also and refer the same for resource allocation, promotion, transfer and other such internal activities also along with the hiring process.

Conclusion

The culture fit tools discussed are of great help in hiring apt candidates; the selection of tool depends on the entrepreneurs and varies from organization to organization. The entrepreneurs and HRs have to understand the needs of the organization and accordingly set a particular budget for the assessment of culture fit. The external agencies have specialization for the same but still the entrepreneurs have to choose the agency wisely and take customized solutions. The culture fit assessment exercise may be undertaken indigenously on the basis of cost benefit analysis. The customized software helps in long run and provides solutions but care has to be taken in the proper installation and up-date. The external agencies and software based on predictive analytics are considered as best in accurate assessment of culture fit. The behavioral interviews, questionnaire and other such techniques are helpful but not that accurate as it involves human biasness and candidates also get chance to manipulate the answers. The tools based on predictive analytics offer the required

solutions and smooth out the recruitment related decision of entrepreneurs. The most important fact to be considered by entrepreneur is that assessment of culture fit is not a onetime task; it is an ongoing activity. Culture fit analysis based on predictive analytics makes it easy to take tough recruitment decisions.

Suggestions

Selection of optimal tools should be done as per needs, resources, time available, number of employees, volume of business, size, profitability, cost benefit analysis etc. Outsourcing or doing indigenously is not a mutually exclusive decision it should be taken in context of the overall organizational policy. Comparison and confirmation of the results may be done by adopting external tools and indigenously developed tools and vice versa. Training of existing resources in the implementation is necessary in all the cases of culture fit assessment. Observations and due corrections should be made regarding essential cultural change in a long run and accordingly the tools and techniques should also be modified or changed.

Implications

Entrepreneurs are to recognize the importance for culture fit but mostly they are unable to assess or employ methods which deliver optimal positive outcomes. Even the HR professionals and recruitment specialists are lacking the competency for assessment of culture fit. Fast pace business needs puts pressure to fill positions and take quick decisions even at the cost of ignoring culture fit. Ignoring culture fit may cost a lot in terms of poor recruitment decision and burden of retrenchment and replacement of resources. Awareness about culture fit may lead entrepreneurs to hire external agencies for recruiting culturally fit employees. The most important aspect for entrepreneurs is to understand the existing culture of their organization and after that only the external agencies or any other behavioral assessment can lead to favorable results.

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A Review on Impact of Financial Sector Reforms on NBFCs

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Abstract

NBFCs, are financial institutions that provide Financial services to their customers, but without holding a banking license they fulfils financial requirements of business and society. They provide variety of financial instruments such as leasing finance hire purchase, mortgage loans, chit funds, loan against gold, housing finance etc. A lot of the studies were already made and published to see the sights of the impact of Reforms on NBFCs, role of NBFCs in economy, their development & growth, evaluation of NBFCs in India and future challenges etc. In present study an attempt is made through study of literature to find out the research break in the impact of financial reforms on non- banking financial sector.

Keywords: NBFCs, Challenges, Financial Instruments, Reforms, Non- Banking Financial Sector

Introduction

The financial sector reforms quantify has impact on the overall effectiveness and steadiness of the NBFCs in India. With the initiation of New Economic Policy in India, the whole banking concept has been changed in India. We see fairly mature financial services practices in India particularly in NBFCs in terms of services offered by this sector. NBFCs have turned out to be engines of development and are necessary part of the Indian financial system, enhancing competition and diversification in the financial sector, spreading risks particularly at the times of financial distress and have been increasingly recognized as complementary of banking system at competitive prices. In India NBFCs, stand for a different group of privately-owned, medium & small-scale financial mediators which offers a variety of services including equipment leasing, hire purchase, loans, investments and chit fund activities, loan against gold etc. These companies play an important role in providing credit to the unorganized sector and to the small borrowers at the local level.

The Banking sector has always been extremely regulated, however simplified sanction procedures, flexibility and timeliness in meeting the credit needs and low cost operations resulted in the NBFCs receiving an edge over banks in providing funds. The research on NBFCs is going on in different parts of the world to evaluate the workings, development, and contribution in loan services, policies and functions of the NBFCs in the world. To look into the changes and developments in the organization, functions, regulations, development, etc, many of the studies were already made and a few latest studies are reviewed as under.

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NBFCs: Study of Literature

Ansari (2006) Writes on “Financial Reforms in India”. The book examines constituents of the Indian financial system in detail. It highlight strengths and weaknesses of Indian financial system before 1991, making a strong case of understanding a comprehensive financial sector reforms in India to achieve high and sustained economic growth. It describes in detail the different types of reforms measures under taken after 1991, in financial sector. The book also critically analyzes the impact of reforms on commercial banks, cooperative banks, DFIs and NBFCs.

Akhan J.A. (2010) writes on “Non-Banking Financial Companies (NBFCs) in India”. The book discussed the financial system in India. It covers the financial intermediaries including commercial banks, regional rural banks, cooperative banks and Non-Banking Financial Companies in India. The book is good source in getting information on businesses, classification, management of assets, risk coverage, etc of the NBFCs in India.

Rani, M. (2008) in her paper entitled “Impact of Financial Sector Reforms on Non-Banking Financial Companies” published in AIMS International Journal of Management, The number of reporting NBFCs and the growth rate of deposits continued to rise till the year 1997, but declined after 1998 as the regulatory framework 1998 which came as a source of excessive control to the real and genuine players in the market. The main source of NBFCs has always been the fixed deposits. The gross NPAs to the total advances were 11.4 per cent in March 1998 and it declined to 9.7 per cent in September 2002.

Pandey in his research report conclude that, since the financial reforms of 1991, there have been significant constructive changes in India’s highly regulated sector. The financial reforms have had a moderately positive impact on reducing the concentration of financial sector (at the lower end) and improving performance. His empirical estimation shoed that regulation lowered the profitability and cost efficiency of public-sector banks at the initial stages of the reforms, but such negative impact disappeared once they adjusted to the new environment. Moreover, allowing banks to engage in non-traditional activities has contributed to improved profitability and cost and earnings efficiency of the whole financial sector, including public-sector. The response of the institutions to the reforms has been impressive. The financial institutions have been adjusting very well to the new environment.

Basu (1961) in his paper entitled “Non-Banking Financial Intermediaries and Monetary Policy” published in „The Banker” stated that a Non-Banking Financial Company (NBFC) is a company incorporated under the Companies Act, 1956 and conducting the financial business as its principal business. In India, the Non-Banking Financial Sector comprises of a multiplicity of institutions, which are defined under section 45 I(a) of the Reserve Bank of India Act, 1934. Its principal business is leasing and housing finance.

Thilakam and Saravanan (2014) write on “CAMEL Analysis of NBFCs in Tamil Nadu” in „International Journal of Business and Administration Research Review”. Financial intermediation is a

crucial function of Banks, Non Banking financial companies (NBFCs) and Development Financial Institutions (DFIs) the post reform period in India is characterized by phenomenal growth of NBFCs complementing the role of banks in mobilizing funds and making it available for investment purposes. During the last decade NBFCs have undergone wide volatility and change as an industry and have been witnessing considerable business upheaval over the last decade because of market dynamics, public sentiments and regulatory environment. To evaluate the soundness of NBFCs in Tamil Nadu over a decade, the authors made an attempt of CAMEL criteria for analysis of selected Companies. Based on findings the suggestions were offered to overcome the difficulties face by selected NBFCs in their development.

