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Contents

EDITORIAL

The foundational pillars of New Education Policy (NEP) focuses on (a) Access, (b) Equity,(c) Quality, (d) Affordability and (e) Accountability, this new NEP policy is aligned to the 2030 Agenda of Sustainable Development. After Independence, several steps were taken by successive governments to decolonise the education system, including through the University Education Commission(1948-49), Secondary Education Commission(1952-53), D.S.Kothari Commission (1964-66) and the National Policy on Education(1968).Undoubtly, India has had three education policy to date. The first came in 1968 and the second in 1986, under Indira Gandhi and Rajiv Gandhi respectively; the NEP of 1986 was revised in 1992 when P V Narasimha Rao was Prime Minister. The third is the NEP released in 2020 after the thirty-four year under the Prime Ministership of Narendra Modi. The New education policy focuses on thrust on "Experiential learning and critical thinking". Further, there is a significant shift from the 1986 policy, which pushed for a 10+2 structure of school education, the new NEP pitches for a "5+3+3+4" design corresponding to the age groups 3-8 years (Foundational stage), 8-11 (Preparatory), 11-14 (Middle), and 14-18 (Secondary). This brings early childhood education (also known as pre-school education for children of ages 3 to 5) under the ambit of formal schooling. The NEP also focuses the students until Class 5 should be taught in their mother tongue or regional language. The new education policy also proposes phasing out of all institutions offering single streams and that all universities and colleges must aim to become multidisciplinary by 2040. Moreover, the document stated the universities from among the top 100 in the world will be able to set up campuses in India. As far as higher education is concerned, the Four-year Programme proposed in the new NEP, students can exit after one year with a certificate, after two years with a diploma, and after three years with a bachelor's degree. Thus, the Four-year bachelor's programmes generally include a certain amount of research work and the student will get deeper knowledge in the subject he or she decides to major in. After four years, a BA student should be able to enter a research degree programme directly depending on how well he or she has performed. However, master's degree programmes will continue to function as they do, following which student may choose

to carry on for a PhD programme. It means a new direction towards research oriented learning is come up with a par excellence of education. Further, this is the Conference Issue of the journal which is 50th Golden Jubilee year of all Orissa Commerce Association. Moreover, the readers of Orissa Journal of Commerce are requested to go through the contents of the journal and help us in improving the academic value of this publication by offering suggestions based on their critical review and constructive observations.

Prof. Malay Kumar Mohanty

(Managing Editor)

Dynamic Causality between Indian Equity and Oil Prices during COVID-19 era: Evidence from Frequency Domain Approach

Gnyana Ranjan Bal and Dr. Shyama Charan Acharya

ABSTRACT

The present study analyses the direction and extent of causality between Indian stock and crude oil prices. The study period classified into pre and during COVID-19 period to get more insight into stock and commodities' usefulness for portfolio management. The paper employs the frequency domain causality (Bretuing & Candelon, 2006)and directional connectedness (Diebold & Yilmaz, 2009,2012) also known as the Diebold-Yilmaz spillover Index. The paper significantly differs from the earlier studies because of contemporary methodologies for study during the COVID-19 era. The findings of the study showed that there exists bi-directional causality among stock and crude oil in both pre and during the COVID-19 phase; however, the frequency varies. The magnitude of connectedness is shallow in the case of spillover index. The findings of the study will be helpful to investors and hedgers for making a decoupling strategy for risk management. Also, Policymakers will get insight from the findings of the study,for framing policy to protect one market from the shock of other markets.

Keywords: *COVID-19, Nifty, Crude Oil, Frequency domain causality, Connectedness analysis*

Introduction

India is one of the largest importers of crude oil. Hence, a major amount of foreign exchange paid towards it, so any changes in crude oil prices will also significantly impact the Indian economy andstock market. The downward movement in crude oil prices will result in cheaper import cost of oil, enhancing the output, and the market will rise (Bagchi et al., 2016). At the same time, the volatility of oil prices has been increased to a greater extent since the time of the global financial crisis in the year 2008; as a corollary, it causes fundamental risk, leads to adverse impacts on the economy as well as the financial market (Zhang, 2017). Similar observations have also been made in other studies (see forJammazi et al., 2017; Wen et al., 2019;Zhang & Broadstock, 2020). Crude oil is one of the significant commodities in the World. As the demand has increased due to higher consumption by developing countries against shrinkage of supply, it has become volatile (Balcilar et al., 2018). Also, it is argued that higher oil price

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will raise cost push inflation and negative output inoil-importing countries. The past studies have tried to explore the relationship between stock and commodities. Like Antonakakis et al., (2017) explored the linkage between stock and oil prices. Applying Diebold & Yilmaz(2014) connectedness index, the paper concludes that the relationship is time-varying in nature.Specifically, the demand side shocks transmit to stock. Also during low volatility, the quantile predictiveness of stocks increases as compared to the higher volatile phase(Bagchi et al., 2016). In another study,the time-varying correlation has been analyzed by Kumar et al. (2019).

Many panic creating events such as terrorist attack, outbreak of any virus etc. cause financial turbulence around World (Ahmed and Farooq, 2008). The recent outbreak of COVID-19, collapsed the economy around the World and the lockdown measures in many countries as a prevention against spread of virus, created disruption in financial markets around the World. The impact of COVID-19, a similarity attribute to the global financial crisis, is undiversifiable systematic risk. So the impact on financial markets needs to be assessed. (Sharif et al., 2020). Their study also used the wavelet method to assess the coherence between oil price shocks and the stock market. Along with as a proxy for other risks, geopolitical risk and economic uncertainty has been also taken. The pandemic shock is time-varying over the short and long run, which may be referredas the economic crisis. The present study has focused on India's context, as the third largest importer and recent fluctuation in West Texas Intermediate (WTI) crude oil will of much interest of researchers to revisit the relationship between equity and oil.At the same time, interdependence between oil and equity has been increased due to financialization of oil market.The paper analyses the impact of COVID-19 on the causality between Indian equity and Crude oil prices. The paper contributes to the existing literature in various ways. First of all, the study employs the contemporary frequency domain causality and connectedness analysis. Secondly, this study is in the context of COVID-19pandemic which will give insight on portfolio allocation during the time of crisis period. The remainder section of the study is organized as; section 2 Literature review, section 3 Data and Methodology, section 4 Empirical results and discussion and lastly section 5 deals with conclusion.

Literature Review

Many researchers have already conducted study in the context of causality and volatility spillover between financial markets, exchange rates and commodities. Study byPrabheesh et al.(2020)analyzed the time varying relationship among Oil and stock market in the context of top ten oil exporting countries. The study employed DCC GARCH and conclude that there is positive correlation between oil and stock during the pandemic period, hence leaves little scope for portfolio allocation.Sahu et al.(2014)explored the dynamic linkage between oil and stock in India. The study employed several methodologies such as VECM, Granger Causality, Impulse response function etc. Their findings showed that there exists long run relationship among the oil and stock. Also VECM revealed uni-directional transmission from stock to oil price, however no short run causality found.Similar study conducted by Yadav et al.(2020), in which the findings showed there exists causal relationship, however absence of long run relationship. Moreover, impact of oil is more significant.In other countries also the dynamic relationship and volatility spillover between oil and stock has also been investigated. Like Enwereuzoh et al.(2021)analyzed relationship among oil and stock in the context of Africa. In the context of US, the

impact of oil shock on stock market has been analyzed by Kang et al.(2015). Jammazi et al.(2017)revisited the time varying causality between oil and stock return. They showed bi-directional causality and which is intense during crisis period. In similar context,Jain & Biswal(2016) investigated linkage between oil, gold, exchange rate and stock in India. They significantly noted that decrease in price gold and oil influence the exchange rate then stock market. In another study made in the context of China by Hou et al.(2019)to explore time varying spillover between oil and stock futures. The findings showed bi-directional spillover.Zhang (2017) investigated connectedness between stock and oil, the study conclude that oil shock is significant for individual countries but not in overall. Studies like Wen et al. (2019) has employed multivariate quantile models to test the spillover between oil and stock market. Their findings showed that weak transmission before crisis however strong spillover during global financial crisis.

In another study, Sarwar et al.(2020)) analysed volatility transmission between Oil and Asian stock markets. By employing BEKK GARCH to data for period from 1997 to 2014. There is bi-directional in case of Pakistan and Uni-directional in case of China, however Indian market showed mix results.Karim et al.(2021) investigated dynamic relationship between oil and stock market of BRICS. Their data for the study pertains from 2006 to 2020. Using wavelet and MGARCH-DCC, the study concluded that as compared to India and China, in case of other BRICS markets oil and stocks are more correlated during COVID-19 pandemic. Sakurai & Kurosaki(2020)revisited the relationship between Oil and US market. There is presence of asymmetric effect. And downside correlation is higher and increased after crisis.

In the light of above literatures, the present study is an attempt to revisit the causality between Indian equity and crude oil prices. However, the paper uses contemporary methodology as compared to most of prior studies. Our study attempts to answer the following research questions: How does the causality between stock and oil changes in different frequency domain? Is there any impact of COVID-19 pandemic on relationship between stock markets and oil prices? Whether the connectedness has strengthened since the outbreak of COVID-19?

Data and Methodology

For the present study, the data pertaining to the closing prices of the Nifty fifty for Indian stock market and Crude oil price has been taken from the official websites. The sample period ranges from 1st April, 2015 to 31st December, 2020. However, the common data points have been only taken for estimation purposes. The whole sample period has been classified into two sub-periods as pre- and during COVID-19 period by applying Dickey-Fuller unit root with break point. The pre-Covid period ranges from 1st April, 2015 to 19th March, 2020 and during COVID-19 period ranges from 20th March onwards. The plot of unit root with break point is shown in the figure.1 both stock and crude oil. The break point of crudeoil is slightly earlier than nifty, however to select common data, 20th March have considered as the starting of COVID-19 era in the Indian context for our study purposes.

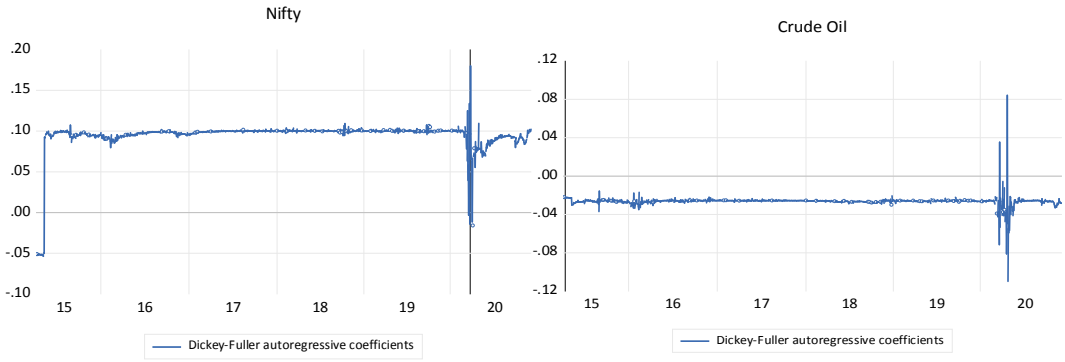

Figure 1 Dickey-Fuller autoregressive coefficients plot

Source: Authors' calculation

Frequency Domain Causality

The past studies have already pointed out that the causality among the variables changes in different frequency bands (Granger & Lin, 1995), hence the traditional test fails diagnose it. The spectral causality of Bretuing and Candelon (2006)is based on causality of Granger(1969) and Geweke(1982)but differs in approach. This approach has already been used in many studies like (Joseph et al., 2014; Ciner, 2013), hence we have not discussed in detail. The stationary VAR model for stock and oil can be written as in equation (1) and (2).

$$dstock_t = \alpha_1 dstock_{t-1} + \cdots \ldots\ldots\ldots + \alpha_p dstock_{t-p} + \beta_1 doil_{t-1} + \cdots \ldots\ldots\ldots + \beta_p doil_{t-p} + \varepsilon_t \quad (1)$$

$$doil_t = \alpha_1 doil_{t-1} + \cdots \ldots\ldots\ldots + \alpha_p doil_{t-p} + \beta_1 dstock_{t-1} + \cdots \ldots\ldots\ldots + \beta_p dstock_{t-p} + e_t \quad (2)$$

In above eqn (1) and (2) dstock and doil stands for first difference of natural log of Nifty and crude oil respectively and ε_t and e_t are error terms. Finally, in the presence linear restrictions, the causality from stock oil and vice versa at frequency (ω) can be tested in the hypothesis: $H_o: R(\omega)b = 0$, here $b = b_1, b_2 \ldots\ldots b_p$ and $R(\omega)$ is the matrix as follows (3):

$$R(\omega) = \begin{bmatrix} cos(\omega) cos(2\omega) \ldots\ldots cos(p\omega) \\ sin(\omega) sin(2\omega) \ldots\ldots sin(p\omega) \end{bmatrix} \quad (3)$$

In this context F statistics can be used to test above hypothesis at frequency interval of $\omega \in (0, \pi)$. Then after the time period can be computed with the help of as .

Diebold-Yilmaz Spillover Index

In addition to frequency domain causality, the present study also applies the spillover index (DY Spillover) of Diebold and Yilmaz, (2009,2012). This methodology is being widely used recently, hence we have limited to our discussion briefly only to the estimation of total spillover, directional spillover and net spillover equation (for details further reading Diebold and Yilmaz, 2009,2012). In aVAR based forecast error variance decomposition (FEVD), the total spillover index is computed as:

$$TC(H) = \frac{\sum_{i,j=1}^{N} \vartheta_{ij}(H)}{N} \times 100 \quad (4)$$

The directional spill over calculated as following (5) and (6)

$$DC_{\cdot \leftarrow j}(H) = \frac{\sum_{j=1 i \neq j}^{N} \vartheta_{ij}(H)}{\sum_{i,j=1}^{N} \vartheta_{ij}(H)} \times 100 \quad (5)$$

and

$$DC_{j \leftarrow \cdot}(H) = \frac{\sum_{j=1 i \neq j}^{N} \vartheta_{ij}(H)}{\sum_{i,j=1}^{N} \vartheta_{ij}(H)} \times 100 \quad (6)$$

and then net connectedness can be calculated by taking difference between (5) and (6) as follows:

$$NC_j(H) = DC_{\cdot \leftarrow j}(H) - DC_{j \leftarrow \cdot}(H) \quad (7)$$

Empirical Results and Discussion

Summary Statistics

The overall sample period has been classified into two sub-periods. Instead of taking the detection of COVID-19 positive cases or declaration of pandemic by the WHO, the structural breakpoints have been detected using Unit root with breakpoints (Figure 1, discussed earlier). The table 1 presents the summary statistics of return of Nifty Fifty and MCX crude oil daily closing prices. In overall sample period both the returns are positive, however Nifty returns higher than crude oil. However, in the pre-COVID period, the Nifty indicates negative average return. At the same time during the pandemic period, both stock and crude oil gives positive return, though less. The standard deviation of oil is much higher than nifty during COVID-19 period, indicates higher risk. This is because sharp downfall in the international oil markets due to various issues such demand supply mismatch, storage concern etc. In all the cases the null hypothesis of Jarque Berra test for normality have been rejected, hence can be concluded that data are not normally distributed. Similarly, the fig. 2 and 3 presents the plot of daily closing prices and fig.4 and 5 presents the log of daily closing prices. The shaded areasindicate COVID 19 period in fig. 2 and 3. There is sharp downfall in both stock oil prices in the starting of pandemic, however the recovery was also quicker. The said pandemic period also denotes higher volatility.

Table 1: Summary Statistics

	Overall Sample		Pre-COVID 19		During COVID 19	
	Nifty Returns	Oil Returns	Nifty Returns	Oil Returns	Nifty Returns	Oil Returns
Mean	0.000299	0.000075	-0.000744	0.00006	0.002299	0.003429
Median	0.000665	0.000305	0.000289	0.000466	0.003898	0.000595
Maximum	0.084003	0.347046	0.225391	0.084003	0.084003	0.347046
Minimum	-0.139038	-0.568435	-0.277872	-0.139038	-0.139038	-0.568435
Std. Dev.	0.011526	0.035742	0.028333	0.011335	0.019661	0.072158
Skewness	-1.695783	-2.218086	-0.226852	-1.828193	-1.872719	-2.132733
Kurtosis	26.93285	65.99954	19.06209	31.16175	19.61394	29.89946
Jarque-Bera	33571.98	229179.6	13168.02	41129.12	2078.702	5316.055
Probability	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***

****** indicates the rejection of null hypothesis at 1% significance level***

Source: Authors' calculations

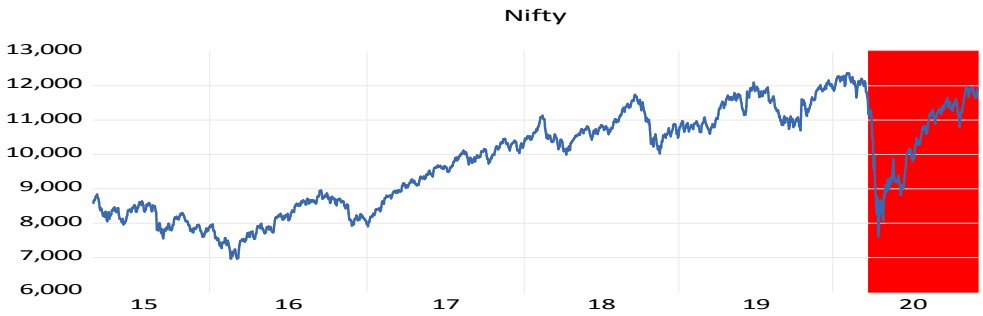

Figure 2 Time plot of daily closing prices of Nifty Fifty

Source: Authors' calculations

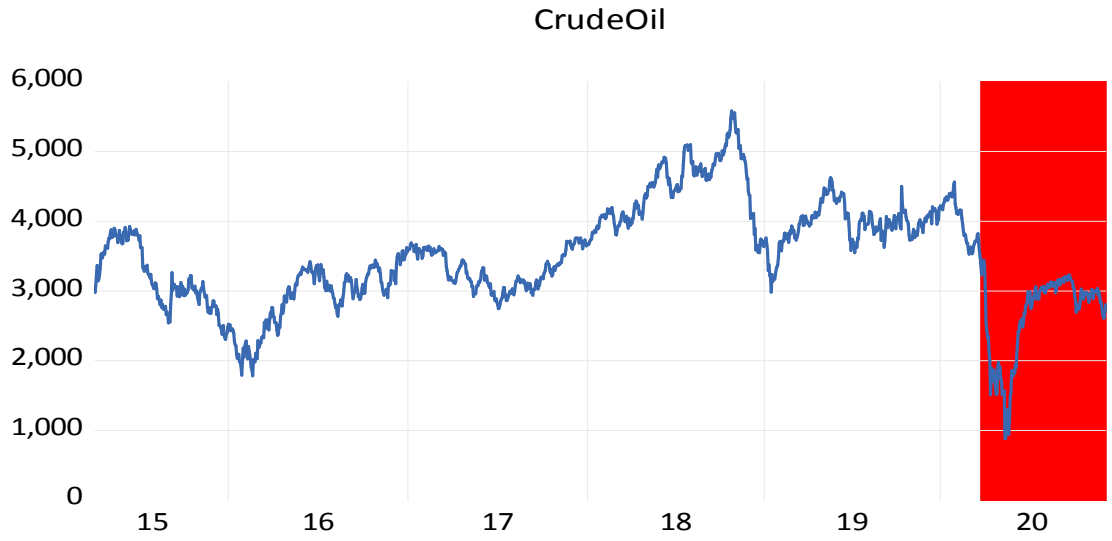

Figure 3 Time plot of daily closing prices of Crude Oil

Source: Authors' calculations

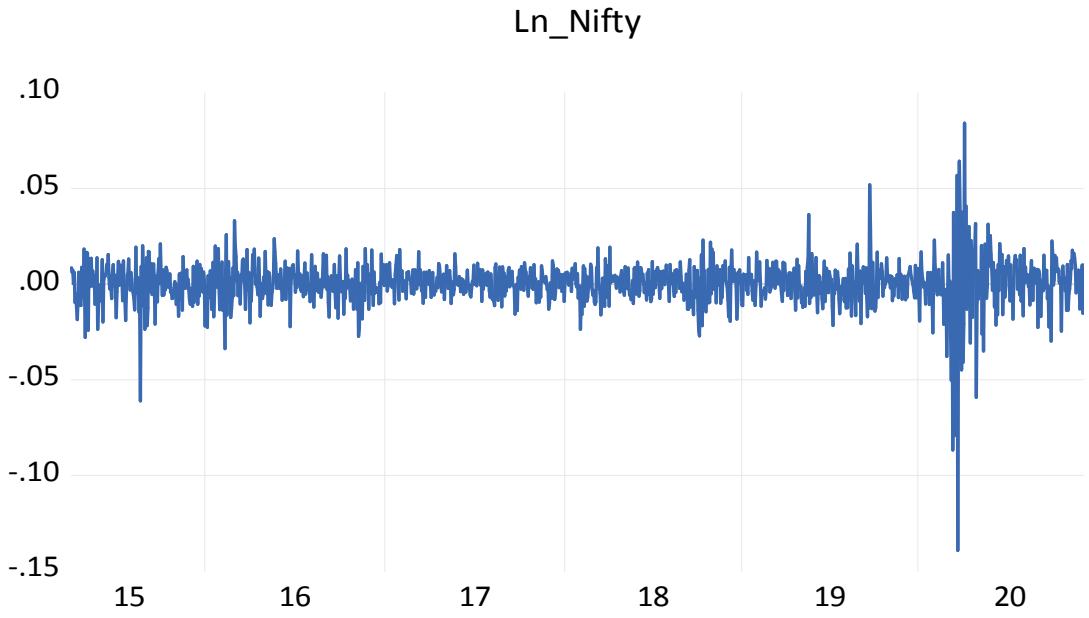

Figure 4 Time plot return of Crude Oil

Source: Authors' calculations

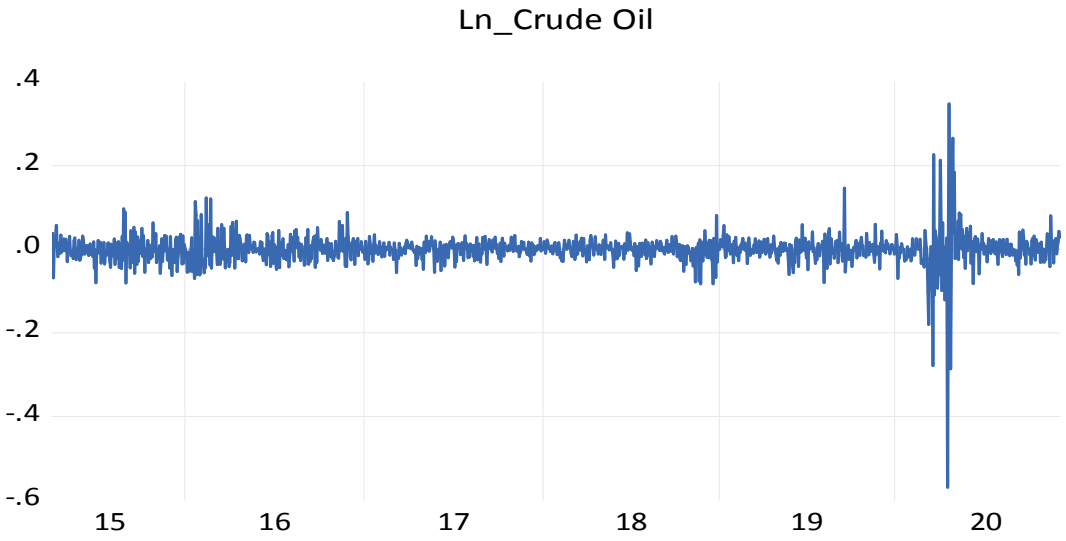

Figure 5 Time plot return of Crude Oil

Source: Authors' calculations

Test of Stationarity

The study has employed Augmented Dickey Fuller (ADF) test and Phillips- Perron (PP) test to test stationarity of the series. The results are presented in the Table 2. In all the sub-sample periods and also in case of overall sample period, the null hypothesis of presence of unit root has been rejected at 1% level of significance. Therefore, there is no issue of non-stationarity for both stock and oil prices on basis of ADF and PP test.

Table 2: Test of Stationarity

	Overall Sample		**Pre-COVID 19**		**During COVID 19**	
Variables	Nifty Returns	Oil Returns	Nifty Returns	Oil Returns	Nifty Returns	Oil Returns
ADF t-statistic	-13.04***	-17.51***	11.75***	-38.56***	-17.15***	-06.07***
PP t-statistic	-39.03***	-37.93***	-36.86***	-38.37***	-17.62***	-12.39***

****** indicates the rejection of null hypothesis at 1% significance level***

Source: Authors' calculations

Frequency Domain Causality

As discussed earlier, the frequency domain causality provides better insight on causal relationship at different time frequency. Our study has estimated Frequency domain causality of Bretuing and Candelon (2006)) in bi-variate framework without any conditional variable. The results are presented in the fig. 6, 7, 8,9,10 and 11. Causality in frequency domain between Nifty and Oil for all frequencies in the time period (0, ð). The horizontal x axis indicates omega(which is frequency band and corresponding time period can be obtained by T=2ð/ (in our case it is no of days). There is mix evidence of causality in different time horizons short, medium and long term. Like in causality from Nifty to Oil in fig.6. showed that causality from initial to frequency 0.25, then frequency 0.62 to 1.55 at 5% level. The corresponding no. of days will be till 25 days and 4 to 10 days. In very short term period frequency 2.51 to 3.14, which is around 2 to 3 days. In opposite from oil to nifty, presented in fig.7 in long term period 110 days to more than a year. And in short term 3 to 8 days (frequencies 2.07 and 0.74 respectively). Hence there is bi-directional causality during pre- pandemic period with different time horizons. During the pandemic period in case of nifty to oil (fig.8), the frequencies are 0.99 to 2.04, so no of days are 3 to 6days only in short term period, absence of long term period. In reverse from oil to nifty at two time phases 2 to 3 days and 4 to 7 days. Similarly, the observations can be made for overall sample period.The results are in the line with Yadav et al. (2020), however their study showed uni-directional causality. Also Jain & Biswal (2016) indiacted short run causality among stock and oil.

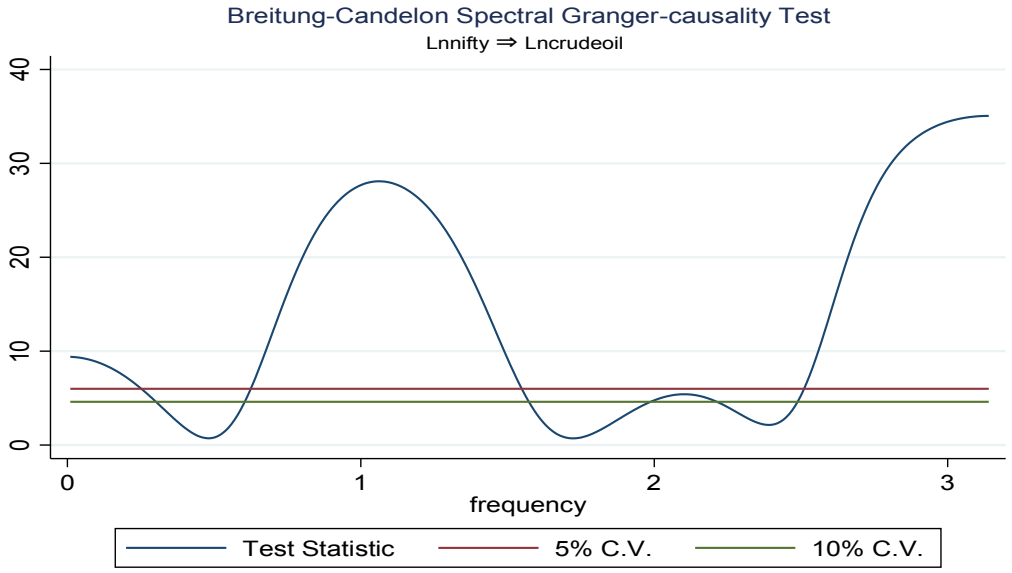

Figure 6 Frequency domain causality from Nifty to Oil during pre-Covid Period

Source: Authors' calculations

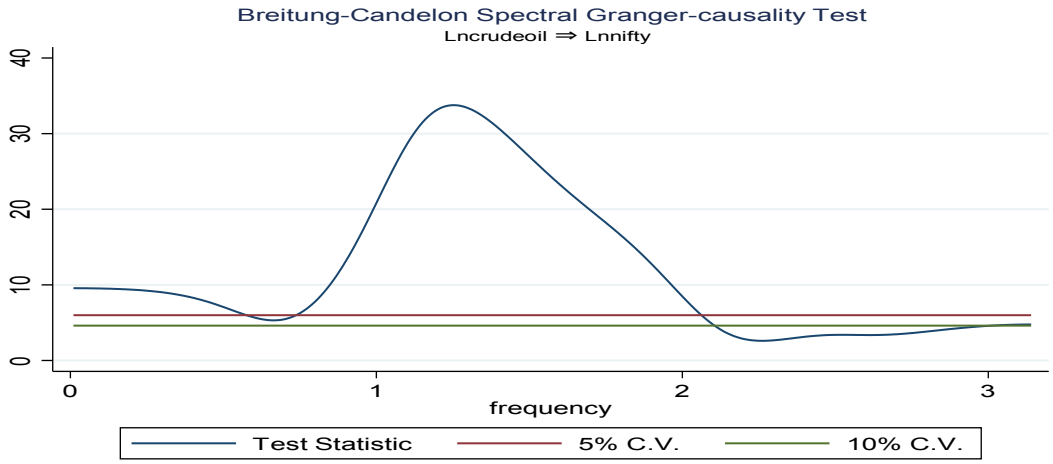

Figure 7 Frequency domain causality from Oil to Nifty during pre-Covid Period

Source: Authors' calculations

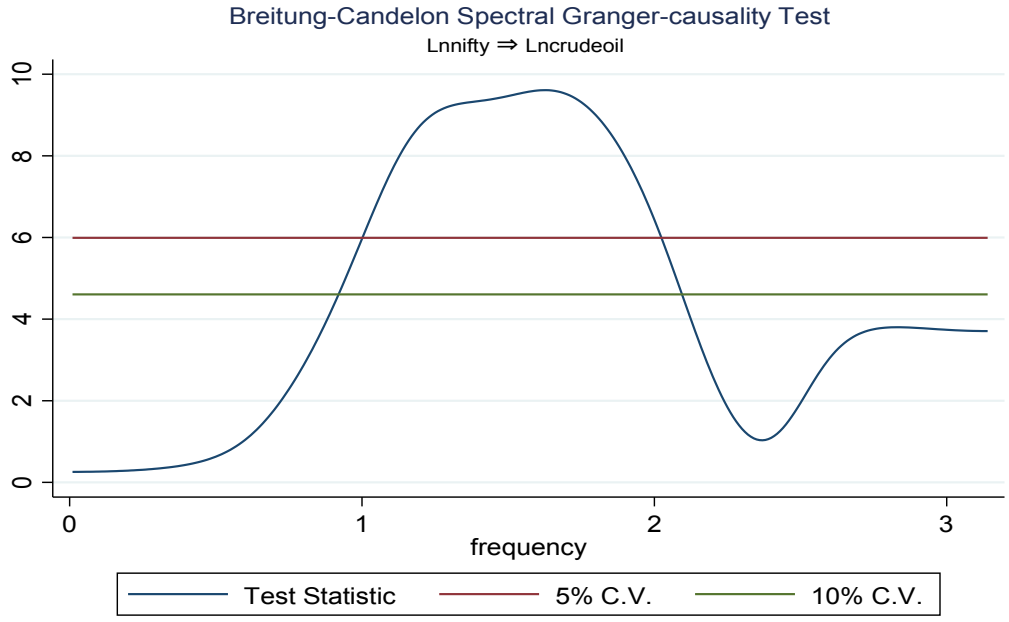

Figure 8 Frequency domain causality from Nifty to Oil during Covid Period

Source: Authors' calculations

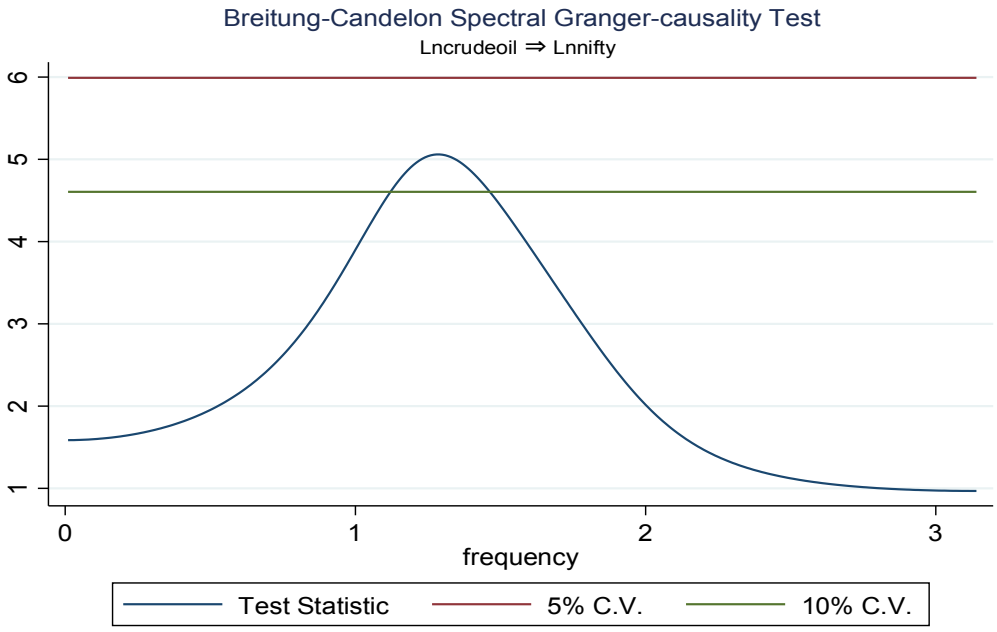

Figure 9 Frequency domain causality from Oil to Nifty during COVID Period

Source: Authors' calculations

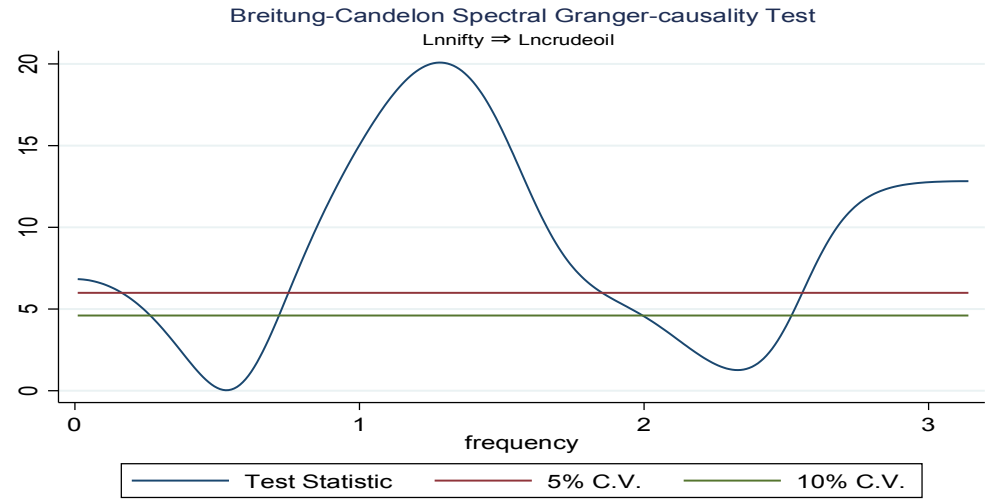

Figure 10 Frequency domain causality from Nifty to Oil during whole period

Source: Authors' calculations

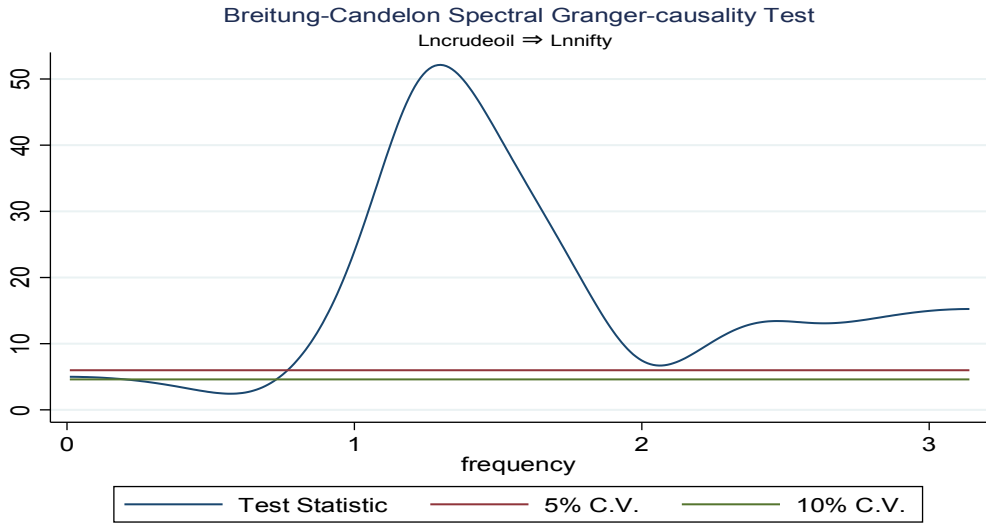

Figure 11 Frequency domain causality from Oil to Nifty during whole period

Source: Authors' calculations

Results of DY Spillover

Further in order to get more insight on portfolio allocation and spillover between Indian stock and oil prices, the study have employed connectedness analysis. The results are presented in table 3,4 and 5 for pre, during and overall period respectively. The total connectedness for pre-COVID period is 5.7%, which higher as compared to post COVID-19 period. The Nifty explains 8.2% of volatility of oil prices, in opposite oil explains 3.3% of dynamics of volatility. Crude oil is the net receiver of volatility transmission from stock markets. As oil explains 3.3% of forecast error variance of stock and receives 8.2%, so net recipient of 4.9%. During the COVID-19 period the obtained results are presented in table 3. The total connectedness for during COVID period is 1%, thus the magnitude of connectedness is much lower. The Nifty explains 1.6 % of volatility of oil prices, in opposite oil explains 0.3% ofFEVD of Nifty. Crude oil is the net receiver of volatility transmission from stock markets (i.e. 1.3%). In overall sample period, the total connectedness is 2.8%, little higher than during COVID-19 period. Nifty contributes 3% to the FEVD of stock, while oil explains 2.5%. during this time phase also oil is net receiver. Our findings also trail the findings of Zhang(2017) in global context. Hence, during the study period data, the oil shocks could not able to contribute much to the FEVD of stock markets, which may be in last five to ten years, there are many structural as well policy level changes owing to many events took place. Which has changed the mechanism of relationship among oil and stock markets. Fig.12,13 and 14 depicts the plot of total connectedness. The impact of pandemic can be clearly observed in both pre and overall period. During pandemic period, the connectedness is time varying in nature. The results would of much interesting for policy makers and hedgers while framing decoupling strategies for risk management.