Nisar and Mohsin (2004) presented a paper entitled “Islamic Non Banking Financial Institutions in India: Special Focus on Regulation”. Indian Muslims have always been trying to manage their economic affairs within the framework of Shariah. This paper aims to highlight the attempts made by Indian Muslims in this regard and how some of the later developments since mid eighties affected their functioning. The paper focuses on how the period of late 1980s and early 1990s saw the proliferation of Non Banking Finance Companies (NBFCs) in India and the subsequent failures of a large number of finance companies caused by the depressed economic scenario in early 1990s and the highly changing regulatory environment in the late 1990s. Some prominent Islamic NBFCs of India are taken for detailed case studies.

Sharma and Goel (2012) write on “Functioning and Reforms in Non-Banking Financial Companies in India”. Non-Banking Financial Companies do offer all sorts of banking services, such as loans and credit facilities, retirement planning, money markets, underwriting and merger activities. These companies play an important role in providing credit to the unorganized sector and to the small borrowers at the local level. Hire purchase finance is by far the largest activity of NBFCs. The rapid growth of NBFCs has led to a gradual blurring of dividing lines between banks and NBFCs, with the exception of the exclusive privilege that commercial banks exercise in the issuance of cheques. This paper provides an exhaustive account of the functioning of and recent reforms pertaining to NBFCs in India.

Xiaoqiang and Degryse (2010) published a paper entitled “The Impact of Bank and Non-Bank Financial Institutions on Local Economic Growth in China” in „Journal of Financial Services Research“. The paper provides evidence on the relationship between finance and growth in a fast growing country, such as China. Employing data of 27 Chinese provinces over the period 1995-2003, the authors study whether the financial development of two different types of financial institutions- banks and non-banks- have a (significantly different) impact on local economic growth. The findings indicate that banking development shows a statistically significant and economically more pronounced impact on local economic growth.

Syal and Goswami (2012) writes on “Financial Evaluation of Non-Banking Financial Institutions: An Insight “in „Indian Journal of Applied Research“. The Indian financial system consists

of the various financial institutions, financial instruments and the financial markets that facilitate and ensure effective channelization of payment and credit of funds from the potential investors of the economy. Non-banking financial institutions in India are one of the major stakeholders of financial system and cater to the diversified needs by providing specialized financial services like investment advisory, leasing, asset management, etc. Non-banking financial sector in India has been a considerable growth in the recent years. The aim of the present study is to analyze the financial performance and growth of non-banking financial institutions in India in the last 5 years. The study is helpful for the potential investors to get the knowledge about the financial performance of the non-banking financial institutions and be helpful in taking effective long-term investment decisions.

Taxman's (2013) published "Statutory Guide for Non-Banking Financial Companies" is published by Taxman's Publications, New Delhi. The book listed the laws relating to Non-Banking Financial Companies. The rules and laws governing the kinds of businesses undertaken by different types of NBFCs are also discussed.

Amit Kumar and Agarwal (2014) published a paper entitled "Latest Trends in Non-banking Financial Institutions" in, *Academica: An International Multidisciplinary Research Journal*. In Indian Economy, there are two major Financial Institutions, one is banking and other is Non-Banking. The Non-Banking Financial Institutions plays an important role in our economy as they provide financial services on wide range, they also work to offer enhanced equity and risk-based products, along with this they also provide short to long term finance to different sectors of the economy, and many other functions. This paper examines the latest trends in Non-Banking Financial Institutions. This paper analyzes the growth and enhanced prosperity of financial institutions in India.

Makhijani (2014) writes on "Non-Banking Finance Companies: Time to Introspect" in *Analytique*. Over the last few years the Non Banking Finance Companies (NBFC) sector has gained significant advantages over the banking system in supplying credit under-served and unbanked areas given their reach and niche business model. However, off late the Reserve Bank of India has introduced and suggested various changes in the existing regulatory norms governing NBFCs with a view to bring NBFCs regulations at par with the banks. The ongoing and proposed regulatory changes for the NBFCs in terms of increased capital adequacy, tougher provision norms, removal from priority sector status and changes in securitization guidelines could bring down the profitability and growth of the NBFC sector. NBFCs will need to introspect and rethink their business models as they will now not only have to combat stringent regulatory norms but also have to face the challenge of rising cost of funds, scare capital and direct competition from banks.

Shakya (2014) published a working paper entitled "Regulation of Non-banking Financial Companies in India: Some Visions & Revisions". Non-Banking Financial Companies are pioneer in their cash deployment, accessibility to the markets and others to count. NBFCs are known for their higher risk taking capacity than the banks. Despite being an institution of attraction for the investors, NBFCs have played a significant role in the financial system. Many specialized services such as

factoring, venture capital finance, and financing road transport were championed by these institutions. NBFC sector has more significantly seen a fair degree of consolidation, leading to the emergence of large companies with diversified activities. However, the recent financial crisis has highlighted the importance of widening the focus of NBFC regulations to take particular account of risks arising from the regulatory gaps, from arbitrage opportunities and from inter-connectedness of various activities and entities associated with the financial system. The regulatory regime is lighter and different than the banks. The steady increase in bank credit to NBFCs over the recent years means that the possibility of risks being transferred from more lightly regulated NBFC sector to the banking sector in India cannot be ruled out.

Conclusion

The NBFCs are playing noteworthy role in meeting financial needs of the medium and small sized industries and growth of Indian economy in a roundabout way. On the other side of the paper the policies of NBFCs are also providing investment safety measures for the investors. It tinted that due to the regulations of the RBI; still the NBFCs are not extending more credit. It is suggested to the NBFC credit policy to reduce rate of interests, which helps to small institutions to get loans for their different capital needs. The review made above shows that the research in NBFCs is not so accelerating & progressive towards economic development as many of the published research papers shows only fundamentals and basics of the NBFCs and still it is crucial to study the impact of financial sector reforms on the performance of NBFCs in India and also the role in development of Indian Economy.

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A Study of Impact of Customer & Competitor Orientation Strategies on Customer Satisfaction in Public Sector Banking Industry

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Abstract

With the growing identification of the customer's role in service sector creation and delivery, there is an increased impulsion on edifice customer-centric & competitor centric organizations. Market orientation is a business perception that makes the customer the crucial spot of a company's total operational process. The research idea stems from academic findings that market orientation not only affects the performance of the concern directly but also indirectly affects the customer's satisfaction and provides the competitive advantage which facilitates the organization to survive better in the competitive environment. In globalised environment customers have become more demanding which has made the job of banking sector much tougher and challenging, therefore in the present day context it has become important for the banking sector to understand the customers changing needs and to learn the application of marketing theories in context of customers as well as of competitors for competitive survival in the market.

Keywords: Service Marketing Strategies, Customer Orientation, Competitor Orientation, Customer Satisfaction

Introduction

Superior firm performance is achieved by developing and sustaining competitive advantage through market orientation. Competitive advantage is partially related to structural characteristics

such as market power, attention to employee's need and delivering promised services to the customers (Slater and Narver, 1994) but the major role is played by market orientation. Market-oriented firms seek to understand customers' expressed and latent needs, and develop superior solutions to those need (Slater and Narver, 1999). It is an organizational culture that most effectively and efficiently creates the necessary behavior for the creation of superior value for buyers and thus continuous superior performance for the business (Zebal, 2003). A market-oriented firm strives to satisfy its internal as well as external customers through intelligence generation, intelligence dissemination and by being responsive to information generated (Kohli and Jaworski, 1990).

Marketing concept is the base of market-oriented business. In competitive economy customers may choose from whom and how to buy, while production program is constantly evolving in accordance with their demands. In order to be successful, enterprise must always provide superior value, better than competitors, when it comes to quality, price and services. Marketing combination of management activities should find the best way to fulfill customers' needs and follow new

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organizational changes. New organizational changes denote new internal and external dimensions of marketing. Internal are related to teamwork and creation of data basis about customers and business partners, and external with developing partnership relations, not only with the customers, but also with the suppliers and distributors.

Competition and globalization of banking services are forcing banks to be productive and profitable. Banks are increasingly focusing on the premise that customers choose on the service provider who differentiates through quick and efficient service. The battle of the banks, for gaining a greater slice of the market share, is taking on a new dimension. In the current falling interest rate scenario, banks are finding it increasingly difficult to meet the high growth expectations. In order to bolster their top lines, banks are in pursuit of newer ways and means of achieving organic growth through strategies that enable acquisition of new customers and retaining the loyalty of the existing customers. Success of a bank's strategy towards customer acquisition will depend on its ability to develop customer insights and translate these into effective operating models.

Review of Literature

The literature has been collected from the secondary data published in journals and on the websites. A review of literature was conducted to find out the relationship among service sector, customer orientation marketing strategy and competitor orientation marketing strategy with customer satisfaction in banking industry.

According to Narver and Slater (1990), the three major components of market orientation - customer orientation, competitor focus, and cross-functional coordination are long-term in vision and profit-driven. Based on extensive interviews with managers and executives, they conclude that market orientation provides a unifying focus for the efforts and projects of individuals, thereby leading to superior performance. A developing stream of empirical research has found a strong relationship between market orientation and several measures of business performance, including profitability, customer retention, satisfaction, innovation, sales growth, and new product success. Marketing academicians and practitioners have been observing for more than three decades that business performance is affected by market orientation, yet to date there has been no valid measure of a market orientation and hence no systematic analysis of its effect on a business's performance. The authors report the development of a valid measure of market orientation and analyze its effect on a business's profitability. Using a sample of 140 business units consisting of commodity products businesses and non commodity businesses, they find a substantial positive effect of a market orientation on the profitability of both types of businesses. The findings do suggest that after controlling for important market-level and business-level influences, market orientation and performance are strongly related.

Lancaster (1990) maintains that the existence of product variety can be a result of consumers seeking variety in their own consumption and/or different consumers wanting different variants because tastes differ. From this perspective, firms using market segmentation strategies are actually

benefiting consumers and society by providing them with market offerings that better satisfy individual wants and needs. The result of the study suggested that firms wishing to provide superior value to consumers should try to develop market offerings that are well suited to specific market segments and furthermore, society should encourage firms to use market segmentation strategies.

The study by Kelley (1990) considered the customer orientation of the customer contact personnel in four banks and found that specifically the relationships between employee motivation, satisfaction, and role clarity are all directly related to customer orientation. However when these variables are considered together, motivation and role clarity appear to have the greatest impact on the customer orientation of employees

Ashok Kumar (1991) made an attempt to review and assess the extent of application of marketing concepts and techniques in the banking sector. It has been recommended that while formulating marketing strategy, a bank should focus attention on consumer sovereignty, on the attitude, responsiveness and personal skills of their staff, on revitalizing the marketing department, on top management support to the marketing department, and on participation of marketing personnel in key bank decisions. Efforts should be made by the banks to understand and estimate the attitude and perceptions of their customers as accurately as possible to enable them to plan the market segments and design service offerings to suit their customer.

Perrien et al. (1992) suggested that strong competitive pressure has forced financial institutions to revise their marketing strategies and to stress long-lasting relationships with customers. Most banks have tried to differentiate from other banks by offering supporting services, which is a first step towards relationship marketing. Many banks would also claim to have implemented relationship marketing more fully by developing closer relations with their clients. The economy of Sri Lanka has undergone considerable structural transformation particularly since 1977, benefiting from progressive economic liberalization. The dependence on the agricultural sector has declined and services and manufacturing sectors have become leading sectors in the economy, providing greater opportunities for both employment and income generation.

Dixit (2004) concludes that for successful marketing and to make it more effective, identify the customer needs by way of designing new products to suit the customers. The staff should be well equipped with adequate knowledge to fulfill the customer's needs. We should adopt long-term strategies to convert the entire organization into a customer-oriented one.

Objectives of Study

- To study the customer oriented service marketing strategies in public sector banks.
- To study the competitor oriented service marketing strategies in public sector banks.
- To explore the impact of customer oriented service marketing strategies on customer satisfaction in public sector banks.

- To explore the impact of competitor oriented service marketing strategies on customer satisfaction in public sector banks.

Hypotheses

- H_{01} : There is no significant impact of the customer orientation strategy on the customer satisfaction in public sector banks.
- H_{1a} : There is a significant impact of the customer orientation strategy on the customer satisfaction in public sector banks.
- H_{02} : There is no significant impact of the competitor orientation strategy on the customer satisfaction in public sector banks.
- H_{2a} : There is a significant impact of the competitor orientation strategy on the customer satisfaction in public sector banks.

Research Methodology

The research purpose of the current study is descriptive in nature as the research purpose is clearly structures and this study aims at gaining insights into customer & competitor oriented service marketing strategies adopted by the public sector banks (SBI & PNB) in Indore and their impact on the customer satisfaction.

➤ **The Population:**

The population in this study comprise of the customers of public (SBI & PNB) sector bank in Indore city.

➤ **Sampling Frame:**

The sampling frames for this study are public (SBI & PNB) banks of Indore city from where the primary data will be collected on the basis of the customers of the banks.

➤ **Sample Size:**

For primary data collection a sample of size approximately 200 (100 from each bank) is selected. Incomplete in sets of data were screened out.

➤ **Sampling Technique:**

In order to suite the research purpose the non-probabilistic convenience sampling technique was used.

➤ **Data Collection:**

Primary data is to be collected through in depth interviews supported by the self-developed, structured and non-disguised questionnaires based on Likert Type Scale. Questionnaire was developed for which the data was collected from the customers of the public sector banks in Indore city.

- **Data Analysis Tools:** Tools used to analyze the results were correlation and regression.