Table 3: Dynamic Connectedness in the Pre-COVID19 period

	Nifty	Oil	From Others
Nifty	96.7	3.3	3.3
Oil	8.2	91.8	8.2
Contribution to Others	8.2	3.3	11.5
Contribution including own	104.9	95.1	TCI 5.7%
Net Directional Connectedness	4.9	-4.9	-

Source: Authors' calculations

Table 4: Overall Connectedness in the During-COVID19 period

	Nifty	Oil	From Others
Nifty	99.7	0.3	0.3
Oil	1.6	98.4	1.6
Contribution to Others	1.6	0.3	1.9
Contribution including own	101.3	98.7	TCI 1.0%
Net Directional Connectedness	1.3	-1.3	-

Source: Authors' calculations

Table 5: Overall Connectedness in the overall period

	Nifty	Oil	From Others
Nifty	97.5	2.5	2.5
Oil	3.0	97.0	3.0
Contribution to Others	3.0	2.5	5.6
Contribution including own	100.5	99.5	TCI2.8%
Net Directional Connectedness	0.5	-0.5	-

Source: Authors' calculations

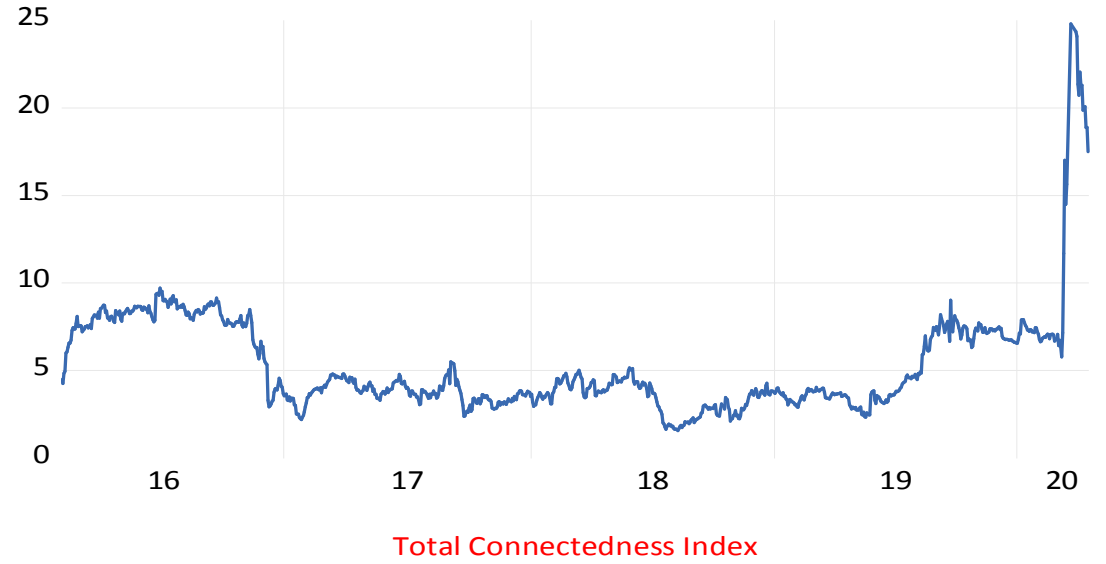

Figure 12: Total connectedness during pre-COVID19 period

Source: Authors' calculations

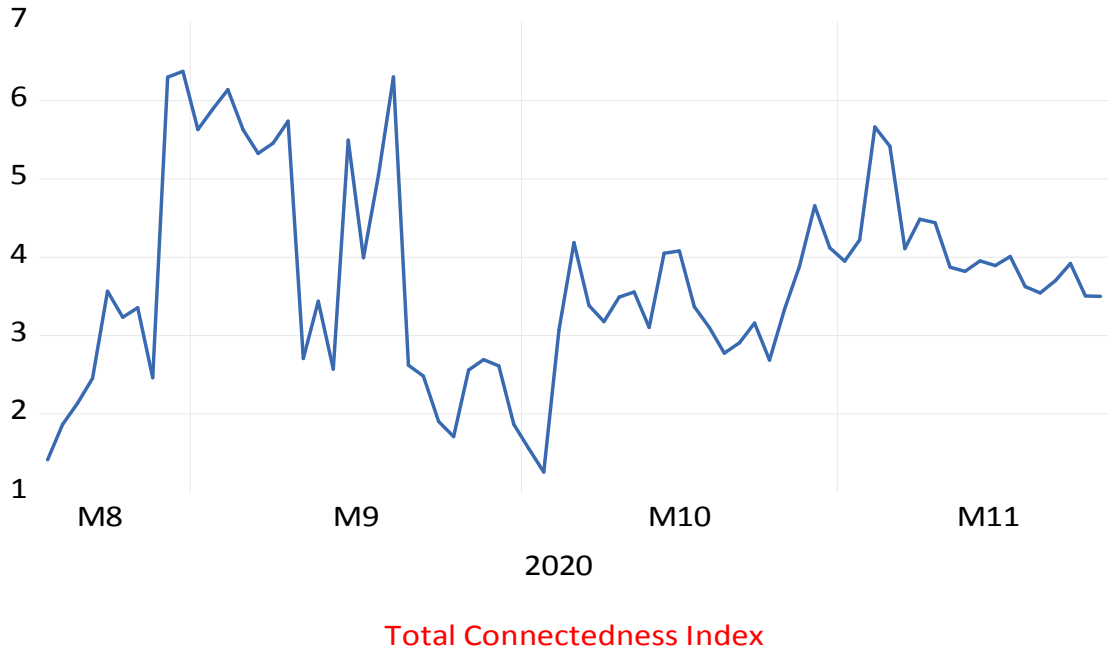

Figure 13: Total connectedness during the COVID19 period

Source: Authors' calculations

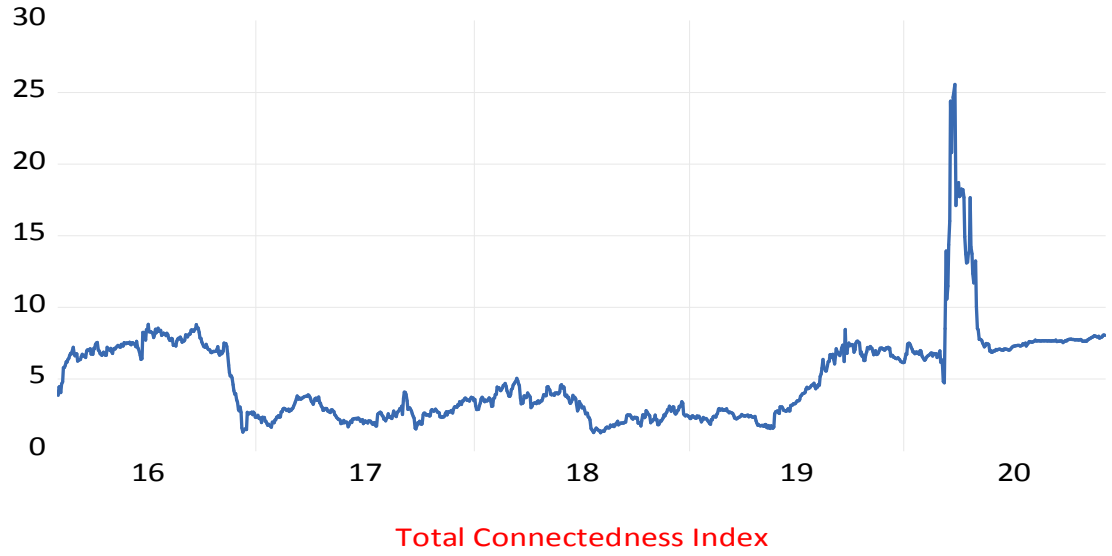

Figure 14: Total connectedness during whole sample period

Source: Authors' calculations

Conclusion

The highly unexpected pandemic has changed the scenario of economic and financial markets around the World. The linkage among stock and commodity will be interesting for Investors and policy makers. The present study revisits the causal relationship between stock and oil during this pandemic era. For this purpose, we employed causality in frequency domain and connectedness analysis. The paper contributes to earlier findings in this context. But the findings of the present study have different implications. Firstly, our methodology is different from many of the past studies referred to here, which have used time domain causality. To analyze the extent of causality in different time frame, frequency domain causality has been used. The findings show that there is bi-directional causality among Indian stock and crude oil markets. However, the frequency of such causality differs. Since the evidences have shown that there is very less connectedness, the findings will be useful for the strategy makers. Further, the study can be extended by including other commodities such as Gold, silver etc. Also the multivariate volatility models can be applied.

References

Ahmed, S. and Farooq, O. (2008). The Effect of 9/11 on the Stock Market Volatility Dynamics: Empirical Evidence from a Front Line State. *SSRN Electronic Journal,* doi:10.2139/ssrn.1140771.

Antonakakis, N., Chatziantoniou, I., & Filis, G. (2017). Oil shocks and stock markets: Dynamic connectedness under the prism of recent geopolitical and economic unrest. *International Review of Financial Analysis*, *50*, 1–26. https://doi.org/10.1016/j.irfa.2017.01.004

Bagchi, B., Dandapat, D., & Chatterjee, S. (2016). Dynamic Linkages and Volatility Spillover. *Dynamic Linkages and Volatility Spillover*. https://doi.org/10.1108/9781786355539

Balcilar, M., Hammoudeh, S., & Toparli, E. A. (2018). On the risk spillover across the oil market, stock market, and the oil related CDS sectors: A volatility impulse response approach. *Energy Economics*, *74*, 813–827. https://doi.org/10.1016/j.eneco.2018.07.027

Breitung, J., & Candelon, B. (2006). Testing for short- and long-run causality: A frequency-domain approach. *Journal of Econometrics*, *132*(2), 363-378. https://doi.org/10.1016/j.jeconom.2005.02.004

Ciner, C. (2013). Oil and stock returns: Frequency domain evidence. *Journal of International Financial Markets, Institutions and Money*, *23*, 1-11. https://doi.org/10.1016/j.intfin.2012.09.002

Dickey, D., & Fuller, W. (1979). Distribution of the Estimators for Autoregressive Time Series With a Unit Root. *Journal of The American Statistical Association*, *74*(366), 427. https://doi.org/10.2307/2286348

Diebold, F. and Yilmaz, K. (2009), Measuring Financial Asset Return and Volatility Spillovers, with Application to Global Equity Markets, *The Economic Journal*, Vol. 119 No. 534, pp. 158-171.

Diebold, F., & Yilmaz, K. (2012). Better to give than to receive: Predictive directional measurement of volatility spillovers. *International Journal Of Forecasting*, *28*(1), 57-66. https://doi.org/10.1016/j.ijforecast.2011.02.006.

Diebold, F., & Yýlmaz, K. (2014). On the network topology of variance decompositions: Measuring the connectedness of financial firms. *Journal of Econometrics*, *182*(1), 119-134. https://doi.org/10.1016/j.jeconom.2014.04.012.

Enwereuzoh, P. A., Odei-Mensah, J., & Owusu Junior, P. (2021). Crude oil shocks and African stock markets. *Research in International Business and Finance*, *55*, 101346. https://doi.org/10.1016/j.ribaf.2020.101346

Geweke, J. (1982). Measurement of linear dependence and feedback between multiple

time series. *Journal of the American Statistical Association* 77: 304–313.

Granger, C. W. J. 1969. Investigating causal relations by econometric models and

cross-spectral methods. *Econometrica* 37: 424–438.

Granger, C., & Lin, J. (1995). Causality in the Long Run. *Econometric Theory*, *11*(3), 530-536.

Hou, Y., Li, S., & Wen, F. (2019). Time-varying volatility spillover between Chinese fuel oil and stock index futures markets based on a DCC-GARCH model with a semi-nonparametric approach. *Energy Economics*, *83*, 119–143. https://doi.org/10.1016/j.eneco.2019.06.020

Jain, A., & Biswal, P. C. (2016). Dynamic linkages among oil price, gold price, exchange rate, and stock market in India. *Resources Policy*, *49*, 179–185. https://doi.org/10.1016/j.resourpol.2016.06.001

Jammazi, R., Ferrer, R., Jareño, F., & Shahzad, S. J. H. (2017). Time-varying causality between crude oil and stock markets: What can we learn from a multiscale perspective? *International Review of Economics and Finance*, *49*(May 2017), 453–483. https://doi.org/10.1016/j.iref.2017.03.007

Joseph, A., Sisodia, G., & Tiwari, A. K. (2014). A frequency domain causality investigation between futures and spot prices of Indian commodity markets. *Economic Modelling*, *40*, 250–258. https://doi.org/10.1016/j.econmod.2014.04.019

Kang, W., Ratti, R. A., & Yoon, K. H. (2015). The impact of oil price shocks on the stock market return and volatility relationship. *Journal of International Financial Markets, Institutions and Money*, *34*, 41–54. https://doi.org/10.1016/j.intfin.2014.11.002

Karim, M. M., Chowdhury, M. A. F., & Masih, M. (2021). Re-examining oil and BRICS' stock markets: new evidence from wavelet and MGARCH-DCC. *Macroeconomics and Finance in Emerging Market Economies*, *00*(00), 1–19. https://doi.org/10.1080/17520843.2020.1861047.

Kumar, S., Pradhan, A., Tiwari, A., & Kang, S. (2019). Correlations and volatility spillovers between oil, natural gas, and stock prices in India. *Resources Policy*, *62*, 282-291. doi: 10.1016/j.resourpol.2019.04.004

Prabheesh, K., Padhan, R. and Garg, B. (2020). Time-varying dependence between stock markets and oil prices during COVID-19: The case of net oil-exporting countries. *Economics Bulletin*, *40*(3), 2408–2418.

Sahu, T.N., Bandopadhyay, K., & Mondal, D. (2014). An empirical study on the dynamic relationship between oil prices and Indian stock market. *Managerial Finance*, *40*(2), 200–215. https://doi.org/10.1108/MF-06-2013-0131

Sakurai, Y., & Kurosaki, T. (2020). How has the relationship between oil and the US stock market changed after the Covid-19 crisis? *Finance Research Letters*, *June*, 101773. https://doi.org/10.1016/j.frl.2020.101773

Sarwar, S., Tiwari, A. K., & Tingqiu, C. (2020). Analyzing volatility spillovers between oil market and Asian stock markets. *Resources Policy*, *66*(June 2019), 101608. https://doi.org/10.1016/j.resourpol.2020.101608

Sharif, A., Aloui, C. and Yarovaya, L. (2020). COVID-19 pandemic, oil prices, stock market, geopolitical risk and policy uncertainty nexus in the US economy: Fresh evidence from the wavelet-based approach, *International Review of Financial Analysis,* Vol. 70, p. 101496.

Wen, D., Wang, G. J., Ma, C., & Wang, Y. (2019). Risk spillovers between oil and stock markets: A VAR for VaR analysis. *Energy Economics*, *80*, 524–535. https://doi.org/10.1016/j.eneco.2019.02.005

Yadav, N., Tandon, P., Tripathi, R., & Shastri, R. K. (2020). A dynamic relationship between crude oil price and Indian equity market: an empirical study with special reference to Indian benchmark index Sensex. *Benchmarking*. https://doi.org/10.1108/BIJ-06-2020-0306

Zhang, D. (2017). Oil shocks and stock markets revisited: Measuring connectedness from a global perspective. *Energy Economics*, *62*, 323–333. https://doi.org/10.1016/j.eneco.2017.01.009

Zhang, D., & Broadstock, D. C. (2020). Global financial crisis and rising connectedness in the international commodity markets. *International Review of Financial Analysis*, *68*,. https://doi.org/10.1016/j.irfa.2018.08.003

Market Efficeency and Systematic Risk: Evidence from BSE Sensex

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ABSTRACT

This paper aims to shed more light on the ever growing disagreement on the efficiency of the Indian stock market and tries to validate it with the authors view on the extent to which it is influenced by the systematic risk. For this purpose, monthly performance of the Sensex 30 stocks, during the period from April 2009 to March 2018, are taken as sample. Paper analyzes the 'weak' form of market efficiency and the result indicates that Indian market is weakly inefficient and OLS regression indicates that systematic risk has a significant negative impact on such weak form of market efficiency. It means that when systematic risk increases, the deviation between expected and actual return decreases. Therefore, as the high beta stocks are more information sensitive, for such stocks with higher systematic risk there is less information asymmetry in the market.

Keywords: *Market Efficiency; Systematic Risk; Stock Return; Information Asymmetry; Sensex*

Introduction

Every rational investor intends to maximize her return and minimize his risk. All his investment decisions are based on the available information (Kevin, 2014). But a very fundamental question comes as to how well do the markets respond to the new information? Is it possible to decide between profitable and unprofitable investment based on current information? In this context market efficiency is highly essential. Market efficiency concept is derived from Efficient Market Hypothesis (EMH) which strongly holds the assumption that market price fully reflect all the available information. In this context, the prices are said to be correct and provide accurate signals for resource allocation (Firth, 1986; Mahapatra, 1995). Hence, efficient market is said to be a market where all the investors are having equal information and same expectation from the market. This condition advocates that there is no abnormal gain. In other words, there is no difference between actual and expected return. When there is difference in return between actual and expected, market is said to be inefficient and having anomalies. Further, it also indicates that market is having information asymmetry. In this situation, Capital Asset Pricing Model (CAPM), which has been widely accepted as one of the classical pricing models, is used to predict future return.

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During the last two decades, market efficiency has been a debatable among the researchers and most of the studies have been conducted to test it by applying serial correlation test, filter test, run test, by making event study, etc. as these are considered to be the relevant tools to determine the stock price movement (add some literatures supporting this). However, this paper attempts to examine market efficiency by applying Capital Asset Pricing Model (CAPM). The logic behind the attempt can be ascribed to the fact that market is efficient when the expected return is equal to actual return and the same expected return could be found out by CAPM. So, if there is any deviation between expectation and actual return then the market is considered as inefficient. Such inefficiency supports the argument that mark has information asymmetry when there is inefficiency in market. Market efficiency is further segregated into three levels such as 'weak' form, 'semi-strong' form and 'strong' form (Roberts, 1967; Fama, 1970). Market is said to be in the 'weak' form, if the current price of the share fully reflects the information as implied by past price movement but doesn't follow a particular trend. This also supports the 'random walk' theory which indicates that price of the shares follows random movement and is not backed by a particular trend (Malkiel, 1973). So, in the context of weak form of efficiency, the fundamental analysis and technical analysis appear to be irrelevant for the investor (Talwar, 2016). The 'semi-strong form' of efficiency holds the assumption that market captures all the public information and is reflected in the share price. Hence, by using public information, investors are also able to gain abnormal return. While 'strong' form of efficiency assumes that share price adjust all information both Public, Private and past prices. Though there are three forms of efficiency yet the present paper intends to test only the efficiency of the market at a broader level i.e., whether the market is efficient or not? After checking such efficiency status, it further intends to check the form of efficiency, particularly whether it is carrying the characteristics of 'weak' form of efficiency or not. Then impact of systematic risk on such efficiency is also been tested. The main motivation for measuring the impact of systematic risk on the efficiency is that, investors are risk averse in nature and they generally diversify their investments in order to avoid the industry or firm specific risk but such diversifications cannot minimize systematic risk. Thus, it is very much essential for the investors to know how their investment responds to such systematic risk during a particular form of market efficiency. The study will help the investors, market regulators, credit rating agencies, financial intermediaries to take decisions in their respective fields. The study is designed as follows; the first section highlights the introduction and main motivation for the study; the second section deals with brief review of important studies on market efficiency and risk analysis; the third section describes the objectives of the study; research methodology is described in the fourth section; fifth section covers the analysis and findings and conclusions are discussed in last section.

Review of Literature

Capital market has always attracted the attention of the researchers throughout the globe. Out of different dimensions of capital markets, information asymmetry, market efficiency and market risk have always been the point of discussion and disagreements among the researchers. Numbers of studies have been conducted on efficiency of the market in different economies but the results found to be quite contradictory in nature. Early studies of Working (1960), Fama (1965), Samuelson (1965), Affleck-Graves and Money (1975), Gilbertson and Roux (1977), and Shiller (1989) have evidenced that market is efficient and it follows random walk theory. While the studies made by Niederhoffer & Osborne

(1966), Jammine and Hawkins (1974), Hadassin (1976), Du Toit (1988), Poterba & Summers (1988) and Lo & MacKinlay (1988) have produced contradictory evidence. They highlight that market is inefficient and violates the random walk theory. Claessens (1995) made a compressive study of nineteen emerging markets and found the result against the EMH and reckoned that market has information asymmetry. Though the studies relating to market efficiency in the foreign context is exhaustive but in case of Indian context only a few studies have been undertaken. Mahapatra (1995), Poshakwale (1996), Acharaya (2017) and Yadav & Patil (2019) have all found evidence that Indian markets are inefficient. However, Mahapatra (1995) found that Indian markets are efficient and having no abnormal gain in the long-run. Kiran & Rao (2019) also advocated that Indian markets are weakly efficient in pre-crisis and crisis period while it is inefficient for the overall study period and post-crisis period. Contrary to that Abhay (2020) evidenced that Indian market particularly pharmaceutical sector shows efficiency in weak form but inefficient in semi-strong and strong form. Arvind (2020) suggested that Indian market efficiency is directly related to market volatility. The more volatility in the market leads to more inefficiency in market. Thus by observing such complex findings, the study motivates to undertake an extensive study which will enrich the literature as well as help in giving a clear and updated picture of the Indian stock market.

Objectives of the Study

- To examine the status of market efficiency in Indian stock market.
- To test the weak form efficiency of Indian stock market.
- To identify the influence of systematic risk on market efficiency.

Hypothesis of the Study

The study has developed the following null hypothesis.

H_{01} - There is no randomness in the stock price movements.

H_{02} - There is no significant influence of systematic risk on market efficiency.

Research Methodology

Data Collection

The data have been collected from the secondary sources. BSE website and RBI website has been used for collection of data. The market data and stock returns are collected from BSE website and risk free rates are collected from the 364 Treasury bills in RBI website.

Sample Selection & Period of the Study

Here, monthly observation of data from the Sensex 30 have been taken as the sample for the study and utmost care has been laid to exclude the samples which had no transaction in the study period i.e., 10 years (from the year 2009 to 2018). As a result, total number of 28 stocks have been considered as final sample for the study.

Study Technique and Design

The study has used the classical model i.e., CAPM (Capital Asset Pricing Model) for evaluating

expected return. CAPM is a traditional tool developed in the mid 1960 by William Sharpe, John Lintner and Jan Mossin. This model has wide acceptance and is extensively used by the investors while predicting the future return (Kevin 2014). There are number of studies that have been conducted on CAPM but very few studies have taken CAPM to measure the efficiency of the market. Studies in case of Indian Context are very rare. Hence, considering the importance of the CAPM and research gap, the study has made a distinct attempt from earlier studies to check the presence of information asymmetry as well as efficiency of the market by comparing the expected return (measured by CAPM) with the actual return. Expected return is computed by the following formula:

$R_{EXP} = R_f + \text{Beta} (R_m - R_f)$

Where, R_{EXP} = Expected return

R_f = Risk free return (364 days treasury bill has been taken as risk free rate)

$\text{Beta} = \frac{Cov.(Rm,Ri)}{\sigma m^2}$

Cov.= Co-variance of market & Stock return,

$\sigma m^2 =$ Variance of the market returns

R_m = Market return, is computed by the following formula:

$R_m \frac{P_{mt} - P_{mt-1}}{P_{mt-1}}$

Here, P_{mt} is the price of the market index 'm' at the period't'

After measuring the expected return, it has been compared with the actual return of the stocks in order find out the market efficiency. The actual return has been calculated by the following formula:

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

Here, P_{it} is the price of the stock 'i' at the period't'

Market Efficiency = $R_{ACT} - R_{EXP}$

In order to make the study more statically significant, the study has used Paired Sample 't-test' to test whether there is a significant difference between actual return and expected return. Further, the study also intends to check whether the market is following 'weak' form of efficiency or not. To test such form of efficiency, the study has applied 'run test' on the market return and robustness has also been checked by applying run test for the all the sample stocks individually.

• Impact of Risk Factor on Market Inefficiency

The literature (Kevin, 2014) has evidenced that unsystematic risk could be minimized by diversifying the portfolio but such practices couldn't be followed in case of systematic risk. Hence, systematic risk is one of the important elements which every investor considers before investing their fund. Hence, understanding the influence of systematic risk is highly essential. As mentioned in the objectives, the study also intends to examine the impact of systematic risk on market efficiency. It has been studied by developing the following OLS (Ordinary Least Square) regression model.

"R = á + â$_0$ (Systematic risk) + â$_1$ (Control Variables) + å

Where,

"R = Difference between actual return & expected return

á = Intercept

$\hat{a}_0$ = Co-efficient of systematic risk

$\hat{a}_1$ = Co-efficient of total risk

å = Error terms

Empirical Results and Discussion

In efficient market all the information is equally available to all the investors and that indicates the absence of information asymmetry. In such a case, everyone is having same expectation and market price also reflects the same information as a result the difference between expected and actual return is zero. In other words, the chances of abnormal gains are nil. In the above backdrop, the study has checked presence of information asymmetry as well as market efficiency by using CAPM. For this purpose the expected return calculated through CAPM has been compared with actual return by applying paired sample 't-test' to find out whether there is significant difference between these two returns. The results of 't-test' have been reported in the following tables.

't-test' Result:

Table No-1: Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	ACT	.048659	28	.1414513	.0267318
	EXP	7.296350	28	.8808024	.1664560

Source-Author's own Calculation

Table No-2: Paired Samples t-Test

		Paired Differences					T	Df	Sig. (2-tailed) P value
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	ACT - EXP	-7.2476906	.8647711	.1634264	-7.5830138	-6.9123674	-44.348	27	.000

Source: Author's Own Calculation

The result of t-test reveals that the P value is 0.000 which is less than 0.05. Hence, we reject the null hypothesis and accept the alternative hypothesis i.e., there is information asymmetry in the Indian stock market. Thus, the study also indicates that the Indian stock market is inefficient.

Though the above result conceded that the Indian stock market is inefficient but it fails to identify the form of inefficiency. Hence, the study further examined the form of market inefficiency. Out of the three forms of inefficiencies, the study aims at checking the presence of 'weak' form of inefficiency by applying 'run test' on the market return. The results of the run test are as follows:

Table No-3: Run Test Results for Sensex Return

Table No-3: Run Test Results for Sensex Return		
	Run test values (Mean)	**Run test values (Median)**
Test Value[a]	17.3131	16.20
Cases < Test Value	64	60
Cases > = Test Value	56	60
Total Cases	120	120
Number of Runs	3	7
Z	-10.680	-9.951
Asymp. Sig. (2-tailed)	.000	.000

Source: Author's Own Calculation

The study used the run test for the sensex return by taking both mean and median. The result highlights that in both the cases the significant value is less than 0.05. Hence, the return is considered as non-random. It means the Indian market is inefficient in 'weak' form and past price has a significant influence over the current price. So, fundamental analysis and technical analysis is highly relevant for the Indian investors. The study has also checked the robustness of the result by applying 'run test' for the all the sample stocks individually and the results are shown in table 4.

Robustness Check

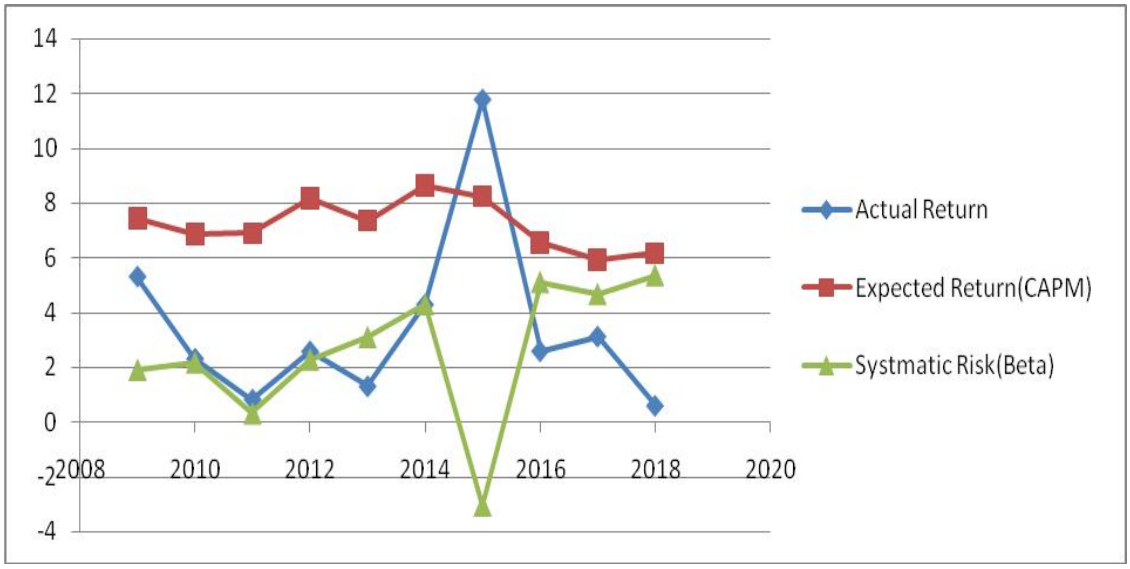
Table No-4: Run Test Results for Sample Stocks

COMPANY NAME	Test Value[a]	Cases < Test Value	Cases >= Test Value	Total Cases	Number of Runs	Z	Asymp. Sig. (2-tailed)
RELIANCE	452.99	60	60	120	23	-6.967	.000
TCS	961.53	60	60	120	4	-10.451	.000
HUL	571.10	59	61	120	4	-10.403	.000
INFOSYS	297.62	60	60	120	4	-10.451	.000
SBI	169.72	60	60	120	4	-10.451	.000
ICICI BANK	215.07	60	60	120	6	-10.084	.000
L AND T	789.71	60	60	120	10	-9.351	.000
BAJAJ FIN	165.99	60	60	120	2	-10.817	.000
WIPRO	172.59	60	60	120	8	-9.717	.000
IOC	44.89	60	60	120	2	-10.817	.000
HCL TECH	667.91	60	60	120	4	-10.451	.000
ASIAN PAINT	511.83	60	60	120	6	-10.084	.000
B AIRTEL	334.50	60	60	120	19	-7.701	.000
NTPC	112.90	60	60	120	17	-8.067	.000
BAJ FIN SV	886.70	60	60	120	4	-10.451	.000
HIND ZINC	109.12	60	60	120	6	-10.084	.000
ULTRATECH CEMENT	2253.85	60	60	120	2	-10.817	.000
INDUSLAND BANK	518.27	60	60	120	2	-10.817	.000
NESTLE INDIA	4930.78	60	60	120	12	-8.984	.000
TITAN	300.78	60	60	120	2	-10.817	.000
GAIL INDIA	305.55	53	67	120	14	-7.868	.000
TECH MAHINDRA	368.98	53	67	120	2	-10.199	.000
BIL	819.30	53	67	120	2	-10.199	.000
DABUR	176.47	60	60	120	2	-10.817	.000
JSW STEEL	73.15	60	60	120	8	-9.717	.000
GCPLTD	407.95	53	67	120	8	-9.033	.000
TATA STEEL	376.50	60	60	120	16	-8.251	.000
YES_BANK	83.99	60	60	120	2	-10.817	.000

Source: Author's Own Calculation

The table 4 indicates that the prices of the individual stocks and index price are non-random. This result further motivates to investigate how such market inefficiency has been influenced by systematic risk measured through Beta. The regression result is discussed in the table 6.

Figure 1: Stock Return and Systematic Risk



Source: Author's Own Calculation.

The Figure 1 indicates that there is sharp gap between actual return and expected return. However, both are heading towards downward trend. Systematic risk and actual return have a opposite trend which highlights that less the systemic risk more will be the actual return.

Table No-5: Summary Statistics

Variable	Mean	Median	S.D.	Min	Max
Actual Return	3.45	2.57	3.27	0.58	11.76
Expected Return	7.21	7.11	0.92	5.90	8.63
Difference in Return	-0.38	-0.48	4.16	-7.51	7.90
Systematic Risk	0.38	0.68	4.03	-7.36	8.17
GDP Growth	-0.10	-0.16	2.07	-3.89	3.47
Real Interest Rate	0.03	0.86	2.99	-6.79	3.30
Trade Openness	0.02	-0.02	0.15	-0.20	0.28
Inflation	-0.35	-0.01	2.41	-4.55	2.53

Source: Author's Own Calculation

The table 5 highlights that mean of expected return (7.21) is comparatively higher than mean of actual return (3.45) while mean of their difference (Actual - expected) is negative (-0.38). Similarly, the median of expected return (7.11) is also higher than the median of actual return (2.57) while mean of their difference is negative (-0.48). It implies that actual return is less and the investors are getting less than their expectation. The mean of systematic risk is 0.38 and median is 0.68. Out of all the variables the difference in return is having highest standard deviation which states that markets are more volatile.

Regression Analysis

Stationarity Test

We check the stationarity of the data by adopting augmented Dickey-Fuller (ADF) test. "R (P-value 0.025), systematic risk (P-value 0.008), Inflation (P-value 0.028), real interest rate (P-value 0.002) are found to be stationary at first level difference where as GDP growth (P-value 0.006) and trade openness (P-value 0.04797) are stationary at second level difference.

Table No-6: Regression Results

Variables	Co-efficient	P-value	VIF
Intercept	0.0811738	0.8690	
Systematic Risk	−1.19697	0.0131 **	2.498
GDP Growth	1.43372	0.0434 **	2.879
Real Interest Rate	0.143360	0.7538	3.059
Trade Openness	11.8413	0.2664	5.893
Inflation	−0.536117	−0.536117	2.942
R-squared	0.985070	Adjusted R-squared	0.947745
F	26.39151	P-value(F)	0.036908
Log-likelihood	−5.790390	Akaike criterion	23.58078
Durbin-Watson	1.333807	Hannan-Quinn	20.36597

Source: Author's Own Calculation

Note: ***, ** and * indicate significant level at 1%, 5% and 10% respectively.

Table 6 shows that co-efficient of systematic risk is "1.19697 and its P value is 0.0131 which less than 0.05. So, the null hypothesis is rejected. Thus, it indicates that systematic risk has a negative and

significant impact over market inefficiency. It can be inferred that higher systematic risk leads to lesser gap between expected return and actual return. The results also advocate that the increase in systematic risk lowers the information asymmetry in the market as systematic risk remains same for all investor and uncontrollable in nature. Hence, with the presence of systematic risk, investors' expectation turned to be more realistic which leads to less deviation between actual return and expected return.

Findings

From the study, it is found that there is presence of information asymmetry in Indian markets and it is not efficient. It is also found that Indian markets are weakly inefficient. Systematic risk has a negative significant impact on market inefficiency. When systematic risk increase (stock becomes more risky than the market), deviation between expected and actual return decreases. Therefore, the high beta stocks appeared to be more information sensitive and the investors lower their expectation as a result there is less fluctuation between expected return and actual return.

Conclusion

Of all the factors, market efficiency is a major factor influencing inventors to invest their money in the stock market. But mismatch in return owing to market inefficiency, can be a major stumbling block in channelizing savings from the households to the stock markets. Though there are not enough studies in relation to market inefficiency yet the information asymmetry can wreak havoc in the minds of the investors. Therefore, more research should be undertaken to devise appropriate measures to assuage the investors. This is crucial as India, being a developing nation, requires more and more investment to cater to its growing investment needs. As a result of which, this study is an attempt in this direction to further substantiate the evidence that the Indian stock market is not efficient in reflecting all the available information. The difference between expected and actual return is nagatively affected by high beta or systematic risk. Therefore, this study will be helpful to the investors in making them more cautious while selecting high beta stocks. Accordingly, it is hoped that the investors can develop alternative strategies like portfolio investment to hedge against high beta stocks.

References

Acharya, V.V., Pedersen, L.H., Philippon, T. and Richardson, M., 2017. Measuring systemic risk. *The Review of Financial Studies*, *30*(1), pp.2-47.

Affleck Graves, J.P. and Money, A.H., 1975. A note on the random walk model and South African share prices. *South African Journal of Economics*, *43*(3), pp.232-236.

Claessens, S., Dasgupta, S. and Glen, J., 1995. Return behavior in emerging stock markets. *The World Bank Economic Review*, *9*(1), pp.131-151.

Cutler, D.M., Poterba, J.M. and Summers, L.H., 1988. *What moves stock prices?* (No. w2538). National Bureau of Economic Research.

Du Toit, G.S., 1988. TECHNICAL ANALYSIS AND MARKET EFFICIENCY ON THE JOHANNESBURG STOCK EXCHANGE.

Fama, E.F., 1965. The behavior of stock-market prices. *The journal of Business*, *38*(1), pp.34-105.

Fama, E.F., 1970. Efficient capital markets: A review of theory and empirical work. *The journal of Finance*, *25*(2), pp.383-417.

Fama, E.F., Fisher, L., Jensen, M.C. and Roll, R., 1969. The adjustment of stock prices to new information. *International economic review*, *10*(1), pp.1-21.

Firth, M 1986, 'The Efficient Markets Theory', in Firth, M. and S.M. Keane, eds., *Issues in Finance*, Heritage Publishers, New Delhi, pp.1-15

Gilbertson, B.P. and Roux, F.J.P., 1977. The Johannesburg Stock Exchange as an efficient market. *Investment Analysts Journal*, *6*(9), pp.21-27.

Hadassin, I., 1976. An investigation into the behaviour of earnings and share prices of South African listed companies. *Investment Analysts Journal*, *5*(8), pp.13-24.

Hawkins, D.M. and Jammine, A.P., 1974. The Behaviour of Some Share Indices: A Statistical Analysis. *South African Journal of Economics*, *42*, pp.43-55.

Kevin S. (2014), *Security Analysis and Portfolio Management,* 2 edition, PHI Learning Pvt. Ltd., Delhi

Kiran, S., 2019. Analysis of Stock Market Efficiency in Emerging Markets: Evidence from BRICS. *Romanian Economic Journal*.

Kumar, A., 2020. Volatility in Stock Prices: a Study in Indian Perspective *Studies in Indian Place Names*, *40*(3), pp.4056-4063.

Kumar, A., Soni, R., Hawaldar, I.T., Vyas, M. and Yadav, V., 2020. The Testing of Efficient Market Hypotheses: A Study of Indian Pharmaceutical Industry. *International Journal of Economics and Financial Issues*, *10*(3), pp.208-216.

Lo, A.W. and MacKinlay, A.C., 1988. Stock market prices do not follow random walks: Evidence from a simple specification test. *The review of financial studies*, *1*(1), pp.41-66.

Mahapatra, R.P., 1995. Relative Strength in Performance of Share Prices in India: A Weak Form Test of Capital Market Efficiency. *Decision*, *22*(3), p.177.

Malkiel, B.G., 1973. *A Random Walk Down Wall Street [By] Burton G. Malkiel*. Norton.

Niederhoffer, V. and Osborne, M.F.M., 1966. Market making and reversal on the stock exchange. *Journal of the American Statistical Association*, *61*(316), pp.897-916.

Poshakwale, S., 1996. Evidence on weak form efficiency and day of the week effect in the Indian stock market. *Finance India*, *10*(3), pp.605-616.

ROBERTS, H., 1967. Statistical versus clinical prediction of the stock market", unpublished manuscript. Chicago, University of Chicago, Centre for Research on Security Prices.

Samuelson, P.A., 2016. Proof that properly anticipated prices fluctuate randomly. In *The world scientific handbook of futures markets* (pp. 25-38).

Sharpe, W.F., 1964. Capital asset prices: A theory of market equilibrium under conditions of risk. *The journal of finance*, *19*(3), pp.425-442.

Shiller, R.J. and Pound, J., 1989. Survey evidence on diffusion of interest and information among investors. *Journal of Economic Behavior & Organization*, *12*(1), pp.47-66.

Talwar S.(2016), *Security Analysis and Portfolio Management,*Cengage Learning IndiaPvt.Ltd. , Delhi

Working, H., 1960. Note on the correlation of first differences of averages in a random chain. *Econometrica: Journal of the Econometric Society*, pp.916-918.

Yadav, M.P. and Patil, C.D.D., 2019. An Empirical Study on Efficient Market Hypothesis of Indian Capital Market (NSE Sectorial Indices). *Management*, pp.222-225. (NSE Sectorial Indices). *Management*, 222-225.

Role of Banking Sector in Sustainable Development of India: An Analysis

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ABSTRACT

The banking industry can play a wonderful role between economic development and ecofriendly protect for endorsing environmentally sustainable and socially viable institution. Sustainable development can be achieved by the country is allowing markets to work within an appropriate framework of cost efficient regulations and economic instrument. One of the major economic agent influencing overall industrial activity and economic development is the financial institutions such as banking sector. Banking industry is one of the stakeholders in the industrial sector, it can find itself faced with credit risk and liability risk. Its main motive is to protect environment. Thus, the bank should go green and play a pro-active role in the business environment by permeating all spheres of life as a part of leading principles, which would force the banking sector, has to adopt sustainable practices to reduce its carbon footprints and mandated investment for environment management. This paper main objective is role of banking sector in sustainable development of India. For this paper used secondary sources of data and implement different statistical tools for analysis and interpretation of data.

Keywords: *Banking Industry, Economic Growth, Ecofriendly, Sustainable Development.*

Introduction

The thought of sustainable development is taking care of the require of present generation without compromising the desires of future generation, has given grow to green marketing and then green banking. The approach towards sustainable banking as it is also identified varies from organisation.[1] Stainable banking covers several different areas, but general refers to how environmentally friendly your bank is, and how committed to green policies these institutions. As green initiatives storm across the world lots of banks are taking note of this and taking action. The normal bank, which considers all the social and environmental factors with protect and conserve the natural resources of the environment is known as green bank. It also calls as sustainable bank.[2] It believes that, some new established organisation that

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can be profitable on an impartial basis which glowing our dream of responsible banking. This involves instituting sustainability principles within the organisation as well as in the broader financial community.[3]

As the market competitiveness, the banking industry has sharpened over the years, most home country banks are getting better with new products even as they increase focal point on quality. In present times, the collapse of some banks and the result erosion of stakeholder value suggest an even stronger need for initiatives that extend the role of banks to include larger sustainability and development issues. Banks are viewed as trustees of public funds and thus have an intrinsic social responsibility to validate this trust. The sustainable banking role in India represents a hitherto unused potentially extremely gratifying opportunity, and time is right for socially responsible and sustainable investing.

India also desires to deal with the problem of deepening income disparities with their associated social unsteadiness risks to growth. India has the great opportunity to grow in a way that mitigates the costs of environmental and social scarcity. In presents a vast range of opportunities for India's banking sector, given its unique role as an economic intermediary and vast scope of influence over various stakeholders. They require for comprehensive social welfare in the country means that there is a growing anticipation from business to take on the challenges. Banks not only need to direct investments in sustainable development, they also need to influence their indirect control over investment and management decisions to influence business goals. Banks are equipped to weigh and price risks, and use price differentiation to promote sustainability.[4]

Literature Review

Bihari S.C. (2010) he has attempted to highlight the green banking initiative taken by the Indian banks. The author also discussed as Green Banking also aims to protect the environment. Green banks honour loan to an organisation only when all the environment safety principles are followed.

Biwas, N., (2011) interpreted Green Banking as combining operational improvements, technology and changing client habits in market place. Receipt of green banking practices will not only be practical for environment but also benefit in superior operational efficiencies, an inferior vulnerability to manual errors and fraud and price reductions in banking activities. The concept of green banking will be mutually beneficial to the banks, corporate, and economy. Not only green banking will ensure the greening of the industries but it will also facilitate in improving the asset quality of the bank in future.

Mani, A (2011) point out that bank has a major role and accountability in supplementing government efforts to substantial decrease in carbon emanation. Bank's contribution in sustainable development takes the form of Green Banking. He examined and compared the green lending policies of banks in India in the brightness of their conformity to environment protection and environment sociable business. He suggest Banking sector in India can execute green lending.

Dharwal, M. & Agarwal, A. (2013) studied that green banking is a key in mitigating the credit risk, legal risk and reputation risk. They provide their view, green banking technique like carbon credit organisation, green financial instrument, green mortgages, carbon footprint reduction and social responsibility services towards the society.

Objectives of the Study

The present study is conducted with few objectives.

1. Role of Indian banks in sustainable economic development.
2. To find out the proper performance of sustainable banking in India.

Role of Banking Sector in Sustainable Growth

In present intellect, banks appeared and consolidated in close connection with the development of commerce and capital accumulation, being a direct consequence of production development and expansion of the entire economy. Commercial banks play a significant role in the development of trade and industry. In the process of commercial banks' appearance money changers and money lenders played a peculiar role, being the first monetary intermediaries, carrying out trade with money.

Banking sector help a lot in attaining sustainable development by creating consciousness and by imparting education. Consciousness can be through communication. The initial step would be defining target groups and means of communication. We can divide the whole system into two subsystems that is internal and external subsystem. The internal subsystems means which can be followed the create awareness on the issue can be weekly green news on interest, clearing programmes, high level meetings, bank's news letter, publication etc. and the target groups are managers and other personnel. As far as external subsystems are concerned, efficient means which can be followed are websites, capacity building, road shows, event meetings, media etc. whereas customers, subsidiaries and general public are target groups.

Today, the role and place of banks in the economy are closely connected with their attribute of main financial intermediaries in the relation saving – investments. In order to perform their functions, banking sector provide a tempting array of financial services to attract customers and to congregate their demands. As the economy growth and the size and structure of exchanges enlarged, the place of money changers and money lenders was taken by banks which funds taken from stakeholders in order to keep them securely and remunerate their owners with interest. Banks were forming deposits used to provide loans for those in necessitate of capital. In this system bank deposit were the bases of the capital redistribution process as lending sources.9

Methodology of the Study

The present paper is based on "Exploratory" in nature. The data used on secondary source. The secondary data required for the study is obtained from the annual report of necessary Banks, various seminars and workshop information, various journals, Magazines, and other relative information published on the banks and other websites. The secondary data covering from 2014-15 to 2018-19. Here we have undertakes 3 public sector banks i.e. SBI. PNB and UCO with 3 private sector banks i.e. AXIS, ICICI and YES bank. After collecting data in depth analysis of sustainable development of banking, we have followed Reliability statistics for testing used Cronbach's Alpha, One-Sample T Test, Descriptive Statistics, Mean, CAGR, Standard Deviation and Coefficient of variation also be calculated.