Result and Discussion

Public Sector Banks (Customer Orientation Strategy)

Table 1.1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	Sector = Public Sector (Selected)			
1	.832a	.692	.686	17.08336

- a. Predictors: (Constant), Customer Oriented
b. Dependent Variable: Customer satisfaction

Table 1.2 ANOVA^{b,c}

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	35362.781	1	35362.781	121.171	.000a
Residual	15759.433	54	291.841		
Total	51122.214	55			

- a. Predictors: (Constant), Customer Oriented
b. Dependent Variable: Customer satisfaction
c. Selecting only cases for which Sector = Public Sector

Table 1.3 Coefficients^{a,b}

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-9.737	17.944		-.543	.590
	Customer Oriented	5.469	.497	.832	11.008	.000

- a. Dependent Variable: Customer satisfaction
b. Selecting only cases for which Sector = Public Sector

The value of R from table 1.1 is 0.832 in case of public sector banks indicates that the impact of customer orientation strategy is there on the customer satisfaction but the impact of private sector is comparatively more than the public sector banks. R² value is .692 which shows 69.2% variation in customer satisfaction due to customer orientation strategy. The value of F from table 1.2 in case of public sector banks is significant as the value is less than 0.05 which means that the regression is

actually significant. The value of regression coefficient from table 1.3 of coefficient is 5.469 in case of public sector banks which indicate that customer oriented strategies have significant impact on the customer satisfaction in public sector.

Public Sector Banks (Competitor Orientation Strategy)

Table 1.4 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	Sector = Public Sector (Selected)			
1	.844a	.712	.706	16.52392

- Predictors: (Constant), Competitor Oriented
- Dependent Variable: Customer satisfaction

Table 1.5 ANOVA^{b,c}

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	36378.056	1	36378.056	133.233	1
Residual	14744.158	54	273.040		
Total	51122.214	55			

- Predictors: (Constant), Competitor Oriented
- Dependent Variable: Customer satisfaction
- Selecting only cases for which Sector = Public Sector

Table 1.6 Coefficients^{a,b}

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.450	16.156		.090	.929
Competitor oriented	9.011	.781	.844	11.543	.000

- Dependent Variable: Customer satisfaction
- Selecting only cases for which Sector = Public Sector

The value of R from table 1.4 is 0.844 in case of public sector banks indicates that the impact of competitor oriented strategy is there on the customer satisfaction in public sector banks. R² value is .712 which shows 71.2% variation in customer satisfaction due to customer orientation strategy for public sector. The value of F from table 1.5 in case of public sector banks is not significant as the value is greater than 0.05. The value of regression coefficient from table 1.6 of coefficient is 9.011 in case of

public sector banks indicates that competitor oriented strategies have significant impact on the customer satisfaction in public sector banks.

Conclusion

The uniqueness of this study lies in its enclosure of customer satisfaction while investigating the relationship between market orientation and business performance in the service sector. The findings of the study indicate significant impact of customer oriented and competitor oriented strategy on customer satisfaction in public sector banks. This research has implications for both theory development and for managers. The main role to theory development involves the confirmation of all the hypothesized relationships among the constructs of market orientation, business performance and customer satisfaction and also provides importance to managers and employees of the banks who are responsible for developing and implementing the marketing strategies. To enjoy the advantages of market orientation, employee satisfaction and customer satisfaction is essential in the organization that is vital for the development and maintenance of market-oriented strategies. Results of the study suggested that effective execution of market-oriented customer and competitor strategies system can optimistically persuade the business performance through customer satisfaction.

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A Study of Consumer's Beliefs about Trustworthiness in online Shopping

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Abstract

Trust is the major component for making good customer relations and it is of course very essential for non-store based retailers that the customers do trust them. When the customer get the desired product information and get product delivered at right price and at right time they intend to buy from online retailers again and also recommends to others. Customers started believing that the retailers are trustworthy when they find that the transactions made by them are safe and reliable and things may not go wrong with them. In order to know the consumer's beliefs on e-shopping this paper is articulated. By analyzing relation among positive and negative beliefs, it is found that those who are positive for online shopping highly affirmative on all positive factors while in case of negative factors it is observed that interrelation among negative factor is weak referring it is not obligatory that those who are negatively perceived about privacy risk so necessarily perceive negative views on other risk factor too. Lastly, this paper concludes that who considered online shopping is virtuous for completing routine work because it is easily accessible avoided all negative factors such as it takes extra charges of delivery; deliver the product but not on time and significantly that it is not timely delivered.

Keywords: Trustworthiness; Online Shopping; Consumer Behavior.

Introduction

Despite the rapid growth of the Internet and the high market potential of business to consumer (B2C) electronic commerce, actual online revenues still remain quite modest when compared to the offline world. According to the Pew Internet Project's September 2007 survey, 78% of online Americans agree that shopping online is a way to save time and a convenient way to buy products. But, at the same time, three quarters (75%) of internet users express discomfort over a key step in online shopping sending personal or credit card information over the internet.

Trust is the major component for making good customer relations and it is of course very essential for non-store based retailers that the customers do trust them. When the customer get the desired product information and get product delivered at right price and at right time they intend to buy from online retailers again, not only this the customer continues the purchases from the retail site in the near future and also recommends to others. Customers started believing that the retailers are trustworthy when they find that the transactions made by them are safe and reliable and things may not go wrong with them because they possess confidence on the transparency and quick information provided by the retailers if anything went wrong. Thus online purchasing involves retailers to be more transparent to its customers and to ensure that transactions with its customers remain safe and secure so that they continue their purchases with trust and faith.

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Review of Literature

Trust is a feeling of mutual acceptance between two parties; it develops out of continuous physical interaction and leads to long-term acceptance and commitment. So the important issue that needs to be addressed is “trust” among the seller-buyer, the lack of which often acts as an obstacle in the trial and adoption of the virtual market concept (Lee and Turban, 2001; Monsuwe’ et al., 2004). Koller (1988) defines trust as a function of degree of risk inherent in a situation. Trust, in the marketing context, can be defined as “a willingness to rely on an exchange partner in whom one has confidence” (Moorman et al., 1993). Mink et al. (1993) proposes three types of trust: “contract trust, self-disclosure trust and physical trust”; the first implying that people will do what they say they are going to do; the second implying that there would be willing and reciprocal sharing of relevant information; and third, meaning that people care about their physical and psychological well being. Ang and Lee (2000), concluded that “if the web site does not lead the consumer to believe that the merchant is trustworthy, no purchase decision will result”. It is also widely acceptable that if online trust can be understood, developed and maintained by the marketer, it would act as a originator to online buying and the number of online buyers would increase significantly (Wang and Emurian, 2005). Goodwin (1996), highlighted that trust “is the grease that keeps the wheels turning”. Online buying and selling necessitate customer trust (Lee and Turban, 2001; McCole and Palmer, 2001). Which indicates the importance of building consumer trust and maintaining relationships. Online trust is an important determinant for the success of online transactions (McKnight and Chervany, 2001; Balasubramanian et al., 2003; Koufaris and Hampton-Sosa, 2004).

The lack of trust in online security and policy, reliability of a company and web site technology play crucial role in consumers buying intentions. “Trust” as a concept has been extensively studied and well researched across numerous disciplines and fields (Wang and Emurian, 2005). It has been studied with “.both institutional phenomena and personal and interpersonal forms of trust (Grabner-Krauter and Kaluscha, 2003). The issue, having been a subject of interpretations across wide disciplines, slippery and lacks a universally accepted definition due to disciplinary orientations used by researchers (Zucker, 1986; Shapiro, 1987; Sultan et al., 2002). The concept has been explained from varying concepts, the earliest works being in the area of psychology (Deutsch, 1958; Zand, 1972) and sociology (Luhmann, 1979). Moreover, trust as a concept in the field of marketing emerged later, with works related to interpersonal relationships between buyers and sellers as well as relationship marketing (Dwyer et al., 1987; Moorman et al., 1992, 1993; Morgan and Hunt, 1994).

Objectives of Study

- To identify the positive and negative beliefs about the trustworthiness of online shopping behavior of professionals in Indore.
- To find association among positive and negative beliefs about the trustworthiness of online retailers.

Research Methodology

This study is exploratory and diagnostic in nature and completely based on the primary data collected from professionals of Indore city. Indore is chosen as sampling area as it is the commercial capital of Madhya Pradesh and also considered as a educational hub. The city has a huge business potential, the consumer here are well educated and having a good purchasing power which in turns significantly contributing to the online business. The sample size is 300, in which survey captured professionals using online shopping of Indore city, surveyed professionals consists Doctors, Chartered Accountants, Engineers of Indore. The sampling techniques adopted in this context was convenience sampling, snowball sampling and Stratified sampling. Questions regarding beliefs were rated on five points Likert scale whereon 1 denotes strongly disagree while 5 represents strongly agree.

Tools for Data Analysis

In order to meet the objective of our study we have used Mean and Standard Deviation to identify the most preferred factor for developing trustworthiness of online retailers. Further Correlations is used to find association among positive and negative beliefs about the trustworthiness of online retailers.

Analysis and Findings

Association among Beliefs about Trustworthiness

For assessing the association among beliefs about trustworthiness towards online purchasing, initially association among all positive believes have been derived by using correlations, in next step all negative variables have been taken and association among them have computed. By doing so, it is scrutinized that those who thinks positive/negative about online shopping, does he stick to stay positive/negative for all other variables or does vary? Lastly, association among negative and positive factor has applied by taking only those variables which are found significant in advanced analysis in chapter 5 and chapter 6. Positive variables are: Price; Easy access and wide range whereas negative variables are namely additional fee; delivery of false product; timely delivered; misuse of bank details and personal information misuse taken into consideration.

Table no. 1 illustrates Descriptive Statistics of positive seven surveyed factors. By seeing mean values, it can be clearly observed that the most preferred factor is **Wide Range Availability**, followed by **Time Saving**, **Easy Access** and **Product Information**. Whereas, **Price** factor held fifth position; **Advertisement along with Entertainment** shared last position. Though, the second order central tendencies values are stating something different story, the standard deviation values of fifth and first positioning factors are akin, that is to say consistency is much higher in prices than other factors. More specifically, professional's views for prices are alike.

Table 1: Descriptive Statistics (Positive Aspects)

	Mean	Std. Deviation	N
Easy Access	3.88	1.047	300
Price	3.69	.960	300
Times saving	4.21	1.012	300
Entertains Me	3.15	1.234	300
Wide Range	4.22	.970	300
Product Information	3.84	1.073	300
Motivated By	3.17	1.149	300

Pursuing same further, here association among negative factors has assessed. Following **table no.2** shows summarized statistic of perceived risk factors. It is clear from table ;views of professionals are diversified and varied mostly in **Product Return Process** and **Additional fee** as values of variance are 1.89 and 1.85 respectively. It is signifying that perceived mental image on these two risk factors varies highly. Least variance obtained by **prices are highly charged by online-store and delivery on wrong place** showing more or less professionals having same views on these two, while above documented analysis also infers that these two factors ranked on bottom line and here mean values also affirming the same situation, that they had gained least mean value, reflecting that by professionals these factors are perceived as acceptable and partaking less degree of fear if they purchase through online shopping. Referring to **Commercial dispute** as found highly terrified factor as mean value is highest 3.33 among all risk factor in analysis, but statistically analysis found that views are scattered for commercial dispute not similar as standard deviation values 1.23 shows.

Table 2: Descriptive Statistics (Negative Aspects)

	Mean	Std. Deviation	N
Additional Fee	3.08	1.360	300
Delivery Of False Products	3.08	1.156	300
Risk of Personal Information	2.80	1.241	300
Bank details May Be Mistreated	2.78	1.100	300
Risk Of Timely Deliver	2.64	1.203	300
Product Return Process	3.17	1.375	300
Delivery On Wrong Place	2.17	1.066	300
Commercial Dispute	3.33	1.232	300

Lastly, relationship among beliefs of professionals has been identified, beliefs can be positive towards online shopping referred as having trust on e-shopping or it may be negative means not having

completely trust on e-shopping might be because of distrust on transaction security or because of quality of the product nothing but reliability or due to any other reasons viz. hedging, hacking or probability of committed to cyber-crime.

Table 3: Correlations among Beliefs

	AF	DFP	RPI	BDM	RTD	CD	EA	Price	WR
AF	1								
DFP	.35**	1							
RPI	.23**	.24**	1						
BDM	.31**	.46**	.47**	1					
RTD	.28**	.28**	.41**	.42**	1				
CD	.15**	.346**	.24**	.45**	.16**	1			
EA	-.08	-.012	.038	-.017	-.15**	.09	1		
Price	.06	.018	-.022	.072	-.05	.03	.70**	1	
WR	.18**	.086	.076	.067	-.07	.06	.44**	.41**	1
AF - Additional Fee DFP- Delivery Of False Products RPI- Risk of Personal Information BDM -Bank details May Be Mistreated RTD -Risk of Timely Deliver EA- Easy Access Price- Appropriate Price WR- Wide Range Availability									
<i>Author's Calculation</i>									

Here table 3 explains the combo interrelation between positive and negative attitude among only those factor which are having significant impact on buying behavior. Almost variables have positive sign reflecting that professionals at the same time feels pleasure in doing online shopping while perceiving risk as well. In contradiction to it, the correlation **value -.15** showing significant inverse relationship between risk of timely delivery and be easy accessible. That is to say those who feel internet-purchasing can be easily accessed never thought it will not deliver timely. Though, easy access is also negatively associated with additional fee, delivery of false product and bank details may be mistreated but the values are too meager and not significant at even 10 per cent level of significance. Similarly, those who find e-stores charged right price with given quality denied with these facts that our information may be misused by any other person or product will not be delivered on time. Whereas wide range availability is also inversely associated with timely delivery risk but the value is too small and not significant.

Conclusion

By analyzing relation among positive and negative beliefs, it is found that those who are positive for online shopping highly affirmative on all positive factors while in case of negative factors it is observed that interrelation among negative factor is weak referring it is not obligatory that those who are negatively perceived about privacy risk so necessarily perceive negative views on other risk factor too. Finally this paper concludes by presenting correlation among positive and negative beliefs that who considered online shopping is virtuous for completing routine work because it is easily accessible avoided all negative factors such as it takes extra charges of delivery; deliver the product but not on time and significantly that it is not timely delivered.