Ata Analysis

Table – 1 Capital value of Respective Banks

(Rs. in crore)

	SBI	PNB	UCO	AXIS	ICICI	YES
Mean	521.02	532.43	2288.48	495.06	1212.64	443.67
CAGR	5.08	24.09	49.16	2.39	3.16	3.01
S.D.	67.38	228.14	1823.22	19.07	68.41	22.35
C.V.	4539.70	52049.30	3324123.80	366.50	4679.30	499.70

Source: Annual Report of Concern Bank 2014-15 to 2018-19

The above table indicates the capital value of respective banks from the period 2014-15 to 2018-19. The mean value point out Rs. 2288.48 crore in UCO bank which is highest as compared to other banks. The highest CAGR value noticed 49.16 in UCO bank and lowest one 2.39 in AXIS bank. The highest standard deviation has seen 1823.22 percent in UCO bank and lowest rank is 19.07 percent in AXIS bank. The coefficient of variation better performance in public sector banks against the private sector banks.

Cronbach's Alpha	**-.003**

As per the rule, reliability coefficient hypothetical variable is being considered, 0.7 to be an acceptable but lower threshold are ignored. Reliability of scales tasted the capital of respective banks and the result exhibit the Cronbach's Alpha – .003 (negative due to negative average covariance among items) which is rejected.

One-Sample Test						
	Test Value = 0					
	t	df	Sig.(2-tailed)	Mean Difference	95% Confidence interval of the Difference	
					Lower	Upper
SBI	27.240	4	.000	820.800	737.14	904.46
PNB	5.220	4	.006	532.600	249.32	815.88
UCO	2.807	4	.048	2288600	24.78	4552.42
AXIS	58.055	4	.000	495.000	471.33	518.67
ICICI	39.638	4	.000	1212.600	1127.66	1297.54
YES	44.393	4	.000	443.800	416.04	471.56

The one-sample T Test is taken to compare the mean score of sample value. The value of capital is coming to be significant i.e. < 0.05 in all respective banks.

	SBI	PNB	UCO	AXIS	ICICI	YES
Skewness	.295	1.1770	2.232	.144	.607	-.561
Std. Error	.913	.913	.913	.913	.913	.913
Kurtosis	-2.820	3.050	4.986	-2.941	-3.322	-3.300
Std. Error	2.000	2.000	2.000	2.000	2.000	2.000

The Skewness result indicates the SBI, PNB, UCO and ICICI banks shows positive and the Std. Error estimation are .913 in all the respective bank. In the Kurtosis result shows PNB and UCO banks are positive and Std. Error estimation are 2.000 in all the respective banks.

Table – 2 Deposits amount of Respective Banks

(Rs. in crore)

	SBI	PNB	UCO	AXIS	ICICI	YES
Mean	2193999.28	602878.76	200499.10	419376.47	497384.48	154823.51
CAGR	18.22	8.04	2.94	13.87	15.81	27.32
S.D.	590547.26	73854.15	12149.69	88077.37	114571.13	58003.71
C.V.	348746068193.50	5454435798.20	147615041.20	7757622215.30	13126543351.30	3364430602.80

Source: Annual Report of Concern Bank 2014-15 to 2018-19

The above table 2 shows deposit amount of respective banks. The highest mean value of deposits Rs. 2193999.28 crorre in SBI bank which indicates more deal in business and the lowest one Rs. 154823.51 crore in YES bank. The highest CAGR value 27.32 of YES bank and lowest CAGR was 2.94 in UCO bank. The highest standard deviation and coefficient of variation point out 590547.26 percent and 348746068193.50 percent respectively in SBI bank and lowest standard deviation and coefficient of variation was 12149.69 percent and 147615041.20 percent respectively in UCO bank.

Cronbach's Alpha	**.647**

As per the rule, reliability coefficient hypothetical variable is being considered, 0.7 to be an acceptable but lower threshold are ignored. Reliability of scales tasted the deposit of respective banks and the result display the Cronbach's Alpha .647.

One-Sample Test						
	Test Value = 0					
	t	df	Sig.(2-tailed)	Mean Difference	95% Confidence interval of the Difference	
					Lower	Upper
SBI	8.307	4	.001	2193999.000	1460737.73	2927260.27
PNB	18.253	4	.000	602878.800	511176.76	694580.84
UCO	36.901	4	.000	200499.200	185413.36	215585.04
AXIS	10.647	4	.000	419376.600	310014.11	528739.09
ICICI	9.707	4	.001	497384.600	355125.76	639643.44
YES	5.939	4	.004	154823.600	82802.48	226844.72

The one-sample T Test is taken to compare the mean score of sample value. The value of deposit is coming to be significant i.e. < 0.05 in all respective banks.

	SBI	PNB	UCO	AXIS	ICICI	YES
Skewness	.335	-.582	-.828	.640	.298	.305
Std. Error	.913	.913	.913	.913	.913	.913
Kurtosis	-2.600	-1.443	1.156	-.073	-.926	-2.214
Std. Error	2.000	2.000	2.000	2.000	2.000	2.000

The Skewness result reveal that SBI, AXIS, ICICI and YES banks shows positive value and the Std. Error estimation are .913 in all the respective banks. In the Kurtosis shows UCO bank only positive value and Std. Error estimation are 2.000 in all the respective banks.

Table – 3 Interest Income of Respective Banks

(Rs. in crore)

	SBI	PNB	UCO	AXIS	ICICI	YES
Mean	190993.72	48534.16	16519.30	44354.98	54870.79	18284.45
CAGR	1.08	2.67	9.19	10.37	5.68	25.65
S.D.	38847.71	2206.28	2413.76	7162.47	5273.40	7134.94
C.V.	1509144278.80	4867667.00	5826239.30	51300955.00	27808743.30	50907348.80

Source: Annual Report of Concern Bank 2014-15 to 2018-19

Table 3 reveals that Interest income of respective banks. In between banks the highest mean value Rs. 190993.72 crore in SBI which indicates more operation of the business and the lowest mean value Rs. 16519.30 crore in UCO bank. The highest CAGR value is 25.65 in YES bank. It indicates the growth rate was fast upward moving during the study. The lowest CAGR point out 1.08 in SBI. The highest standard deviation and coefficient of variationnoticed 38847.71 percent and 150944278.80 percent in SBI against other bank.

Cronbach's Alpha	**.599**

As per the rule, reliability coefficient hypothetical variable is being considered, 0.7 to be an acceptable but lower threshold are ignored. Reliability of scales tasted the interest income of respective banks and the result presents the Cronbach's Alpha .599.

One-Sample Test						
	Test Value = 0					
	t	df	Sig.(2-tailed)	Mean Difference	95% Confidence interval of the Difference	
					Lower	Upper
SBI	10.994	4	.000	190993.600	142757.80	239229.40
PNB	49.189	4	.000	48534.000	45794.54	51273.46
UCO	15.303	4	.000	16519.400	13522.32	19516.48
AXIS	13.847	4	.000	44355.000	35461.62	53248.38
ICICI	23.267	4	.000	54870.600	48322.81	61418.39
YES	5.730	4	.005	18284.400	9425.20	27143.60

The one-sample T Test is taken to compare the mean score of sample value. The value of interest income is coming to be significant i.e. < 0.05 in all respective banks, which is positive signal.

	SBI	**PNB**	**UCO**	**AXIS**	**ICICI**	**YES**
Skewness	.595	1.349	.157	.529	1.187	1.25
Std. Error	.913	.913	.913	.913	.913	.913
Kurtosis	-2.055	2.351	-2.684	.078	2.396	1.216
Std. Error	2.000	2.000	2.000	2.000	2.000	2.000

The Skewness result point out all banks are shows positive and the Std. Error estimation are .913 in all the respective banks. In the Kurtosis result shows PNB, AXIS, ICICI and YES banks indicate positive and Std. Error estimation are 2.000 in all the respective banks.

Table – 4 Operating Expenses of Respective Banks

(Rs. in crore)

	SBI	PNB	UCO	AXIS	ICICI	YES
Mean	51312.79	11063.88	2895.56	12265.65	14545.49	4170.93
CAGR	16.62	5.44	3.15	15.15	11.85	29.04
S.D.	13096.05	1653.26	158.87	2727.78	2583.94	1616.66
C.V.	171506477.700	2733278.500	25238.300	2440772.300	6676769.300	2613587.500

Source: Annual Report of Concern Bank 2014-15 to 2018-19

Table 4 manifested the operating expenses of respective banks. The highest mean value of operating expenses seen Rs. 51312.79 crore in SBI bank which indicates the declined the profit and the lowest mean value of operating expenses is Rs. 4170.93 crore in YES bank which is helping the maximization the profit. The maximum CAGR value shows 29.04 in YES bank and minimum CAGR 3.15 in UCO bank. The highest standard deviation and coefficient of variation was 13096.05 percent and 171506577.70 percent respectively in SBI bank and lowest standard deviation and coefficient of variation was 158.87 percent and 25238.30 percent in UCO bank.

Cronbach's Alpha	**.686**

As per the rule, reliability coefficient hypothetical variable is being considered, 0.7 to be suitable but lower threshold are ignored. Reliability of scales tasted the operating expenses of respective banks and the result shows the Cronbach's Alpha .686.

One-Sample Test						
	Test Value = 0					
	t	df	Sig.(2-tailed)	Mean Difference	95% Confidence interval of the Difference	
					Lower	Upper
SBI	8.761	4	.001	51312.800	35040.90	67573.70
PNB	14.964	4	.000	11064.000	9011.20	13116.80
UCO	40.753	4	.000	2895.400	2698.14	3092.66
AXIS	10.055	4	.001	1265.600	8878.62	15652.58
ICICI	12.587	4	.000	14545.600	11337.21	17753.99
YES	5.769	4	.004	4171.000	2163.65	6178.35

The one-sample T Test is taken to compare the mean score of sample value. The value of operating expenses is coming to be significant i.e. < 0.05 in all respective banks, which is optimistic.

	SBI	PNB	UCO	AXIS	ICICI	YES
Skewness	.714	1.130	-.807	.240	.271	.186
Std. Error	.913	.913	.913	.913	.913	.913
Kurtosis	-1.463	.624	.332	-1.664	-.767	-1.584
Std. Error	2.000	2.000	2.000	2.000	2.000	2.000

The Skewness Result shows SBI, PNB, AXIS, ICICI and YES banks positive value and the Std. Error estimation are .913 in all the respective banks. In the Kurtosis result noticed PNB and UCO banks are positive value and Std. Error estimation are 2.000 in all the respective banks.

Table – 5 Net Profit of Respective banks

(Rs. in crore)

	SBI	PNB	UCO	AXIS	ICICI	YES
Mean	51312.79	11063.88	2895.56	12265.65	14545.49	4170.93
CAGR	16.62	5.44	3.15	15.15	11.85	29.04
S.D.	13096.05	1653.26	158.87	2727.78	2583.94	1616.66
C.V.	171506477.700	2733278.500	25238.300	2440772.300	6676769.300	2613587.500

Source: Annual Report of Concern Bank 2014-15 to 2018-19.

Table 5 expressed net profit of respective banks. The highest mean value of net profit noticed Rs. 8168.69 crore in ICICI bank. PNB and UCO bank indicates negative mean value i.e. Rs. -4538.90 crore and Rs. -2454.06 crore respectively. The CAGR value of AXIS, ICICI and YES bank are 53.72, 31.78 and 20.04 respectively but SBI, PNB and UCO bank cannot show CAGR value due to negative net profit. The highest standard deviation and coefficient of variation was 7917.82 percent and 61692867.70 percent respectively in SBI.

Cronbach's Alpha	**.812**

As per the rule, reliability coefficient hypothetical variable is being considered, 0.7 to be suitable but lower threshold are ignored. Liability of scales tasted the net profit of respective banks and the result exhibit the Cronbach's Alpha .812 which is preferable.

One-Sample Test						
	Test Value = 0					
	t	df	Sig.(2-tailed)	Mean Difference	95% Confidence interval of the Difference	
					Lower	Upper
SBI	1.008	4	.370	3570.200	-6251.07	13401.47
PNB	-1.504	4	.207	-4538.600	-12918.09	3840.89
UCO	-2.406	4	.074	-2454.000	-5285.62	377.62
AXIS	3423	4	.027	4844.000	915.17	3774.43
ICICI	5.838	4	.004	8168.400	4283.41	12053.39
YES	6.052	4	.004	2763.800	1495.79	4031.82

The one-sample T Test is taken to compare the mean score of sample value. The value of net profit of SBI, PNB and UCO banks coming is to be insignificant i.e. > 0.05 which is rejected and AXIS, ICICI and YES banks coming is to be significant i.e. < 0.05 which is accepted.

	SBI	**PNB**	**UCO**	**AXIS**	**ICICI**	**YES**
Skewness	.034	-.125	1.132	-.554	-1.066	.671
Std. Error	.913	.913	.913	.913	.913	.913
Kurtosis	-1.470	-2.402	.976	-.407	.239	-.894
Std. Error	2.000	2.000	2.000	2.000	2.000	2.000

The Skewness result indicates SBI, UCO and YES banks shows positive figure and the Std. Error estimation are .913 in all the respective banks. In the Kurtosis result shows UCO and ICICI banks positive figure and Std. Error estimation are 2.000 in all the respective banks.

Table – 6 Fixed Assets of Respective banks

(Rs in crore)

	SBI	PNB	UCO	AXIS	ICICI	YES
Mean	24365.46	5538.77	2509.11	2558.54	7188.52	6940.13
CAGR	32.19	14.21	20.39	11.26	11.38	96.59
S.D.	16097.84	1207.06	780.21	618.00	1383.67	13952.03
C.V.	259140451.30	1456996.70	908731.50	381929.30	1914539.30	194659034.70

Source: Annual Report of Concern Bank 2014-15 to 2018-19

Table 6 explains the fixed assets of respective banks. The highest mean value of fixed assets Rs. 24365.46 crore in SBI bank and lowest value Rs. 2509.11 crore in UCO bank. The highest CAGR value 96.59 in YES bank which indicates quick growth of fixed assets and lowest one 11.26 in AXIS bank. The highest standard deviation and coefficient of variation was 16097.84 percent and 259140451.30 percent respectively in SBI bank. The lowest standard deviation and coefficient of variation was 618.00 percent and 381929.30 percent respectively in AXIS bank.

Cronbach's Alpha	**-1.436**

As per the rule, reliability coefficient hypothetical variable is being considered, 0.7 to be suitable but lower threshold are ignored. Reliability of scales tasted the fixed assets of respective banks and the result display the Cronbach's Alpha -1.436 (negative due to negative average covariance among items) which is rejected.

One-Sample Test						
	Test Value = 0					
	t	df	Sig.(2-tailed)	Mean Difference	95% Confidence interval of the Difference	
					Lower	Upper
SBI	3.384	4	.028	24365.400	4377.29	44353.51
PNB	10.261	4	.001	5538.800	4040.04	7037.56
UCO	7.191	4	.002	2509.000	1540.24	3477.76
AXIS	12.876	4	.000	3558.600	2791.25	4325.95
ICICI	11.617	4	.000	7188.600	5470.55	8906.65
YES	1.112	4	.328	6940.300	-10383.53	24263.93

The one-sample T Test is taken to compare the mean score of sample value. The value of fixed assets of YES bank coming is to be insignificant i.e. > 0.05 which is rejected and SBI, PNB, UCO, AXIS and ICICI banks coming is to be significant i.e. < 0.05 which is accepted.

	SBI	PNB	UCO	AXIS	ICICI	YES
Skewness	.393	-1.542	-2.232	-1.682	-2.181	2.235
Std. Error	.913	.913	.913	.913	.913	.913
Kurtosis	-3.009	1.831	4.980	2.913	4.792	4.998
Std. Error	2.000	2.000	2.000	2.000	2.000	2.000

The Skewness result reveal that SBI and YES banks show positive and the Std. Error estimation are .913 in all the respective banks. In the Kurtosis result noticed PNB, UCO, AXIS, ICICI and YES banks point out positive and Std. Error estimation are 2.000 in all the respective banks.

Conclusion

Sustainable banking considers all the social and environmental factors with an aim to protect to stakeholders funds with the natural resources of the environment. It involves, online banking, mobile banking, e-statement, ATMs and using banking service through online. The present study finds that one-sample T Test value of capital, deposit, interest income and operating expenses are significant, i.e. < 0.05 in all respective banks which is optimistic. The skewness and kurtosis result maximum comes positive. In future, indian bank's modern technology systems reduce carbon emission. It will definitely benefit banks, industries, stakeholders with whole environment.

References

Amaeshi Kenneth M., Ezepja Ane; E., Ado Bongo C., Nwafor Manson (2007), Financial Exclusion and Strategic Corporate Social Responsibility: A missing link in sustainable finance discourse? No. 49, ICCSR Research Paper Series – ISSN: 1479-5124, http://www.nottingham.ac.uk/business/ICCSR.

Bahl S. (2012), :Role of Green Banking in Sustainable Growth", International Journal of Marketing, Financial Services and Management Research, Vol. 1, No. 2, February 2012,ISSN: 2277-6222.

Bihari S.C. (2010), Green Banking-Towards socially responsible banking in India, IJBIT, Vol. 4(1).

Biswas, N. (2011), Sustainable Green Banking Approach: The Need of the Hour, Business Spectrum, pp.32-38.

Dharwal, M. and Agarwal, A. (2013), Green Banking: An Innovative Initiative for Sustainable Development.

Mani, A (2011), "Green Banking Through Green Lending", www.ibmtedu.org/gvcg/pPAPERS/ic-140.PDF,2011.

file:///C:/Users/mypc/Downloads/SSRN-id1322824.pdf

http://www.banknetindia.com/banking/sustain.htm

http://www.financialexpress.com/archive/sustainable-banking-in-india/200875/

Socio-Economic Determinants of Education Loan for Higher Education: Evidence from Odisha

Dinamani Biswal and Prof. Mitali Chinara

ABSTRACT

Loan financing of higher education has emerged as a feature across the globe. The study elucidates the determinants of education loan with special reference to the socio-economic background of the students. The study uses primary data from different universities and colleges in Khordha district of Odisha. By applying descriptive statistics and a multivariate regression model, it found that students studying in private educational institution get more amount of education loan and that too relatively conveniently. It is observed in the study that loan amount increases with the decrease in the percentage of mark secured in the last qualifying examination. The private educational institutions do not charge a uniform course fee for the students. It is also observed that student loan distribution is not equitable, and it has a gender, caste, and religion bias. So far as access to education loan is concerned, father's income is found not to be a significant determinant. If the student is eligible for the education loan, then usually he gets it irrespective of the income of the household he belongs to. Nature of the course that the student is pursuing significantly determines his probability of securing an education loan. Education loan is more conveniently available to the course, which is highly professional and guarantees early engagement.

Keywords: *Education loan, determinants of education loan, student loan, higher education, Odisha*

Introduction

Education is the central part of human capital investment which can bring economic development to both individual and economy as well (Becker, 1975). Evidence from various literature including papers by Hanushek and Kimko (2000); Krueger and Lindahl (2000); Hanushek and Woessmann (2007) show the investment in education develops human capital and fosters economic development and growth. It is well accepted that the rate of return in education is high. If we compare primary education with higher education, research shows that the social rate of return is more elevated in primary education than in higher education (Tilak & Varghse, 1991). In recent years, it is observed that the returns to higher education have been increasing compared to the returns to primary education (Schultz, 2003; De Ferranti et al., 2003). Moreover, higher education has many positive externalities. Higher earnings by educated citizens increase tax revenues for governments and provide finance to the state. In the era of the information-driven economy, higher education helps a country to compete with a more

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technologically advanced economy (Bloom et al., 2006; Tilak, 1999). People having higher education can also improve the skills and understanding of the less educated persons (Bloom et al. 2006). In the twenty-first century, India is poised to experience a demographic dividend. Hence, it is apparent that investment in higher education can accelerate the pace of economic growth and development as well.

Investment in higher education requires huge funds and these come from three sources, viz public financing of higher education which constitutes government subsidies, grants, and scholarship; household expenditure which includes student fees; and education loan to finance higher education. In recent times, education loan has emerged as an option to finance higher education and fulfil the goal of fiscal consolidation. Student loan provides a path by which huge funds can be mobilised in a short time (Tilak, 1999).In this context, education loan is an essential and arguably eûective tool for ûnancing higher education. However, education loan is not accessible to all student. Each year many student relinquish their dream of higher education and enter in to labour market. Many youth from poor and lower middle income families under invest in higher education due to high cost of college. This happens because the above said students could not access credit or have high level of debt aversion (Barr, 2015). Similarly, Cameron and Taber (2004) found that constraint to education loan hinders progress in higher of many students. Borrowing constraint seems a natural interpretation of such a situation because higher education is costly, both in terms of direct and opportunity cost, and poor people may be unable to borrow against future income if credit markets are imperfect (Gurgand et al., 2011).

Review of Literature

In India, higher education is funded by the state. However, it benefits goes not only to State but also individuals. Although, it is equitable to finance higher education from general taxation because it improves access to higher education. However, such non-discriminatory public subsidisation may not be equitable. Most often, those people who are paying taxes may not go for higher education on their own or by their children (Tilak & Varghese, 1991). From the return point of view, primary education provides more social rate of return in comparison to higher education (Tilak, 1988). Moreover, it is argued that higher education expands on the cost of primary education, hence, it would be necessary to reduce public spending on higher education and to reallocate fund to mass education as it is a constitutional commitment (Tilak & Varghese, 1991). Financing of higher education by education loan is the most obvious source of additional funds. Further, some part of the cost of higher education can be recover from students (Psacharopoulos, 1986; Jimenez, 1987). However, the concept of student loan has an inherent weakness, as it may not be equitable and equally accessible to all students. It may indeed be a deterrent to the growth of higher education (Tilak, 1999).

Odisha being one of the educationally backward states in the country with acute poverty, face the problem of financing its education in general and higher education in particular. Education loan for higher education in Odisha is not equitable in Odisha. It is tilted towards higher caste and class category students (Debi, 2010)

From the review of literature, we understand that the education loan has substituted the government burden to finance higher education, but it is not equitable across caste and class. However, Education loan is an essential aspect of higher education in Odisha, a few literature emphases accessibility of education loan in Odisha. Hence, a fresh look to retest and reevaluate equity, determinants of education

loan for higher education in Odisha can be useful to generate new and up-to-date insights into the issue. ‘

Objective

To explore education loan in Odisha, we made a primary study to know the nature of educational loans at the grassroots level. The objective of the study was to find out the composition of education loan recipients in terms of their socio-economic background in Odisha and to examine the determinants of education loan in Odisha.

Data and Methodology

The study is based on primary data. Khordha district has been selected as the study area because it contains many technical colleges, non-technical colleges, and Universities (public and private) and is a hub for higher education in eastern India. The list of operating colleges and Universities in Khordha district was obtained from the website of All India Survey on Higher Education. Stratified random sampling has been applied for choosing one University, one medical college, an engineering college, one management college, one Agricultural Institute, and one law college from the six strata. Six major courses like MBBS, B.Tech, Law, MCA, MBA, and M.Sc in Agriculture from six educational institutions such as KIIT University, SOA University, Orissa University of Agriculture and Technology Utkal University, College of Engineering and Technology (CET) Bhubaneswar and Hi-Tech Medical College of Khordha district, Odisha has been selected for the sample. Due to the lack of secondary data on the number of students taking a loan in each institution, snowball sampling has been applied to collect samples from each institution. Twenty samples have been taken from each institution. Descriptive statistics have been used to show the composition of loan recipients by socio-economic background and accessibility of education loans in Odisha. Multiple Regression analysis was applied by using the STATA software package to identify the factors determining education loan.

Socio-Economic Profile

Khordha district of Odisha, India is an educational hub in Odisha. There are six universities and more than 100 colleges running in the district. As the state capital, Bhubaneswar is situated in this district, and many students from the state and outside of the state come to study here. In this era of growing course fees in both private and government colleges and universities, many students take a loan from the banks. We have taken a sample of 120 students from five universities and one college. Six courses, namely MBA from KIIT University, IMCA from Utkal University, B.Tech from the College of Engineering and Technology, M.Sc. Agriculture from OUAT, Law from SOA University, and MBBS from Hi-Tech Medical College have been taken for the current study. Education loan taken by the students and their course fee has taken for the analysis of the study. The study includes two government and four private educational institutions of higher education.

Table-1

Course and Fee details

Types of course	Types of Institution	Course fee (in lakh)
IMCA	GOVT	2
MBA	PRIVATE	9 (on an average)
MSC.AG	PRIVATE	1(on an average)
B. TECH	GOVT (SELF FINANCE)	3.2
MBBS	PRIVATE	29(on an average)
LLB	PRIVATE	6(on an average)

Sources- Primary data and author's own calculation.

(IMCA- Integrated Master in Computer Application, MBA- Master in Business Administration, MSC.AG- Master of Science in Agriculture, B.TECH- Bachelor in Technology, MBBS- Bachelor in Medicine and Bachelor in Surgery, LLB-Bachelor in Law)

The table-1 shows that government educational institutions have a uniform course fee, whereas private educational institutions show variation in their course fee for similar courses. For the IMCA course, Government University has a uniform two lakh course fee whereas for the MBA course in Private University the course fee is different for different students without any valid region. Therefore an average course fee for Private institutions has been taken for consideration.

Table-2

Loan Recipient's Composition (in terms of place of origin)

Student's place of origin	Frequency	Percent
Rural	54	45
Semi Urban	15	12.5
Urban	51	42.5
Total	120	100

Sources- Primary data and author's calculation.

It is found from the table-2 that both urban and rural students are studying in these institutions; however, relatively a more significant percentage of rural students have availed educational loans as compared to the urban student. Around 46 percent of loan recipients are from rural areas, whereas around 41 percent are from urban areas, and only 12 percent are from the semi-urban areas. This figure appears because the parental income of the rural area is low, so their student depends more on education loans.

Table-3

Gender composition of loan recipients

Gender	Frequency	Percent
Female	56	46.67
Male	64	53.33
Total	120	100

Sources- Primary data and author's calculation

Analysing the gender aspect is quite important. The table-3 shows gender perspective of education loan is observed in the study, which refers to that a more significant number of male students have availed loans than the female students. Around 56 percent of students who have availed student loans were male, whereas about 43 percent of them are female. Hence we can deduce that if you are a male student, the chance of getting a loan is greater than the female students.

Table-4

Occupation of loan recipients' father

Types of Occupation	**Frequency**	**Percent**
Non Govt	83	69.16
Govt	37	30.83
Total	120	100.0

Sources- Primary data and author's calculation.

In Odisha, mostly the education of a student is financed by her/his father and some cases by her/his parents. Hence, it is crucial to analyse the father's occupation of students who got an education loan. It is observed from the table-4 that fathers of students who have taken education loan are mainly employed in the non-government sector which includes business, farming, and private services and their share is 69 percent and around 31 percent of the fathers of such students are working in the government sector.

Table-5

Father's income of loan recipients

Fathers income (monthly) In Rupees	Frequency	Percent
5000-25000	47	38.8
25000-50000	38	31.4
50000-75000	11	9.9
75000-100000	13	10.7
>100000	11	9.1
Total	120	100

Sources- Primary data and author's calculation.

It is observed from the table-5 that fathers of 38.8 percent of students earn a monthly income between Rs5000 to Rs25000, whereas fathers of 9.1 percent of students earn a monthly income of more than Rs1, 00,000 per month. Hence, it is clear that most of the students are from a middle-class family.

Table-6

Distribution of loan recipients according to religion

Religion	Frequency	Percent
Christianity	3	2.50
Hinduism	104	86.67
Muslim	13	10.83
Total	120	100

Sources- Primary data and author's calculation.

Sometimes religion prevails an obstacle for education loan, and the minority gets deprived. From the table-6, it's deduced that that most of the loan recipients (86.8%) are Hindu, whereas 10.7% belong to the Islam religion. Only 2.5% of the students availing education loan are Christians. It shows that most of the loans are taken by students who belong to the Hindu religion.

Table-7

Social category-wise distribution of loan recipients

Category	Frequency	Percent
GEN	59	49.17
OBC	36	30
SC	20	16.67
ST	5	4.17
Total	120	100

Sources- Primary data and author's calculation.

Apart from religion, caste plays a vital role in the accessibility of education loans. It is observed from the table-7 that 49.6% of students belong to the general category to get an education loan. Students belonging to OBC, SC, ST, and minority category got 29.8 percent, 16.5 percent, 0.8 percent, and 3.3 percent of the total loan, respectively. It brings out the fact that the number of ST category students availing education loan is minimal (only 0.8% in this sample).

Determinants of Education Loan

The second objective of the study analyses of factors determining the amount of education loan. Several factors determine the amount of education loan. However, some of the key factors have been identified from the review of the literature (Mainly derived from (Debi, 2010) and (Tilak, 1992)). These factors are the father's income, father's occupation, interest rate, type of course, and percentage of marks secured in the last examination. Multiple regression analysis has been used to explore the relative influence of these factors on the quantum of education loan. In this regression, qualitative variables (dummy variables) have been used, and the natural log of the variables like father's income and course fee has been taken to cater to outliers in these two variables. The regression model used is as follows:

$Y=á + â_0 lnFI+ â_1 lnCF+â_2 LP+ â_3 RE+â_4 CG+â_5 SX+â_6 CS+ u$

Y =Amount of Loan

LnFI= Natural logarithm of Father's income

LnCF= Natural logarithm of the course fee

LP=Percentage of marks secured in the last examination.

RE=Religion (Hindu, Muslim, Christian)

CG= Category (Gen, OBC,SC-ST)

SX= Sex (Male, Female)

CS=Types of course (IMCA-1,MBA-2 M.Sc.Ag-3,Law-4,B.Tech-5,MBBS-6

Table-8

Results of regression analysis :(With Robust Standard Error)

VARIABLES	Coefficients
LnFI	16,143
	(17,671)
LnCF	62,92***
	(23,049)
LP	-1,934
	(3,798)
RE(Muslim)	252,05*
	(128,678)
RE(Christian)	1.435*
	(788,033)
CG(OBC)	-92,91***
	(33,444)
CG(SC)	-778,06*
	(459,303)
CG(ST)	-155,12***
	(54,085)
SX	20,676
	(32,833)
CS(MBA)	160,64***
	(52,259)
CS(Ms.C Ag)	-4,662
	(54,458)
CS(Law)	119,525***
	(40,228)
CS(Betch)	70,567
	(54,343)
CS(MBBS)	962,282***
	(72,003)
Constant	-558,137
	(411,301)
Observations	120

Author's calculation

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

(Ln FI- Log of fathers income, LnCF- Log of Course fee, LP- Last percentage of mark secured in the last exam before taking a loan, RE- Religion, CG- Category, SX- Sex, CS- Course.)

Table-9

Results of VIF Test

Variable	VIF	1/VIF
lnfi	1.74	0.574394
CF	2.88	0.346878
LP	1.39	0.717315
RE		
RE(Muslim)	1.37	0.729243
RE(Christian)	1.57	0.638218
CG		
CG(OBC)	1.36	0.733556
CG(SC)	1.8	0.55443
CG(ST)	1.55	0.643915
1.SX	1.27	0.789165
CS		
CS(MBA)	2.01	0.498459
CS(Ms.C Ag)	1.77	0.564444
CS(Law)	1.89	0.530005
CS(Betch)	2.57	0.388699
CS(MBBS)	3.9	0.256585
Mean VIF	1.93	

(Ln FI- Log of fathers income, LnCF- Log of Course fee, LP- Last percentage of mark secured in the last exam before taking a loan, RE- Religion, CG- Category, SX- Sex, CS- Course.)

Analysis of the results

Table-8 reports the outcome of the logistic regression. The F statistics of the regression shows that the model has overall significance at one percent level of significance with R^2 of 0.8 which indicates that a one percent increase in the dependent variable (loan amount) is 0.8 percent defined by the independent variables. The adjusted R^2 of the model 0.77, which shows the independent variables included in the model are relevant. The issue of heteroscedasticity found in the model has been corrected by taking a robust standard error of the regression. From the model, it is clear that the father's income is

insignificant in determining the amount of education loan. This result supports the finding of (Cameron & Heckman 1998) and (Carineiro& Heckman 2002). Loans are mostly availed and sanctioned for professional courses which have high employment potential because it assures a payback.

The percentage secured by the student in the last qualifying examination before applying for a loan is also insignificant. It is also clear that course fee is a significant variable, and it is positively affecting loan amount, i.e. as course fee increases the student avails a higher amount of loan. It happens due to the presence of highly professional and costly courses like MBBS. Similarly, social category to which the student belongs has a significant and negative effect on the loan amount. Students belonging to OBC, SC, and ST category are not getting student loans conveniently. The most important thing is the education loan amount is closely connected with the types of courses. Students are availing loans for courses which are professional and guarantee an immediate job, and not for general courses, though the loan can be availed for all types of course. In addition this, Table-9 tests multicollinearity, it's clear that the model has no multicollinearity, which means that the independent variables of the model are not correlated with each other. The Variance Inflation factor is less than ten which is a clear indication of the absence of multicollinearity.

Concluding Observations

It is evident from the study that education loan is not equally accessible to all students. Although father's income is not a significant determinant of education loan, students studying private educational institution are availing a substantial amount of education loan. The nature of the course that the student is pursuing significantly affects the loan amount. Education loan is more conveniently available to the course, which is highly professional and guarantees immediate engagement. Moreover, student belongs to marginalised caste (SC, ST, and OBC) could not equally access education loan in comparison to general category student. In addition to this, the study found that the course fee which is charged from students are not uniform even for the same type of courses across different private higher education institutions, which can be regarded as a major defect of privatisation of education. There is a lack of transparency in the fee structure despite a so-called Regulatory Body set up by the state government to determine the same. Reduced budgetary support to and privatisation of higher education has increased the demand for education loan. But the extent to which it has fulfilled its objective of improving access to higher education and ensuring equity remains questionable to a great extent. Hence, the state government should review the accessibility of education loan and ensure equity in access to education loan.

References

Barr, A. (2016). Enlist or enrol: Credit constraints, college aid, and the military enlistment margin. *Economics of Education Review*, *51*, 61-78.

Becker, G. S. (1975). Front matter, human capital: a theoretical and empirical analysis, with special reference to education. *In Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education, Second Edition* (22).

Cameron, S. V., & Heckman, J. J. (1998). Life cycle schooling and dynamic selection bias: Models and evidence for five cohorts of American males. *Journal of Political economy*, *106*(2), 262-333.

Cameron, S. V., & Taber, C. (2004). Estimation of educational borrowing constraints using returns to schooling. *Journal of political Economy*, *112*(1).

De Ferranti, D., Perry, G. E., Gill, I., Guasch, J. L., Maloney, W. F., Sánchez-Páramo, C., & Schady, N. (2003). Closing the gap in education and technology. *The World Bank.*

Debi, S. (2010). Loan financing to higher education: Experiences of bank financing in a less developed region. *Centre for Multi-Disciplinary Development Research*

Gurgand, M., Lorenceau, A. J., & Mélonio, T. (2011). Student loans: Liquidity constraint and higher education in South Africa. *Agence Française de Développement*, (117).

Hanushek, E. A., & Kimko, D. D. (2000). Schooling, labor-force quality, and the growth of nations. *American economic review*, *90*(5), 1184-1208.

Hanushek, E. A., &Wöbmann, L. (2007). The role of education quality for economic growth. *The World Bank.*

Jimenez, E. Y. (1987). Pricing policy in the social sectors: Cost recovery for education and health in developing countries, *The World Bank*.

Krueger, A., &Lindahl, M. (2000). Education for growth: why and for whom? *Princeton University. Industrial Relations Section,* (429).

Psacharopoulos, G. (1986). Financing Education in Developing Countries: An Exploration of Policy Options. *The World Bank.*

Schultz, T. P. (2003). Higher education in Africa: Monitoring efficiency and improving equity. *African Higher Education: Implications for Development*, *93*.

Tilak, J. B. (1988). Costs of education in India. *International Journal of Educational Development*, *8*(1), 25-42.

Tilak, J. B. (1992). Student loans in financing higher education in India. *Higher Education*, *23*(4), 389-404. DOI: 10.1007/BF00138626

Tilak, J. B. (1999). Emerging trends and evolving public policies in India. *Contributions to the Study of Education*, 77, 113-136.

Tilak, J. B. (2004). Public subsidies in education in India. *Economic and Political Weekly*, 343-359.

Tilak, J. B., & Varghese, N. V. (1991). Financing higher education in India. *Higher Education*, *21*(1), 83-101.

Trend and Growth of NPAs in Public Sector Banks in India

Prof. Susant Kumar Baral and Prof. Sudhakar Patra

ABSTRACT

The objective of the paper is to analyze the trend and growth of non-performing assets (NPAs)of public sector banks (PSBs) inour country with special focus on inter-bank analysis. The CAGR of NPAs is 0.73 for loans sanctioned to non-priority sector but it is 0.59 and 0.39 for priority sector and public sector respectively. For non priority sector, NPAshave increased from 51.33 percent of total NPAs in 2003 to 75.2 percent in 2017. The percentage of NPAs to total investment in public sector banks has increased from 7.71 percent during 2005 to 31.43 percent during 2017. There is significant increase in percentage of NPAs to 10.16 percent of total loans (advances)and 27.46 percent in 2014 and 2016 respectively. The total investment granger cause NPAs but not the vice versa. The regression coefficient is found to be 0.28 and p-value is 0.001. It implies that the investment influences NPAssignificantly at 1 percent level.Theinvestment of public sector banks in two lag period significantly affects the NPAs in the current year as the p-value is 0.00. Therefore, the beneficiaries/ borrowers default loan in the second year of the repayment than the first year of repayment. Implementation of Government's 4R's strategy i.e. recognition, resolution, recapitalision and reform could reduce NPAs of the PSU banks.

Keywords: *Credit, Deposit, Investment, Non-performing assets (NPAs), Public sector banks (PSBs).*

Introduction

Non-performing asset (NPAs)is thatloan or advancewhere interest or installment of principal remainsdefault for 90 days. As the banks depend on receipt of interest as income; NPAs putchallenges for banks and other financial institutions. NPAs needs to be managed effectively by the banks for performance improvement in terms of profit, return on investment (ROI), return on assets (ROA), earnings per share (EPS) and market price of each equity share. Lesser the amount of NPAs indicates better performance of a bank.

According to RBI annual report, aggregate gross advances of PSBsincreased from Rs. 18, 19,074crore as on 31st March 2008 to Rs 52, 15,920crore as on 31st March 2014. Gross NPAs of PSBs increased from Rs. 2, 79,016crore(as on 31st March 2015) to Rs. 8, 95,601crore(as on 31st March 2018). The Economic Survey 2016-17 reveals India ranks poorly among emerging markets in terms of NPAs as percent of gross advances. NPAs as a percent of gross advances is 2 percent, 3 percent, 4 percent, 9

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percent and 9 percent for China, S Africa, Brazil, Russia and India respectively. During 2016, Rs 7, 495,631crore worth of loans are classified as NPAs in India which is more than 10 percent of all loans. If restructured and unrecognized assets were included, then total stressed assets could have been 15 to 20 percent of totaladvances. (Source: Care Rating). According to RBI data on global operations,NPAs of PSU banks reached a peak of Rs 8,95,601 crore as on 31st March 2018 andreduced by Rs 1,06,032 crore to Rs 7,89,569 crore as on 31st March 2019 which was possible mainly due to 4R's Strategy of the Government. (Source: pib.gov.in)As per RBI inputs, "the rise in Gross NPAs has been due to willful default, aggressivelending practices, corruption in some cases, and economic slow-down. (Source: Business Today, 25thJune2019).

Review of Literature

Choudhary and Sharma (2011) tried to investigate the methods of management of NPAsby public and private sector banks in India.They found that liberal governmental regulations have a major role to play for PSBs in India to competewith privatebanks as well as foreign banks.

Patidar and Kataria (2012), observed- that there is a negative relationship between NPAs and return on assets (ROA) in all types of banks. This shows that- accumulation of NPAs negatively affect proûtabilityof banks. Parmar(2014) found that total advances and net profit had shown growing trend in both SBI and ICICI bank. In comparison to SBI, NPAs in ICIC bank has shown downward trend due to proper administration of NPAs.Both SBI and ICICI bank have indicated negative relationship between net profit and Net NPAs. It is also observed negative relationship between net profit and net NPAs.

Prasanna (2014) investigated the determinants of NPAswith the help of panel data modeling of 31 Indian banks. The period of study was from 2000 to 2012. The author found thatlower NPAs in Indian banks resulted into higher growth rate in savings and GDP. Higher interest and inflation rates are led to higher NPAs and vice-versa is true.Joseph and Prakash(2014) investigated into the trends of NPAs in India from 2008 to 2013. The authors found that NPAs in privatesector banksare lesser than the NPAs of public sector banks. They suggested that implementation of risk management policy, proper credit appraisal and monitoring, centralized data base, credit management information system and credit modeling are necessary to reduce NPAs to a large extent. Credit modeling can predict sickness of firms.Das and Dutta (2014) found that there was no significant difference between the means of NPAs at 5 percent level of significance.Sharma (2005) found that growing NPAsnot only adversely affects the proûtability of the banks, but also the entire economy.Also, NPAsinfluence key variables such as capital adequacy, interest spread, and business per employee, proûtability, and proût per employee.

Measures Taken to Control NPAs

According to New Economic Policy 1991, Narsimham Committee initiated measures to curb NPAs such as i) The Debt Recovery Tribunals (DRTs), 1993were created to reduce time period for settlement of cases. As number of DRTs was less, large number cases piled up and remained pending. ii) Credit Information Bureau (CIB), 2000 was created for a dynamic information system to maintain and share data of willful defaulters. iii) Lok Adalats, 2001 helped in recovery of small loans limited to Rs 5 lakhs

only by the RBI guidelines. Similarly, the Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002; Compromise Settlement Act, 2001; Asset Reconstruction Companies (ARC) 2003; Corporate Debt Restructuring, 2005;5:25 Rule, 2014; and so on. Joint Lenders Forum, 2014 helped banks to avoid loan to the same individual or company from different banks. Mission Indradhanush, 2015 represents the most comprehensive reform for transforming the PSBs by improving their overall performance by ABCDEFG (Appointment, Bank Board Bureau, Capitalisation, De-stressing PSBs, Empowerment, Framework for Accountability, Governance reforms for PSBs. Asset Quality Review (AQR) implemented in 2015 for clean and fully provisioned bank balance sheets and revealed high incidence of NPAs. In 2019, Government has implemented a systematic and comprehensive 4R's (recognition, resolution, recapitalision and reform) strategy to reduce NPAs.

Objective and Methodology

The objective of the paper is to analyse the trend and growth of NPAs and its linkage with the total investment of public sector banks in India. The research work analysed the secondary data for the period from 2003 to 2017 collected from RBI database, the World Bank database, etc. To analyse the trend and growth, the study has used line graph, least square method, compound annual growth rate and descriptive statistics. Further, the study has used regression, Granger Causalty Wald test and vector auto regression to investigate into the relationship between investment and NPAs of PSBs.

Trend and Growth of NPAs in India

NPAs in India are a matter of grave concern for the banking sector as well as the economy as a whole. It is observed that capacity of banks' lending has been seriously affected due to mounting NPAs. The present study examines the rise of NPAs in the Country. Hence, this paper made an attempt to find thetrend of NPAs in priority, non-priority and public sector along with compound annual growth rate which is shown in Table -1.