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Effect of Flexible Work Arrangement on Work Life Balance of IT Professionals

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Abstract

Societal changes like shift of family structure from joint to nuclear families, entry of women in workforce leading to increase in dual couple earner, changes in work timings from fixed hours to long working hours etc. Have made it difficult for professionals in IT industry to manage both their work & non-work demands leading to work life imbalance. The IT organizations are experimenting with various HRM practices to achieve work life balance for its employees. The study analysed the impact on work life balance of some flexible work arrangement practices like compressed work week, job sharing, part time work, self-rostering and work from home on a sample of IT of Pune. Findings revealed that flexible work arrangement practices have significant impact on work life balance of IT professionals.

Keywords: Work life balance, flexible work arrangement, compressed work week, job sharing, part time work, self-rostering, work from home

Introduction

Indian society has observed numerous changes in last few decades like shift of family structure from joint to nuclear families, entry of women in workforce leading to increase in dual couple earner, & changes in work timings from fixed hours to long working hours.

The Indian IT industry is playing an important role in economic growth of India and is one of the major contributors of GDP of the country. However, the IT industry follows hectic & demanding work culture, where employees need to work 24*7 (Bharat, 2008), as the projects are basically outsourced from other countries having different time zones. So, IT professionals are required to work as per schedule of the client countries. For example, employees need to start their day as per the Indian clock & work for long hours to deal & communicate with clients situated in different countries. As a result, they don't have time to take care of their personal and family related activities. This has made it difficult for employees to manage both their work & non-work demands leading to work life imbalance. The paper explores role of flexible work arrangement practices in accomplishing work life balance among IT professionals of India.

Work life balance is "satisfaction and good functioning at work and at home with a minimum of role conflict" (Clark 2000). Human resource professionals have been working hard to design practices & policies that will help IT professionals to attain work life balance. HRM practices relate to specific practices, formal policies, and philosophies that are designed to attract, develop, motivate, and retain

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employees who ensure effective functioning and survival of the organization (Cheng Ling Tan & Aizzat Mohd Nasurdin, 2011).

In current scenario, flexibility is taking a roof in every one's mind in managing conflicting demands of work & family. Flexible practices can help employees to cater to the needs of work & non-work life and may help to create positive relationship between employee & employer goals (Apgar, 1998). Flexible working arrangements have been recognized as one of the essential ways of balancing work and non-work demands (Evans 2001; Glass and Estes, 1997; Dex and Smith, 2002).

Review of Literature

HRM practices that support employees in managing work & non-work demands have elevated attention of many researchers & practitioners (Hammer et al, 2005). Flexible work arrangement is one of the HRM practices that helps employees in managing their work & non-work demands (Allen et al., 2013; 29 Hill et al., 2008). It is getting more and more attention as it provides freedom & autonomy to employees. Flexible work arrangement permits employees to have control on when & where they work. In other words, Flexible work arrangement practices are formal or informal practices that allow employees to have flex schedule & work place (Lambert et al, 2008, Maxwell et al, 2007). Flexible work arrangement can be a substitute for traditional practices, where employees need to take leave if having some other responsibility to perform during working hours. Gratham et al (2009) suggested some flexible work arrangements like compressed work week, job sharing, part time work, self-rostering & work from home. 'Compressed work week' is one in which even though the employees are required to complete minimum number of hours per week, but they have freedom to schedule working hours on day to day basis. For example, if employees must work for 40 hours per week, they can complete it by working for 10 hours a day in 4 days (Lambert et al, 2008). It gives autonomy to employees to have longer period for attending to family responsibility. 'Job sharing' is a practice where two or more than two employees are responsible for one task and together they required to finish the task by managing their sick leaves and holiday offs and vacation (Mamaghani, 2006).

'Part time' work employees work lesser no of hours than full time workers (Wikipedia, 2018) and have lesser responsibility than that of full time workers. The practice of allowing employees to work part-time will help, specially working mothers, in reducing the work family intervention and in attaining work family balance, which further supports in their well-being (Van et al, 2004). The practice of 'Self-rostering', also known as flexitime, allows employees to start & finish their working day as per their discretion, but they are required to work standard number of hours per day (Rocereto et al, 2011). This practice generally helps in reducing work family conflict, until & unless the practice is used unidirectional like stretching the working hours by using flexibility in finishing work day (White et al, 2003).

With the change in technology & human resource management perspective, 'work from home' practice has come as an opportunity for employees to manage equilibrium between work & non-work

responsibilities and it also provides flexibility to employees (Drew et al., 2003). Work from home is also termed as ‘telecommuting’ where employees can work from remote location by using technology like laptop, computer, Phone & internet (Mamaghani, 2006). This practice is beneficial for both: this will reduce organization cost on employees like electricity bill, net bill etc. and will help employees in minimizing their transportation time from home to work (Siha & Monroe, 2006).

Haymann (2009) found relationship between perceived usability of flexible work arrangement with work life balance & its variable work interference with personal life, personal life interference with work, and work/personal life enhancement. The study also reveals that usability & availability of flexible work arrangement practices will help in achieving work life balance. Implementation of flexible work arrangement practices as formal policy in organization as per demand of employees, will support in maintaining equilibrium between work & family issues (Schieman & Young, 2010). Flexible arrangement practices have been found to be a win-win situation for both organization and their employees (Khan and Agha, 2013, Kumar and Chakraborty, 2013, and Aumann et al. 2011). Flexible work practices like compressed work week, job sharing, part time work, self-rostering & work from home will help in attaining work life balance (Rawashdeh, 2016)

Objectives of Study

- To identify factors of work life balance among IT professionals.
- To study the impact of flexible work arrangement practices on work life balance among IT professionals.

Hypothesis

H_0 : There is no significant impact of flexible work arrangement practices on work life balance among IT professionals.

H_1 : There is significant impact of flexible work arrangement practices on work life balance among IT professionals.

Sub-hypotheses

H_{01} : There is no significant impact of ‘compressed week work’ on work life balance among IT professionals.

H_{11} : There is significant impact of ‘compressed week work’ on work life balance among IT professionals.

H_{02} : There is no significant impact of ‘job sharing’ on work life balance among IT professionals.

H_{12} : There is significant impact of ‘job sharing’ on work life balance among IT professionals.

H_{03} : There is no significant impact of ‘part time work’ on work life balance among IT professionals.

H_{13} : There is significant impact of ‘part time work’ on work life balance among IT professionals.

H_{04} : There is no significant impact of ‘self-rostering’ on work life balance among IT professionals.

H₁₄ : There is significant impact of ‘self-rostering’ on work life balance among IT professionals.

H₀₅ : There is no significant impact of ‘work from home’ on work life balance among IT professionals.

H₁₅ : There is significant impact of ‘work from home’ on work life balance among IT professionals.

Research Methodology

Description of Sample

The study was conducted for IT professionals of Pune. Sample of 107 IT professionals was drawn through convenient sampling.