Table-1 Trend of NPAs (in Rs Billion) in India

Year	Priority Sector		Non Priority Sector		Public Sector		Total
	Amount	Percentage	Amount	Percentage	Amount	Percentage	Total
2003	168.86	47.1	184.02	51.33	5.61	1.56	358.49
2004	167.05	47.74	178.95	51.14	3.9	1.11	349.9
2005	153.36	46.75	170.62	52.01	4.06	1.24	328.04
2006	149.22	51.78	132.27	45.9	6.68	2.32	288.17
2007	153.44	58.63	103.4	39.51	4.87	1.86	261.72
2008	159.72	63.96	85.63	34.29	4.38	1.76	249.74
2009	157.54	59.35	106.68	40.19	1.21	0.46	265.43
2010	195.67	53.76	165.23	45.4	3.05	0.84	363.95
2011	246.2	55.61	194.1	43.84	2.42	0.55	442.72
2012	324.24	46.96	355.55	51.49	10.68	1.55	690.48
2013	408.34	40.16	599.01	58.91	9.48	0.93	1016.83
2014	537.5	36.45	935.67	63.46	1.3	0.09	1474.48
2015	709.34	34.61	1337.67	65.26	2.59	0.13	2049.59
2016	969.03	23.18	3210.85	76.82	17.63	0.42	4179.88
2017	1257.29	24.8	3811.93	75.2	147.2	2.9	5069.22
CAGR	0.59		0.73		0.39		0.76

Source: RBI database, Time series publication.

Table-1 presents the amount of NPAs in priority sector, non-priority sector and public sector undertakings in India for 15 years (2003 to 2017). The compound annual growthrate of NPAs is 0.73 for non-priority sector compared to priority sector and public sector where it is 0.59 and 0.39 respectively. The percentage of NPAs to total investment in priority sector is 47.1 percent in 2003which reduced to 24.8 percent on 2017. But, it is to note that for non priority sector, it has increased from 51.33 percent in 2003 to 75.2 percent in 2017. After the implementation of Narsimham Committee Report in 1991, the priority sector lending was reduced from 40 percent to 10 percent. The commercial banks are sanctioning credit to priority sector strictly following the credit-worthiness of people.But, sanctioning credit to the borrowers of non-priority sector is comparatively liberal. The rising NPAsaremainly due to willful default.

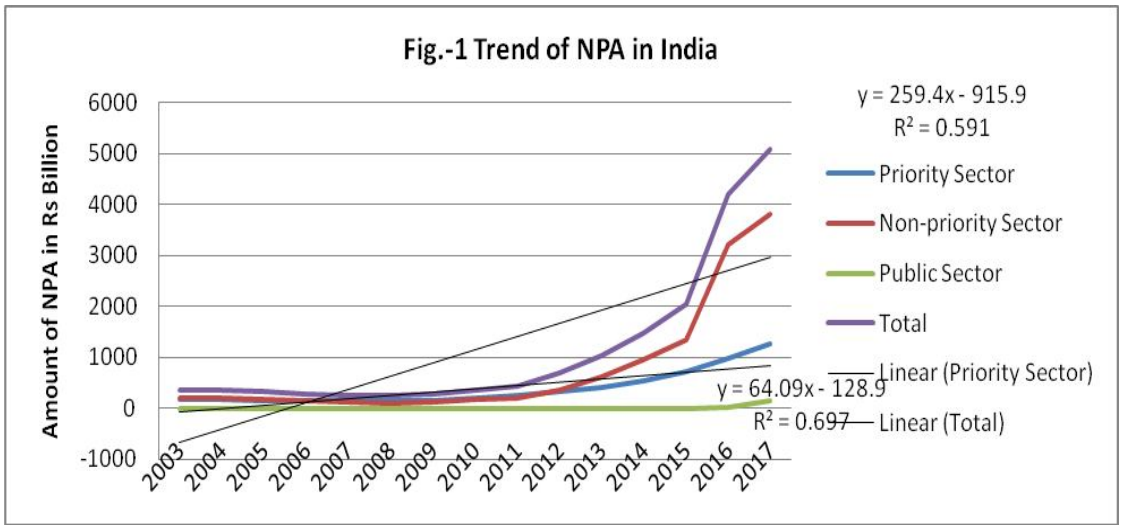

Fig.-1 presents the trend line of NPAs for three 3 sectors from 2003 to 2017. The least square trend gives a positive co-efficient of 259.4 for total NPAs indicating a significant rise of NPAs in India. This is not a good indicator of financial health of banking sector. One of the objectives of financial sector reform in India was to reduce the NPAs and improve the profitability of banks which is neglected.

Table-2 Descriptive statistics

Statistical measure	Priority Sector		Non-priority Sector		Public Sector		Total
	Amount	Percent	Amount	Percent	Amount	Percent	Amount
Mean	383.79	46.06	771.44	52.98	15.00	1.18	1159.24
Standard Devn.	343.23	12.18	1173.23	12.68	36.82	0.82	1508.73
C.V.	89.43	26.44	152.03	23.93	245.47	69.49	130.15
Kurtosis	2.02	-0.39	3.33	-0.39	14.50	-0.24	3.06
Skewness	1.66	-0.57	2.07	0.61	3.79	0.54	1.98
Range	1108.07	40.78	3726.30	42.53	145.99	2.81	4819.48
Minimum	149.22	23.18	85.63	34.29	1.21	0.09	249.74
Maximum	1257.29	63.96	3811.93	76.82	147.20	2.90	5069.22
Sum	5756.80	690.84	11571.58	794.75	225.06	17.72	17388.64
Count	15.00	15.00	15.00	15.00	15.00	15.00	15.00

Source- Computed by the author

Table-2 shows the descriptive statistics of NPAs in India. NPAs of non priority sector have more fluctuations and less consistent as the standard deviation of non-priority sectoris 1173.23 compared to

standard deviation of priority sector which is 343.23. The co-efficient of variation is found to be 152.03 for non-priority sector and 89.43 for priority sector. Therefore, credit to non-priority sector isproblematic for banking sector. Other statistical measures can be seen in Table-2.

Table-3 Total investment and NPAs of Public Sector Banks

Year	Total Investment of Public Sector Banks (in Rs Billion)	NPAs of Public Sector Banks in India(in Rs Billion)	Percentage
2005	4255.08	328.04	7.71
2006	4087.95	288.17	7.05
2007	4529.81	261.72	5.78
2008	5360.18	249.74	4.66
2009	6550.41	265.43	4.05
2010	8281.24	363.95	4.39
2011	9503.79	442.72	4.66
2012	10899.47	690.48	6.33
2013	12861.07	1016.83	7.91
2014	14515.59	1474.48	10.16
2015	14492.28	2049.59	14.14
2016	15220.80	4179.88	27.46
2017	16128.97	5069.22	31.43
2018	27918.83	NA	---
CAGR	1.06	0.92	

Source- RBI Database and Authors Calculation

Table-3 shows that the percentage of NPAs to total investment byPSBs has increased from 7.71 percent during 2005 to 31.43 percent during 2017. There is significant increase in NPAs from 10.16 percent in 2014 to 27.46 percent in 2016. The analysis implies that both investment and NPAs have increased but NPAs have increased more significantly than investment. The compound annual growth rate of investment from 2005 to 2018 is found to be 1.06, but it is 0.92 for NPAs. Figure-2 shows that there is increasing trend of percentage of NPAs to investment which is significant as the co-efficient of linear trend is found to be 1.6702. It implies that the banking sector is experiencing increasing default of loans over time. If the trend of NPAs is not reduced overtime, the banking sector in India will run into a crisis.

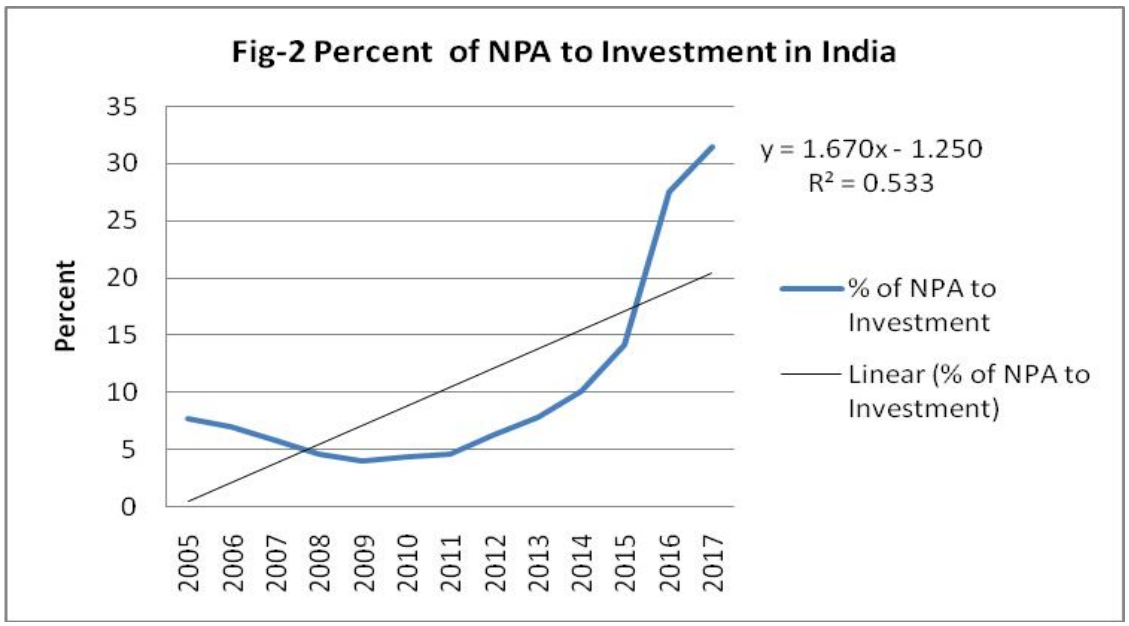

Table-4 shows the results of Granger Causality Wald test to know the direction of relationship between investment and NPAs. To investigate the bi-directional relationship between the two, this test was conducted. It is observed that total investment Granger Cause NPAs but not the vice versa. Therefore, linear regression was conducted taking investment as independent variable and NPAsas dependent variable.

Table-4 Results of Granger Causality Wald Test

Equation	Excluded |	chi2	dfProb.> chi2 |
Total investment	NPAs of PSBs |	5.3557	2 0.069 |
NPAs of publicsector	total investment |	3.1888	2 0.203 |

Null hypothesis	P Value	Decision	Direction
Total Investment does not granger cause NPAs	0.069	H_0 Rejected	There is Unidirectional relationship that Investment Granger cause NPAs
NPAs does not granger cause total investment	0.203	H_0 Accepted	

Source: Computed by author using STATA.

The p-value is found to be 0.069 for first null hypothesis, but it is 0.203 for second null hypothesis. Therefore, total investment of PSBs affects NPAs. Table-5 shows the regression results of NPAs on investment. The regression coefficient is found to be 0.28 and p-value is 0.001. It implies that the investment influence NPAs at 1 percent level of significance.

Table-5 Regression Results(Investment as Independent variable, NPAs as dependent variable)

Regression Statistics				
Multiple R	0.79			
R Square	0.62			
Adjusted R Square	0.59			
Standard Error	1018.05			
Observations	13.00			
	Coefficients	Standard Error	t Stat	P-value
Intercept	-1411.95	690.31	-2.04	0.06
NPAs	0.28	0.06	4.28	0.001

Source- computed by the Authors, * means significant at 1 percent level.

The linear regression equation is given below.

Regression Equation

NPAs = -1411.95 + 0.28* Investment

(t=4.28)

The vector auto regression was conducted to examine the influence of past variables. It was observed from Table-6 that the investment of public sector banks in two lag period significantly affect the NPAs in the current year as the p-value is 0.00. It implies that the beneficiary/ borrower defaults loan in the second year of the repayment than the first year of repayment.

Table-6 Vector Auto regression Results(Lag- 2 Periods)

Sample: 2007 - 2017		No. of Observations = 11		11		
Log likelihood = -74.44729			AIC	=	14.08133	
FPE	= 77467.2		HQIC	=	14.01292	
Det(Sigma_ml) = 44266.97			SBIC	=	14.18984	
Equation	Parameters	RMSE	R-sq	chi2	P>chi2	
NPAs of PSBs	3	246.713	0.9827	624.33	570.00	
NPAs of Public Sector Banks in India |		Coefficient	Standard Error	z	P>|z|	[95% Conf. Interval]
L1. |		-0.370	.27	-1.37	0.170	-0.90 0.15
L2. |		3.50	0.54	6.44	0.000	2.43 4.56
_cons |		-523.59	127.4626	-4.11	0.000	-773.4141 -273.77

Source- Computed by the Authors using STATA

Suggestions and Conclusion

There is significant increase in NPAs over time. The percentage of NPAs to total investment in priority sector is 47.1 percent in 2003 which reduced to 24.8 percent on 2017. But, it is to note that for non priority sector, it has increased from 51.33 percent in 2003 to 75.2 percent in 2017. The least square trend gives a positive co-efficient of 259.4 for total NPAs indicating a significant rise of NPAs in India. This is not a good indicator of financial health of banking sector. The co-efficient of variation is found to be 152.03 for non-priority sector and 89.43 for priority sector. Therefore, credit to non-priority sector is problematic for banking sector. The analysis implies that both investment and NPAs have increased but NPAs have increased more significantly than investment. There is increasing trend of percentage of NPAs to investment which is significant as the co-efficient of linear trend is found to be 1.6702. It implies that the banking sector is experiencing increasing default of loans over time. The regression coefficient is found to be 0.28 and p-value is 0.001. It implies that the investment influence NPAs at 1 percent level of significance.The investment of public sector banks in two lag period significantly affects the NPAs in the current year as the p-value is 0.00. Therefore, the beneficiary/ borrower defaults loan in the second year of the repayment than the first year of repayment.

The Government should implement 4R'sstrategy whole-heartedly to reduce NPAs and to make the banking sector fair and efficient. As a result,sustainable development of PSBs in particular and our economy at large will be possible.

References

Choudhary, K.& Sharma, M. (2011), "Performance of Indian public sector banks and private sector banks: A comparative study", *International Journal of Innovation, Management and Technology,* 2(3), pp. 236- 249.

Das, S.& Dutta. A. (2014), "A Study on NPAs of Public Sector Banks in India", *IOSR Journal of Business and Management*, Vol.16, Issue 11, pp. 75-83

Joseph, A. L.&Prakash, M. (2014), "A Study on Analyzing the Trend of NPAs Level in Private Sector Banks and Public Sector Banks",*International Journal of Scientific and Research Publications*, 4(7), pp. 1-9.

Parmar, R. (2014), "Non Performing Assets (NPAs): A Comparative Analysis of SBI and ICICI Bank", *International Journal for Management and Pharmacy*, 3(3), pp. 67-78.

Patidar, S.&Kataria, A. (2012), "NPAs in Priority Sector Lending: A Comparative Study between Public Sector Banks and Private Sector Banks of India", *Bauddhik,* 3(1), pp.54-69.

Prasanna, P.K. (2014), "Determinants of Non-performing Loans in Indian Banking System", 3rd International Conference Volume on *Management, Behavioral Science and Economic Issues*, Singapore, pp. 99-110.

Sharma, M. (2005),"Problem of NPAs and Its Impact on Strategic Banking Variables", *Finance India* 19(3), pp.953–967.

Role of Micro Finance for the Promotiom of Women Entrepreneurship in Odisha: A Study with Special Reference to Himjlicut Block of Gnajam District

Dr. Yayati Nayak and Ms . Subhadarshini Pradhan

ABSTRACT

Micro finance is regarded as one of the most important tools for the promotion of women entrepreneurship in Odisha. In Ganjam district the number of women entrepreneurs are increasing day-by-day. Entrepreneurial activities of women entrepreneurs are also increasing in the same direction.They are making different home made products in their own home. Researchers find that women of Ganjam are very intelligent. They have the ability to apply their own skill and knowledge into various home made products and services. However, in spite of all these abilities they have been struggling in order to survive. Availing credit facility is one of the most important problems for them.It is the need of the hour to help them, support them and motivate them. Therefore, the present study is an attempt made by the researchers to analyse the perception of women entrepreneurs on the contribution of micro finance towards women entrepreneurshipin Hinjilicut block of Ganjam district. This study also aims toexamine the relationship between annual income and financial credit of women entrepreneurs. The present study is mainly based on primary data. However, secondary data has also been collected from various published as well as unpublished sources.Chi-square test has been applied for the analysis of data. The paper finds that there isimprovement in the annual income of women entrepreneurs after taking loan from the micro finance institutions. The paper concludes with a suggestion that since micro finance has been playing a pivotal role for the empowerment of women in the study area it can also be used as a tool for the survival and growth of women entrepreneurship in rural areas.

Keywords: *Women Empowerment, Entrepreneurship, Micro Finance, SHGs, Problems*

Introduction

The economic development of a country depends on its industrial development. It is The entrepreneurs who stand at the centre of the industrial activity and play an important role for the economic prosperity of a nation. MSMEs play a significant role in the contribution of GDP of a country. Again, this sector is widely recognised as a valuable foundation in fostering economic growth. Therefore, entrepreneurship has its own advantage. Any strategy aimed at economic development without involving women is meaningless. Women entrepreneurship has gained momentum with the increase in the number

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of women enterprises and their substantive contribution to economic growth. In the dynamic world, women entrepreneurs are likely to become an important part of the global quest for sustained economic development and social progress. There has been a rapid increase in the efforts to encourage women entrepreneurship in developing countries. The role of women entrepreneurs is undergoing changes in the wake of technological innovations which have brought many opportunities.

However, in India, though women have played a key role in the society, the entrepreneurial ability of women has not been properly developed due to the poor status of women in the society. The development of women entrepreneurship has become an important aspect. Several policies and programmes have been implemented for the development of women entrepreneurship in India. It is an accepted fact that the role of women in the productive activities in India has been increasing over the last few years. For the emergence and development of women entrepreneurship, effective management and promotion is highly essential for a developing country like India. Therefore, women entrepreneurship should be nurtured with much care by the Government, its agencies, financial institutions, the society and the individuals. Good efforts should be made to encourage women to start their own enterprises and become entrepreneurs.

Micro finance is also called as micro credit. It is pioneered by Prof. Muhammad Yunus, the Nobel Prize winner. It is one of the most important ways which provide access to finance for the promotion of entrepreneurship. Micro entrepreneurs who do not have access to traditional sources of finance depend on micro finance. Micro finance helps them by providing necessary funds to start a business. Collateral free loan is one of the most important advantages of micro finance which attracts a large number of micro entrepreneurs towards it. It is noteworthy to mention that the contribution of micro finance for the growth and development of entrepreneurship is increasing day-by-day.

Review of Literature

Nkomo et al. (2016) have used phenomenological approach with the intention of deeply understanding entrepreneurship as a driver of job creation based on the experiences of the respondents. The study reveals that most unemployed youths venture into entrepreneurship only because of job scarcity and unemployment. The findings also pointed out that entrepreneurship is psychologically developing youths because running a business develops one's critical thinking as well as the decision making skills. The study recommends that both the government and private agencies should come forward to support youths in their businesses. At the same time awareness campaigns about agencies that are assisting youth entrepreneurs should be communicated to youth entrepreneurs for their better results. **Françoise et al. (2016)** have made an attempt to determine the effect of PPPMER II project on SME growth in Rwanda. The study finds that training, financial access, and access to market information significantly and positively correlated to SMEs growth. The study concludes with the recommendations that training offered to the entrepreneurs should meet the needs of the SMEs growth and should be tailor-made. The interest rate and collateral requirements by the banks should be made friendly to the SMEs operators to encourage them to borrow loans to advance their businesses. **Odhiambo et al. (2016)** have made an attempt to investigate the influence of entrepreneurial skills on the level of innovation performance in youth enterprises in Kenya. The result of the study indicates that entrepreneurial skills play a key role in determining the levels of innovation in the enterprises. Limited entrepreneurial skills existed because very little attention is given to train the youths before they are funded. The study recommends more

training programmes for youths on communication skills, decision making and other relevant skills. The study also recommends for more exposure of youths globally to widen the scope of innovation for greater benefits to both the youths as well as the government in terms of employment creation.

Ali MS and Cook Kevin (2020) have studied on the role of micro finance for the empowerment of rural women. They have concluded that empowerment of rural women is a good sign for the family, community, society and the nation as a whole. The study suggests that we should pay close attention for this.

Alshami Samer Ali et al. (2019)have conducted a study on the women borrowers who have availed loan from AmanahIkhtiar Malaysia (AIM) in Selangor. The study has been conducted through semi interviews of 22 women borrowers. Findings of the study show that majority of women who have availed loan from AmanahIkhtiar Malaysia (AIM) have been successfully running their enterprises. However, a few of them are struggling to survive due to lack of product diversity and repayment of loan. The paper concludes with a suggestion that there is a need for renovation of AIM products.

BoseBoney (2018)hasstudied on the practice of micro finance and its impact on dairy sector in Kerala. He has also tried toidentify the constraints of the producer farmers in production and marketing of the dairy products.Findingsof the study mention that the role of microfinance has a strong relationship with income, education, and business progress of dairy sector.

VR Haripriya and Thenmozhi R. (2017) have evaluated on the merits and demerits of microfinance programmes.For the purpose of this study data have been collected from various secondary sources. The study concludes that MFI provides assistance to the women entrepreneur through MFI- bank linkage programme.The main focus of micro finance industry is to empower woman.MFI provides more loan to woman on easy terms. Hence, it is a good indicator for women entrepreneurs.

Kulshreshtha and Jai (2018) have examined the importance of start-up and it's benefit for new entrepreneurs. They have also examined the problems and tried to find out the solutions for this. Simple random sampling method has been used for this study. A structured questionnaire has been used for the collection of primary data from 40 respondents. The study finds that start-up do not solve the major problems of women entrepreneurs. **Kani&Helan (2019)** have conducted a study to identify the position of rural and urban entrepreneurs in the district of Tirunelveli. They have investigated the problems of both rural and urban entrepreneurs. The study finds that rural entrepreneurs face more problems as compared to urban entrepreneurs. The recommendations of the study may be helpful for designing need based policies **Sivagami&Maran (2019)** have evaluated the role of agriculture for the promotion of rural entrepreneurship. They suggest that rural people should actively involve in agriculture. Rural development is possible through a healthy growth in Agriculture. It will not only create employment opportunities but it also helps in eradicating rural poverty. The study also finds that the mind-set of the rural people and the inefficiency of the government create hindrance for the development of rural entrepreneurship. **Sebastian &Karunakaran (2020)** have discussed on the schemes and incentives available for the promotion of women entrepreneurship. They have also examined the factors motivating women for entrepreneurship. The study finds that majority of the women entrepreneurs are not completely aware about the schemes designed for the promotion of women entrepreneurship.

Research Gap

After going through the above mentioned literature, it is found that many general aspects of micro finance and entrepreneurship have been covered by the researchers. They have mainly covered the importance of micro finance for the promotion of entrepreneurship.However, in the context of Ganjam district and Hinjilicut block studies relating to micro finance and women entrepreneurship is found to be very less. There is very less number of studies on the perception of women entrepreneurs on the role of micro finance for the promotion of women entrepreneurship in Hinjilicut block.To bridge the existing gap, the present study has been conducted by the researchers.

Objectives of the Study

The present study has the following objectives.

1. To analyse theperception of women entrepreneurs on the role of micro finance inHinjilicut Block of Ganjam district.
2. To study the relationship between annual income of the respondents before and after availing loan from banks.

Hypothesis

The null hypothesis of this study is as follows.

H_0: There is no significant improvement in the annual income of the respondents after availing loan from banks.

Research Methodology

Sources of Data: The present study is mainly based on Primary data. However, secondary data has also been used for the purpose of this study.The primary data for this paper has been collected through pre-tested interview schedule. The interview Schedule was designed to gather the data keeping in view the objectives of this study. Secondary data has also been collected from various articles, websites and from the office of the DIC,Ganjam.

Sample Size: Five self-help groups have been identified from Hinjilicut Block of Ganjam District for the purpose of this study.Out of which only 100 respondents have beenselectedfor interview by applying simple random sampling method.

Period of Study: The study has been conductedduring the period 2018-19.

Methods of Data Analysis: After collecting data from the respondents, the researchers have analysed the same by using chi-square test. Tables have been used to present the required data.

Table No-1

Profile of the Respondents

Particulars	SHG Group-I	SHG Group-II	SHG Group-III	SHG Group-IV	SHG Group-V
Name	Maa Gayatri Sangha	Maa Mangala Sangha	Maa shyamalai Swayan Sahayak Gosti	Maa Gayatri Mahila Sangha	Maa Anrnapurna Swayan Sahayak Gosti
District	Ganjam	Ganjam	Ganjam	Ganjam	Ganjam
Location	Hinjilicut Block	Hinjilicut Block	Hinjilicut Block	Hinjilicut Block	Hinjilicut Block
Yearof Starting	2014	2014	2014	2014	2014
Members for study	20	20	20	20	20

Source: Primary Data

In this study five SHG groups of Hinjilicut Block inGanjam Districthave been selected. They have allstarted in the year 2014. The name of the SHG groups are MaaGayatri Sangha, MaaMangala Sangha, Maa shyamalai Swayan Sahayak Gosti, Maa Gayatri Mahila Sangha, Maa Anrnapurna Swayan Sahayak Gosti.Only twenty respondents from each groups have been selected for this study.

Table No.2

Perception of Women Entrepreneur on Micro Finance

Particulars	No of Respondents	Percentage
Amount of Loan		
Rs (3,000-10,000)	45	45
Rs(10,001-22,000)	55	55
Period of Loan		
10-15 months	65	65
16-40 months	35	35
Loan Processing Time		
Less than 1 month	30	30
1 to 12 month	70	70
Amount of subsidy		
No subsidy	25	25
Rs 3000 -7000	15	15
7000-10000	60	60
Source of Repayment		
From own income	70	70
Husbands' income	20	20
Borrow from others	10	10
Loan Purpose		
Business	100	100
Monthly Saving in		
Rs (40-50)	20	20
Rs (60-100)	80	80

Intrepretation

- From the above table it is found that the amount of loan taken by the respondents fromRs. 3,000-10,000 consists of 45 percent and Rs.10, 001-20,000 consists of 55 percent.
- 10 -15 months as Period of loan taken by the 65 per cent women entrepreneurs whereas 35 per cent of women entrepreneur's period of loan consists of 16-40 months.
- 30 per cent respondents said that processing time of Loan is less than 1 month whereas 70 per cent respondents said it takes 1- 12 months.
- 60 per cent of respondents have received a subsidy of Rs 7000 to Rs 10000 as compared to subsidy of Rs 3,000 -7,000 and no subsidy of 15 per cent and 25 per cent of respondents respectively.
- Majority of the respondents have repaid their loan from their own business which consists of 70 per cent.
- Every member of the SHGs group must have to deposits very small amount of savings in their bank account in order to avail credit. In Hinjilicut Block Rs 40-50 has been deposited by 20 per cent respondents in every month.
- The abovetable alsoshows that the main purpose of availing a micro loan is to finance their enterprise.80 per cent respondents havemonthly saving ofRs 60-100.

Table No.3

Relationship Between Annual Income of the Respondents before and after taking Loan

ANNUAL INCOME (IN RUPEES)	NO. OF RESPONDENTS		TOTAL
	YES	NO	
20,000-30,000	05	02	07
30,001-40,000	05	03	08
40,001-50,000	30	08	38
ABOVE 50,000	40	07	47
TOTAL	80	20	100

Source:Primary Data

Calclutions of Chi-Squre Test

O	E	(O-E)	$(O-E)^2$	$(O-E)^2/E$
5	5.6	-0.6	0.36	0.064286
2	6.4	-4.4	19.36	3.025
5	30.4	-25.4	645.16	21.22237
3	37.6	-34.6	1197.16	31.83936
30	1.4	28.6	817.96	584.2571
8	1.6	6.4	40.96	25.6
40	7.6	32.4	1049.76	138.1263
7	9.4	-2.4	5.76	0.612766
100			3776.48	804.7472

Df= (r-1)(c-1),(4-1)(2-1)=3*1=3

The above Table shows that the calculated value 804.7472 is greaterthan the table value (3 d.o.fat 5 % level of significance. Tabulated ø2 = (7.81).So, the null hypothesis is rejected.There is significant relationship between annual income of the respondents before and after availing loan.

Findings

- From the above analysis it is found that the main purpose of taking loan by women entrepreneurs of Hinjilicut is business.
- The women entrepreneurs of Hinjilicut Block invest the loan amount in their business in order to maximise their annual income.
- With the help of bank loan,they can expand and diversify their business.
- Sincethere is significant relationship between annual income of the respondents before and after availing loan from banksit can be said that bank loan is a blessing for the women entrepreneurs of Hinjilicut.
- Women entrepreneurs of Hinjilicut contribute towards the economic prosperity of the block and district as well.
- The role of micro finance is very significant in the promotion of women entrepreneurship in Hinjilicut Block.

Conclusion

From the above discussionsit may be concluded that micro finance plays a very important role for the promotion of women entrepreneurship in Ganjam. Most of the respondents feel that their respect in the family and society have grown up after the participation in SHGs. They have availed financial support from the micro finance institutions. After availing credit facilities, it is observed that the annual income of the respondents is increasing. Women entrepreneurs of Hinjilicut block are becoming more

independent. Their social status and respect is also increasing. Hence, it can be said that there are blessings of micro finance on the women entrepreneurs. The success of micro enterprises mainly dependson the identification of local talents and native capabilities of poor and marginalised women.In addition to the normal job of micro finance it can also contribute for the betterment of women entrepreneurs through technology upgradation, marketing facilities and promotion of savings. There are some limitations of this study. The findings of this study may not be applied to other blocks and districts of Odisha. This study has covered only a small area of micro finance. Researchers may focus on other core areas of micro finance. This study will help the researchers and academicians who are planning to work in the similar direction.

References

Samer Ali Alshami, Izaidin Majid, Nurulizwa Rashid, HayderAdil, Women Micro and Small Business Sustainability in Malaysia through Microcredit, International Journal of Recent Technology and Engineering (IJRTE) ISSN: 2277-3878, Volume-8, Issue-1S5, June 2019.

Ali MS and Cook Kevin, Empowering Rural Women by Developing Micro-enterprise, International Journal of Investment Management and Financial Innovations, 2020; 6(1): 7-10, http://www.aascit.org/journal/ijimfi, ISSN: 2381-1196 (Print); ISSN: 2381-120X (Online)

Boney Bose, The effect of microfinance on dairy sector for uplifting backward sector in Kerala, International Journal of Commerce and Management Research ISSN: 2455-1627, Volume 4; Issue 1; January 2018; Page No. 01-05, www.managejournal.com.

Haripriya VR, R.Thenmozhi, Micro Finance- An Tool to Elevate Women Entrepreneurship Performance, International Journal of Engineering Technology Science and Research, IJETSR www.ijetsr.com ISSN 2394 – 3386 Volume 4, Issue 10 October 2017, Pp-148-153.

M.K Irshad, R.Sathyadevi,"Women empowerment and micro finance in Kerala", International Journal of Scientific Engineering and Applied Science (IJSEAS) - Volume-1, Issue-6, September 2015,ISSN: 2395-3470 www.ijseas.com,Pp361-368.

Tiberius P. Mlowosa, Natalia Kalimangasi, Bundala Dodo Mathias, the role of Microfinance Institutions in Improving the Economic Status of Women in Tanzania: The Case Study of PRIDE TANZANIA (Arusha Branch), International Journal of Scientific and Research Publications, Volume 4, Issue 11, November 2014, ISSN 2250-3153.

ArangiVenu ,Sravani, Role of micro-finance in development of rural women: a case study of boipariguda village in koraput district of odisha,international journal of multidisciplinary advanced research trends ISSN : 2349-7408 volume 2, issue 2, march 2015.

Touheda Yasmin Chowdhury, Aysa Yeasmin and Zobayer Ahmed, Perception of women entrepreneurs to accessing bank credit,Journal of Global Entrepreneurship,Research,2018, page**8:32**

Conceptual Clarification of Smart City Branding from the Slum Dwellers Perspective

Dr. Sandeep Kumar Mohanty

ABSTRACT

Slums are the most economically neglected places in a city. People living in slums can find the place more challenging and the government's effort to make cities smart cities can make their life more miserable. So the question arises whether a smart city concept is hope for slum dwellers living in slums or not? Before that, we can also ask the question that whether the slum dwellers understand the concept of a smart city or not? Qualitative research has been conducted with the help of grounded theory to find out the acceptance of the smart city concept by slum dwellers in five smart cities in India. Further, a quantitative analysis has been done to find out how slums have understood the concept to move forward in modern urbanization. This research takes the changingurbanization as an opportunity and tries to identify whether smart cities broadly apply the slum dweller's specified factors to define a smart city or it is unidirectional in its approach to shape strategies. In this research paper, an instrument has been developed to measure the concept of a smart city from the slum dwellers' perspective. This study has practical implications for policy formulation and policy implementation related to slum dwellers in different smart city projects not only in India but outside this country also. This will also help in identifying gaps in smart city proposals and it will help in better planning and execution of smart city projects in emerging economies.

Keyword: *Smart City Branding, Slum Dwellers, Scale Development, Mixed Method Research, Marketing Communication,*

Introduction

As per the figures released by Census 2011, there are 65 million people live in slums in India. 17 percent of India's urban population lives in slums. The growth rate of slums in urban areas is 20 percent. A city like Pune has 564 slums, which is 40 percent of the city's population. Similarly, the overall slum population of Select Smart Cities is 3,01,611 and the total Select Smart Cities Municipality Corporation recognized slums are 436 with 80,665 households. In recent times nearly 300 families in slums were evicted from Charan Khand settlement in Dharmsala smart city. 1200 slum dwellers evicted from Indore Smart City. 300 families evicted from Bhopal smart city. There are almost 90000 people in slums will lose home if Rourkela smart city will shape its plans by 2021. As there are so many negatives about slums and slum dwellers, still we feel they run the city and are part of the city. They feel smart city

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projects will unite them to rise and fight against many issues like who owns the city "the class or the mass". So the concerns of slum dwellers are real challenges for smart city marketing, development, and implementation. They cannot be ignored in the phase of planning and implementing smart city projects in different parts of India or any part of the emerging world. The real question is whether the smart city program can be a success if the slum dwellers are not actively part of the plan. In this way, the slum dwellers' understanding of the smart city is more pertinent. And this is expected that with identical socio-cultural and technological concerns prevailing in India, every smart city can relate these issues and findings of this research. This study plans to compare the views of slum dwellers with the conceptual expressions of government authorities related to the concept of smart city branding.

Literature Review

Defining Smart City

The concept of the smart city is not very clear and its definitions have failed to delimit its core (Hollands, 2008). This demonstrates that a smart city is a complicated and multi-dimensional concept that include *technology, people, and institution* (Nam and Pardo, 2011). A smart city is nothing but a concern for city infrastructure and many services the city is expected to provide resourcefully (Washburn *et al.*, 2009). A smart city can be recognizedas a city with smart technology, internet connections, and useful sensor connections (Deren*et al*. 2011, Milton, 2012; Cimmino *et al.,* 2014). A smart city inclines the *economy, environment, mobility,* and *governance* (Bakici *et al.*2012; Gabrys, 2014; Bronstein, 2009). Ensuring public safety and outstanding city services define a new generation smart city (Su et al. 2011).A smart city must aim for self-sustainability (Cocchia, 2014). This can only happen if slum dwellers understand economic growth, manageable urbanization, and a certain level of constrain on population figure (Neirotti, 2014). A smart city is like a new delusion and a new technical challenge to manage. Every smart city must maintain moral order (Vanolo, 2013). A smart city is the highest level of implementation of urban planning (Anthopoulos and Vakali, 2012). It must look for green and efficient energy and water supply (Bowerman et al., 2000). The most essential part of any smart city concept is citizens those who represent intellectual class, use technology, and have an interest in public administration (Caragliu et al., 2011; Fontana, 2014). The strategic approach to a smart city will always have proper strategic intent (Paskaleva, 2011). A smart city is a part of the political establishment and it has socio-technical issues that ensure stakeholders identify those issues and make necessary amendments (Gibbs et al., 2013; Ojo et al., 2014; Lazaroiu and Roscia, 2012). It has been found by some of the European researches like Anthopoulos and Vakali (2012) that smart city implementation has a relationship with urban planning. Clarke et al. (2019) has discussed the possible constraints a city a may face from the normal stage to a modification phase like smart city. Praharaj and Han (2019) emphasized the sustainable aspect of the smart city and considered the slums as vital part for this transformation. Emerging economies are more concerned about smart city projects as the population rise and slum dwellers' expectations are exploding. Governments are concerned about the smart utilization of urban space for smart living.

Smart City and Slums

There is a sense of anxietyand uncertainty in the mind of slum dwellers in various cities in India. They are not sure what would be the next expansion agenda of the central government and how far the agenda can bring positivity in their life. So their attitude towards the smart city mission and their involvement in this project is a positive and encouraging sign to consider. So the problem statement is clear to address whether their view can be standardized or not.Kitchin (2015) has opinionated that smart cities are more of state-oriented and market-centric programs. They are not so much slum Dwellers-centric. Cardullo and Kitchin (2018) also find that smart cities are less focused on a people-oriented approach and they are created without knowing the harsh realities of a location. Plum *et al*. (2007) have pointed out that slums are challenges for the healthy growth of a city. The recently developed and occupied slums are more than a headache for the city planners and government authorities. According to Townsend (2013) as population increases smart city becomes a challenge for all. In this context, slums pose as challenging as more than two-third population lives in slums. But, McFarlane (2011) has accepted that modern city life must respect the spirit of slum life. As per Gurstein (2014), slum dwellers of any state and city must get *smart community planning-supports* in providing better and smarter services in slums. Slums are having a similar spirit of city life as the normal city public expects. Sajja (2014) has studied the dimensions like living conditions and health issues related to a smart city. He has found that the above issues need to be addressed if we look at the city from a smart city perspective. The role of slums must be very much clear from the living condition and sanitation aspects. Slums are associated with city life and they must cooperate in providing a fresh look and ramification. They must be associated with a new slum dweller's order and a new ray of hope. (Amin, 2013). Marx *et al.* (2013) have confirmed that usual living standards within slums are increasing and day by day becoming close to a quality life. This has ensured a better life and hope for a new generation of slum dwellers. New initiatives have always made the slum dwellers compelled and this leads to more relocating and transferring situations (Olds et al. 2002). Kit *et al.* (2013) have rightly said that slums are an integral part of city life and they make a bold statement about new age urbanization. They are challenges for the urban mindset and part of the psychology of urban expansion. Whenever there is rapid urbanization the poor living in slums will always feel the heat and may get ejection. They are always the soft and most caressed targets (Lee *et al.* 2011). As per Patel (1995) slum dwellers are always the victim of slum rehabilitation and restructuring. They are like to be part of slum improvement programs. Khalil (2010) has mentioned slums are grey areas and may affect the sustainable development concept. So the understanding of smart city development has a relationship with slum development and mostly slum dwellers mentality to accept the developments.

The literature review points out that the concern of slum dwellers within the management preview of smart city execution is valid and needs to be addressed. If the smart city is a product then the slum dwellers are equally interested to get it and we must recognize the conceptualization of the smart city from the slum dwellers' perspective. Then it would be clear whether the needs and aspirations that make their conceptualization of smart city feasible or unattainable.

Objectives of the Study

The study has two objectives and by collecting data from a single instrument (questionnaire) both of these objectives have been achieved. These objectives are:

1. To define the smart city concept as understood by slum dwellers of Smart Cities
2. To compare the views of majorparticipants in slums (senior citizen, working-class, businessman, housewives, and students)related to their understanding of the smart city concept

These objectives are considered for study as the conceptual confusion of smart city remains the key constraint for smart city implementation. The comparison of their understanding will clarify the issues of contention and expectation management can be done properly. So this study aims at comparing conceptual and application orientations of smart city concept by slum dwellers that will encourage city planners, smart city developers, and smart city users in near future.

Research Methodology

The study has been conducted in a structured manner. As there are two objectives to achieve, the study has followed a two-step analysis. First of all, no study define the smart city concept in India and there is no city specific study that helps the research to conceptualize smart city. So in the first study, a scale is developed to measure the understanding of the smart city concept by the slum dwellers. In the second study, a comparative analysis is done on the response of five major representatives ofthe slum.

Research Design

The study has followed a sequence of activities to get the desired result.

1. The first phase of the study has been an exploratory study and then the variables have been identified and this has helped in developing the items to justify the smart city concept.
2. The second phase of the study has developed a scale of the concept of the smart city. Here all the steps of scale development have been followed.
3. The third phase of the study compares the understanding of the smart city concept by different sections of slum and finds out the difference among them for recommending further discussion and action in this regard

Phase-1: Exploratory Study

An exploratory study in the form of face-to-face interviews was conducted with different sections of slums in five different smart city projects in India. The cities are Bhubaneswar, Rourkela, Raipur, Warangal, and Vishakhapatnam. Local MBA students of a reputed B-schools could collect the information in their local language and later could translate it into English for further analysis. Some of the transcriptions are provided here. The question asked to them was simple and it has been taken care of to receive only one response from a family. The question was “What do you understand by smart city and how this can be a challenge for your slum?” Table-1 presents ten transcripts of 35 responses in the exploratory study.

Table1: Responses from slum dwellers

Respondent 1: Housewife (age 37 years, Bhubaneswar, Bhoinagar Basti)	Response: I think a smart city is a symbol of improvement. A smart city should improve the transportation facility, water, and electricity supply in my slum.
Respondent 2 Senior Citizen, (age 66 years, Bhubaneswar, Saliasahi Basti)	Response: Smart city is a good step to address slum problems. A city must have peace: control over law and order situation. It must bring good roads in the interior part of the city and the government must make a plan for slums to get the benefits also.
Respondent 3: Student(age 20 years, Rourkela, Telugupara, Slum)	Response: Smart city is all about digital adaptation. Slums are far behind in this line. I think the smart city will bring new colleges and institutions in cities and slums will get its benefits also. As far as challenges are concerned the public transportation system will improve, the job opportunities will be more and the city infrastructure will improve.
Respondent 4: Businessman(Age 23 years, Rourkela, Madhusudanapalli)	Response: Smart city is a joke. This is politics. Yes, there are a lot of things as challenges for slums. I hope the smart city will bring jobs, major investment in the state, and no none sense of political drama.
Respondent 5: Businessman(age 52 years, Warangal, Laxmipuram slum)	Response: I think a smart city is a good infrastructure and more business. There are many problems we are facing in this city like the slums and roads and transportation. The smart city will make us more disciplined.
Respondent 6: Student, (age 21 years, Warangal, Nakkalpalli)	Response: Smart city is an internet city, I mean a digital city. It will bring better transportation, connectivity, and better life. Slums will be smarter also. Otherwise, they will lose the good effort by the government has started.
Respondent 7: House Wife (age 42 years, Vishakhapatnam, Indira Nagar)	Response: Smart city is a new way to make the city better. The slum has challenges like drinking water and sanitation. Slums are not vote-bank. We are also part of the city and must get the basic city life like others. Major challenges are facing today are skilled labor issues and infrastructure and industrial development.
Respondent 8: Working-class(age 49 years, Vishakhapatnam, Jalaripeta)	Response: Smart city is a mark of digital and knowledge level up-gradation of city life. Even if we are working in government offices we are in poor shape. There are no big government educational institutions for slum children. This is a politically charged and ill-conceived move to divert mass attention from regular issues they are facing in the city.

(*Contd...)*

Respondent 9: Senior Citizen (age 67 years, Raipur, Dindayal Upadhaya Nagar)	Response: Smart city is smart slum management. Digitalization is the key to smart city success. Smart Cities is a new generation concept. Slums are not bad for a city, yet slums need to be given proper attention. Slums can change city life
Respondent 10: Working Class (age 39 years, Raipur, Woman-Rao Lakhey Nagar)	Response: Smart city is a new concept. I can see new roads, new colonies and new jobs in the city. Slums will find a new life under smart city projects. If everything will be smart then how slums can remain aloof.

These were selected responses of some of the identified slum dwellers in five smart cities selected for this study. They have been truthful in articulating what they mean as a smart city. Few of them were aware of the plan presented by the city authority in the smart city project. It can be understood that their diverse demographic profiles and their personal experience in the smart cities might have helped them to answer in an open, free, and unbiased manner. Their responses were coded and the components were identified. The major components that have come out of this exploratory study are provided in Table 2 below:

Table 2: Exploratory study and identified component of the smart city by slum dwellers

Security	Living Condition	Local Politics	Governance	Social identity
Transportation	Digital Adaptation	Business Center	Rea-Estate Policy	Stability
Water Supply and Electricity	Educational Institutions	Internet Connection	Vending Zone	Sense of adjustment
Peace	Economic Growth	Better Life	Environmental Friendly	Involvement
Law and Order	Infrastructure	Skilled Labor	Slum Planning	Connectivity
Roads	Investment	Industrial Development	Employment	Morality
Health care	Opportunity	Inclusiveness	Engaging	Respect

The above-identified components have helped to develop items for scale development.

Experts' View on Identified Components of Smart City

An extensive survey has been conducted in these five Smart Cities. It specially studied the responses of various age groups in slums on the declaration of smart city projects by the government of India. Here the respondents were positive to respond as they could realize the background of the study and they have expressed their imagination and understanding of the city infrastructure and related possibilities with maximum trust and enthusiasm. Two experts from the industry who have been associated with developing similar projects and understand the challenges of smart city design and deliverables were contacted for expert comments on the items developed after the extensive literature review and exploratory study.

Questionnaire Preparation

Pilot study

A pilot study was conducted on 64 respondents mostly aged between 21 to 75 years and they were asked to respond to 30 questions framed in a questionnaire. The responses were observed on a five-point Likert scale (that captured the response of the respondents on a scale of 1 as 'Strongly Disagree' to 5 as 'Strongly Agree.' The responses were incorporated into the final questionnaire. Since all of the items were understood and were responded without any difficulty, the issue of negative face validity and content validity was not found.

Sampling

The sampling technique used here is cluster sampling. This sampling technique has been applied as there is regular but comparatively heterogeneous groups are evident in a slum population. Here the total population is separated into five groups (or clusters) like *students, businessmen, working-class, housewives,* and *senior citizens in a slum*. 82 responses from each group are finalized for data analysis. So the total sample for the first phase of data collection is 410. The rejection rate of the responses was less than 3% and the data collection stopped when the desired number of responses were obtained. As there are thirty questions in the questionnaire the rule of thumb is that there ought to be five responses per item as per the reference of Clark and Watson (1995).

In the second study convenience sampling techniques were used, but the sample size has been limited to fifty one in each category. This is a comparative study and one-way ANOVA is used to test the hypothesis. The detail of the respondents' profile has been provided in Table-3 below.

Table 3: Detail of Respondents Profile

Category(total Response)	*Sub-category*	*Percentage(number)*
Students (82)	Undergraduates	10%
	Post Graduates	10%
Businessmen (82)	Retailers	6.5%
	Real-estate	6.5%
	SMEs	6.8%
Working Class (82)	Govt. Employees	10%
	Private Sector	10%
Housewives (82)	Age below 40	10%
	Age between 41-60	10%
Senior citizen (82)	Male age 60-75	10%
	Female age 60-75	10%
Total Respondent (410)	Male	50%
	Female	50%

Data Collection

Data collection has been quite hectic as there were district clusters to address. The questions were understandable and respondents were able to answer all the questions without any problem. Sometimes the research team has to elaborate a few points to them before filling the question. But mostly the questionnaire was fit for data collection. It took three months to collect the desired data. Items defining smart city has been provided in Table 4 below.

Table: 4 Items Defining Smart City Concept

Sl No	Items	Code
1	The smart city is about the implementation of smart technology in slums	Item 1
2	The smart city is about including creative and experienced people in slums to grow further.	Item 2
3	The smart city is about creating sufficient educational institutions for slums	Item3
4	The smart city is about an acceptable level of urbanization with slums	Item4
5	The smart city is about providing public safety in slums	Item5
6	The smart city is about looking for environmentally friendly technology in slums	Item6
7	The smart city is about bringing better water supply facilities to slums	Item7
8	The smart city is about making better transportation facilities in the city and the slum.	Item8
9	The smart city is about making the slum infrastructure excellent	Item9
10	The smart city is about improved slum health services.	Item10
11	The smart city is about showing promises of tremendous economic development in slums	Item11
12	The smart city is about has the geographic locational advantage for slums	Item12
13	The smart city is about making the slums digital	Item13
14	The smart city is about converting the slum sustainable (self-supportive)	Item14
15	The smart city is about building a slum where everything is available	Item15
16	The smart city is about creating job opportunities for slum dwellers	Item16
17	The smart city is about making slum governance a high standard	Item17
18	The smart city is about E-Governance, e-services available in slums	Item18
19	The smart city is about maintaining a high level of moral order in slums	Item19
20	The smart city is about reaching a high level of internet dependency in slums	Item20
21	The smart city is about realizing the importance of sensory networks in slums	Item21
22	The smart city is about making slum dwellers highly educated	Item22
23	The smart city is about ensuring there are sufficient skilled laborers in slums	Item23
24	The smart city is about making the slum the center of regional, local, and state politics	Item24
25	The smart city is about making the slum part of the city change over.	Item25
26	The smart city is about engaging dialogues between ordinary slum and local authority	Item26
27	The smart city is about having a significantly larger business class in slums	Item27
28	The smart city is about making the government departments highly responsive in slums	Item28
29	The smart city is about involving NGOs and Non-Profit Organizations in slum growth	Item29
30	The smart city is about giving power to slums to address their local problems	Item30

Scale Development

Exploratory Factor Analysis (EFA)

EFA was conducted using the principal Component Analysis and varimax rotation with the support of SPSS 20. The split-half technique was used to select the data set for this. So a total of 205 respondents were selected for the EFA and the rest 205 were used further for CFA. Six factors were extracted with 71.73 of shared variance. Results of the purification stage have been provided in Table 5 below.

Table 5: Results of Purification Study

Latent variables	items	Item to total correlation	Alpha if item deleted	Coeff. Alpha
City life	**Item5**	.843	.714	.942
	Item14	.823	.688	
	Item15	.806	.669	
	Item19	.771	.600	
	Item24	.832	.703	
	Item30	.881	.785	
Technology	**Item1**	.864	.904	.929
	Item6	.838	.908	
	Item13	.857	.905	
	Item20	.781	.920	
	Item21	.736	.928	
Infrastructure	**Item7**	.862	.908	.932
	Item8	.797	.920	
	Item9	.850	.910	
	Item10	.851	.910	
	Item28	.737	.931	
Economy	**Item11**	.851	.882	.919
	Item16	.775	.908	
	Item23	.830	.890	
	Item27	.801	.900	
Governance	**Item18**	.677	.760	.821
	Item17	.643	.775	
	Item25	.621	.786	
	Item26	.635	.778	
Knowledge	**Item2**	.618	.616	.711
	Item3	.377	.860	
	Item22	.677	.570	
	Item29	.611	.610	

Item3 has been eliminated from the analysis as it has a low (below 0.5) Item to total correlation. This elimination is required to have a strong factor structure. By observing the pattern matrix 27 Items with factors loading more than 0.5 were selected and all the factors could load at least three items. The Kaiser-Mayer-Olkin (KMO) measure of sample adequacy was 0.88 and Bartlett's test of sphericity indicates that the covariance structure was encouraging for EFA. The factor loading of the final factor structure can be understood by observing Table 5 provided below.

Table 6: Factor Loading

City life	Technology	Infrastructure	Economy	Governance	Knowledge
.904					
.883					
.872					
.864					
.855					
.830					
	.896				
	.891				
	.888				
	.847				
	.825				
		.890			
		.875			
		.873			
		.830			
		.813			
			.890		
			.888		
			.853		
			.852		
				.816	
				.795	
				.783	
				.775	.850
					.830
					.816

The factors were identified as S*lum Life, Technology, Infrastructure, Economy, Governance,* and *Knowledge.*

Convergent Validity

The convergent validity was evaluated by Fornel and Larcker's method. The result shows that the CR(Composite Reliability) values in all the factors are greater than 0.75 and AVE values are greater than 0.5 and MSV and ASV are lower than AVE. This fulfills the reliability and Convergent validity. The results of convergent analysis have been provided in Table 7.

Table 7: Convergent Validity Analysis

FACTORS	CR	AVE	MSV	ASV
Economy	0.920	0.742	0.140	0.042
CityLife	0.943	0.734	0.065	0.025
Technology	0.931	0.731	0.099	0.038
Infrastructure	0.933	0.736	0.140	0.061
Governance	0.822	0.536	0.053	0.029
Knowledge	0.861	0.673	0.099	0.028

Discriminant Validity

The analysis shows that the factors are separate and unique. Here the AVE for each factor was observed to be more than the correlation coefficient with the other factors. The results of discriminant validity have been provided in Table 8 below.

Table 8: Discriminant validity analysis

Factors	Economy	City Life	Technology	Infrastructure	Governance	Knowledge
Economy	0.861					
CityLife	-0.034	0.857				
Technology	0.207	-0.115	0.855			
Infrastructure	0.374	0.254	0.151	0.858		
Governance	0.143	0.214	-0.114	0.231	0.732	
Knowledge	-0.080	-0.013	0.315	0.157	-0.105	0.821

Confirmatory Factor Analysis (CFA)

A sequence of confirmatory factor analysis was conducted with the help of Amos 20. This test was

conducted with the other half of the data set with 315 responses. The measurement model has been provided in Figure 1 here. The model fit indices show adequate model fit with CMIN/DF 1.084, CFI 0.993, TLI 0.992, IFI .993, GFI 0.902, RFI .901, and RMSEA 0.019.

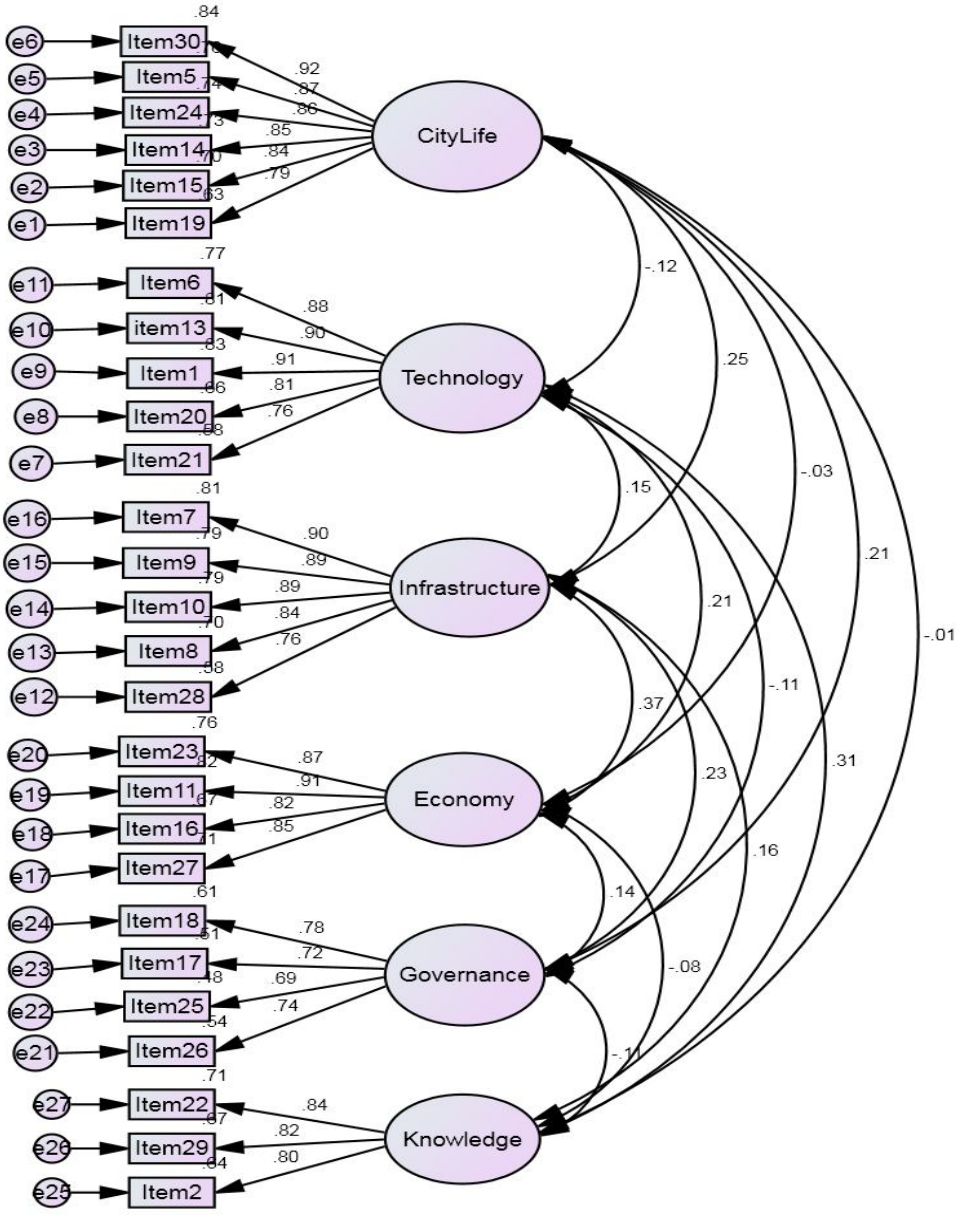

Figure 1: Measurement Model CFA

Smart city as a concept can be captured by six dimensions and this is going to help the researchers to find out the overall score of stakeholders' understanding of this concept. To study the second objective, 51 responses from each of the five different slum population (major participants in slums like senior citizens, working-class, businessman, housewife, and student) were analyzed with the help of one-way ANOVA. The results are interpretations that have been provided in Table 9 below.

Table 9: ANOVA Results

Factors	F Value	Sig.	Interpretation
Citylife	.943	.392	There is no significant difference of opinion on citylife by all five major participants in slum
Technology	7.552	.001	There is a significant difference of opinion on technology by all five major participants in slum
Infrastructure	10.760	.000	There is a significant difference of opinion on infrastructure all five major participants in slum
Economy	1.593	.206	There is no difference of opinion on the economy all five major participants in slum
Governance	1.195	.305	There is no difference of opinion on governance by all five major participants in slum
Knowledge	4.792	.010	There is a significant difference of opinion on knowledge by all five major participants in slum

Results

The first phase of the study managed to capture six major factors that define the concept of a smart city by the slum dwellers of select smart cities. These factors are *Technology*, *Knowledge*, *City-life, Infrastructure, Economy,* and *Governance*. Considering the government of India's smart city mission, and the multiple smart city proposals and information shared on their websites, the present study and its results corroborate their research. The exploratory study and its results show there is no major difference between government assessment of the smart city and slumdwellers' understanding of the smart city in proposing issues like *governance, economic development, and social development*. But issues like *Technology, Knowledge, and Infrastructure* need more clarity. The second study that compares the views of three stakeholders on six identified factors shows the variation in three factors such as *technology, knowledge, and infrastructure*.

Managerial Contribution

This present research justifies the work of Neirotti, (2014)that slum dwellers understand economic growth and their adjustment to urbanization or city life. The study also justifies the work of Caragliu, Del Bo, and Nijkamp(2011) and Fontana(2014) that understanding technology and its components may not be so easy for slum dwellers. This study could found that Kitchin (2015) was correct in assessing the smart cities are more of state-oriented and market-centric programs as slum dwellers don't understand the government version of the concept in totality. This study does reflect Marx *et al.*, (2013) work on slum dwellers' understanding of living standards within slums and expectations. This study also accepts Kit *et al.* (2013) work on slums and find the slum dweller's views important. There are certain issues the paper highlights more specifically. As the slum dwellers understand the different dimensions of the smart city concept, they are not at the same pace to realize their importance in reshaping their life in a smart city. In the case of technology, infrastructure, and knowledge the slum dwellers are not similar in their understanding and expression. This could create confusion in a smart city where technological advancement and knowledge sharing will be the key to growth. At the same time, this is an issue to address by the smart city authority to educate slum dwellers. There are similar views and understanding of slum dwellers in the case of conceptual clarity on city life, economy, and governance issues related to a smart city. This will encourage the smart city authority, planners to integrate slums in a positive direction.

Conclusion

The study has relevance in understanding smart cities from a slum dweller point of view. The results are going to help policymakers to relook and set their priorities in deciding and finalizing smart city projects in a locality especially in a city where more than fifty percent people are living in slums. In this study, the slum dweller's response in conceptualizing smart city has proved that ground realities are not covered and subjective attention is given to propel smart city projects. If we generalized the study we find that smart city proposals should be slum driven and more funding should be allocated to educate slum dwellers for better smart city branding. Today a smart city is not a concept that can be discussed in isolation, it has to include all the sections of society even the likes of slum dwellers.

References

Anthopoulos, L. G., & Vakali, A. (2012). Urban planning and smart cities: Interrelations and reciprocities. In *The Future Internet* (pp. 178-189). Springer Berlin Heidelberg.

Bakici, T., Almirall, E., & Wareham, J. (2013). A smart city initiative: the case of Barcelona. *Journal of the Knowledge Economy*, *4*(2), 135-148.

Bowerman, B., Braverman, J., Taylor, J., Todosow, H., & Von Wimmersperg, U. (2000, September). The vision of a smart city. In *2nd International Life Extension Technology Workshop, Paris* (Vol. 28).

Bronstein, Z. (2009). Industry and the smart city. *Dissent*, *56*(3), 27-34.

Caragliu, A., Del Bo, C., & Nijkamp, P. (2011). Smart cities in Europe. *Journal of urban technology*, *18*(2), 65-82.

Cimmino, A., Pecorella, T., Fantacci, R., Granelli, F., Rahman, T. F., Sacchi, C., & Harsh, P. (2014). The role of small cell technology in future Smart City applications. *Transactions on Emerging Telecommunications Technologies*, *25*(1), 11-20.

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological assessment*, *7*(3), 309.

Cocchia, A. (2014). Smart and digital city: a systematic literature review. In *Smart city* (pp. 13-43). Springer International Publishing.

Deren, L. I., Zhenfeng, S., & Xiaomin, Y. (2011). Theory and Practice from Digital City to Smart City [J]. *Geospatial Information*, *6*, 002.

Fontana, F. (2014). The Smart City and the Creation of Local Public Value. In *Smart City* (pp. 117-137). Springer International Publishing.

Gabrys, J. (2014). Programming environments: environmentality and slum Dwellers sensing in the smart city. *Environment and Planning D: Society and Space*, *32*(1), 30-48.

Gibbs, D., Krueger, R., & MacLeod, G. (2013). Grappling with smart city politics in an era of market triumphalism. *Urban Studies*, *50*(11), 2151-2157.

Giffinger, R., & Gudrun, H. (2010). Smart cities ranking: an effective instrument for the positioning of the cities. *ACE: Architecture, City and Environment*, *4*(12), 7-26.

Hollands, R. G. (2008). Will the real smart city please stand up? Intelligent, progressive or entrepreneurial. *City*, *12*(3), 303-320.

Lazaroiu, G. C., & Roscia, M. (2012). Definition methodology for the smart cities model. *Energy*, *47*(1), 326-332.

Mitton, N., Papavassiliou, S., Puliafito, A., & Trivedi, K. S. (2012). Combining Cloud and sensors in a smart city environment. *EURASIP journal on Wireless Communications and Networking*, *2012*(1), 1-10.

Nam, T., & Pardo, T. A. (2011, June). Conceptualizing smart city with dimensions of technology, people, and institutions. In *Proceedings of the 12th Annual International Digital Government Research Conference: Digital Government Innovation in Challenging Times* (pp. 282-291). ACM.

Neirotti, P., De Marco, A., Cagliano, A. C., Mangano, G., & Scorrano, F. (2014). Current trends in Smart City initiatives: Some stylised facts. *Cities*, *38*, 25-36.

Ojo, A., Curry, E., & Janowski, T. (2014). Designing Next Generation Smart City Initiatives-Harnessing Findings and Lessons from a Study of Ten Smart City Programs.

Paskaleva, K. A. (2011). The smart city: A nexus for open innovation. *Intelligent Buildings International*, *3*(3), 153-171.

Su, K., Li, J., & Fu, H. (2011, September). Smart city and the applications. In *Electronics, Communications and Control (ICECC), 2011 International Conference on* (pp. 1028-1031). IEEE.

Vanolo, A. (2013). Smart mentality: The smart city as disciplinary strategy. *Urban Studies*, 0042098013494427.

Washburn, D., Sindhu, U., Balaouras, S., Dines, R. A., Hayes, N., & Nelson, L. E. (2009). Helping CIOs understand "smart city" initiatives. *Growth*, *17*, 2.

Kitchin, R. (2015). Making sense of smart cities: addressing present shortcomings. *Cambridge journal of regions, economy and society*, *8*(1), 131-136.

Cardullo, P., & Kitchin, R. (2019). Being a 'slum Dwellers in the smart city: up and down the scaffold of smart slum Dwellers participation in Dublin, Ireland. *GeoJournal*, *84*(1), 1-13.

Plumb, D., Leverman, A., & McGray, R. (2007). The learning city in a 'planet of slums'. *Studies in Continuing Education*, *29*(1), 37-50.

Townsend, A. M. (2013). *Smart cities: Big data, civic hackers, and the quest for a new utopia*. WW Norton & Company.

McFarlane, C. (2011). Assemblage and critical urbanism. *City*, *15*(2), 204-224. Gurstein, M. (2014). Smart cities vs. smart communities: empowering slum Dwellerss not market economics. *The Journal of Community Informatics*, *10*(3).

Marx, B., Stoker, T., & Suri, T. (2013). The economics of slums in the developing world. *Journal of Economic Perspectives*, *27*(4), 187-210.

Olds, K., Bunnell, T., & Leckie, S. (2002). Forced evictions in tropical cities: an introduction. *Singapore Journal of Tropical Geography*, *23*(3), 247-251.

Kit, O., Lüdeke, M., & Reckien, D. (2013). Defining the bull's eye: satellite imagery-assisted slum population assessment in Hyderabad, India. *Urban Geography*, *34*(3), 413-424.

Lee, C. K., Lee, J., Lo, P. W., Tang, H. L., Hsiao, W. H., Liu, J. Y., & Lin, T. L. (2011). Taiwan perspective: developing smart living technology. *International Journal of Automation and Smart Technology*, *1*(1), 93-106.

Patel, S. B. (1995). Slum rehabilitation: 40 lakh free lunches?*Economic and Political Weekly*, 2473-2476.

Khalil, H. E. (2010). New Urbanism, Smart Growth and Informal Areas: A Quest For Sustainability. *Sustainable Architecture & Urban Development*, 137-156.

Deren, L. I., Zhenfeng, S., & Xiaomin, Y. (2011). Theory and Practice from Digital City to Smart City [J]. *Geospatial Information*, *6*, 002.

Dameri, R. P. (2013). Searching for smart city definition: a comprehensive proposal. *International Journal of computers & technology*, *11*(5), 2544-2551.

Stübinger, J., & Schneider, L. (2020). Understanding Smart City-A Data-Driven Literature Review. *Sustainability*, *12*(20), 8460.

Suresh, N.S., Kumar, M. and Arul Daniel, S. (2019), "Multi-agent strategy for low voltage DC supply for a smart home", Smart and Sustainable Built Environment, *9*(2),73-90.

Clarke, N.J., Kuipers, M.C. and Roos, J. (2019), "Cultural resilience and the Smart and Sustainable City: Exploring changing concepts on built heritage and urban redevelopment",

Praharaj, S. and Han, H. (2019), "Building a typology of the 100 smart cities in India", Smart and Sustainable Built Environment, *8*(5), 400-414.

Determinants of Access and Use of Saving Account, Women Empowerment in India: A Demographic Analysis

Sangram Charan Panigrahi

ABSTRACT

The access to financial services has considered as an oxygen for socio-economic empowerment of the excluded section especially women in the developing countries. This study examined the nexus between access to saving account and participation of women in decision making at the household level in India. The use of logistic regression model helps to identify the various determinants of access and use of saving account by women. The logit analysis shows that the head of house, caste, religion, place of households, age, education, working status, number of child of the respondent, education of husband, age gap between wife and husband were significant determinants for women have savings account that they themselves use. Different states like Bihar, Chhattisgarh, Gujarat, Haryana, Assam, Jharkhand, Maharashtra, West Bengal, M.P and Manipur show a dismal performance in women's access and use of saving account as compared to the other states in India.

Keywords: *Credit, Women Empowerment, Saving,*

Introduction

The process of economic growth and development of an economy depends upon the easy accessibility of credit policy to the poorest section of society. Credit is not only an essential element but also an indispensable part of the development of human resources. The Provision of credit to the needy people at the time of necessity and right place leads to an increase in rural development and removal of poverty (Pitt and Khandker, 1998), considered as superior instruments to look poverty into a museum (Yunus, 2009) for developing countries. In India, large numbers of households residing in rural areas are still trapped in poverty. The lack of provision of credit compels the rural poor in a 'vicious debt circle' with little hope to come out of the trap of poverty. This is caused by the fact that formal credit institutions providing more importance to an urban area and wealthy customers. The banking and financial institutions have little confidence on rural borrowers due to the lack of proper collateral required to access to credit. Alternatively, people have to depend on informal credit sources (i.e. moneylenders, relatives, friends, neighbors, landlords) that charge a higher rate of interest. They generally exploit people in the name of financial help and make them lifetime indebted. More proportion of poor people living in rural areas

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has deprived of basic financial services due to the lack of saving and collateral facilities provided by banking institutions (Arora and Meenu, 2010). As a result, the demand for credit from formal institutions is low in the rural area, especially among backward caste, small farmers and people belonging to the north east region (Rangrajan, 2008).

There is an inequality that persists on the access of financial services based on gender in India. The National Mission for Financial Inclusion started under Pradhan Mantri Jan Dhan Yojana (PMJDY) launched in August 2014 targeted to reduce gender disparity in access to finance. Under PMJDY, a total of 34.01 crore accounts have been opened with deposits amounting to ¹ 89257 crores as on January 2019. However, most of the PMJDY accounts are inactive. The Global Findex Survey (2017) estimates that more than three fourth (77%) of women in India own a bank account but half of the accounts (48%) of accounts were inactive as there are no deposits or withdrawals in 2017. The male-female difference in account ownership narrowed to 6.4% in 2017. Very few proportions of women less than a fifth (16.7%) save formally under PMJDY. The outstanding of credit to female small borrowers are very less (25%) as against male borrowers (72%) as on March 2017. Only half of the women as compared to men use the debit card (22% versus 43%). The study found numerous factors i.e. unemployment of women, low wages, unpaid care work, low female labour force participation rates, socio-cultural restrictions, low bargaining power, and lack of collateral tends to makes many of them as high-risk borrowers. An overall lack of empowerment, therefore, reflects in low awareness and less demand for credit leads to financial exclusion in India. Keeping the above problems as background, the present study used the empirical data to examine the status of financial inclusion of women, nexus between financial inclusion and women empowerment using National Family Health Survey (NFHS-4). It highlights different factors determine the use of saving account by women themselves, participation of women in decision making and acceptance of wife thrashing of women at the household level.

India's Financial Inclusion: An Overview

The provision of financial services from formal institutions to the poor people led to creating the idea of financial inclusion in India. Financial inclusion refers to the *"provision of affordable financial services (i.e. payments and remittance facilities, savings, loan and insurance services)"* (RBI, 2006) to those who have been left unattended or under-attended by formal finance institutions. The process of financial inclusion ensures access to financial services, adequate credit needed by financially excluded sections, comprise of marginal farmers, landless laborers, self employed, slum dwellers, migrants, senior citizens and women (Rangarajan, 2008; Thorat, 2007). Different supply-side factors such as defective government policy, rigidities norms and structures, refusal by banks, identity requirements, terms and conditions, etc. are the main reasons of financial exclusion in developing countries (Ferrari, 2007). In India, since the beginning/ inception of national plans, successive governments have emphasized the role of financial inclusion especially for poor people living in rural areas. It led to initiate the programmes of National Strategy for Financial Inclusion (NSFI) in June 2017 under the supervision of Financial Inclusion Advisory Committee (FIAC). Different surveys have shown the status of financial inclusion in India and suggest suitable policies to address the problem. NABARD's All India Rural Financial Inclusion Survey 2016-17(NAFIS) found the half of the households (47.4%) reported the outstanding debt as on date of survey. More proportion of agriculture households (52.5%) and 42.8% of Non-

agriculture households were in debt at the time of the survey. Nearly four out of every ten (43.5%) agriculture households reported having borrowed any money during the last year from some source or the other. More than half (60.4%) of them borrowed from institutional sources, 30.3% borrowed from only informal sources and 9.2% of agricultural households borrowed from both sources. According to NSSO 70th round data (2012-13), more than half of the households (52%) in the country were indebted. The levels of indebtedness varying from 93% in Andhra Pradesh, 82.5% in Tamil Nadu, 37% in Chhattisgarh and 17.5% in Assam. Kerela was top in average amount of outstanding loan (Rs 2,13,600) followed by Andhra Pradesh (¹ 1,23,400) and Punjab (¹ 1,19,500). Different informal sources supplied 40% of the total loan with 26% advanced by money lenders act as remote controller of credit. On the other, various formal institutions (i.e., government, cooperatives and banks) supplied only 15% of their credit to marginal landholding households.

In India, the provision of credit through Self Help Groups (SHGs) initiated by National Bank for Agricultural and Rural Development (NABARD) was started in 1992, leads to make the rural financial systems move towards more inclusive and sociable development for women members of the households. The SHGS programme evolved as a financial movement in 2011 merged as **National Rural Livelihoods Mission (NRLM) and** renamed as Deendayal Antyodaya Yojana (DAY – NRLM) in November 2015. As on march 2019, DAY – NRLM covers 122 million families through 10 million SHGs with savings deposit of Rs 232 billion. There are 5.07 million SHGs received collateral-free credit, loan outstanding of over Rs 870 billion. The non performing assets (NPA) of the SHGs loan are 6.5% less than the overall NPA of Indian Banks i.e. 10.2 %. (NABARD 2018-19). Micro credit programmes through SHGs are superior instrument to target the poor, especially women, to involve them in income-generating activities (Khandker, et.al, 1998). The reason behind lending to women is that most of women borrowers are more creditworthy than men and can control the use of loans (Garikipati, 2006; Ang, 2004). The poorest, especially women, when receiving credit, can improve not only their own lives but the standard of living of their families, their communities, and their nations. The small amount of loan helps in provision of self employment led in generating income to feed the family, send kids to school, and build decent housing (Bakhtiari 2006). Literature available on micro credit and women empowerment provides several empowerment indicators comprise of borrower' control over her loans (Goetz et al., 1996; Montgimery et al., 1996), her knowledge of micro enterprise (Ackerly, 1995), decision making power and attitudes towards socio economic aspects (Amin and Pebley, 1994; Hashemi et al., 1996) control over resources and incidences of domestic violence (Naved, 1994). The formation of SHGs for collective savings, group credit, financial literacy and interaction with group members has the potential to empower women in the rural area. Therefore, it is believed that micro credit can contribute to the empowerment of rural women in India by enabling them to be financially independent (GOI, 2007).

All the previous studies analyse the factors associated with women empowerment and ignored the relationship between financial services and empowerment indicators. There are few studies available on the determinants of owing a bank account by households in Asia (Dey and Majumder, 2017). However, no studies highlighted about use of bank or saving account by women themselves and more empirical evidence is needed in this area. Using data from NFHS-4, the present study seek to empirically understand different factors associated with women's access and use of saving account, identify whether the participation of women in decision making is closely associated with access to financial services. Keeping

the above issues and challenges, the study analyses the following three objectives.

Objectives

I) To examines the determinants of own and use of savings accounts by women in India.

II) To analyses the relationship between financial inclusion and participation in the decision making of women alone or jointly with husband in different activities.

III) To investigates the access and use of saving account by women herself with respect to different states of India.

Econometrics Model

The study used data from National Family Health Survey (NFHS-4) conducted in 2015 to 2016. The NFHS is a cross-sectional survey of a nationally representative sample of 699,686 women of belongs to reproductive age (15-49 years). The analysis in the present study included data from 64008 women, who have reported on access and use of saving account by themselves. The participation of decision making by women has collected from 86811 respondents and 120876 respondents opined about acceptance of wife beating. The study used a binary logistic regression model to find out (i) the determinants of women's access and use of banking services (ii) factors that influence the participation of women in decision making on different household activities.

Dependent Variables

In the NFHS-4, every woman aged 15-49 years, who was interviewed on (i) access of financial services (ii) participation in 3 types of decision making (ii) attitudes of women towards justification in wife beating on 6 types of activities. We created a binary dependent variable to record whether a woman has own and use saving account by herself, participated in alone or jointly with husband in at least one type of decision making, as mentioned below. For the present analysis, we recorded dependent variables as binary variables: (i) if women have bank or savings account that they themselves use coded it as "1" otherwise "0", (ii) If an ever-married woman participated in alone or jointly with husband in at least one type of decision making, we coded it as "1", and if she did not participate, we coded it as "0".

Here,

Access and Use of Saving Account by Respondent= $\begin{cases} 0, \text{if Respondents Doesn't use saving Account} \\ 1, \text{If Respondents use Saving Account} \end{cases}$

The logistic regression model is given by

Logit (P) $= log\left(\frac{p_i}{1-p_i}\right) = \sum_{i=0}^{n} \beta_i X_i$

Where

P_i= P ($Y_i = \frac{1}{X_i} = \frac{\exp\ (\sum_i \beta_i X_i)}{1+\exp\ (\sum_i \beta_i X_i)}$= Probability that the ith respondent has use saving account

Y_i= Respondents access and use of saving account

=1 if the respondent access and use of saving account, and zero otherwise

= ith predictor variable; and = ith Parameter associated with

Explanatory Variables

We hypothesize that the experience of decision making, the use of saving account is a result of interactions between individual characteristics and influenced by socio-economic factors of the household. In concordance with the ecological framework of the determinant of financial service, and empowerment described before, our analyses include several indicators (i.e. individual variables, and household variables were) considered as independent or explanatory variables. All the analyses have examined by STATA-14 software.

Results and Discussion

Access to financial service

Access to financial services is emerging as a new paradigm for the development of financially excluded groups especially women who contribute half of the total population of India. It enables not only economic growth but also the social development of a privileged and disadvantaged section of society.

Table: 1.1 Access to financial services

Percent of		India	Odisha
1	Women use Bank or Savings account	52 (122,351)	56 (5483)
2	Women use own earning	82 (20252)	81(853)
3	Women who use husband earning	71 (86173)	73 (3803)
4	Women have idea about the micro credit programmes	37 (122,351)	68(5483)
5	Women taken a loan from a micro credit	7 (45794)	21(3729)

Source: NFHS-4 (Figure in the bracket refers to total number of respondents)

Table 1.1 provides an insight into the participation of women on financial aspects/dimensions for Odisha and India. A lower proportion of women's participation is noticed in terms of utilization of money and its savings in India as against Odisha. For instance, about 52 percent of women are seen to have savings account that they themselves use in India as against 56 percent of women in Odisha. However, the proportionate variations in terms of utilization of own earnings are seen to be low in Odisha as compared to India (82% versus 81%). Nearly three-fourths of women (73%) living in Odisha used the earning of the husband. The proportion of women knowing micro credit programme is seen to be much higher in Odisha as compared to India (68 percent versus 37 percent). Similarly, more proportion of women (21%) in Odisha has taken a loan from micro credit institutions as against India (7%).

Determinants of Owing a Bank Account

Table 1.2 Factors influences on use of Saving account by women in Odds ratio: Respondent own savings account that they themselves use =1 Otherwise=0[A] (N=79481)

Table 1.2 Factors influences on use of Saving account by women in Odds ratio: Respondent own savings account that they themselves use =1 Otherwise=0[A] (N=79481)		
Independent Variables[1]		**Odds Ratio[2]**
Male headed house	R	
Female headed house		2.02
Respondent Age in years (16-29)	R	
30-49		1.54
Respondent education (Illiterate)	R	
Primary or more		1.22
Secondary		1.87
No child	R	
One child		1.59
Two Child		1.48
Caste of Households (SCs/STs)	R	
OBC		0.94
General		0.90
Religion of Households (Hindu)	R	
Muslim and Others		0.80
Place of Households (Urban)	R	
Rural		0.84
Respondent Working (No)	R	
Yes		1.44
Poor (Wealth Quintile)	R	
Rich		1.71
Education of Husband (Primary)	R	
Secondary		1.08
Higher Secondary		1.48
Age gap of husband (less than 2 years)	R	
3-5 Years		1.03
6-10 Years		1.09
[A]Dependent variable, [R]-Reference category, Sources: Author's Own Calculation		

The present study used a logistic regression model to find the determinants on access and use of a bank account by a female member of the households. The result of logistic regression (Table 1.2) shows that head of house, caste, religion, place of households, age, education, working status, number of the

child of the respondent, education of husband, age gap between wife and husband were significant factors on determinants of women's use of savings account. For example, female headed households are 2.02 times more likely to have access and use of a bank account themselves as against male headed house. The female person as being head of the house has full power to take decision might be the possible reason for the use of saving account by herself. With an increase in the age of respondents, the use of saving account by a women increases gradually. As observed from the odds ratio, respondents with 30-49 years of age are 1.54 times more likely to use of saving account as compared to those who belong to age between 16-29 years. The access and use of saving account by a woman increased gradually with increasing in education of respondents (Dey & Majumdar, 2017). The odds ratio reveals that the respondents with primary education are 1.22 times more in odd and secondary education are 1.87 times more likely to have access and use of saving accounts, respectively as compared to the illiterate respondents. An increase in the number of a child of respondents shows a rise in more access to bank services. The respondent with one child, two children is 1.59 and 1.48 times more in odds respectively to use of saving account as compared to no child.

The respondents belong to the OBC category (OR=0.94) and the general category (OR=0.90) are less likely in odds to use of saving accounts by themselves as against SC/STs households. The women belong to Muslim/other religions are 0.80 times less likely to use of bank account as compared to the Hindu family. Similarly, rural households are at a disadvantage position in terms of female's use of saving account (Sahu *et. al*., 2017). Holding other factors constant, owing to a bank account by women from the rural areas is about 0.84 times less in odds in magnitude than those in the urban areas. The working status of respondents determines the access and use of financial services by women in households. For example, respondents employed for cash are 1.44 times more likely to use of saving account against the reference category (i.e. unemployed). The respondent belongs in rich households (include the group middle, rich, richest by NFHS) is 1.71 times more likely to be agreed on the use of bank account against their counterparts (poor). Further, the result of logistic analysis shows that an increase in the education of husband leads to more likely access to banking services. The odds ratio implies that the husband with secondary and higher secondary are 1.08 and 1.48 times more likely in access and use of saving accounts respectively. The age gap between husband and wife with more than 3 to 5 years has seen 1.03 times more in odds on use of savings accounts by women as compared to the reference category (less than 2 years).

Decision Making of Women

The ability of women to participate in decisions making on different aspects is an essential part of empowerment (Kishore and Gupta, 2009). The decision making of women on three different categories (i.e. own health care, making large household purchase and visiting their family or relatives) has collected in NFHS-4 to measure the empowerment of women. The respondents were asked who makes decision on above mentioned activities: mainly you, mainly your husband, you and your husband jointly, or someone else? The participation of women in decision-making alone or with the husband is an important indicator for empowerment at household levels (Acharya et.al, 2010**).**

Table: 1.3 Decision making of women		India	Odisha
Percentage of women who participate alone or jointly with husband on		N=86811	N=3831
1	Own Health care	76	73
2	Major household purchases	74	73
4	Visits to her family or relatives	76	70
5	On all of the above three decisions	64	61
6	None of the above three decisions	16	17

Source: NFHS-4

Table 1.3 shows proportions of women who makes decisions alone or jointly with husband on three different activities in India and Odisha. India shows a higher proportion of women's participation in decision making to various activities as compared to Odisha. For instance, about 76 percent of women in India are noticed to participate in a decision relating activities on health care as against 73 percent in Odisha. Similarly, as against Odisha, India has shown a higher proportion of women's participation in decisions making activities on major household purchases and visits to family or relatives. About 64 per cent of women belonging to India are seen to participate in decisions relating to all major three activities enlisted in Table 1.3 as against 61 percent of women in this respect in Odisha. On the other hand, about 16 percent of women in India and 17 percent in Odisha are not seen to participate in decisions relating to any of the three major activities.

Determinants of Decision Making of Women

Table 1.4 presents the results of logistic regression used to examine the relationship between decisions making of women with all individual- and household-level characteristics. The dependent variable is "1" if the respondent participated in any one type of decision making alone or jointly with husband, Otherwise "0".