Description of the Tool Used

A structured questionnaire was developed for the study. Questionnaire was divided into three parts viz.: demographic profile (containing age, marital status, children status, educational qualification, monthly income, and experience), work life balance scale (containing 23 items grouped into four factors), and five flexible work arrangement practices.

In work life balance & human resource management scale 7 point liker scale was used and coded as 1 = Strongly Disagree, 2 = Disagree, 3 = Slightly Disagree, 4 = Neutral, 5 = Slightly Agree, 6 = Agree, & 7 = Strongly Agree.

Cronbach’s alpha statistics was applied to check reliability of the questionnaire, thereafter factor analysis for work life balance was done. Linear regression was applied to achieve the objective & to test hypotheses of the study.

Results & Discussion

Statistical testing & analysis was done by using SPSS (originally Statistical Package for the Social Sciences) version 22 for Windows.

Profile of the Respondents

150 questionnaires were distributed among IT professionals of Pune out of which 107 completely filled questionnaires were received & used for further analysis. Out of 107, 68 were male & 39 were female. 59 of them were married & 48 were unmarried. Out of the 59 married respondents, 23 had children. 81 employees belonged to 20-30 years age group, 24 belonged to 30-40 years age group & remaining 2 belonged to 40 years and above age group.

Reliability

The questionnaire was made up of two different scales: flexible work arrangement practices and work life balance. Cronbach’s alpha statistics were measured for both the scales individually. As per table 1 given below, the Chronbach’s alpha value for work life balance was .908 & for flexible work arrangement practices was .820. The Chronbach’s alpha value more than 0.72 is considered as good and acceptable in literature.

Table 1: Reliability Statistics of Work Life Balance and Flexible Work Arrangement Practices Scales

Scale	Reliability Statistics		
	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Work Life Balance	.908	.908	23
Flexible Work Arrangement Practices	.820	.823	5

Factor Analysis

Adequacy of data was checked by KMO Barlett's test of sampling adequacy. The KMO value for work life balance scale as shown in table 2 was .877, which is acceptable value and good, as value of KMO above 0.5 is acceptable and higher the value more adequacy is associated with data. Hence data was adequate & factor analysis could be applied. To identify the factors, principal component analysis was done and as a result four factors were extracted with Eigen value of more than 1. All the factors accounted for cumulative variance of 71.638% as shown in table 2. Four factors were named as work family interference, family work interference, work family enhancer, & family work enhancer.

Table 2: KMO & Bartlett's Test of Work Life Balance

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.877
Bartlett's Test of Sphericity	Approx. Chi-Square	1861.903
	df	253
	Sig.	.000

Table 3: Factor Analysis of Work Life Balance

Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.724	33.582	33.582	7.724	33.582	33.582	5.064	22.018	22.018
2	6.140	26.694	60.276	6.140	26.694	60.276	4.794	20.845	42.862
3	1.541	6.699	66.975	1.541	6.699	66.975	3.711	16.133	58.995
4	1.072	4.662	71.638	1.072	4.662	71.638	2.908	12.643	71.638
5	.823	3.580	75.218						
6	.658	2.859	78.077						

7	.612	2.659	80.736						
8	.536	2.329	83.065						
9	.485	2.110	85.176						
10	.477	2.075	87.251						
11	.379	1.648	88.899						
12	.330	1.434	90.333						
13	.307	1.336	91.669						
14	.278	1.210	92.879						
15	.275	1.194	94.073						
16	.234	1.017	95.091						
17	.217	.943	96.034						
18	.193	.838	96.872						
19	.185	.805	97.677						
20	.159	.690	98.367						
21	.148	.643	99.010						
22	.132	.572	99.582						
23	.096	.418	100.000						

Extraction Method: Principal Component Analysis.

Hypothesis Interpretation

H₀1 : There is no significant impact of ‘flexible work arrangement practices’ on work life balance among IT professionals.

H₁1 : There is significant impact of ‘flexible work arrangement practices’ on work life balance among IT professionals.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.500a	.250	.243	18.219	.250	34.960	1	105	.000

a. Predictors: (Constant), HRM Practices

Table 5: ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	11604.053	1	11604.053	34.960	.000b
Residual	34852.134	105	331.925		
Total	46456.187	106			

a. Dependent Variable: Work Life Balance (WLB)

b. Predictors: (Constant), HRM Practices

Table 6: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	55.898	5.828		9.591	.000
	HRM Practices	1.524	.258	.500	5.913	.000

a. Dependent Variable: Work Life Balance (WLB)

Linear Regression was applied to assess the impact of ‘flexible work arrangement’ on work life balance, where flexible work arrangement was used as independent variable and work life balance as dependent variable. The regression showed R² value as .250. R-square value indicated that flexible work arrangement explained 25.0% of the variance in work life balance and remaining by other variables. F statistics had value of 34.960 at significance of .000. This indicated that the model was significant. The t statistics value for flexible work arrangement practices was 5.913 at a significance level of .000. The p-value was less than .005, hence as per regression model, ‘flexible work arrangement’ puts significant impact on work life balance among IT employees. Thus, as per results from tables 4, 5 & 6, null hypothesis was rejected, and the alternate hypothesis was accepted. Thus, the conclusion was that ‘flexible work arrangement’ puts significant impact on work life balance of IT employees.

Sub Hypothesis – 1

H_{a1}: There is no significant impact of ‘compressed week work’ on work life balance among IT professionals.

H₁₁: There is significant impact of ‘compressed week work’ on work life balance among IT professionals.

Table 7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.450a	.202	.195	18.696	.202	26.914	1	106	.000

a. Predictors: (Constant), Compressed Work Week

Table 8: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9407.229	1	9407.229	26.914	.000 ^b
	Residual	37049.512	106	349.524		
	Total	46456.741	107			

a. Dependent Variable: Work Life Balance (WLB)

b. Predictors: (Constant), Compressed Work Week

Table 9: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	63.442	5.198	.450	12.206	.000
	Compressed Work Week	5.838	1.125		5.188	.000

a. Dependent Variable: Work Life Balance (WLB)

Linear Regression was applied to assess the impact of ‘compressed work week’ on work life balance, where ‘compressed work week’ was used as independent variable and work life balance as dependent variable. The regression showed R² value as .202. R-square value indicated that ‘compressed work week’ explained 20.2% of the variance in work life balance and remaining by other variables. F statistics had value of 26.914 at significance of .000. This indicated that the model was significant. The t statistics value for ‘compressed work week’ was 5.188 at a significance level of .000. The p-value was less than .005, hence as per regression model, ‘compressed work week’ puts significant impact on work life balance among IT employees. Thus, as per results from tables 7, 8 & 9, null hypothesis was rejected, and the alternate hypothesis was accepted. Thus, ‘compressed work week’ puts significant impact on work life balance of IT employees.

Sub Hypothesis – 2

H₀₂: There is no significant impact of ‘job sharing’ on work life balance among IT professionals.

H₁₂: There is significant impact of ‘job sharing’ on work life balance among IT professionals.