Table 1.4 Factors influences decision making alone or jointly with husband in Odds ratio:
Respondent participated in any one type of decision making alone or jointly with husband =1 Otherwise=0[A] (N= 79149)

Independent Variables[1]		**Odds Ratio[2]**
Male headed house	R	
Female headed house		1.78
Respondent Age in years (16-29)	R	
30-49		1.49
Respondent education (Illiterate)	R	
Primary or more		1.26
Secondary		1.45
No child	R	
One child		1.34
Two Child		1.42
Caste of Households (SCs/STs)	R	
OBCs		.769
General		.922
Religion of Households (Hindu)	R	
Muslim and Others		1.16
Place of Households (Urban)	R	
Rural		.919
Own Bank Account (No)	R	
Yes		1.64
Respondent Working (No)	R	
Yes		1.44
Poor (Wealth Quintile)	R	
Rich		1.02*
Education of Husband (Primary)	R	
Secondary		.990*
Higher Secondary		1.03*
Age gap of husband (less than 2 years)	R	
3-5 Years		1.03*
6-10 Years		3.73*

[A] Dependent variable, [R]-Reference category, *>0.05-Insignificant, Sources: Authors Own Calculation

The result of logistic analysis (Table 1.4) shows the head of house, caste, religion, place of households, age, education, access to the bank, working status, number of a child of the respondent were significant determinants for the participation of women in decision making. However, wealth status, education of husband, the age gap between wife and husband were insignificant factors towards the same. The female headed households have more participation in decision making (odds ratio: 1.78) as compared with male headed house. In India, women being the head of the house might have more

right to participate in decision making. This is a sign of empowerment of women in India. An increase in the age of respondent leads to better cooperation with the husband reflects on higher participation in decision making. The odds ratio indicates that respondents within 30-49 years are 1.49 times more likely participating in decision making as against the reference category (16-29 years). Results of logit analysis show that the respondent completed primary and secondary education were higher participation in decision making (odds ratio; 1.26 times and 1.45 times) respectively as compared to illiterate. An increase in the number of children shows higher participation in the decision making of women on different activities. The respondent with one child with 1.34 more likely and two children were 1.42 times in odds more likely takes decisions alone or jointly with a husband as compared to no child. The result also illustrates that households belong to OBC and general category were less likely (odds ratio; 0.76 and 0.92) to participate in decision making as against SC/STs category. Similarly, rural households are at a disadvantaged position in terms of participation in decision making. Holding other factors constant, women's participation in the decision making from the rural areas have 0.91 less in odds in magnitude than those in the urban areas. The access to banking services and employment helps to participate in decision making of women in India. The odds ratio indicates that the presence of a bank account in the name of respondent helps 1.64 times more in odds to participate in decision alone or jointly with husband as compared to reference category (respondent with no bank account). The male members of households change their idea towards the role of women from a bread maker to bread earner due to possess a bank account. However, the wealth status, education of husband and age gap of wife and husband were an insignificant impact on the decision making of women at the household level.

Women's Acceptance of Wife Beating

A fundamental element of empowerment is the rejection of the right of husbands to regulate and control the behavior of women. Women who justify let it be beating of wives by husbands are less empowered than women who think otherwise (Kishor and Gupta, 2004, United Nations, 1995). NFHS-4 asked women (15-49 years) about their opinion regarding on justification of hitting or beating of wife by husband on account of five situations: if she goes outside without informing him, if she neglects the house or children, if she argues with him, if she refuses to have sex with him, if she does not cook food properly. Women who agreed on justification of hitting or beating of wife by husband on the specified reasons are less empowered than those who protest or reject towards the same.

Table:1.5 Women's support on wife beating in percent		**India**	**Odisha**
Items	Percentages of women agreed on that a husband is justified in hitting or beating his wife if:	**N=120876**	**N=5434**
1	She Neglects the house or children	32	32
2	She Argues with husband	29	31
3	She goes out Without telling him	26	24
4	She doesn't cook properly	19	18
5	She refuses to have sexual intercourse with him	13	12
6	Agree with at least one specified reason of husband Beating	44	46

Source: NFHS-4

Table 1.5 shows the proportion of women agreed with the justification for wife beating on different specified reasons for India and Odisha. The proportion of women who support or accept the beating of a wife is higher in Odisha as against India. For instance, one in every three (32 percent) of women in both India and Odisha agree to the statement that the husband has the right to beat if she neglects children or the house. The support to the beating of a wife is more pronounced in Odisha than in India when she argues with husband. An equal proportion of respondent agreed on wife beating if she goes outside without telling him (24 percent), doesn't cook food properly and refusal of sex in India and Odisha. In this sequel, more proportion of women (46%) in Odisha agreed with at least one reason of beating of wife as against India (44%). Women's acceptance of beating of wife doesn't vary much with their age, the number of children and household structure but declines sharply with a rise in their education and wealth quintile. Women's acceptance of beating of wife is lower in urban than in rural areas. It is also low among women who were not employed compared to employed, and among never married women as compared to married women (NFHS, 2015).

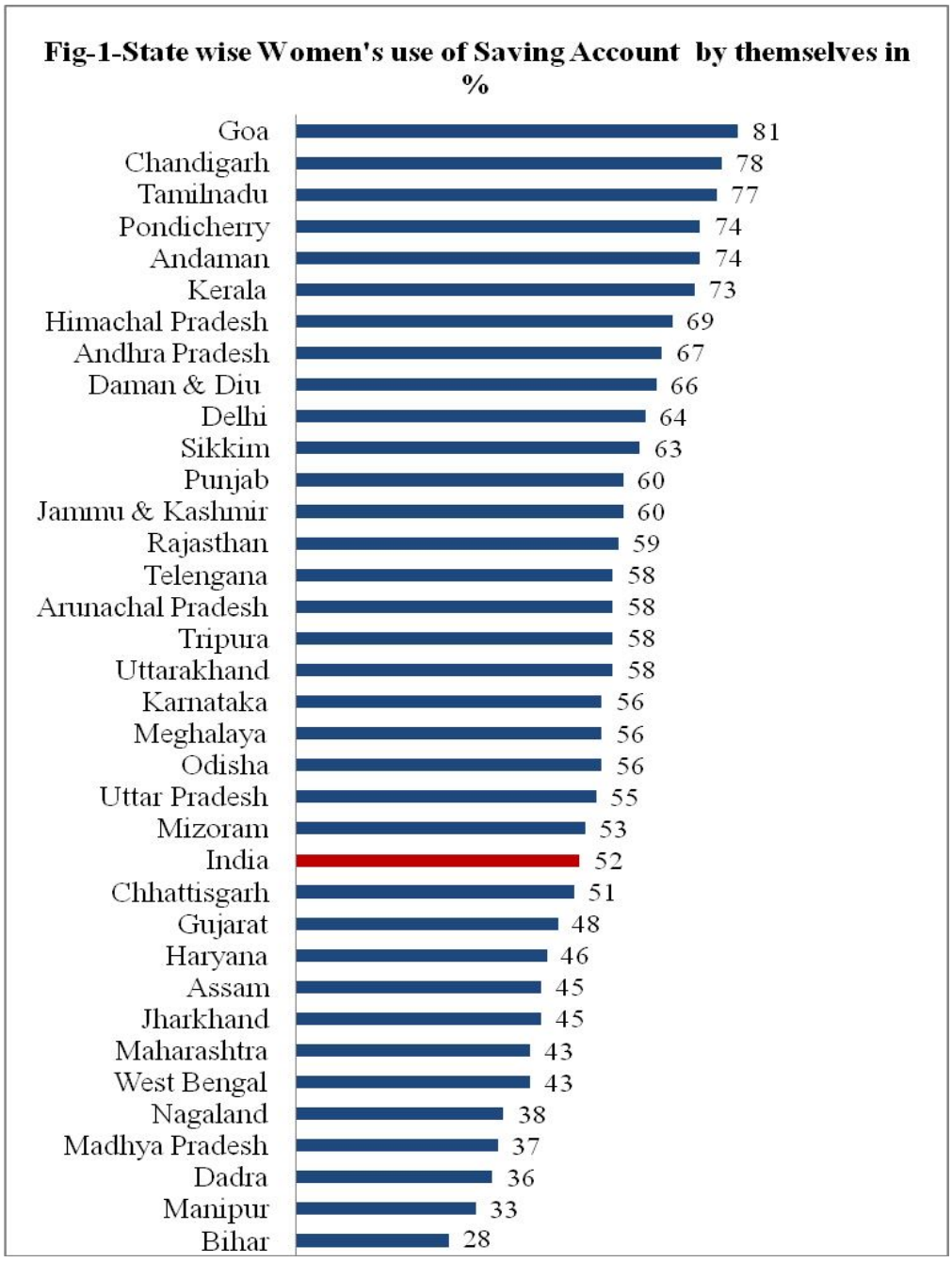
Women's Freedom of Movement

The freedom of movement is one of the indicators to measure the empowerment of women. It reflects the power of women to perform certain activities alone without depending upon others. Women's freedom of movement is not directly reported in NFHS-4. Instead, women were asked whether they needed permission to go alone to different destinations: to the market, health center, and outside of village.

Table:1.6 Women's freedom of movement	**India**	**Odisha**
Percentage of women allowed to go alone to:	**N=122351**	**N=5483**
The market	54	33
The health center	49	25
Places outside the village/ community/relatives	48	31
All three places	40	20

Source: NFHS-4

Table 1.6 shows the proportion of women allowed to move alone to different specified places in India and Odisha. The proportion of women allowed to move alone is noticed to be significantly high for India as against the state of Odisha. For instance, the proportion of women allowed visiting the market works out at 54 percent for India and 33 percent for Odisha. Similarly, about 40 percent of women in India are allowed to visit all the three places as against only 20 percent for Odisha. In general, women in Odisha have less freedom of movement as compared to India.



1.5.7 State wise Women's Access and use of saving Account

Source: Author's own calculation

The access and use of saving accounts by women is not uniform in a pattern for various states as desired for financial inclusion especially women in India. For ex, the proportions of women regarding use of saving account herself are very high as against other states. Figure 1 rank the states based on the percentage of women's access to and use of banking services in descending order. The main purpose is to assign a rank to different states which would help to address the problem and frame suitable policy for the financial inclusion of women. More than half of the women (52%) have bank or savings accounts that they themselves use indicating a dismal performance regarding access and use of financial inclusions policy in India. The percentages of women have bank or savings accounts that they themselves use, ranges from 28% in Bihar to 81% in Goa. Looking at the situation, one could notice that Goa has the highest percentage (81%) in access to banking services to the women and it was followed by Chandigarh (78%), Tamilnadu (77%), Kerala (73%) and H.P (69%) respectively. The bottom 10 states (i.e. Bihar, Chhattisgarh, Gujarat, Haryana, Assam, Jharkhand, Maharashtra, West Bengal, M.P, Manipur, and Nagaland) have low access to women's use of saving account as compared to average percentages of India. For ex, Bihar was at the bottom most levels with 28 percent of women included in financial inclusion and Manipur (33%) was the state second to it followed by M.P (37%), West Bengal (43%) and Maharashtra (43%) respectively.

Conclusion

The access and use of financial services to men and women has been considered as two parts of the same coin for economic development. This study founds the use of bank or savings account by women herself influenced by different socio-economic characteristics of households in India. The multivariate result implies that female headed households have more power on the use of saving accounts as compared to male headed house. The increases in age of respondents (30-49 years) lead to more probability on the use of saving accounts as against reference category (16-29 years). So government and financial institutions should develop an effective mechanism for provision of banking services to young women. The probability of access to banking services is gradually increased with increases in educational level of respondents. Thus, India needs to prioritize education seriously for the women in an early stage. In this situation, policy and decision makers should allocate more financial resources to the education sector for improvements in girl's education. It is found that women belong to OBC and General categories have less use of saving account by themselves than SC/ST households. At this point, the financial institutions develop an appropriate mechanism for financial inclusions of women belong to OBC and general category. The study shows that women residing in rural areas are at a disadvantaged position in terms of female's access to banking services. More policy needed for the financial inclusion of women in rural areas through a targeted approach. The results suggest that implementation of existing programmes (PMJDY) is highly essential to expand the banking services especially women to empower at individual, households and social levels. More emphasis should give for use of saving account by women themselves instead of opening of saving account under PMJDY. It is found that respondents belong to poor households have less access to banking services than non-poor households. Keeping this point, the government and policy makers should design new rules and regulation for inclusion of poor people in banking services. The employment of women helps in access to banking services found in this study needs to require more women employment programmes towards the same. This study found the provision of banking services is a key parameter for the participation of women in decision

making activities. Now the male members of households change their idea towards the role of women from a bread maker to bread earner. In this context, India needs to prioritize the provision of credit and use of credit by the beneficiaries to empowerment of women. The bottom 10 states (i.e. Chhattisgarh, Gujarat, Haryana, Assam, Jharkhand, Maharashtra, West Bengal, M.P, Manipur, Bihar) shows very dismal performances in owing a bank or savings account, required special attention. The policy framework should design in order to review the present structure of ensuring women's access to banking services as a priority basis.

References

Acharya, D. J. Bell, P. Simkhada, E. Teijlingen, and P. Regmi, (2010), "Women's autonomy in household decision-making: a demographic study in Nepal", Retrieved 11 March 2010 from http://www.reproductive-health-journal.com/content/7/1/15

Ackerly, B.A. (1995), "Testing the tools of development: credit programs, loan involvement and women's empowerment", IDS bulletin, 26 (3), 56–68.

Amin, S. and A.R. Pebley, (1994), "Gender inequality within households: the impact of a women's development program in 36 Bangladeshi villages", *The Bangladesh development studies,* XXII (2-3), 142–145

Ang, M.H. (2004), "Empowering the poor through microcredit", *Entrepreneurship and Innovation Management*, 4 (5), 485-494.

Arora, S. and Meenu (2010), "Microfinance Intervention- An insight into related literature with special reference to India", *American Journal of Social and management Sciences,* Online: 2151-1559, doi:10.5251/ajsms. http://www.scihub.org/AJSMS

Bakhtiari, S. (2006), "Microfinance and Poverty Reduction: Some International Evidence", *International Business and Economics Research Journal*, 5 (12)

Dey, S and Majumder, S (2017), "Identifying factors that influence access to banking services in Bangladesh: A household level Analysis"**,** Bangladesh J. Sci. Res. **30**(1&2): 81-89, 2017 (December)

Ferrari, A. G. Jaffrin, and S. Shrestha, (2007), "Access to Financial Services in Nepal", Washington D.C.: World Bank.

Findex index survey (2018), Renu Kohli, Women & Banking: India's financial inclusion suffers from a gender gap, May 19, 2018, https://www.financialexpress.com/opinion/women-banking-indias-financial-inclusion-suffers-from-a-gender-gap/1173467/

Garikipati, S. (2006), "The impact of lending to women on household vulnerability and women's empowerment: evidence from India" (Research Paper Series No. 2006/25). Liverpool, Great Britain: University of Liverpool, Management School.

Goetz, A.M. and R. Sen Gupta, (1996), "Who takes the credit? Gender, power, and control over loan use in rural credit programmes in Bangladesh", *World Development,* 24 (1), 45–63.

GOI, (2007), "Report of the Steering Committee on Empowerment of Women and Development of Children for the Eleventh Plan Planning Commission", Government of India,

Hashemi, S. R. Sidney, S. Schuler, and A.P. Riley (1996), "Rural Credit Programmes and Women's Empowerment in Bengladesh", *World Development*, 24 (4), 635-653

Iqbal, B & Samia, S, (2017) "Role of banks in financial inclusion in India" http://dx.doi.org/10.1016/j.cya.2017.01.007

Khandker, S.R. H. Samad, and Z. Khan, (1998), "Income and employment effects of micro-credit programmes: Village-level evidence from Bangladesh", *The Journal of Development Studies*, 35 (2), 96-124. Retrieved 10 March 2011 from http://www.informaworld.com/smpp/title~content=t713395137

Kishor, S. and K. Gupta, (2004), "Women's Empowerment in India and Its States Evidence from the NFHS", *Economic and Political Weekly*, February, 694-712

Kishor, S. and K. Gupta, (2009), "Gender equality and Women's empowerment in India, National Family Health Survey (NFHS-3)", International Institute for Population Sciences, Mumbai

Montgomery, R. D. Bhattacharya, and D. Hulme, (1996), "Credit for the poor in Bangladesh: theBRAC rural development program and the governmentthan resource development and employment program", in D. Hulme, and P. Mosley, (Eds) "Finance against poverty", vols. 1 and 2. London: Routledge.

Naved, R. (1994), "Empowerment of women: listening to the voices of women", *The Bangladesh Development Studies* (special issue on women, development and change), XXII, (2-3).

NABARD (2016), "NABARD All India Rural Financial Inclusion Survey 2016-17(NAFIS)", Department of Economic Analysis & Research, National Bank for Agriculture and Rural Development

NSSO 70th Round (2013), "Income, Expenditure, Productive Assets and Indebtedness of Agricultural Households in India", (January– December 2013), Ministry of Statistics and Programme Implementation, Government of India

National Family Health Survey (NFHS-4) 2017, International Institute for Population Sciences, Govandi Station Road, Deonar, Mumbai-400 088

Pitt, M. and S.R. Khandker, (1998), "The Impact of Group-based Credit Programmes on Poor Households in Bangladesh: Does the Gender of Participants Matter?" *Journal of Political Economy,* 106 (5), 958-96

Rangarajan, C. (2008), "Report on the committee on financial Inclusion", Retrieved on August, 2011 from www.nabard.org/pdf/report_financial/full%20Report.pdf

Sahoo, A, Pradhan, B, & Sahu, N (2017) "Determinants of Financial Inclusion in Tribal Districts of Odisha: An Empirical Investigation" Articleh//doi.org/10.1177/0049085716683072

Thorat (2007), "Financial Inclusion—The Indian Experience", Reserve Bank of India Bulletin, July,1165–71

United Nations (1995), "Population and Development: Programme of Action Adopted at the International Conference on Population and Development, Cairo, September 5-13, 1994, Department for Economic and Social Information and Policy Analysis, United Nations.

Yunus, M. (2009), "Creating a world without poverty", [video file]. Video posted to www.youtube.com/watch?v=3P-mfWCKMRA.

Reporting of Intangibles – A Study of Large Cap Companies, Mid Cap Companies and Small Cap Companies of India

N. Srinivas Rao and Prof. Ranjan Kumar Bal

ABSTRACT

In the knowledge economy the competitive strength for the companies is intangible assets. The intangibles when creating value for the companies, the companies are required to recognise, measure and report in their financial statements. When measured it gets managed and when reported there are advantages like company can raise the funds on the strength of the resources and there can be reduction in asymmetry in the information for the investors of the stock market of a growing economy. The study examined the reporting practices. of intangible assets by the large cap, mid cap and small cap Indian companies with the objective to study the trend of reporting of value of intangible by the companies under each category and to examine the difference in reporting of intangible assets among the three categories of companies.

The study found that a small increasing trend in the number of companies reporting of intangible assets and value of intangible assets over the sample period from 2010-11 to 2019-20.The descriptive statistics of the distribution of percentage of intangible assets to total assets, reveal that the mean values are low for each categorythere are high dispersal and asymmetryin the distribution within the three groups of companies categorised on the basis of their size. The one-way ANOVA test for the equality of mean values of the distribution for the three group of companies shows no difference in the reporting of value of intangible assets among three groups of companies. It is concluded that the Indian companies need to develop the practice of reporting intangible assets in par with the global practices.

Keywords: *Intangible Assets, Large Cap Companies, Mid Cap Companies, Small Cap Companies*

Introduction

The companies had been competing with each other on the basis of their physical and financial assets in the industrial economy but with the emergence of the knowledge economy, the companies are creating their value by using the intangible assets. In the knowledge economy, the primary competitive strength for the companies is the intellectual resources. The strategic resources that determine future

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success are intangibles, (Kaplan and Norton, 1992). The shifting of the competitive advantage from the traditional assets to intangible assets requires the companies to measure and report the intangibles.

The objective of general-purpose financial reporting is to provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity (IASB, 2010). The two primary characteristics of financial statements are reliability and relevant. The art in preparing the financial reports lies in selecting the information that is relevant to the users and reliable. Accounting, being the language of business, has been responding to the changing business environment. In the pre industrialization era, accounting focused on the maintaining and improving the wealth of the proprietors by focusing on capital in balance sheet. Responding to the growth of corporate form of entities during the post industrialization period, various financial control metrics are introduced for efficient allocation of resources. In the current knowledge economy, the intangible assets are to be shown by the companies in their financial statements. The accounting gains its socio-economic importance when in accounting the relevant format for reporting is developed for providing the information needed by the users. The Indian companies had been showing the tangible fixed assets and capital work in progress in the balance sheet as two separate line items and till 2011 for intangible assets only one separate line item was there as intangible assets. The balance sheet format for Indian companies was revised in 2011 and responding to the requirement of the knowledge economy a separate line item as "Intangible Assets under Development" was added. The companies in India now need to report as "Intangible Assets" when asset is ready to use and "Intangible Assets under Development" when the intangible asset to be ready to use after completing the development phase. This change in reporting format for intangible assets gives due recognition the increasing importance of intangible assets for the business and its generation process with spending for the development expenditure. Such reporting format emphasised on the reporting of acquired intangible assets and also self-generated intangible assets.

The companies report the resources that they control not only to the existing providers of fund for informing how the funds are deployed but also to raise further funds from lenders by creating charge on the assets, to find the ways for efficient use of the resources, to protect the resources from risk by insuring them, Reporting the resources reduces the asymmetry in the information thus helps in taking right decisions by the investors and protects their investments. Hence the companies taking into effect of the knowledge economy have to represent the intangible assets for which there is guidance from standards and format of financial statements.

Statement of Problem

Accounting needs to take into account and report the effect of the dynamics of economic changes. The companies when moved from material-based economy to knowledge-based economy, in the financial statements the intangible assets which is the competitive strength of knowledge economy are to be reported. The current study is to find the trend in reporting of value of intangible assets by the Indian companies and also to find the is the size of the company influence the value of intangible assets that it reports.

Literature Review

In the early 1990s, the practice of reporting intellectual capital in their annual reports was started by few companies. In their annual reports the companies - Skandia, Ramboll and Dow chemical company published the various aspects of intellectual capital contributing to their value in 1994(Petty and Guthrie, 2000).

In accordance to balance scorecard developed by Kaplan and Norton in 1996, the frameworks used for reporting intellectual capital are developed and the popular reporting models for intellectual capital are Brooking, 1996; Sveiby, 1997; Edvinsson and Malone, 1997(Van and Zijlstra, 2001). Zambon*et.al.*(2020) found Skandia Navigator which was developed by Edvinsson(1997) and Edvinsson and Malone(1997), Intangible Assets Monitor proposed by Sveiby in 1997 and Strategic Resources & Consequences Report by Lev and Gu(2016) as are the reporting framework for intangible assets.

Subsequent the reporting of intangibles by the Skandia, Ramboll and Dow chemicals and development of reporting frameworks for intangibles by Sveiby, Brooking, Edivnsson and Malone, the research have grown on the reporting of intangibles by companies.

The researchers used and modified the codes used for qualitative and quantitative disclosure of intangibles by the above-mentioned authors and the researchers developed their disclosure index. Using the disclosure index and content analysis technique, the researchers across the world did research on reporting of intangibles.

With the content analysis technique for studying the reporting of intangibles by the companies in the foreign countries, the research work of the researchers revealed an increasing trend. Oliveras and Kasperskaya(2005) studied for the Spanish companies, Singh and Weligamge(2009) studied for listed companies of Sri Lanka, Teodori and Veneziani(2010) for listed companies of Italy.

The research on reporting of intangibles by the Indian companies were done by Mehra(2010), Chander and Mehra (2011), Ragini(2012), Paramashivaiah and Puttaswamy(2013),Kamath(n.d.)and Sharma and Dharani(2017) using disclosure index developed for content analysis. The study of Mehra(2010) and Chander and Mehra(2011) found an increase in the level of disclosure of intangibles by the Indian companies in the year 2007-08 compared to the year 2003-04. There is increase in the disclosure score for intangibles from the year 2001 to the year 2005 for the Indian companies and also USA companies and Japanese companies (Ragini, 2012).The study by Paramashivaiah and Puttaswamy(2013)for 50 BSE listed companies and by Kamath(n.d.)for 10 Indian IT companies revealed that the level of disclosure of intangibles is low. The study of Sharma and Dharani(2017) found a positive trend in the reporting of intangibles related disclosures by the 120 companies belonging to Pharmaceutical, Basic Metals, Industrial Manufacturing, Energy, Financial Services and Information Technology for the period from 2004-05 to 2013-14.

The content analysis has been the widely used technique for studying the reporting of intangible assets as it studies more extended information on intangible resources. However, it lacks unified and uniform codes which creates difficulty in comparability of results. The traditional accounting, hence focused on money measurement principle and financial reporting standards have been issued for identification, measurement and disclosure of financial items only. There are researches on reporting of value of intangible assets. Lev(2018) observed the USA private sector's investment in intangibles

(relative to gross value added) increased from 8% to 15% of value added over the period during 1977 to 2016 and the aggregate investments in tangible assets (relative to gross value added) declined from 16% to 10% and it shows the rising importance of the investments in the intangibles for the companies. The study of Vummenthala and Achalapathi(2017) finds a positive correlation between rising market capitalisation and increasing value of intangible assets disclosed by NIFTY 50 Indian companies over the period from 2011 to 2016.

Objectives

It is observed from the study of literatures that there is no study on the reporting of intangible assets by the Indian companies categorising them according to their size. On the basis of this research gap the study is made with the following objectives:

Objective 1: To study the trend of reporting of intangible assets by large cap companies, mid cap companies and small cap companies of India

Objective 2: To compare the mean value, for large cap companies, mid cap companies and small cap companies, of the average of relative value of intangible assets to total assets

The objective 1 has following two sub objectives

Sub Objective 1.1: To study the trend of number of large cap companies, mid cap companies and small cap companies reporting intangible assets

Sub Objective 1.2: To study the trend of relative value of intangible assets to total assets of large cap companies, mid cap companies and small cap companies

Hypothesis

For the study of objective 2 the hypothesis will be tested. The null and alternate hypotheses for the test are:

H_0: The mean of average of relative of value of intangible assets to total assets are equal large cap, mid cap and small cap companies.

H_1: The mean of average of relative of value of intangible assets to total assets are not equal for at least one of the categories from among large cap, mid cap and small cap companies.

Research Methodology

Universe and Sample

The universe for the study is NIFTY 500 companies. The companies included in NIFTY 500 index are 100 large cap companies, 150 mid cap companies and 250 small cap companies. The list of companies included in the NIFTY 500 index as on 31.3.2020 is the universe for the study. The sample is the companies which have uniform financial year ending as on 31st March for all the sample years and have disclosed value of intangible assets at least one of the years over the sample years. According to the criteria 242 companies are selected which included 54 large cap companies, 75 mid cap companies and 113 small companies.

Sample Period

The sample period is 10 years from financial year 2010-10 to 2019-20. This span of 10 years provides a scope to study the reporting practices of intangible assets by the Indian companies. During this period, the format for Balance Sheet for companies was revised which added a line as Intangible Assets under Development and also listed companies prepared their financial statements with the guidance of Ind AS.

Sources of Data

All the financial data of the companies are accessed from the CMIE Prowess database.

Analysis

Trend of number of companies reporting intangible assets

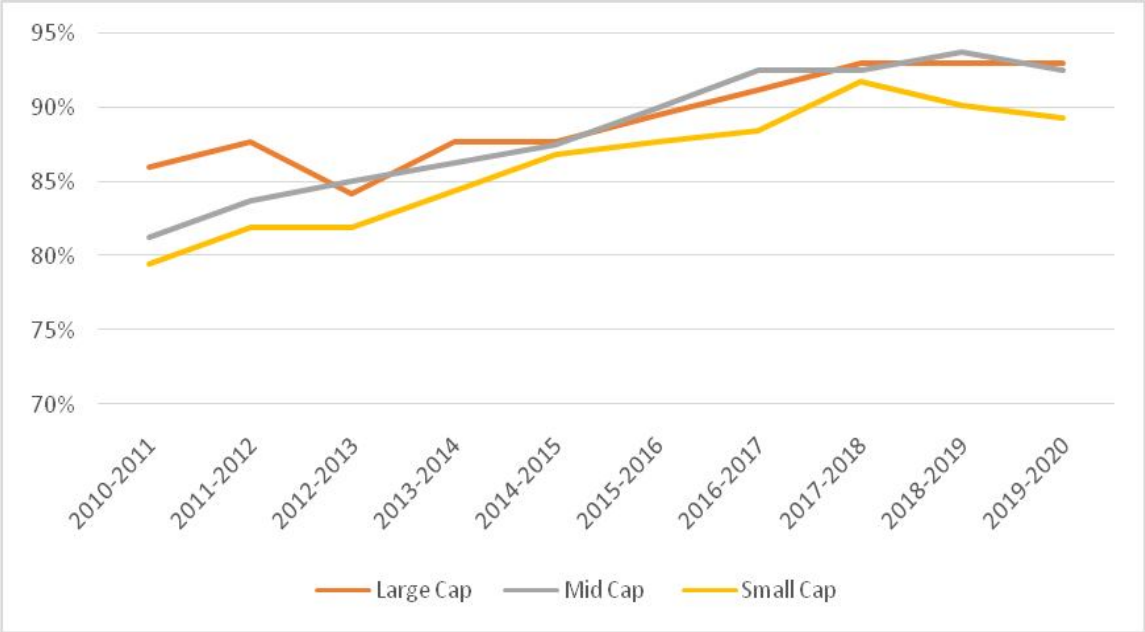
Sub Objective 1.1: To study the trend of number of large cap companies, mid cap companies and small cap companies reporting intangible assets in their financial statements.

Table No. 1: Percentage of large cap companies, mid cap companies and small cap companies reporting intangible assets in their financial statements

Year	Large Cap	Mid Cap	Small Cap
2010-2011	86%	81%	80%
2011-2012	88%	84%	82%
2012-2013	84%	85%	82%
2013-2014	88%	86%	84%
2014-2015	88%	88%	87%
2015-2016	89%	90%	88%
2016-2017	91%	93%	89%
2017-2018	93%	93%	92%
2018-2019	93%	94%	90%
2019-2020	93%	93%	89%

(Source: Computed)

Figure No.1: Trend in percentage of large cap companies, mid cap companies and small cap companies reporting intangible assets in their financial statements



The table number 1 and figure number 1 show percentage of large cap companies, percentage of mid cap companies and percentage of small cap companies reporting intangible assets in their financial statements in each of the ten sample years from 2010-11 to 2019-20. The percentage is calculated by taking the ratio of number of companies reporting intangible assets in the respective year under each of the cap category to total number of sample companies of the respective cap category. The table and the line charts show from the beginning of sample years the percentage companies reporting intangible assets for all the three cap categories and there is a marginal rise in the percentage of companies in each cap category. The percentage of large cap companies reporting intangible assets increased from 86% in 2010-11 to 93% in 2019-20; the percentage of mid cap companies increased from 81% to 93% over the sample years from 2010-11 to 2019-20; and for the small cap categories the percentage of companies increased from 80% to 89%.

It is observed from the study of this sub objective that a large number companies have been reporting value of intangible assets in their financial statements and there has been also rise in number of companies making disclosure of value of intangible assets.

Subsequent upon finding the marginal increase in the percentage of companies reporting value of intangible assets in their financial statements over the sample years 2010-11 to 2019-20, the study is made to find the trend in reporting the relative value of intangible assets to total assets for the large cap companies, mid cap companies and small cap companies. The sub objective for the main objective of studying the trend for this sub section is:

Trend of Value of intangible assets

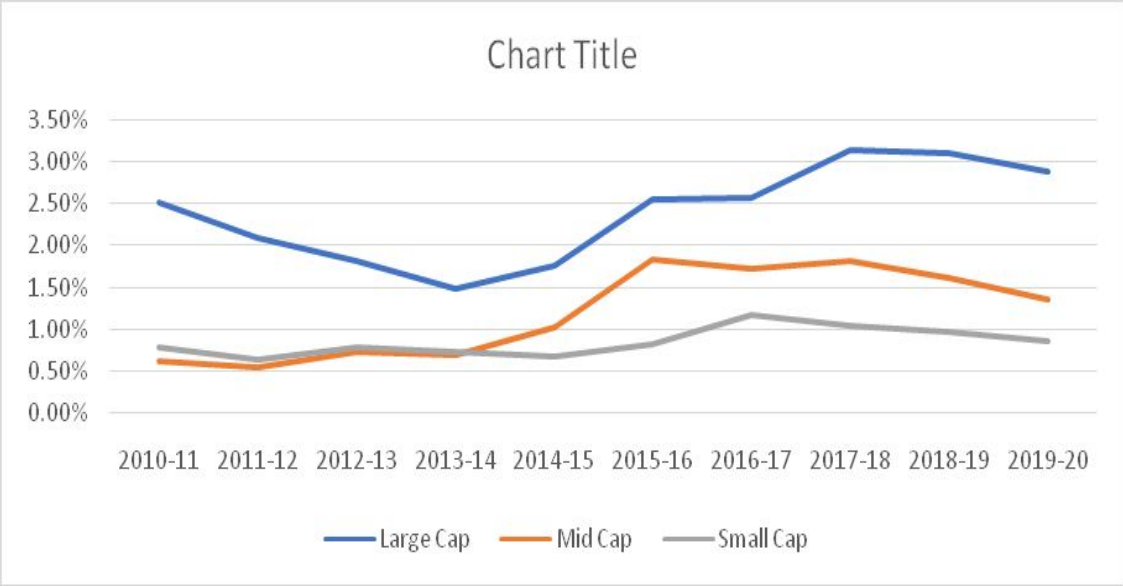
Sub Objective 1.2: To study the trend of average of percentage of value of intangible assets to total assets of large cap companies, mid cap companies and small cap companies

Table No. 2: Average of percentage of intangible assets to total assets of large cap companies, mid cap companies and small cap companies

Year	Large Cap	Mid Cap	Small Cap
2010-11	2.52%	0.62%	0.77%
2011-12	2.10%	0.54%	0.63%
2012-13	1.82%	0.73%	0.78%
2013-14	1.49%	0.68%	0.72%
2014-15	1.77%	1.02%	0.67%
2015-16	2.55%	1.83%	0.81%
2016-17	2.56%	1.72%	1.17%
2017-18	3.14%	1.80%	1.04%
2018-19	3.11%	1.61%	0.96%
2019-20	2.88%	1.36%	0.85%

(Source: Computed)

Figure No.2: Trend of the average of percentage of intangible assets to total assets of large cap companies, mid cap companies and small cap companies



The table and line graphs in the figure show an increasing trend of average of percentage of intangible assets to total assets for large cap companies, mid cap companies and small cap companies. For large cap companies the average of percentage increased from 2.52% to 2.88% over the ten years from 2010-11 to 2019-20. For mid cap companies the increase of average of percentage is from 0.62% in 2010-11 to 1.36% in 2019-20 and over the same period for small companies has increased from 0.77% to 0.85%. The investment in the value of intangible assets as a percentage of total assets is highest for large cap companies, but the increase is significant for mid cap category.

Descriptive statistics

The descriptive statistics describes the basic of characteristics of the distribution of values. The statistics such as average, dispersion, skewness and kurtosis of the distribution of average of relative value of intangible assets to total assets for the large cap companies, mid cap companies and small cap companies are studied to get an insight into the variable for the companies classified according to their size as large cap, mid cap and small cap.

Table No.3: Descriptive statistics of the distribution of average of percentage of intangible assets to total assets for large cap companies, mid cap companies and small cap companies

	Large Cap	Mid Cap	Small Cap
N	54	75	113
Missing	0	0	0
Mean	2.39%	1.19%	0.841%
Median	0.384%	0.157%	0.21%
Standard deviation	6.21%	3.76%	1.68%
Skewness	4.12	5.09	4.41
Kurtosis	18.2	27.4	25.9

(Source: Compiled from the results obtained using Jamovi Software)

The table number 3 shows the descriptive statistics of the variable – average of percentage of intangible assets to total assets for large cap, mid cap and small cap companies. The table describes the statistics for the companies across the three groups created on the basis of their size. There are 54 large cap companies and the mean of average percentage of intangible assets to total assets as 2.39% and the median is 0.38%; the standard deviation is 6.21% indicating a high dispersal; and the distribution of the variable is highly skewed and also a peaked distribution. In the mid cap group, there are 75 companies. For these 75 mid cap companies the mean of average of percentage of intangible assets to total assets as 1.19% and the median is 0.16%; the standard deviation is 3.76%; and the statistics for skewness and kurtosis are respectively 5.09 and 27.4 which show skewed distribution and peaked distribution. There are 113 small cap companies in the sample. The central values for the small cap companies are – mean 0.84% and median 0.21%; the dispersal measured by standard deviation is 1.68%; and the skewness is

4.41 and kurtosis value is 25.9 indicate skewed and peaked distribution. Among the three categories of companies grouped according to their size, the large cap companies have high central value; and the mid cap companies the high relative dispersal, skewness and kurtosis for the variable average of percentage of intangible assets to total assets.

One Way ANOVA

Objective 2: To compare the mean value, for large cap companies, mid cap companies and small cap companies, of the average of relative value of intangible assets to total assets

After finding the mean of the average of percentage f value of intangible assets to total assets for large cap companies is 0.0239, for mid cap companies 0.0119 and which is for small cap companies 0.0084,the study is made to compare these mean values for examining whether statistically the mean values are equal or not. The null and alternate hypotheses for the test are:

H_0: The mean of average of relative of value of intangible assets to total assets are equal large cap, mid cap and small cap companies.

H_1: The mean of average of relative of value of intangible assets to total assets are not equal for at least one of the categories from among large cap, mid cap and small cap companies.

For testing the hypothesis, one way ANOVA is applied. For testing the hypothesis with one way ANOVA test, the assumption is that the distribution of the variable for each category is to be normal. However one way ANOVA is a robust test and it can be applied, if the distributions are not normal and the degrees of freedom for each category is at least 40 with comparable sample size for the categories(Field, 2009). Before applying the test, it is required to check the homogeneity of variance. When there is homogeneity of variance, Fisher's F test is applied or else Welch's F test is applied and homogeneity is tested with Levene's test. The result of the Levene test is shown in the following table:

Table No. 4: Result of Homogeneity of Variances Test (Levene's)

	F	df1	df2	P
Average of Percentage of Value of Intangible assets to Total Assets	8.75	2	239	< .001

(Source: Compiled from the results obtained using Jamovi Software)

The above table no. 4shows the result of Levene's test for homogeneity of variance for the distribution of average of relative of value of intangible assets to total assets for large cap companies, mid cap companies and small cap companies. The p value of the test is less than 0.05 and thus the test suggests not to accept the null hypothesis of homogeneity of variance. Thus, the variance of the distribution of average of relative of value of intangible assets to total assets for large cap companies, mid cap companies and small cap companies are unequal.

On finding no homogeneity in variance, the Welch's one way ANOVA test is applied. The null and alternative hypotheses for the test are:

H_0: The mean of average of relative of value of intangible assets to total assets are equal large cap, mid cap and small cap companies

H_1: The mean of average of relative of value of intangible assets to total assets are not equal for at least one of the categories from among large cap, mid cap and small cap companies.

Table No. 5: Result of One-Way ANOVA (Welch's)

	F	df1	df2	P
Average of Percentage of Value of Intangible assets to Total Assets	1.83	2	93.3	0.167

(Source: Compiled from the results obtained using Jamovi Software)

The result of the Welch's One way ANOVA test is shown in table no.5 and the p value of the test is 0.17 which is more than 5%. Hence the null hypothesis is not rejected at 5% level of significance and mean values of the variable average of relative of value of intangible assets to total assets are statistically equal for large cap, mid cap and small cap companies in India.

Findings

- Large number of companies are reporting the value of intangible assets in their financial statements in all the three categories – large cap, mid cap and small cap. In the large cap and mid cap categories 93% of companies have reported value of intangible assets in their financial statements and in small cap category 89% companies have disclosed the value of intangible assets in the year 2019-20.
- There has been increase in the average of percentage of intangible assets to total assets for all the categories of companies. However, the percentage of intangible assets to total assets for all the categories of companies are low. The percentage is maximum for large cap companies which is 2.9% in 2019-20 from among the large cap, mid cap and small cap companies.
- The statistics describes that there is high dispersion in distribution of average of intangible assets to total assets for all three categories of companies. The three distributions are skewed and peaked.
- The result of one way ANOVA suggests there is no difference in the means of the distribution of average of intangible assets for the large cap companies, mid cap companies and small cap companies though there is no equality in variances for the three groups of companies.

Conclusion

The paper which studies the reporting of intangible assets by the Indian companies categorised as large cap companies, mid cap companies and small cap companies, brings out that there are small rising trends for all the three categories of companies and there is no much difference in the value of intangible assets disclosed by the companies in their financial statements. From the 1st year of the ten sample years from 2010-11 to 2019-20, it is observed that many companies are reporting the value of intangible assets in their financial statements irrespective size of companies. However, the value of intangible assets reported by the companies, irrespective of the size, is small. According to Global Intangible Finance Tracker(GIFT™), 2019, the disclosed intangible assets USD 14.5 trillion and undisclosed intangible assets USD 35.4 trillion and the value disclosed is 14% of global enterprise value and the same report says that undisclosed intangible assets for Indian enterprises is 31% of the enterprise value. According to the findings of the current study for Indian companies, the disclosed value of intangible assets as a percentage of the book value of total assets is 2.88% for large cap companies, 1.36% for mid cap companies and 0.85% for small cap companies.

With the shift in the economy to knowledge economy from industrial economy, the companies have been spending more for acquiring the control of intangible assets. When they have control over the intangible resources, they should disclose for better management of such resources. There is an anonymous quote, which is often attributed to management guru Peter Drucker, "What gets measured gets managed". The Indian companies need to improve the disclosure of the intangible assets, to be at par with global disclosure practices

References

Brand Finance(2019), "GIFT™ 2019 Global Intangible Finance Tracker (GIFT™) — an annual review of the world's intangible value"

Chander, S. and Mehra, V.(2011), "A study on intangible assets disclosure: An evidence from Indian Companies", *Intangible Capital, 2011 – 7(1): 1-30 - ISSN: 1697-9818*

Field,A.(2009), "Discovering Statistics Using SPSS", *Sage Publications Ltd., London, ISBN 978-1-84787-906-6, p.360*

IASB(2010), "Conceptual Framework for Financial Reporting"

Kamath, G.B.(n.d.), "Content Analysis of Intellectual Capital Disclosure of IT Firms in India"

Kaplan, R.S. & Norton D.P., (1992), "The Balanced Scorecard: Measures that Drive Performance", *Harvard Business Review, January-February, 1992*

Lev,B.(2018), "Intangibles", *SSRN-id3218586*

Mehra, V.(2010), "Accounting and Reporting of Intangible Assets in India"

Oliveras, E. and Kasperskaya, Y., (2005), "Reporting Intellectual Capital in Spain", Working Paper

www.researchgate.net/publication/23695551_Reporting_Intellectual_Capital_in_Spain

Paramashivaiah, P. and Puttaswamy(2013), "Intellectual Capital Disclosure Practices: A New Paradigm in Financial Reporting", *Vidyaniketan Journal of Management and Research, Vol.1 Issue-2, July – December 2013*

Petty, R. and Guthrie, J. (2000), "Intellectual capital literature review". *Journal of Intellectual Capital, 1(2), pp.155–176.*

Ragini(2012), "Corporate Disclosure of Intangibles: A Comparative Study of Practices among Indian, US, and Japanese Companies", *Vikalpa , Volume 37, No 3, July - September 2012*

Sharma, S., &Dharni, K. (2017). *Intellectual capital disclosures in an emerging economy: status and trends. Journal of Intellectual Capital, 18(4), 868–883*

Singh, K. and Weligamge, S.(2009) "Intangible Assets Reporting Practices: Evidence from Selected Listed Companies in Sri Lanka", *Indian Journal of Accounting Vol. XL (1) December 2009, pp. 35-47*

Teodori, C. and Veneziani, M.(2010), "Intangible Assets in Annual Reports: A Disclosure Index"

Van der Meer Kooistra, J. and Zijlstra, S. M. (2001), "Reporting on intellectual capital*" Accounting, Auditing & Accountability Journal, 14(4), pp. 456–476.*

Vummenthala, A.R. and Achalapathi, K.V. (2017), "Valuation of Intangible Assets and Capital Markets: An Indian Perspective", *Indian Journal of Accounting (IJA) 19 ISSN : 0972-1479 (Print) 2395-6127 (Online) Vol. XLIX (2), December, 2017, pp. 19-32*

Zambon, S., Marzo, G., Girella, L., Abela, M. and D'Albore, N.(2020), "A Literature Review On the Reporting of Intangibles", *Academic Report- European Financial Reporting Advisory Group*

A Study On Socio – Economic Condition of Unorganized Women Agricultural Labourer & Planning For Their Development Specially In Bhadrak District of Odisha, India

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ABSTRACT

The present study examined and found out that the women agricultural workers are facing a lot of difficulties due to lack of financial and educational support as per the needs of the hour. The government could provide financial empowerment and educational development to agricultural women workers for gainful economical, social and educational requirement. The government policies for women in rural areas are not properly functioning due to lack of proper supervision at various levels of the government administrations. The discussion and participation of women are required for different policies for women. In the analysis, it was observed that the plenty of opportunities are available for women in the Bhadrak District of Odisha but there are not properly utilized. It requires to provide the free quality and technical education, trade skills, training, vocational education guidance, support services, financial credit facility at low rate of interest at village/panchayat level through social awareness camp. Proper infrastructure facility may be extended and be trained mechanism for proper supervision of utilization of subsidized funds provided to them as well as evaluation of the progress be emphasized, so that, they may draw the benefit and development of women can be achieved.

Keywords: *Marginal worker, Agricultural worker, Unorganized sector, National commission, Harvesting.*

Introduction

Women constitute nearly about 50% of the total population of the country. Primarily, they do all house works, take care of children, rear the animals, collect fire wood, fuel and water for the house. But in spite of that, like men, they also participate in the field of production may it be agriculture, industry or trade every where they participate equally with men. The domestic work of women is unpaid which

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constitute 25 to 39 % of GNP (ILO estimate), still they are treated as 2nd class citizen of our society. Agriculture in India, household cottage industry and petty trading are included in the category of unorganized sector. In India, 90% of women are employed in unorganized sector without fair wages and occupational amenities. The largest number of working women is engaged in farming operations either as cultivators or as agricultural labourers in India. They take up variety of agricultural activities, like showing of seeds, transplanting, weeding, harvesting, preparation of compost pits, application of manures, storage of seeds and food grains. An active farm woman spends eight to nine hours in the farm during peak agricultural season. With the growth of industrialization and urbanization, cultivable area of land turns to industries, towns, cities and house site. Thus on the one hand there is scarcity of land for cultivation due to growth of population and on the other hand the demand for land is rising. Further, due to lack of assured source of employment in rural areas, men labourer are migrated to towns and cities in search of job, for which there is acute shortage of men labourer in agricultural field. This has forced the women labourers to go to the field for work, to cultivate land. Besides the work of agriculture, women are also employed in informal sectors like weaving handicrafts, tailoring, sale of fish, dry fish, preparation of dry fish and in construction activities. Women's contribution towards the economy by and large remains unrecognized. Yet their services are valuable and commendable. Women account for over half the food produced in the developing world and even more in Africa; they constitute one-fourth of the developing world's industrial labour force; they head one–fourth or more of the families in many developing nations. Studies in Nepal and Philippines suggest that, when the production of rural women is valued properly on average, they actually contribute about one-half of family's income.

Agricultural Labourer

The National Commission of Rural Labour constituted by Govt. of India submitted its report in 1991 stated that, "A person who is living and working in rural areas and engaged as agricultural / non – agricultural activities requiring physical labour and getting wages or remuneration partially or wholly, in cash or land or both during the year or such own-account workers like small farmers and artisans who are not usually having in labourers but are a part of petty production in rural areas".

The 1st Agricultural Labour Committee(ALC) (1950-51) defined Agricultural labourers as, those people who are engaged in raising crops on payment of wages. The 2nd ALC (1955-57) enlarged the definition of agricultural labourer to include those who are engaged in other agricultural occupations like dairy farming, horticulture, raising of live stocks, bees, poultry etc. According to National Commission on Labour (NCL) an agricultural labourer is one, who is basically unskilled, unorganized and has little for his livelihood, other than personal labour. Thus persons whose main source of income comes under this category of wage employment are other side called as agricultural labourer. Further, they are of two categories,

a. Permanent Labour (attached to cultivating household)

b. Casual Labour (CL)

Permanent Labourer works on contract for the whole year or for some months but the casual labour works temporarily on daily wage basis at the market rate of busy seasons of agricultural work. They are not attached to any big farmer or land-lord like permanent labour.

Agricultural labourers are economically and socially backward and downtrodden group who are classified into following four categories.

a. Landless labourers, attached to land lord or Big Farmers.

b. Landless labourers, who work less time on own farm & most of the time in other farms.

c. Petty farmers, who work less time on own farm and most of the times in other farm.

d. Farmers who work for others, but their own land cultivated by sons or female persons of family.

The last category of labourer is as mentioned above are slaves or bonded labourer, who are mortgaged near the landlord and can not go else where for job. In most of the times, they rear up the fowls and goats supplied by their masters. The others are casual labourers and work independently. They search jobs from place to place in nearby villages. Agricultural labour constitutes an important section of rural community on whom the rural agriculture depends from sowing of seeds to reaping and harvesting of corns. They are marginal farmers and landless Agricultural labourers. The unorganized workers include people involved in agriculture and agriculture related works, forest workers, fishermen, construction labourers, workers employed in small scale/ancillary units in the informal sector of industry, domestic workers, Anganwadi workers, casual/contract labourers, home based workers and self employed workers. These unorganized agricultural labourers work on daily, weekly, monthly or piece rate, as the wage provided by the employer and as exploited less than the prevailing market rate.

Causes of Growth of Agricultural Labour

Various causes are held responsible for the growth of agricultural labourers in our country. These are the followings.

a. Growth of population

b. Rural indebtness

c. Growth of absentee land lordism

d. Dis-integration of village communities

e. Decline of handicrafts and cottage industries.

f. Dis-integration of peasants

g. Lack of employment opportunity in organized sector.

h. Loss of agriculture due to irregular monsoon and nature.

Some of the causes of poor economic condition of women Agricultural labourers are the low social activity, unorganized, seasonal employment, shortage of non-agricultural jobs, rural Indebtedness, etc.

Objectives of the Study

The main objectives of the present study are the followings

- To examine the facilities provided to the women workers in agricultural sectors.
- To explore extent which the women workers social-economically satisfy in under developed Panchayat of Bhadrak district of Odisha

Research Methodology of the Study

The present study was carried out in seven selected Panchayats as sample from seven block of Bhadrak district of Odisha. The seven panchayats have been taken into consideration with similar economic and educationally backwards. Here, women are mostly engaging agricultural activities in different seasons throughout the year and they are mostly sole-earner of their family. 280 sample were selected randomly from seven panchayats and have households 40 from each panchayat. Therefore, no specific technique was employed. The study is based on qualitative and quantitative in nature. The present study was based on primary data collected from each household and secondary data from deferent reports.

Analysis and Interpretation Data

Workforce participation rate in rural Labour Market

The poor are concentrated in rural agriculture and non-agricultural occupations in India. They work both as cultivator and wage agricultural occupations. They work both as cultivator and wage agricultural labourer i.e. half cultivator and half-labourer. They belong to backward, unorganized and deprived sections of society.

The supply of rural labour force is more in comparison to the demand for labour, because of lack of opportunities of work in rural area. The study on female labour by Rudra & Bardhan (1978) Dreze & Mukherjee (1987) Walker & Rayan (1990) have contributed to the theorization of the functioning of labour market in Indian villages. The studies stated that there is regional variation with regard to the stages of development and 90% or more are rural landless labourers. They have the heterogeneous in character. They are landless labourers, part-time share croppers, marginal/small farmers dependant on big farmers for credit and other agricultural requirements.

As per Census 2011, the workforce participation rate for females is 25.51% against 53.26% for males. Rural sector has a better female workforce participation rate of 30.02 % compared with 53.03 % for males whereas for urban sector. In rural areas, Himachal Pradesh has the maximum female workforce participation rate (47.4%) whereas Tamil Nadu has the maximum (21.8%) among major states. Workforce participation is more/ less equal for rural and urban males but there is a huge gap in rural and urban females workforce participation. Rural India has more than 50% workers in self-employed category, whereas urban India has more than 40% workers in self-employed and regular wage categories as per NSS 8th Round(2011-12) and compare to 2001 population census, the percentage of female workers in urban areas are 15.45% and in rural areas 33.47%. Total number of workers including male-female workers as per 2001 census in Odisha was 142.76 lakhs of which 44.75 lakhs are female workers. The census figures since 1951 reveals that, about 98% of female workers engaged in agricultural sector belongs to rural areas, where as it is 98.54% in 2001 census. The corresponding figures is 97.90% for 1991 Census.

Table No : 1: Distribution of Female Workers in (Odisha)

Census Year	Total Female Workers (in Lakh)	% to Total	Female workers in Agricultural Sectors (in Lakhs)	% to Total
1991				
Total	32.42	100%	15.26	100%
Rural	30.82	95.06	14.94	97.90
Urban	1.59	4.94	0.32	2.10
2001				
Total	44.75	100%	9.59	100%
Rural	42.13	94.15	9.45	98.54
Urban	2.61	5.85	0.14	1.46
2011				
Total	63.42	100%	15.72	100%
Rural	56.72	89.43	14.85	94.29
Urban	6.70	10.57	0.87	5.71

Source: Odisha SDR Indicator Framework-2019, Odisha Annual Report 2016-17 Human Development Report – 2004,

Table No : 2: Distribution of Female Workers in Study Panchayats of District, Bhadrak

Names of the Gram Panchayats	Total No. of Female Agricultural Labourers	% to Total Female Workers
Korkora GP (Bhadrak Block)	1200	72%
Palasahi GP (Dhamnagar Block)	980	80%
Baligaon GP (Chandabali Block)	1675	85%
Malada GP (B.Pokhari Block)	1800	82%
Kampada GP (Tihidi Block)	1550	88%
Nuagaon GP (Basudevpur Block)	1634	85%
Adia GP (Bonth Block)	1402	83%

Source : Field Study

The above table showed that most of the women agricultural labourers work as Casual seasonal labourers. The percentage of women working as agricultural labourer varies from 72% to 88% in rural areas of study Panchayats in the seven blocks of Bhadrak district.

Rural Female workers & women Agricultural Labourers

Women labour in formal sector is an important segment of the labour force. According to the estimate of National Commission on Self Employment of Women (NCSEW), 94 % of the total female work force operates in the unorganized sector. They do the work of daily wage earner, piece-rate worker, casual labour and paid family labour. Agriculture, agro-based industries construction work, beedi making, domestic matches, tailoring, garment units, food processing units and other registered units of small scale business are included in the category of non-institutional unorganized sector. These units provide regular employment to women workers. But this is not applicable to domestic workers, sweepers, scavengers, vendors, hawkers and self employed institutional organized women workers. This concentration of women workers due to lack of opportunity for them which have forced them to work & to remain almost in indebtness and absolute poverty.

Generally, women work as casual labourer in agricultural sector where as male members work as regular labour. During the year 1998-99 in Odisha, female casual labour was 50.5% which has increased to 51.5% during 2012-13. But incase of Uttar Pradesh, Rajasthan the percentage of women casual labour is 10.% to 12.4% .

Table No: 3: Employed persons by status of Employment for Odisha and Low Income states in Rural areas.

Names of States	1998-99						2012-13					
	Self Employed		Regular Employed		Casual Labour		Self Employed		Regular Employed		Casual Labourer	
	M	F	M	F	M	F	M	F	M	F	M	F
Odisha	52.9	55.5	9.2	3.3	37.9	50.5	55.7	46.6	6.4	1.9	37.9	51.5
Bihar	54.4	44.4	9.3	6.4	36.3	56.5	54.9	38.9	4.8	1.5	40.3	59.6
MP	65.5	63.2	10.0	4.4	25.5	40.2	61.7	55.8	6.1	1.7	32.2	42.5
Rajasthan	67.3	81.9	7.3	2.1	25.4	10.4	71.2	1.3	7.6	1.3	21.2	12.4
UP	72.3	77.1	6.0	3.0	21.7	20.3	71.7	74.2	5.9	1.5	22.4	24.3
All India	57.5	54.9	10.4	4.9	32.1	40.2	56.7	51.3	8.7	3.4	34.6	45.3

Source: Odisha SDR Indicator Framework-2019, Odisha Annual Report 2016-17 Human Development Report – 2004

The above table indicates that the percentage of women casual labour was 5.5% in 2012-13 which has been increased to 51.5% in 1998-99 in Odisha. In Rajasthan the percentage of women casual labour is 12.4% which is lowest in India in comparison to all India average of 45.3%. Almost women are self employed in Odisha 55.7% in unorganized sector. The percentage of regular employed women in Odisha is very low about 1.9% only. The World Bank report further states that, making women more productive, "will not merely reduce their dependency, enhance their status and security in the family, unless the circumstances accelerate their real growth in unorganized sectors, where women constitute nearly held of the labour force, to earn for the daily livelihood of the households below poverty line and such acceleration would improve male and female child survival and increase family investment in education for their daughters, and reduce fertility and slow population growth". Thus, nearly 92% of 317 million workers in the country belongs to unorganized sector. They are most vulnerable section of the society. These 290 million workers have no job security and less bargaining power and fight for their self sustenance in daily labour market.

Conditions of Women Workers

The condition of women workers economically is very miserable, socially depressed, psychologically suffering but mentally strong. They have to fight for their survival with minimum earning for the existence. A number of migrant domestic workers in towns and cities live in slums where there is no facility of drinking water and electric light. In rural area, the condition is more deplorable. A women domestic worker has to sweep, swab, wash utensils and clothes in every house twice a day i.e. morning and evening. Sometimes, she has to stand in a long queue to collect water. She does the same work in her own house and other persons house where she works as a made servant. She has to do some extra work for more time, if some guest arrives where she works more without any extra remuneration. Sometimes, they are sexually assaulted by their employer also. In the present day, world women contribute 50% of the total food production. In Tanzania, women work as an average of 2600 hours a year in agriculture. It is only 1800 hours a year for men. In Africa as a whole 60% of all Agricultural works, 50% of animal husbandry and 100% of food processing is done by women. For millions of women in 3rd world, who cook, clean, sew, wash, weed, care for the old and bring up the young a 16 hour a day is not uncommon.

The census data of 1991, 2001 & 2011 shows that the conditions of women workers have been shifted from agriculture to unpaid family worker, without any fundamental change in their economic status. A slight improvement has been observed in transport, storage and communication sector. The women are sliding down to low paid house work. The cause of such declining trend of women work is due to the followings.

(i) Techno Logical & Occupational Structure, male based transformation,

(ii) Composition of work in favour of male

(iii) Urbanization hampers the handicraft rural industries, where women work.

Thus, the status of women workers, 94% engaged in informal sector and only 6% in organized sector. Further, 87% of them work in rural areas and 13% in urban areas as agricultural workers.

Major Problems of Women Workers

In comparison to male members, females are more illiterate. The percentage of literacy of 2011 census indicates in Odisha 81.59% male literate, where as 64.01% females are literate, a wide gap is between men and women. The percentage of marginal worker was 12.7% in 2001 which has increased to 16.3% in 2011 due to contractual and piece rate work of the informal sector. The work of women has been underestimated and undervalued. The domestic work has been treated as unproductive and only agricultural produce has been considered as value added work. During 1981 to 2011, it has been observed that women workers have been almost casualized. The percentage of regular worker has been declined due to contractual labour work concept; women work has been marginalized and casualised in the labour market. Most unorganized women work in adverse situations, such as cleaning of Drains, where they are killed by noxious fumes and methane gas or faint or dies after some hours. Another problem is lower wages for women in comparison to men labourer. Women are paid lower wages in farms and factories, mines, because of lower wages in farms and factories, mines because of lower strength, vigour and vitality. In child bearing stage they also lack doing of work. In South Africa, the apartheid women were adversely affected, over worked and under-paid. But they play a crucial role in liberation struggle. The instruction of modern technology is cultivation has also displaced women from the place of work and employment. The Committee on status of women in India in 1975 has observed another problem that affects women's participation in agriculture; technology has not eliminated seasonality of work but increased the seasonal fluctuation in female employment. But in spite of that women labourer earn more than the men labourer in weeding and transplanting since they know the best art of it in doing so. During peak agricultural seasons like transplanting, weeding and crop cutting, women have to do longtime or overtime work as demanded by employer, but they are exploited without any payment of extra wage.

Women workers in the unorganized sector also lack essential services like crèches and child care centers where children are left for care during working hours. Sexual harassment for young girls and women's by the contractors and employers a curse for nation found in this sector. The majorities 93% of women labourers work within the village involve in agriculture and allied activities. The majority 94.6% use to go on foot to working place, only 23.2% used public transport who go to distant places for job. There is no provision of regularity of job. They only get job, 10 to 15 days in a month. In case of subsidiary occupations, 80% of agricultural and 67.6% of non-agricultural labouers get work for less than 10 days in a month. Poor rainfall is also a cause of low rate of employment. The majority 83.8% women labourers get daily wage which shows temporary nature of work, 23% labourer get weekly wages those who work in mills and 30% of labourers face problems in getting their wage, 10.3% labourers pay commission of their daily wage to get their group leader or Agent of supplier of labour.

Planning for Women in Agriculture in the study Panchayats of Bhadrak District

Planning in agriculture can be prepared taking the resource of the study Panchayats of the District. The different kids of resources are available like,

(i) Land Resource

(ii) Common Property Resource

(iii) Water Resource

(iv) Animal Resource

(v) Fishery Resource

(vi) Social Forestry Resource

(vii) Human Resource.

Taking these resources into consideration, planning for women agricultural labourer is possible. The quality of land throughout the District is not fertile. Only the cultivable land area of the riverside Baitarani and Salandi is some extent fertile. Other parts of the land area are sandy, mixed soil, acidic, clay and sticky. Out of the total cultivable land area 175,000 hectares, only 113,000 hectares are irrigated. The major crop of the district is rice / paddy production. As a planning measures are (i) land reform in the district is very much essential. The case of absentee land lordism be wiped out and the lands may be distributed to landless poor for enhancement of agricultural production (ii) Soil testing, (iii) Assured irrigation, (iv) supply of timely credit to farmers at cheap rate of interest, (v) adequate procurement and support prices to cultivators are highly essential. Credit to women marginal farmers should be provided through Mahila Banks operating in the respective Panchayats.

As regards to the kinds of cropping, or cropping pattern, commercialization of crops along with paddy cultivation of crops along with paddy cultivation is possible. Jute, oilseeds, dal, wheat, potato, ground nut, black gram, green gram, arhar production is feasible in the sample panchayats of the district. Besides these, sugarcane, vegetable production is suitable and possible in the district. Simultaneously, the planting of bamboo, aakasi wood plant, teak plantation, cotton plantation, beetle plantation as commercial crop and profit accruing long-term benefit plantation is possible in the district in common property barren, uncultivated land. Beetle farm house is found in Asurali panchayat, ply wood factory at Paliabindha, Bhadrak (from cotton plant, simlipnat) is found. Further the areas of Chandabali Baligaon, Motto, Ghanteswar is suitable for coconuts plantation in sandy lands. So such areas may be fit for coconut plantation and establishment of casunuts processing plant is necessary. It can create the source of employment for rural poor women during the month of April and May, the harvesting of casunuts season. Now, the dalals or middle man collects casunuts at price of Rs. 150 per kg and after processing the nuts it is sold at the market of Rs. 800/- per kg.

The study area Panchayats of river side Baitarani and Salandi produces huge quantity of vegetable tomato during the end of winter season. The price per kg declines to only Rs. 5.00 per kg. The tomato source plants like prime, kissan the branded tomato sauce producer collects such tomato as raw material from the cultivators at cheap price and there at the locality, the preparation of the “raw tomato source”, just by boiling in big tin-drums and carry way those to their respective factories process them and sale at high prices just after packing those in bottles. Hence, the suggestion is that if the “Tomato Sauce” plants with the effort of Block Development Officer(BDO) in consultation with NABARD is established at Dhusuri Panchayat so that it may generate the employment opportunity and poverty alleviation for the rural poor women of the District.Fishiculture is more prospective in the district of Bhadrak. Consumption of per capita fish per annum is 25 kg in the district of Bhadrak. Whereas the quantity of production is only 10 kg including in land and marine fish. So, the differtence is imported 15 kg of fish per head from the neighbouring state i.e. Andhra Pradesh to meet our consumption demand. The common

property village ponds, Panchayat ponds and water lodging areas may be developed for fishiculture with the effort of District Fishery Officer. Further, prone and Bagda fish wide demand in foreign market at high price which has wide opportunity for production in Basudevpur, Chudamani, Iram and Dhamara of Bhadrak district. Horticulture, beekeeping, mushroom production, dairy farming, poultry farming has the good opportunity for production and demand in the district of Bhadrak. It can meet the consumption demand of the home market & can be supplied to other State Markets for sale and earning of money income, employment opportunity for rural poor women. Creation of village jungles, social forestry is possible in common property the Government land to meet the firewood and house making material of the rural women.

Conclusion

Hence, from the above discussion it is concluded that, in the present study District and Panchayats of Bhadrak has ample of opportunity of land, water and human resources which can be utilized to prosper its agriculture, forestry, fishery and can generate employment / self employment opportunity to alleviate women rural poverty to lead a decent standard of living for its people. If the government of odisha and district administration properly support and monitor the financial assistance through SHG or individual, it can improved their economic, social and educational life in the society. The social awareness camp and proper supervision is required from social workers to develop their working life.

References

Annual Activity Report of Odisha-2016-17.

B Krishnan B. (2005), "Rural Landless Women Labourers, Problems and Prospectus", *Kalpaz publication*, Delhi,

Chakravarty S. (1975), "Women in Agriculture", *Magazine Kurukhetra,* Nov, 16,

Chuna J.D. (1987), "Domestic workers Isolated & Powerless" *Indian Express,* July – 5, pp.14.

District Statistical Handbook, Bhadrak, 2007. 2012, 2017

Economic Survey, Govt. of Odisha, 200-09, 2012-13, 2017-18

Economic Survey, Govt. of India, 2018-19,

Indrakumari Y & Rao Y. S. (2005), "Empowerment of Women & Rural Development", *Serial Publication,* New Delhi, pp.37-40.

Joseph H (1995), "A Voice for the Unheard", *The Hindu Magazine Section,* August, 20.

Jhabela R , (1998), "Minimum Wages Based on Workers Needs" *EPW,* March, 07, pp. 500-503.

Kumar K & Jayasheela P (2009), " Floriculture Opportunity for India" *Yojana,* Aug, 09, pp. 62-64.

Gulati L, (1984), " Agricultural Labourers, Women & Work in India- Continuously & Change", *Promila & Company, Delhi.*

Master Plan Book (2018), Panchayatraj, Panchayat Samiti District, *Bhadrak, Publisher – District Collector, Bhadrak,*

Magazine, Kurukhetra (1980), July – 16.

Mishra S.N. (2003), "Women Empowerment for Rural Development in India", *Asian Economic Review,* Vol-60, Issue-9.

Odisha Development Report: 1987, 2002, 2004.

Preeti Rustogi P (2002), "Women Employment in Unorganized Sector", *Social Action*, Vol – 47, April – June, pp.167-169.

Rao R.S. (2003), " Understanding Social Transformation", Edited by K. Sarap & others in Agrarian Transformation in Odisha, Publisher- P.G. Dept. of Economics, *Sambalpur University*, pp. 04 - 06.

Sunderam S.I, (1996), "Plight of Unorganized Women Workers" edited by S.N. Tripathy, *Discovery Publishing House*, New Delhi, pp. 1 - 5.

Umadevi S. (1993), "Women as Agricultural Workers", Women's Development, Probems & Prospects", *APH Publishing House*, New Delhi,

Does Corporate Social Responsibility Impact on Financial Performance? An Empirical Evidence of BSE Listed Companies.

Sonalisa Mohanty and Dr. Ramesh Chandra Das

ABSTRACT

Financial market plays a critical role in adding corporate social responsibility (CSR) activities to its method of allocating resources to the general public and contributes to the overall advancement of the management of the nation's account area.The study has examined the impact of corporate social responsibility (CSR) on financial performance of Bombay Stock Exchange (BSE) listed companies. To analyze the impact of CSR on financial performance of the company in short run as well as long run, panel data regression is used. The date period from 2014-15 to 2017-18 is taken having sample size of 100 top BSE listed companies based on market capitalization. For estimating the financial performance of the organization firm specific and market specific components are used in short-run as well as in long-run. These components are covered with imperative parameters of the financial performance of the organization which are profit after tax, current ratio and return on assets. The study uncovered a positive connection between CSR expenditure and the company's various financial parameters with the aid of different key aspects of financial performance of the company. These components are covered with imperative parameters of the financial performance of the organization which are profit after tax, current ratio and return on assets for financial performance in short runand, long run with financial performance of the company for the concerned organization. The study has many implications in general such as investors, society and companies etc.

Keywords: *Corporate social responsibility; Financial performance; Panel recession; Short-run; Long-run*

Introduction

The commencement of 21st century witnessed a great demand for corporate social responsibility in the corporate world. Corporate social responsibility has recently developed into an essential feature of the philosophy of business, reflecting the impact of business on the society in the context of sustainable development. The major point of view of CSR revolves around the obligation of companies towards all

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its partners: investors, banks, representatives, providers, government, and network rather than exclusively on various advantages for investors. CSR does not only incorporate regulatory consistency in the organization, but it also alludes to the proof that business flourishes only through balanced, deliberate ways of dealing with natural and social issues in an extremely valuable way for the general public. Each financial market plays a critical role in adding CSR activities to its method of allocating resources to the general public and contributes to the overall advancement of the management of the nation's account area. For defining the duties and responsibilities of financial institutions with regards to social welfare, central bank of the country emphasis on requirement of proper act regarding CSR, which advised banks to pay exceptional attention to the social connection of various functionalities of these institutions and directed them to show active participation in various area related to social welfare and understand the combination of development of various instruments for that. Central Bank as a regulatory body jointly perceived that banks were initiating non - financial reports (NFR) that could cowl the banks ' work towards the development of society.

This study has significance in terms of unique analysis done in this study for fining out the relationship of the monetary performance of a company with its corporate social responsibility. This study is aimed towards guiding and motivating the corporate to increase their participation and involvement in social welfare activities. This study talks about responsibilities of a corporate towards various sections of society and environment. This is an attempt to justify and signify the role of CSR in the overall development of the organization and various stakeholders associated with organization. This present study is completely based on secondary data in nature. The secondary data has been collected form books, journals, article, magazine and internet. The sample size taken for this study is being contained 100 organizations mentioned above. For estimating the financial performance of the organization firm specific and market specific components are used in short-run as well as in long-run. These components are covered with imperative parameters of the financial performance of the organization which are profit after tax, current ratio and return on assets. Panel regression is used for examining the relationship between corporate social responsibility and firm's financial performance.

The study uncovered a positive connection between CSR expenditure and the company's various financial parameters with the aid of different key aspects of financial performance of the company. These components are covered with imperative parameters of the financial performance of the organization which are profit after tax, current ratio and return on assets for financial performance in short runand, long run with financial performance of the company for the concerned organization. The study has many implications in general such as investors, society and companies etc.

The rest of the paper is organized as follows: Section 2 discusses the review of literature and research Gap. Section 3 defines the data and sample selection and model selection. Section 4 discusses the empirical analysis and section 5 concludes the study.

Review of Literature

Roush et al. (2012) isolated the effect of weight structure society on CSR conduct in a Capital Market encountering over the top good obligation in which they research the impact of social validness factors on various initiatives of social welfare. They place those movements in CSR methods incorporating were used to intensify accomplice premiums by watching out for social legitimacy including

corporate duty issues. Findings of this study bolster that CSR practices were essentially affected by people in general weight factors of organization estimate, however, were not altogether impacted by our financial authenticity control measures, except for constructive noteworthy cooperation between Leverage for CSR Strengths. It created the impression that CSR practices were utilized to address social authenticity concerns. Munaza et al (2013) conducted their research on social value, social awareness, social representation of the firm and its association with various components of a company's financial performance in Pakistan. In their study, they selected leading firms listed on one of the major exchange in their region and collected data of CSR, profit after tax and total assets for the last 3 years. They also concluded that companies' expenditure on CSR has a very motivating association with benefits from continuous sustainable development and also increases monetary value of the firm in a short span. Fatma et al (2015) studied the part of CSR as a determinant of customer reactions in the commercial area by uniting the part of C-C characteristic proof and its consequences for consumer behavioral results. It was meant to consider the relationship of CSR practices through the customer– association ID. Purchaser impression of CSR practices was inspected despite corporate limit and how purchasers impact trade to off between these two sorts of connection. The immediate impact of CSR-construct C-C identification proof in light of buying expectation was examined. An individual review of managing an account buyer was done, bringing about 320 authentic feedbacks. Keeping in mind the end goal to agree to look into the goal and test the speculation, an auxiliary condition showing was utilized as a part of their study. The outcome demonstrated the positive observational approval of the connection between corporate affiliation and customer– organization unique proof. Their hypothetical model was tried in managing an account area, so the generalization was constrained to setting particular to banking segment.Schenkel-Nofz (2015) conducted a study to analyze the CSR programs and activates in small sized and medium sized companies. In this study, he analysed the degree of social welfare programs in these organizations and change in the outcomes with the degree of operations in the company. They compared the social activity programs of different companies of selected size to assess the change in CSR setup and outcome of that setup on the external environment and beneficiaries of these programs. He studied the audit program of these companies to check consideration for CSR budget and review of CSR programs in these companies to check the intensity of commitment of these companies towards these social welfare programs.Johnson (2015) examined and contended that corporate volunteering (CV) is known to be a convincing representative commitment action. Regardless, paying little respect to the indisputable nature of the study also examined the impact of employees engaged in such activities with positive intent and effect of this on people who are beneficiaries of these exercises. CSR picture, subsequently, strengthens passionate and mental steadfastness and furthermore casual. Encourage contemplate revealed the coordinating effect of apparent acknowledgement of the corporate volunteering program, customer status and the admiration individuals put on CSR. The investigation wrapped up with speculative and hierarchical outcomes, and furthermore an inspiration for future research. Ghosh (2015) studied about the sorts of correspondence of CSR data among the private ventures in India, she called attention to that as reflected in the corporate goals tolerating net benefit as the parameter and show that the corporate responsibility in India is yet to thoroughly observe the estimation of open procedure about CSR practices to address the issues of an especially clear forceful market and to help produce corporate picture. Mohammad (2016) conducted a study to establish the relationship between social welfare and financial health of the firm in the long run as well as in short run. In his study, he

extracted return on asset as an indicator of effectiveness of the firm in short run and Tobin's Q as a representative of financial health of the company in long run. He selected 125 companies to form 25 sectors to analyze the impact using panel data regression technique. His study suggested that social welfare programs of the company helps in increasing monetary health in both long time span and short time span by improving various performance indicators associated with the company. His study also revealed that for selected companies social welfare has less significant association with long term indicator of financial health of the company.

Research Gap and Objectives of the Study

Based on the above discussion, profitability of the organization, liquidity position of the organization and return on assets are used as an indicator of financial performance in short run where the effect on the value of the organization and return on equity is to be analyzed for analyzing the impact over indicators of financial performance in the long run of the company. The risk on market for the company is to be analyzed through risk premium (Beta) of the company along with market value at risk (VAR) of the company. The CSR impact over the risk which is financial in nature of the company is also a part of the CSR impact on the financial performance of the company. This is one of the uncovered areas where very less research is done in past. Objectives for this study is to analyze the CSR impact over the company's financial performance which is comprised of the following-

- To study the impact of CSR on the financial performance indicators of the company in short-run as well as in long-run

Research Methodology

This section discusses the model selection for examining the relationship between corporate social responsibility and firm's financial performance. In the second part it discusses the data and sample selection.

Model Selection

The paper is used the pooled regression model for examining the relationship between corporate social responsibility and firm's financial performance. Profit after Tax (PAT), Current Ratio (CR) and Return on Assets (ROA) of the firm are used as dependent variables and corporate social responsibility expenditure used as an independent variable in the model specification. The control variables such size, profitability, leverage used in this model.

Data and Sample Selection

The sample size taken for this study is being contained 100 organizations mentioned above. This constitutes the sampling frame of the study. In this study, companies are selected which are listed on BSE who either having rupees five hundred crores net worth or more, or rupees one thousand corers turnover or more or rupees five crores net profit or more during any of the financial year from 2014-15 to 2017-18. Convenience sampling application is the most popular one as compared to other methods of sampling. Secondary data for this study were collected from the official website of various companies through annual reports of the companies as well as from BSE website and various authentic databases like database of Ministry of Corporate Affairs.

Empirical Analysis

Table 1: Year-wise Budgeted (Prescribed) and Actual CSR Spent

Year	**Budgeted CSR (***in INR Cr.)*	**Actual CSR** *(in INR Cr.)*
2014-15	7888	5952
2015-16	8169	7549
2016-17	9275	8746
2017-18	11234	10765

Source: Compilation performed by scholar from ministry of corporate affairs (2018) & BSE India (2018)

It shows that from 2014-15 to 2017-18 gaps between prescribed CSR and actual CSR spent is decreased. At the same time, it is also visible that prescribed CSR is also increased throughout the year. It indicates that companies are earning more and more profit throughout the years which could be a result of positive steps taken by these companies in the area of social welfare. Their active participation and commitment in various CSR programs might be helping them in generating more income and wealth for the company.

Table 2: Top 10 Indian Companies in terms of Actual CSR Expenditure

Company Name	**Actual CSR**	**Prescribed CSR**
Reliance Industries Ltd	**659**	**620**
Oil & Natural Gas Corp Ltd	**526**	**536**
Tata Consultancy Services Ltd	**380**	**446**
HDFC Bank Ltd	**305**	**304**
Infosys Ltd	**289**	**287**
NTPC Ltd	**280**	**228**
ITC Ltd	**276**	**275**
Indian Oil Corp Ltd	**214**	**213**
Tata Steel Ltd	**194**	**116**
Wipro Ltd	**186**	**176**

Source: Compilation performed by scholar from ministry of corporate affairs(2018) & BSE India (2018)

The top ten CSR contributing companies in India, most of these companies are doing maximum utilization of their prescribed CSR budget. Out of these 10 companies, four leading IT sector companies are there in the list of top 10 contributors of India in terms of CSR spent. As it can be seen that public sector companies are very sincere in terms of their social welfare commitment as a result, they have

secured their place among leading companies in this list. Now interestingly leading IT companies are also doing social welfare actively. One of the reasons for that could be their globalized business environment. As IT companies are linked with US and other western countries where companies are self-driven in terms of their social welfare commitment as a result of that these IT companies of our country are also following the same pattern.

Impact of CSR on the Financial Performance Indicators in Short Run

To analyze the impact of CSR on financial performance of the company in short run panel data regression was applied where dependent variables were Profit after Tax (PAT), Current Ratio (CR) and Return on Assets (ROA) of the firm.

Table-3- Impact of CSR on the Profit after Tax (PAT) of the Firm

Variable	Coefficient	t-Statistic	Prob.
Intercept	899.87***	3.50	0.001
LCSR	0.63***	21.56	0.001
R-squared	0.42	0.001	

Note: Own compilation. **** indicates the one percent level of significance.

Outcome of regression analysis shows that probability value is 0.00 which is less than 0.05; it means p-value is quite low and it signifies that Corporate Social Responsibility (CSR) is significantly related to change in the Profit after Tax of the company. Hence it can say that CSR has significant impact on the Profit after Tax of the company. R-square value is the statistical measure of how close the data is to the fitted regression line. It is always between 0 to 100 percent. In out outcome R-square value is 53.15 percent which means close to 54 percent of Profit after Tax is explained by CSR. Hence CSR has significant impact on the Profit after Tax of the Company. When our model is having more complexity, we should rely on Adjusted R-square instead of R-square. For positive result Adjusted R-square must be equal to or greater than 19 percent. In outcome of our regression model Adjusted R-square value is 42.23 percent it means our model accounts for 42.23 percent of the total variability. In simple words 42.2367 percent variability of Profit after Tax is explained by CSR. Adjusted R-square outcome satisfactory as almost 42 percent of the variability in Profit after Tax is explained by our regression model, which is dependent on Corporate Social Responsibility (CSR).

Impact of CSR on the Current Ratio (CR) of the Firm

Table 4. Regression Analysis of impact of CSR on Current ratio

Variable	Coefficient	t-Statistic	Prob.
Intercept	1.10***	14.51	0.0000
LCSR	0.77***	35.86	0.0000
R-squared	0.42		

Note: Own compilation. **** indicates the one percent level of significance.

Outcome of regression analysis shows that probability value is 0.00 which is less than 0.05; it means p-value is quite low and it signifies that Corporate Social Responsibility (CSR) is related to change in the value of Current Ratio. Hence it can say that CSR has significant impact on the Current Ratio of the company. Regression coefficient between CSR and Current ratio is 0.77 which represent that mean change in the current ratio is significant for one unit of change in the CSR while holding other variable in the model constant. t- Statistic represents the ratio between estimated coefficient and standard error, in this outcome t-statistic is 35.86 which is more than 2.7. It also represents that very few values of CSR are showing variability from the regression line and they are far away from the regression line. R-square value is the statistical measure of how close the data is to the fitted regression line. It is always between 0 to 100 percent. In out outcome R-square value is 41.79 percent which means close to 42 percent of our current ratio is explained by CSR. For positive result Adjusted R-square must be equal to or greater than 19 percent. In outcome of our regression model Adjusted R-square value is 38.71 percent; it means our model accounts for 38.71 percent of the total variability. In simple words 38.71 percent variability of current ratio is explained by CSR. Adjusted R-square outcome is very significant as almost 38 percent of the variability in current ratio is explained by our regression model, which is dependent on our independent variables which is CSR. Adjusted R-square value of 38.71 percent represents that CSR has a very significant impact on the Current Ratio of the company or in simple words liquidity of the company.

Impact of CSR on the Return on Assets (ROA) of the Firm

Table 5: Regression Analysis of Impact of CSR on Return on Assets

Variable	Coefficient	t-statistics	Prob
Intercept	1.23***	27.07	0.00
LCSR	0.82***	38.74	0.01
R^2	0.52		

Note: Own compilation. **** indicates the one percent level of significance.

Outcome of regression analysis shows that probability value is 0.01 which is less than 0.05; it means p-value is quite low and it signifies that Corporate Social Responsibility (CSR) is significantly related to change in the Return on Assets of the company. Hence it can say that CSR has significant impact on the Return on Assets of the company. Regression coefficient between CSR and Return on Assets is 0.82 which represent that mean change in the Return on Assets is significant for one unit of change in the CSR while holding other variable in the model constant. R-square value is the statistical measure of how close the data is to the fitted regression-line. It is always between 0 to 100 percent. R-square value is 63.45 percent which means close to 64 percent of Return on Assets is explained by CSR. Hence CSR has significant impact on the Return on Assets of the Company. So conclusively it can be said that variables representing financial performance of the firm in short run which are profit after Tax, Current Ratio and Return on Assets are significantly dependent on Corporate Social Responsibility (CSR) of the company.

Impact of CSR on the Enterprise Value (EV) of the firm

Table 6: Regression Analysis of Impact of CSR on Enterprise Value

Variable	Coefficient	t-Statistic	Prob.
Intercept	12.87***	4.13	0.00
LCSR	0.86***	3.49	0.00
R^2	0.72		

Note: Own compilation. **** indicates the one percent level of significance.

Outcome of regression analysis shows that probability value is 0.00 which is less than 0.05; it means p-value is quite low and it signifies that Corporate Social Responsibility (CSR) is significantly related to change in the Enterprise Value of the company. Hence it can say that CSR has significant impact on the Enterprise Value of the company. Regression coefficient between CSR and Enterprise Value is 0.86 which represent that mean change in the Enterprise Value is significant for one unit of change in the CSR while holding other variable in the model constant. R-square value is the statistical measure of how close the data is to the fitted regression line. It is always between 0 to 100 percent. R-square value is 75.36 percent which means close to 75 percent of our Enterprise Value is explained by CSR. Hence CSR has significant impact on the Enterprise Value of the Company.

Conclusion

The study has examined the impact of corporate social responsibility on firm's financial performance of top hundred Bombay stock exchange listed companies from the period 2014 -15 to 2017-18. For examining the relationship Panel regression is used. The study uncovered a positive connection between CSR expenditure and the company's various financial parameters with the aid of different key aspects of financial performance of the company. For estimating the various aspects of financial performance of the organization ponder utilized 3 components of financial performance which are financial performance indicators in short run, financial performance indicators in long run and market risk associated with financial performance of the company. These components are covered with imperative parameters of the financial performance of the organization which are profit after tax, current ratio and return on assets for financial performance in short runand, long run with financial performance of the company for the concerned organization. The study has many implications in general such as investors, society and companies etc.

References

Fatma, M., Rahman, Z. & Khan, I. (2015). The role of CSR as determinant of consumer responses in financial sector. Journal of Institute of Management Calcutta, 12 (4), 156-178.

Ghosh, S. (2015). Proactive Communication of CSR in India: A Distant Dream or Reality? Paradigm, 19(2), 115–136.

Ghosh, S. (2015). Proactive Communication of CSR in India: A Distant Dream or Reality? Paradigm, 19(2), 115–136.

Johnson, C. (2015). MNC CSR in Emerging Economy Conflict Zones: A Case Study of HUL's North East Operations in India. VIKALPA, 38 (4), 69 82.

Munaza, K. (2013). Impact of corporate social responsibility on the firm's financial performance. IOSR Journal of Business and Management 14 (5), 67-74.

Nofz, M. S. (2015). CSR and Employees: Employees Conception and Perception of CSR and its effects. Journal for Business, Economics & Ethics, 16 (3), 288-312.

Roush, P. B., Mahoney, L. S. &Dhorne, L. (2012). The Effects of Public Pressure on CSR Behaviour in a Capital Market Experiencing Excessive Moral Debt Accounting and the Public Interest. American Accounting Association, 12 (1), 87–105.