Table 10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.355a	.126	.117	19.575	.126	15.244	1	106	.000

Table 11: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5840.941	1	5840.941	15.244	.000 ^b
	Residual	40615.800	106	383.168		
	Total	46456.741	107			

a. Dependent Variable: Work Life Balance (WLB)

b. Predictors: (Constant), Job sharing

Table 12: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	73519	4.330	.355	16.980	.000
	Compressed Work Week	3.745	.959		3.904	.000

a. Dependent Variable: Work Life Balance (WLB)

Linear Regression was applied to assess the impact of ‘job sharing’ on work life balance, where ‘job sharing’ was used as independent variable and work life balance as dependent variable. The regression showed R² value as 0.126. R-square value indicated that ‘job sharing’ explained 12.6% of the variance in work life balance and remaining by other variables. F statistics had value of 15.2444 at significance of .000. This indicated that the model was significant. The t statistics value for ‘job sharing’ was 3.904 at significance level of .000. The p-value was less than .005, hence as per regression model ‘job sharing’ puts significant impact on work life balance among IT employees. Thus. as per results from tables 10, 11 & 12, null hypothesis was rejected, and the alternate hypothesis was accepted. Thus, job sharing puts significant impact on work life balance of IT employees.

Sub Hypothesis – 3

H03 : There is no significant impact of ‘part time work’ on work life balance among IT professionals.

H13 : There is significant impact of ‘part time work’ on work life balance among IT professionals.

Table 13: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.326a	.106	.098	19.793	.106	12.580	1	106	.001

a. Predictors: (Constant), Part time Work

Table 14: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4928.378	1	4928.378	12.580	.001b
	Residual	41528.363	106	391.777		
	Total	46456.741	107			

a. Dependent Variable: Work Life Balance (WLB)

b. Predictors: (Constant), Part time Work

Table 15: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	72.247	5.025		14.377	.000
	Part time Work	4.453	1.256	.326	3.547	.001

a. Dependent Variable: Work Life Balance (WLB)

Linear Regression was applied to assess the impact of part time work on work life balance, where ‘part time work’ was used as independent variable and work life balance as dependent variable. The regression showed R² value as 0.106. R-square value indicated that ‘part time work’ explained 10.6% of the variance in work life balance and remaining by other variables. F statistics had the value of 12.580 at significance of .001. This indicated that the model was significant. The t statistics value for ‘part time work’ was 3.547 at significance level of .001. The p-value was less than .005, hence as per regression model, ‘part time work’ puts significant impact on work life balance among IT employees. Thus, as per results from tables 13, 14 & 15, null hypothesis was rejected, and the alternate hypothesis was accepted. Thus, ‘part time work’ puts significant impact on work life balance of IT employees.

Sub Hypothesis – 4

H04 : There is no significant impact of ‘self-rostering’ on work life balance among IT professionals.

H14 : There is significant impact of ‘self-rostering’ on work life balance among IT professionals.

Table 16: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.319a	.102	.093	19.843	.102	11.982	1	106	.001

a. Predictors: (Constant), Self-rostering

Table 17: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4718.141	1	4718.141	11.982	.001b
	Residual	41738.599	106	393.760		
	Total	46456.741	107			

a. Dependent Variable: Work Life Balance (WLB)

b. Predictors: (Constant), Self-rostering

Table 18: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	72.217	5.141		14.047	.000
	Self-rostering	3.710	1.072	.319	3.462	.001

a. Dependent Variable: Work Life Balance (WLB)

Linear Regression was applied to assess the impact of ‘self-rostering’ on work life balance, where ‘self-rostering’ was used as independent variable and work life balance as dependent variable. The regression showed R² value as 0.102. R-square value indicated that ‘self-rostering’ explained 10.2% of the variance in work life balance and remaining by other variables. F statistics had the value of 11.982 at significance of .001. This indicated that the model was significant. The t statistics value for ‘self-rostering’ was 3.462 at significance level of .001. The p-value was less than .005, hence as per regression model, ‘self-rostering’ puts significant impact on work life balance among IT employees. Thus, as per results from tables 16, 17 & 18, null hypothesis was rejected, and the alternate hypothesis was accepted. Thus, ‘self-rostering’ work puts significant impact on work life balance of IT employees.

Sub Hypothesis – 5

H05 : There is no significant impact of ‘work from home’ on work life balance among IT professionals.

H15 : There is significant impact of ‘work from home’ on work life balance among IT professionals.

Table 19: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.455a	.207	.200	18.643	.207	27.667	1	106	.000

a. Predictors: (Constant), Work from Home

Table 20: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9615.870	1	9615.870	27.667	.000b
	Residual	36840.870	106	347.555		
	Total	46456.741	107			

a. Dependent Variable: Work Life Balance (WLB)

b. Predictors: (Constant), Telecommuting (Work from Home)

Table 21: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	65.332	4.798		13.616	.000
	Work from Home	4.664	.887	.455	5.260	.000

a. Dependent Variable: Work Life Balance (WLB)

Linear Regression was applied to assess the impact of ‘work from home’ on work life balance, where ‘work from home’ was used as independent variable and work life balance as dependent variable. The regression showed R² value as 0.207. R-square value indicated that ‘work from home’ explained 20.7% of the variance in work life balance and the remaining by other variables. F statistics had the value of 27.667 at significance of .000. This indicated that the model was significant. The t statistics value for ‘work from home’ was 5.260 at significance level of .000. The p-value was less than .005, hence as per regression model, ‘work from home’ puts significant impact on work life balance among IT employees. Thus, as per results from tables 19, 20 & 21, null hypothesis was rejected, and the alternate hypothesis was accepted. Thus, ‘work from home’ puts significant impact on work life balance of IT employees.

Findings

Findings entails that all flexible work arrangement practices i.e. compressed work week, job sharing, part time work, self-rostering & work from home shows significant impact on work life balance of IT professionals. Hence implementation of these practices will be beneficial for both employees & employers. Study indicated that ‘work from home’ showed highest impact on work life balance followed by ‘compressed work week’. Hence, implementation of these flexible work arrangement practices will help IT professionals in achieving work life balance.

Conclusion

Indian IT industry has marked its identity in India in last few years and is recognized globally due to its quality work force. The industry is facing problem of work life imbalance among its employees, and to resolve this problem organizations need to take initiatives in the form of effective HRM practices. Shift to flexible work arrangement has been found to be one of the most suitable ways to maintain compatibility between work and non-work life. Findings of the study also indicate that flexible work arrangement practices have significant impact on work life balance of IT professionals. Five types of flexible work arrangement practices viz. compressed work week, job sharing, part time work, self-rostering, & work from home were studied and all practices showed significant impact on work life balance. The highest impact was shown by ‘work from home’ followed by ‘compressed work week’. So conclusion can be drawn that ‘flexible work arrangement practices’ in general, and ‘work from home’, & ‘compressed work week’ practices in particular should be the first choice of IT organizations for implementation to deal with the problem of work life imbalance among IT Professionals.

Further study can be done to know the impact on organizational & employees’ outcomes by having work life balance with the help of flexible work arrangement. The study is limited in its scope to ‘flexible work arrangement’ only as an HRM Practice to attain work life balance. Further study can be done by including more supportive HRM practices. Results cannot automatically be generalized for the whole Indian IT industry, as the sample was drawn from Pune only. So, future research can be done by covering whole IT industry.

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