CSR and Community Development: A Study of Project Villages of NALCO Foundation in Damanjodi Mining Area of Koraput

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ABSTRACT

Contemporary literature on the role of corporate social responsibility (CSR) in community development is not scant. Although a good amount of academic work is also skeptical about the true purpose of running CSR programmes, there exist a significant spectrum of studies that view CSR as a representative action for business ethics, a protective insurance for the society and an instrument for local community development. The present paper seeks to revisit the debate on driving forces behind effective corporate responsibility through a critical appraisal of the CSR initiatives undertaken by the Indian aluminum giant NALCO in the vicinity of its mines at Damanjodi area of Koraput district of Odisha. On the basis of analysis of primary data and narratives collected from 293 sample respondent households from 16 tribal dominated villages of Damanjodi, the study concludes that the CSR initiatives of NALCO are largely driven by stakeholder relations and have been successful in improving the standard of living and self-esteem of the beneficiary households in the project area.

Keywords: CSR, Community Development, Rural Development

Introduction:

In the changing business dynamics and with the increasing need of integration of profit motive of businesses with the community around which such businesses operate, the concept of Corporate Social Responsibility (henceforth CSR) has now become a tool of businesses to claim social acceptance. CSR broadly encompasses all strategies and activities of the businesses that have a potential to reduce the negative externalities of the business and offer society friendly alternatives to promote the brands. In

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countries like India, it has become mandatory for listed businesses to reveal their social responsibility in the form of a share of their profit as a giveaway for the community. While it has a symbolic importance to create a base for ethical business operations, at times, depending on the quantum of such giveaway, CSR may actually generate substantial economics of welfare for the recipient community. The present paper seeks to study the role of CSR as a catalyst of community development. The authors have considered the aluminum giant National Aluminum Company Limited (henceforth, NALCO) as a case to understand the effects of CSR activities of the company on the lives of the people in the vicinity of its mining units in Koraput district. NALCO, a *Navratna* public sector undertaking in India incorporated in 1981, is among the leading industrial units engaged in mining of bauxite, refining of alumina, smelting and casting of aluminum. In the year 2019, it was world's lowest cost producer of aluminum as per the Wood McKenzie report(Dash, 2019; NALCO, 2021). Moreover, with a long term vision for green energy production, NALCO is also emerging as the highest producer of renewable energy among PSUs(PTI, 2017; NALCO, 2021). As a responsible business entity, it has bagged several accolades including Mines Safety Award-1988, Best Eco-friendly Factory Award 1994–95, FICCI Environment Award for Environment Conservation and Pollution Control- 1996–97, Special Commendation under Golden Peacock Environment Management Award 1998 Scheme by World Environment Foundation, Dun & Bradstreet's Best PSU Award – 2012 etc., to name a few. In the year 2016, it was also recognised for its outstanding CSR practices in community development in the Odisha CSR Summit 2016. While the business profile and the recognition of the company for its social responsibility is illustrious, being an extractive unit engaged in mining and refinery activities, the economic activities of the company also contributes to a significant level of environmental damage and negative externalities. The company spends a sizable amount of money for community development work in the vicinity of its mining area that comes under the CSR efforts of the entity. It is therefore pertinent to study the effects of such efforts towards community welfare. The paper seeks to examine this effect from the perspectives of the sample beneficiaries selected at random from the project areas of NALCO. While NALCO has been considered as a case to study the relationship between CSR efforts and community development, the present paper seeks to generalize the ideas developed for better comprehension in a larger context and to contribute to the ongoing debate on CSR and community development linkage.

Review of Literature

Whether it is the business practice or academic discourse on CSR, they are broadly reflected through shareholder and stakeholder approaches(Carroll, 2009; Porter, 1990). Of which the CSR and community interface is related to stakeholder relations(Deigh, Farquhar, Palazzo, & Siano, 2016; Metaxas & Tsavdaridou, 2012). Further, this relationship may be negative or positive depending on the impact of CSR interventions on beneficiary communities. Existing studies on the role of extractive industries found negative perspective of communities on CSR interventions due to various factors. Although the CSR contribution of mining, manufacturing, oil and natural gas companies are high compare to other sectors globally, but still there is a gap between the intention of businesses to that of beneficiary perception. Particularly while undertaking social projects when companies choose affected communities not on the basis of their merit but order them as per their degree of threats to businesses(Frynas, 2005; Veiga, Scoble, & McAllister, 2001). Literature also illustrated adversities of mines on rural economy particularly after their closure(Hilson (a), 2012; Hilson, 2002) and this adversity is severe when all

local economic activities were concentrated in and around of mining units in the form of supplying wage laborer, small artisans, and eateries(Jenkins & Obara, 2006). For instance, the oil MNC Shell act as a quasi-government agent in provisioning social welfare at Nigerian Delta against governmental failure. But, still its CSR interventions are not free from inefficiencies on the ground of inclusion of people's interest and on-time delivery of plan and programs(Ite, 2005). Some literature also discussed number of long-term impacts of mines-closure including environmental degradation and permanent distortion of sustainable means of indigenous livelihood practices in addition to the immediate short-term economic adversities as discussed before(Laurence, 2006).

Whether CSR leads to a long-term growth of business or not is still a much debated topic. At times, business operations become costly when factors like local resistance, instability, raw material constraints, investor interests and consumer expectations are taken into consideration. All these factors create the contours of social risk that pose threats to the business prospects. Therefore, companies undertake CSR activities todilute both the business and social risk. So, CSR becomes a mere tokenism(Kemp, 2010; The Economist, 2005). However, on several occasions, CSR activities are also designed in such manners that they no more remain tokenism. Rather they gear towards enhancing people's capacity through knowledge-based approaches(Manteaw, 2008; The Economist, 2005). It was also found that people centric CSR programs related to rural communities and employees not only led to social transformation, they also enhanced firm value compared to other dimensions of CSR(Singh, Sethuraman, & Lam, 2017). Such relationship is relatively prominent among extractive industries(Banks, Kuir-Ayius, Kombako, & Sagir, 2013; Dorobantu & Odziemkowska, 2017; Mathende & Nhapi, 2017). In advanced economies like Canada, mining companies also act as development agents with their significant contribution in local development for indigenous communities. Even during global financial crisis companies were continuing with their CSR activities particularly the metal and metallurgy sector in Greece(Metaxas & Tsavdaridou, 2012). Although, the CSR allocation was decreased by volume due to severity of financial crunches but, the prospects of CSR were not affected by such adversities. Rather companies were oriented towards strategic CSR which having long-term benefits both for businesses and communities(Bansal, Jiang, & Jung, 2015; Metaxas & Tsavdaridou, 2012).

In India, this corporate-community relationship is an age-old practice(Singh & Sarkar, 2018) that took a paradigm shift with the implementation of mandatory CSR clause under the Companies Act, 2013(Deodhar, 2015). Since, 1900s companies like Tata and Birla were involved in the process of social transformation and rural development in India(Moon, 2014). But, this developmental interface between business to community is not free from conflicts as highlighted by Newell (2005), who has examined the case of NTPC in India on its pollution control mechanism. The company has been reported to have failed in identifying suitable beneficiaries and poor communities those are victimized. On the other hand, some CSR activities particularly among the small and medium enterprises in India areself-driven and beyond the core business motives(Nair & Sodhi, 2012). Some research also underlined the role corporates in the process of restoring damages and providing basic requirements to the people affected from natural disasters. After natural disasters like; flood in Mumbai, earthquake of Gujarat and Kashmir, Indian Ocean tsunami both medium as well as large scale companies had extended their helping hands towards the relief and rehabilitation works(Miyaguchi & Shaw, 2007). The mine and mineral based industries in particular act as developmental agents in the process of community and rural development(Acharya & Patnaik, 2018; Narula, Magry, & Mathur, 2019).

Thus, the contemporary literature is not unanimous on the motives and effectiveness of CSR, especially among the extractive industries. The extractive industries usually operate on large geographical areas and significantly affect the local environmental standards and economic opportunities available for the local communities. The CSR efforts by these industries can be meaningful if they really cater to the needs of the communities. Unfortunately, much work on CSR provides theoretical insights and the context specific reporting are largely opinion based and promotional in nature. It is in thiscontext that we seek to present the CSR efforts of NALCO in the mining area of its operation and the peripheries. The present paper makes an attempt to identify the nature of CSR activities undertaken by NALCO in the light of broad classifications provided in the literature reviewed. At the same time, it also attempts to assess the perceived welfare of the local communities through the narratives and information gathered through a primary survey.

Data and Methods

In line with the objectives of the research, this paper examined the role of CSR interventions on community development at the periphery of Damanjodi operational unit of NALCO. Although, there is evidence that the company undertook different activities that can be considered as CSR since its inception in 1981, in order to streamline its efforts, NALCO established a standalone unit called NALCO Foundation in the year 2010. This paper covers the CSR projects implemented by NALCO Foundation at its Damanjodi operational unit in Koraput district of Odisha. Primary information was collected through a structured questionnaire from 293 sample households during a field survey conducted at 16 villages and hamlets selected through simple random sampling method from among 194 project villages and hamlets covered by the Foundation.In addition to the information collected through questionnaire, other tools such as participatory rural appraisal (PRA) and focused group discussions (FGD) were employed. The official records maintained by the foundation regarding projects and expenditures were examined. The macro variables in these records relating to expenditure on CSR were also cross checked from the company annual reports and the company website.

The records of NALCO Foundation (henceforth, foundation) have grouped the activities under seven heads such as; (1) Education (2) Healthcare including sanitation (3) Rural infrastructure, (4) Skill development, (5) Preservation and promotion of local traditions and cultural practice, (6) Environmental protection, and (7) Creation of model villages. Descriptive and simple inferential tools were used for analysis of data.

Study Area and Sample

Our study area covers the project area of NALCO in Koraput district of Odisha. Koraput is tribal dominated and one of the economically backward districts of Odisha. Although, the district is endowed with valuable mineral resources, its hilly terrains and remoteness are some of those major hurdles for any developmental projects to commence. For example, the total household size of a sample village Upargadti is only 38. It is situated at the foothill of Panchpatmali hills where the NALCO have its largest opencast bauxite mine. Like Upargadti, in almost all the villages in the periphery of Damanjodi operational unit, people have limited economic opportunities. Petty business activities small grocery shops, eateries and other daily provision stores have emerged during last decades to cater to the demands

of people associated with the company activities. Table 1, gives a brief profile of household and population size of sample villages.

Table 1: Profile of Sample Villages at Damanjodi Unit

Sl.No.	Village	Total Household	Total Population	Gram Panchayat	Block
1	Bhitargarh	140	529	Bhitargarh	Laxmipur
2	Barigaon	124	471	Bhitargarh	Laxmipur
3	Kapsiput	148	596	Bhitargarh	Laxmipur
4	Khagadara	55	207	Dumuripadar	Koraput
5	Upargadti	38	322	Bijaghati	Narayanpatna
6	Cherangaguda	148	514	Padmapur	Koraput
7	Chaugan	153	563	Padmapur	Koraput
8	Khalpadi	134	465	Cherangul	Semiliguda
9	Cherangul	222	487	Cherangul	Semiliguda
10	Marichmal	261	1005	Mathalput	Koraput
11	Anlabadi	97	318	Litiguda	Koraput
12	Tala mania	114	476	Pakjhola	Semiliguda
13	Kudumul	236	797	Mathalput	Koraput
14	Bhejaput	143	592	Charangul	Semiliguda
15	Kakiriguma	467	1612	Kakiriguma	Laxmipur
16	Lacchamani	256	1256	Litiguda	Koraput

Source: Compiled from Field Survey and NALCO Foundation Records

The socio-economic profile of sample respondents shows that the majority of households are from schedule tribe (62.8 percent) followed by 19.5 percent from the scheduled caste and 17.7 percent from the general category and other backward classes. Around 59.39 percent of our respondents were male and 40.61 percent were female.Among sample respondents, more than 87 percent are from the age group of 15 to 59 years. Around half of them illiterate and only 28.3 percent had completed their elementary level of education. Only two respondents have studied the bachelor's degree and 17 were found with professional and vocational education like ITI and the apprentice program at NALCO. Around 19.8 percent sample households were below poverty line and almost all the households (96.9 percent) are original inhabitant of their current place of residence.

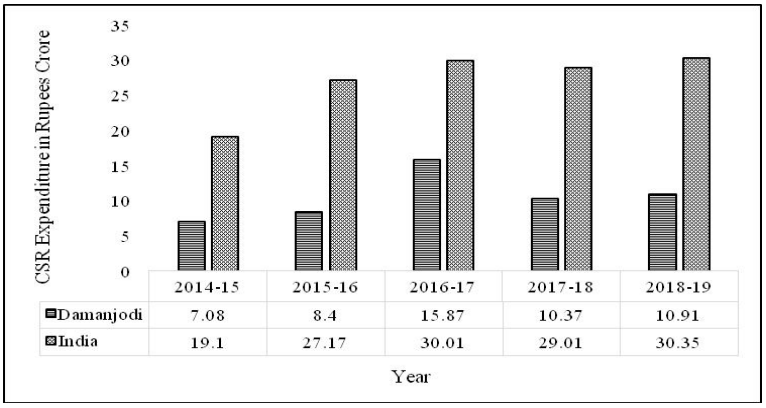
In order to have a better comparison, we also have taken 100 households as controlled samples who are randomly selected, 50 each from Dayanidhiguda and Kendar villages of Koraput Block. Being an urban block the households living in the vicinity are expected to have better access to basic facilities and are better aware of different issues related to community development. In the following sections, we shall make an attempt to study the nature of CSR by NALCO Foundation and its role in welfare of the local community.

Data Analysis and Results

Nature and Pattern of CSR Expenditure of NALCO

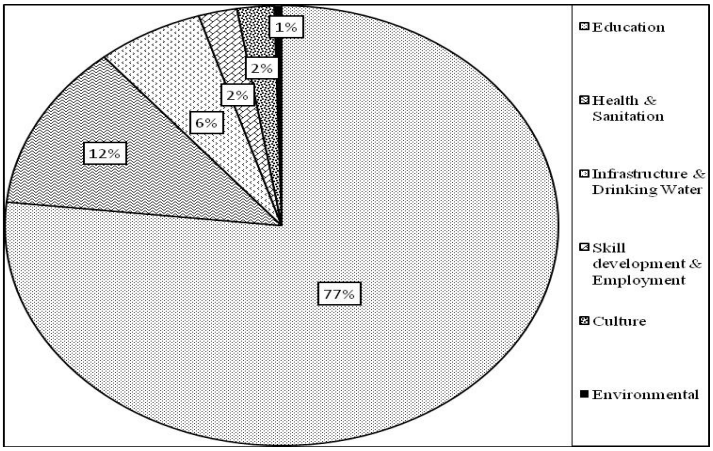
As per the guideline set by the company, 40 percent of its total CSR expenditure is earmarked for peripheral community development. The detailed reports of the Foundation reveal that on average around 38.8 percent of its total CSR expenditure is made at its Damanjodi operational unit at Koraput district during 2014-15 to 2018-19. The major avenues of expenditure have been social overheads related to education, healthcare and sanitation, and infrastructural development including alternative energy sources and drinking water provisions that amount to around Rupees 52.63 Crore. During this period, the company had spent rupees 135.64 Crore for all its CSR activities across the country. A year wise description of NALCO's CSR expenditure is illustrated in Figure 1.

Figure 1: CSR Expenditure at Damanjodi Unit and India (in Rupees Crore)



Source: Compiled from NALCO website (as on 10 February, 2021)

Figure 2: Thrust area wise CSR Expenditure at Damanjodi Unit (in %)



Source: Compiled from NALCO website (as on 10 February, 2021)

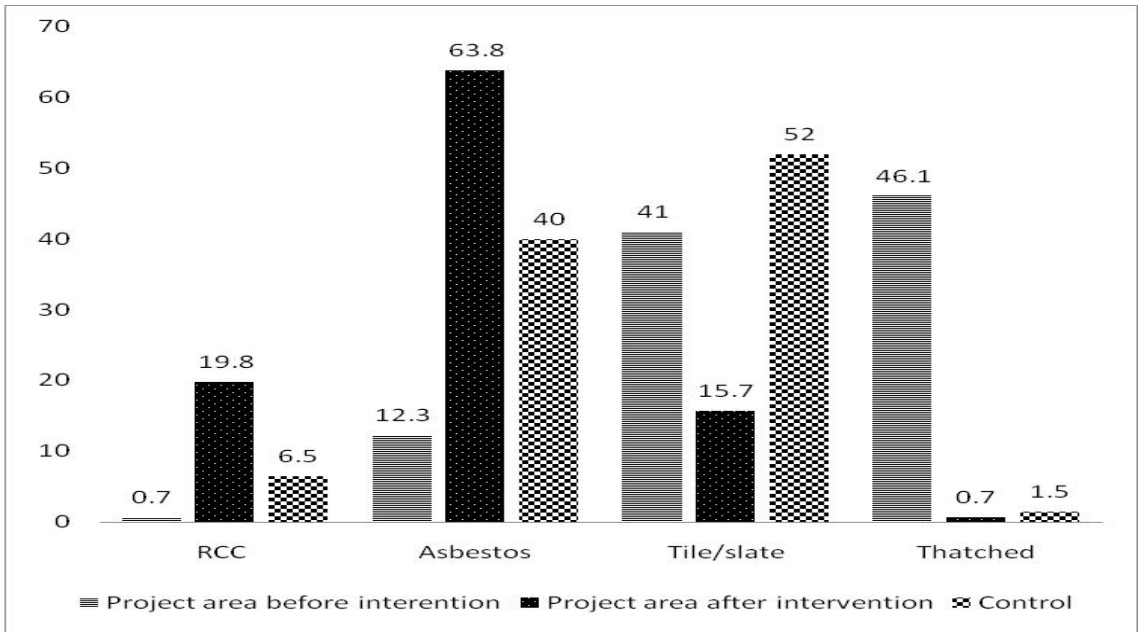
We may broadly classify the CSR interventions of NALCO Foundation into two groups such as; community development and local area development. With thelegal obligations for profit proportionate CSR mandate under the Companies Act, 2013, the interventions of the Foundation have been aligned more towardscommunity development rather than area development. The major thrust areas of community development have been provisions like education, skill development, employment, youth training and related infrastructure, and technological promotion through rural digitalization were the major contributors in capacity building. During the period of analysis, the company had spent about Rupees 40.37 Crores on education which includes provision for quality education, education for girls, necessary institutional infrastructure and vocational training like ITIs, etc. An item wise composition of CSR expenditure of NALCO is presented in Figure-2. It is noteworthy that more than 75 percent of total CSR expenditure at Damanjodi unit was on education, followed by the 12 percent expenditure on healthcare and sanitation. Under the local area development, the company had allotted rupees 3.28 Crore (6.24 percent) on core infrastructural development including the provision for drinking water facilities at peripheral villages. The skill development and employment which also includes youth training and rural digitalization had only 2.26 percent share of total spending. Similarly, the spending on promotion of local tradition and culture also got a meager share of 2.16 percent. Less than one percent of the total CSR spending by NALCO wastowards addressingenvironmental issues.

Impact of CSR interventions on community development in the periphery of Damanjodi unit

For assessing the impact of CSR interventions at Damanjodi unit we have used both quantitative data and qualitative information collected through primary survey and FGDs. The impacts of CSR on community development of the locality can take any of the three important dimensions. They are; lifestyle impact, economic impact, and the environmental impact. All these impacts are multidimensional in nature and can be linked with social needs.Impacts can be expressed in terms of number of parameters having direct and indirect bearing on the lives of individuals in particular and the community in general. For example, life style impacts can be assessed from the changes in conditions of housing, availability of drinking water and healthcare facilities. Similarly, economic impacts can be assessed from the parameters like changes in income and employment opportunities. Environmental impacts can be assessed from the perception of the people on the condition of the physical environment. In the following paragraphs, an attempt is made to assess the different parameters of impacts of CSR in the study area.

Information from the field suggests a significant leap in the different aspects of lifestyle impacts. Although, such changes cannot be directly linked with CSR activities of the foundation, it can nevertheless be considered as outcomes associated with the existence and activities of the company in the study area. Moreover, the analysis presented in the following sections is based on perceptions of the respondents. While such perceptions are likely to be subjective, they definitely reflect the level of satisfaction of dissatisfaction of the communities related to the expectations from the company.

Figure 3:The Housing Conditions in Damanjodi before and after the CSR intervention (in %)



Source: Calculated from Field Data

An analysis of housing condition in the project area provides a clear indication about the transformation in the lifestyle. Noteworthy here that the respondents in project areas were asked to recall the condition of their dwelling units and other facilities back in 2010 in comparison with their present status when the survey was conducted during June 2018 to March 2019. As presented in Figure-3, the project areas before intervention by NALCO had about only 0.7 percent houses with RCC roofs, 12.3 percent houses with asbestos roofs, 41 percent houses with tiled or slated roofs and around 46 percent houses with thatched roofs. After almost a period of 10 yearsafter intervention, the project area had around 20 percent houses with RCC roofs and around 64 percent houses with asbestos roofs. Compared to around 16.5 percent houses in project areas which are still continuing with thatched or tiled roofs, the control villages still have around 54 percent houses with thatched or tiled roofs (Figure-3). It is to be highlighted that these years are also marked with several other interventions by the successive governments for rural housing projects and schemes. Therefore, an improvement in housing conditions from around 0.7 percent RCC roofs in 2010 to 19.8 percent in 2018 does not necessarily indicate the impact of CSR interventions by NALCO. However, a comparison with the condition in the controlled villages clearly shows that the distinctive improvement of housing conditions in the project villages over a decade as well as the controlled villages,is not just the result of overall development trajectory in the region, but also a result of the CSR interventions made through NALCO Foundation efforts. The contemporary literature also substantiates that such transformations are results of direct and indirect effects of CSR interventions targeted for better facilities, concerns related to the 'safety of ingress and egress as well as safety of building materials'(Hong, Ismail, & Yin, 2008), better landscaping

requirements, avoidance of disasters such as outbreak of fire, company reputation, in the project areas. More or less, these concerns, although, have a philanthropic element, also help in the profiling of the business model (Kemp, 2010; Bansal, Jiang, & Jung, 2015; Metaxas & Tsavdaridou, 2012).

There has been a significant improvement in access to safe and potable drinking water in the project area. The Foundation identified locations with limited source of drinking water and installed provisions for community access to water through piped supply system or deep bore-wells. The information on access to drinking water is provided in Table-2. For the sake of comparison, we have classified the sample respondents in the project area into direct beneficiary and non-beneficiary households. The information from the project area as presented in Table-2 suggests that in 2010 less than five percent of the beneficiary households had access to safe drinking water through public sources compared to around 14 percent non beneficiary households from both public (community) and private sources. During our survey in 2018-19, we found that the proportion of beneficiary households with access to safe and potable drinking water from both public (community) and private sources was around 86 percent compared to only 81 percent among the non-beneficiary households. Although, the proportion of households having private access to safe drinking water is still more among the non-beneficiary households, overall access is higher among the beneficiary households. On the other hand only around 73 percent households, in the control villages, have access to safe and potable drinking water.

In India, the countryside is still deprived of basic human needs. The government of India in recent years had taken several steps to improve the water and sanitation condition in rural areas. So, it is reasonable to believe that a larger part of the improvements in access is because of the general trend of development and the new programmes of the government. However, the disparities in access among the beneficiaries and non-beneficiaries and the same among households living in project areas and control areas can be explained only as a result of the effectiveness of the CSR programmes of NALCO Foundation. It is noteworthy that the average distance covered by a typical household to fetch drinking water has reduced significantly from around 0.71 Kilometers to around 0.12 Kilometers after the CSR interventions by NALCO. Moreover, access to safe water and sanitation facilitiesbeing a precondition for better health outcomes and better quality of life, it is reasonable to believe that such activities have contributed in reduced morbidity among the local people. Water borne diseases have been arrested to a great extent in the project area.

Table 2: Percentage of beneficiary and non-beneficiary households with access to safe drinking water before and after CSR intervention

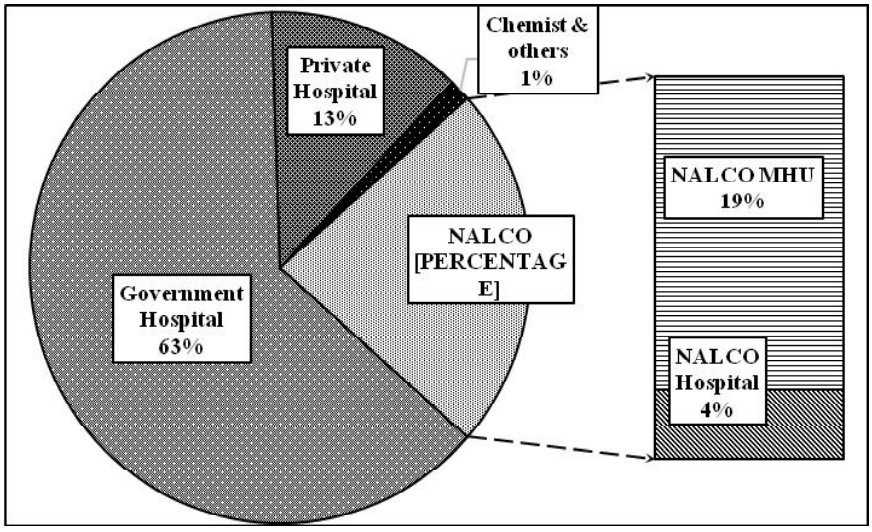
	Before Intervention (2010)	After Intervention (2018-19)
Non-Beneficiary HHs	13.74	81.98
Beneficiary HHs	4.65	85.56
Overall Project Area	11.11	83.01
Control Villages	NA	73.9

Source: Calculated from Field Data

Two major thrust areas of NALCO CSR in the periphery of Damanjodi mining unit has been the promotion of quality education and creation of much needed healthcare facilities. While around half of the respondents were illiterate, educational needs of the younger generation is given priority by the sample respondents. NALCO stood tall in meeting thislocal development aspiration in the vicinity of the mining area. From the company reported data (Figure 2) and field observations, community provisions of educational and vocational training facilities are clearly prioritized in NALCO's budgetary allocation for CSR. As expressed by respondents,flagship programmes like *NALCO kiLadli* for girls' education, vocational training through ITI and in-house apprentice program for local youth with scholarship are integral part of NALCO CSR interventions. While infrastructural issues are taken care of by constructing additional classroom, playground, boundary walls, hygienic kitchen, drinking water and toilet facilitiesetc, the outcomes are also monitored through systematic student-parent connect programmes leading to an improvement in retention rate and reduced dropout rates. Expenditure on education and training seems to have a lion-share in NALCO CSR budget.

During the period of 2014-19 NALCO had spent about 12 percent of its total CSR fund on healthcare needs of people living in the vicinity of Damanjodi area (Figure 2). Our sample respondents have also expressed their satisfaction in the efficacy of healthcare facilities provided by the NALCO Foundation. Although government run medical and healthcare facilities still provide for a majority of the local healthcare needs, facilities provided by NALCO, especially the mobile health units, are very popular among the respondents. Compared to around 12.59 percent respondents who have opted for private healthcare facilities, the provisions under the NALCO CSR healthcare accounted for the health needs of around 23 percent (around 19 percent through MHUs and four percent through the NALCO sponsored hospital. Figure-4 provides information on the share of different health care providers in meeting the local health demand in the study area.

Figure 4: Healthcare Facilities Availed by Respondents in the Study Area



Source: Calculated from Field Data

On a different note, the out-of-pocket expenditure on curative healthcare by respondents has increased from Rs.1344 to Rs.2388per household per annum during 2010 and 2019. One can always argue that on average, out of pocket expenditures made by households have increased after the implementation of CSR programs in the locality. However, such an increase in out of pocket expenditure might also be because of increased awareness on common diseases and the urge to lead a healthy life among the respondents. It may also be because of the proportionately higher rise in prices of medicines and other healthcare needs. The estimates by the Office of the Economic Advisor to Government of India suggests that the rise in the wholesale price index for manufacture of pharmaceuticals, medicinal chemical and botanical products have been around 28 percent during 2011-2020 compared to a 20 percent increase in the WPI for all commodities during the same period(GOI, 2021). However, a comparison with the information from controlled households in Koraput district suggest that the average healthcare expenses per household per annum was much higher at Rs. 5703 indicating that the overall health care expenditure in the area where CSR interventions are made are much less compared to areas where such interventions were not made, i.e., the controlled area. Moreover, a lower standard deviation in the healthcare expenses in the controlled areas indicate that such high burden of healthcare expenses is more of less a general phenomenon for the controlled sample. It is also observed that the skewness of out of pocket expenditure is very high in CSR intervention areas and positive in both project area and controlled areas. This indicates that relatively more number of people in the project area actually spend less amount of money on curative healthcare facilities compared to the proportion of people who spend less in controlled areas. Table-3 provides information on such discrepancy in project and controlled areas. One may infer that the people living in NALCO project areas are burdened less in terms of out of pocket expenses on healthcare services.

Table 3: Healthcare Expenditure in the Study area before and after NALCO intervention

Out of Pocket Expenditure on Curative Healthcare	Project Area Before Intervention (2010)	Project Area After Intervention (2018-19)	Controlled Sample (2018-19)
Mean	1344.0	2388.0	5703.0
Median	600.0	900.0	5328.0
Skewness	6.0	5.9	1.1
Standard Deviation	124.8	250.5	94.7

Source: Calculated from Field Data

The CSR activities by NALCO have also resulted in economic transformation in the study area. Not just in terms of increase in income, the area under intervention have also undergone a notable shift in the occupational structure. NALCO interventions have primarily aimed at changing the economy of the households and through that to bring changes in the existential conditions of the people and community life. As evident from field data, the monthly income of households residing in Damanjodiproject areas had increased by around 222 percent with an increase of around 305 percent in

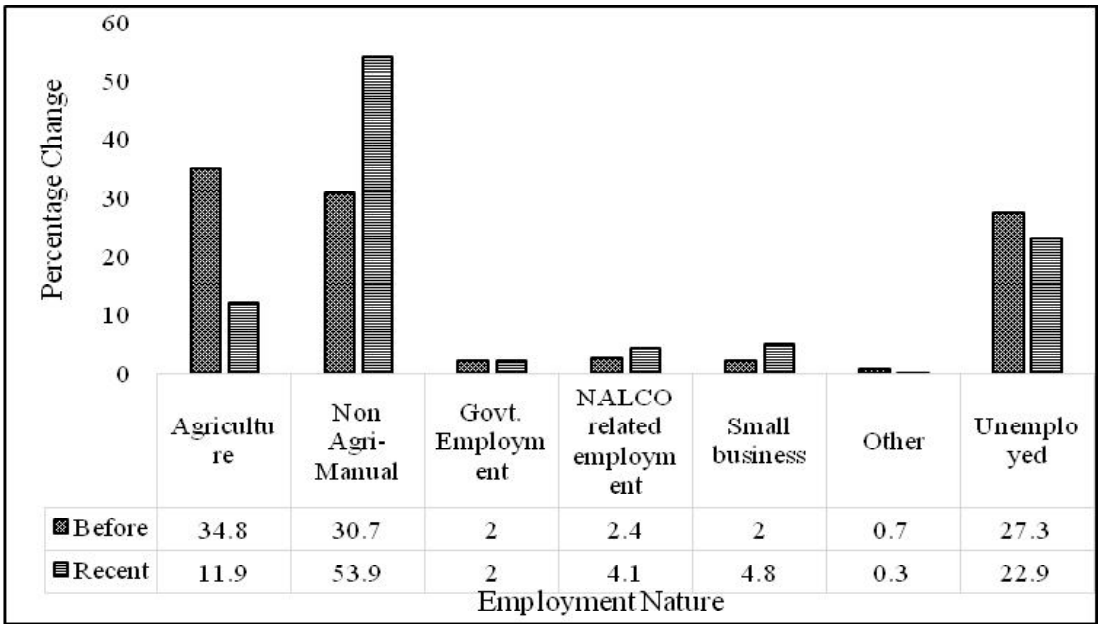
the income of the median respondent. It is a significant improvement in the core basis of a better standard of living (Table-4). Moreover, positive skewness of distribution of income, almost no change in the standard deviation in the monthly income and a proportionately higher increase in the income of the median respondent household indicate that the improvement in the income is more observed among the people who were relatively poor before the intervention. Although, under its CSR activities NALCO had few direct employment related programs, due to its effort on capacity building and youth training at locality the employability and income opportunities of masses have increased. Figure-5 gives a broad overview of the shifts in the occupational structure in the study area. We can observe a reduction in the unemployment rate from 27 percent to 23 percent after the CSR intervention in the study area.

Table 5: Growth in Monthly Family Income before and after CSR Intervention

Statistics	Project Area Before Intervention (2010)	Project Area After Intervention (2018-19)	% Change
Mean	3384	10887	221.7
Median	2100	8500	304.8
Skewness	2.78	5.18	86.3
Standard Deviation	1386.0	1382.5	-0.3

Source: Calculated from Field Data

Figure 5: Change in the Occupational Structure in the Study Area



Source: Calculated from Field Data

The proportion of population in the respondent households dependent on agriculture was around 35 percent before the CSR interventions started in the project areas. However, after the CSR interventions through training and other capacity building programmes the proportions declined gradually to less than 12 percent. The workforce that left agriculture got absorbed primarily in other wage employment activities. The CSR activities of NALCO not only increased the ability of the workers to look for other employment opportunities in non-agricultural sector, development of the project areas also created demand for such workers with varied skills. One such programme run by the NALCO was the mason training programme run by NALCO. While the development of the area paved the way for new work opportunities in the construction sector, it also enabled the local youth to take up training as masons and supply their labour in the sector.

Table-6 gives information on CSR expenditure on specific activities by NALCO.

Table-6: CSR Expenditure on Employment and Skill Training

Angul and other Districts	Amount Spent in Lakhs
Enhancement of skill of by bridging the gap of Existing contract worker and unemployed youth in Angul	26.35
Digitization drive in peripheral villages, Angul	12.4
Distribution of Charkha to women weaver and spinners of Puri	4.12
Distribution of Charkha to women weaver and spinners of Khurda	3.62
Improving emplyoability in peripheral and surrounding villages of Angul by NSDC	46.5
Improving emplyoability in peripheral and surrounding villages of Khurda by NSDC	45.5
Subtotal Angul and Other districts	**138.49**
Damanjodi Project Area	
Enhancement of skill of by bridging the gap of existing contract worker and unemployed youth of district where company is operating	56.46
Digitization drive in peripheral villages	0.96
Distribution of Charkha to women weaver and spinners of Rural India.	5.76
Improving employability in peripheral and surrounding villages at Damanjodi,Koraput by NSDC	46.76
Preparation of DPR for skill development in mining sector by NSDC	7.2
Subtotal Damanjodi	**117.14**
Outside Odisha	
Skill development training of youths belonging to poor, BPL families at Gwalior,Madhya Pradesh.	26.45
Total Expenditure on Employment and Skill development	**282.08**

Source: CSR reports of NALCO Foundation

As observed from Table-6, rather than providing direct employment opportunities, the CSR activities by NALCO focused on building capacities. These activities made attempts to bridge the skill gap of unemployed youth, computer literacy and digitalization drives, distribution of looms to women weavers etc., and Damanjodi project area had been a major focus of such activities. Out of a total Rs. 2.82 crores on employment and skill training, around Rs. 1.17 crores were spend in Damanjodi alone. The results of such efforts have been substantial in preparing and orienting the young workers towards dynamic market requirements.

Conclusion

Existing studies on the links between CSR (especially by the extractive industries) and community development have largely found a negative perception of communities. Although the CSR expenditures of extractive industries such as mining, manufacturing, oil and natural gas companies, etc, are high compared to other sectors globally, but still there is a gap between the intention of businesses to that of beneficiary perception. This happens primarily because of the biased inclusion and exclusion of the beneficiaries. It is evident from the review of contemporary literature that more often than not, companies choose affected communities not on the basis of their merit but as per their degree of threats to businesses. At times, business operations become costly when factors like local resistance, instability, raw material constraints, investor interests and consumer expectations are taken into consideration. All these factors create the contours of social risk that pose threats to the business prospects. Therefore, companies undertake CSR activities to dilute both the business and social risk. The present study found a clear departure from the above idea in case of NALCO CSR activities. The CSR activities of NALCO had been rather strategic and complex in their forward and backward linkages. Instead of providing freebees, the CSR activities of NALCO have successfully built capacities of the people, created opportunities and groomed material aspirations of the residents in the project areas for better standard of living. On the surface, one can say that the CSR activities of NALCO has not been beneficiary centric in a sense that the CSR activities of the company did not focus much on making provisions that directly helped people in realizing their economic goals. However, the efforts to spread education, creation of innovative health facilities in remote areas, providing training for self employment, making community provision of basic facilities have created a benchmark of best practice as far as CSR is concerned.

References

Acharya, J., & Patnaik, S. N. (2018). Corporate Social Responsibility in Community Development and Sustainability: Rourkela Steel Plant, a Unit of SAIL, India. Asian Journal of Business Ethics, 7(1), 53-79.

Banks, G., Kuir-Ayius, D., Kombako, D., & Sagir, B. (2013). Conceptualizing Mining Impacts, livelihoods and Corporate Community Development in Melanesia. Community Development Journal, 48(3), 484–500.

Bansal, P., Jiang, G. F., & Jung, J. C. (2015). Managing Responsibly in Tough Economic Times: Strategic and Tactical CSR During the 2008–2009 Global Recession. Long Range Planning, 48(2), 69–79.

Carroll, A. B. (2009). A History of Corporate Social Responsibility: Concepts and Practices. (A. Crane, D. Matten, A. McWilliams, J. Moon, & D. Siegel, Eds.) Oxford University Press.

Dash, J. (2019, April 3). NALCO turns lowest cost producer of bauxite, alumina in FY19. Retrieved February 2, 2021, from Business Standard: https://www.business-standard.com/article/companies/nalco-turns-lowest-cost-producer-of-bauxite-alumina-in-fy19-119040301057_1.html

Deigh, L., Farquhar, J., Palazzo, M., & Siano, A. (2016). Corporate Social Responsibility: Engaging the Community. Qualitative Market Research, 19(2), 225–240.

Deodhar, S. Y. (2015). India's Mandatory CSR, Process of Compliance and Channels of Spending. IIMA Working Papers. Indian Institute of Management Ahmedabad, Research and Publication Department.

Dorobantu, S., & Odziemkowska, K. (2017). Valuing Stakeholder Governance: Property Rights, Community Mobilization, and Firm Value. Strategic Management Journal, 38(13), 2682–2703.

Frynas, J. G. (2005). The False Developmental Promise of Corporate Social Responsibility: Evidence from Multinational Oil Companies. International Affairs, 81(3), 581–598.

GOI. (2021, March 18). Wholesale Price Index (WPI) Data (2011-12=100). Retrieved March 18, 2021, from Office of the Economic Advisor, Department for promotion of Industry and Internal Trade : https://eaindustry.nic.in

Hilson (a), G. (2012). Corporate Social Responsibility in the Extractive Industries: Experiences from Developing Countries. Resources Policy, 37(2), 131–137.

Hilson, G. (2002). An Overview of Land Use Conflicts in Mining Communities. Land Use Policy, 19(1), 65–73.

Hong, S. Y., Ismail, M., & Yin, T. S. (2008). Corporate Social Responsibility in Malaysia Housing Development – The Developer's Perspective. Pacific Rim Property Research Journal, 14(2), 177-198.

Ite, U. E. (2005). Poverty Reduction in Resource-rich Developing Countries: What Have Multinational Corporations Got to Do With It? Journal of International Development, 17(7), 913–929.

Jenkins, H., & Obara, L. (2006). Corporate Social Responsibility (CSR) in the Mining Industry-the Risk of Community Dependency. 1-23.

Kemp, D. (2010). Community Relations in the Global Mining Industry: Exploring the Internal Dimensions of Externally Orientated Work. Corporate Social Responsibility and Environmental Management, 17(1), 1–14.

Laurence, D. (2006). Optimisation of the Mine Closure Process. Journal of Cleaner Production, 14(3), 285–298.

Manteaw, B. (2008). From Tokenism to Social Justice: Rethinking the Bottom Line for Sustainable Community Development. Community Development Journal, 43(4), 428–443.

Mathende, T. L., & Nhapi, T. G. (2017). Business and Society: Determinants and Experiences of Corporate Social Responsibility Practices in Zimbabwean Extractive Industries from 2000-2015. Consilience: The Journal of Sustainable Development, 17(1), 143–161.

Metaxas, T., & Tsavdaridou, M. (2012). Corporate Social Responsibility (CSR) on Metallurgy Sector in Greece. MPRA Paper. Germany: University Library of Munich.

Miyaguchi, T., & Shaw, R. (2007). Corporate Community Interface in Disaster Management: A Preliminary Study of Mumbai, India. Risk Management, 9(4), 209–222.

Moon, J. (2014). Corporate Social Responsibility: A Very Short Introduction. Oxford University Press.

Nair, N. K., & Sodhi, J. S. (2012). CSR Practices by SMEs in India: Lessons from Five Case Studies. Indian Journal of Industrial Relations, 47(4), 583–597.

NALCO. (2021). NALCO. Retrieved February 3, 2021, from NALCO: https://nalcoindia.com/company/about-us/

Narula, S. A., Magry, M. A., & Mathur, A. (2019). Business-community Engagement: A Case of Mining Company in India. Business Strategy & Development, 2(4), 315–331.

Newell, P. (2005). Citizenship, Accountability and Community: The Limits of the CSR Agenda. International Affairs, 81(3), 541–557.

Porter, M. E. (1990). The Competitive Advantage of Nations. Harvard Business Review, pp. 73–91.

PTI. (2017, September 17). Aluminium major Nalco to tap renewable energy for power requirements. Retrieved February 10, 2021, from The Economic Times: https://energy.economictimes.indiatimes.com/news/renewable/aluminium-major-nalco-to-tap-renewable-energy-for-power-requirements/60720673

Singh, P. J., Sethuraman, K., & Lam, J. Y. (2017). Impact of Corporate Social Responsibility Dimensions on Firm Value: Some Evidence from Hong Kong and China. Sustainability, 1532(9), 2-24.

Singh, P., & Sarkar, S. (2018). Revolutionising Corporate Social Responsibility in India: Is It Truly Revolutionised? Asia-Pacific Journal of Management Research and Innovation, 13(1-2), 1-12.

The Economist. (2005, January 22). The Good Company: A Survey of Corporate Social Responsibility. The Economist, pp. 1-14.

Veiga, M. M., Scoble, M., & McAllister, M. L. (2001). Mining With Communities. Natural Resources Forum, 25(3), 191–202.

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1. Prof. Paresh Chandra Ray
2. Prof. Suryakanta Das
3. Prof. Batakrushna Mohanty
4. Prof. Durga Prasad Nayak

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27	2007	P.G. Department of Commerce Utkal University, Bhubaneswar	Prof (Dr) Samson Moharana Professor Utkal University, Bhubaneswar	Prof. Kishore Ch. Rout, Berhampur University	Prof. Jagannath Panda, Berhampur University	One Issue
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31	2011	P. G. Department of Commerce, Berhampur University	Prof. Malay Kumar Mohanty, Former Registrar, Ravenshaw University, Professor G. M. College, Dean Sambalpur University	Dr. Kshiti Bhusan Das, Utkal University	Prof. Ranjan Kumar Bal, Utkal University	One Issue
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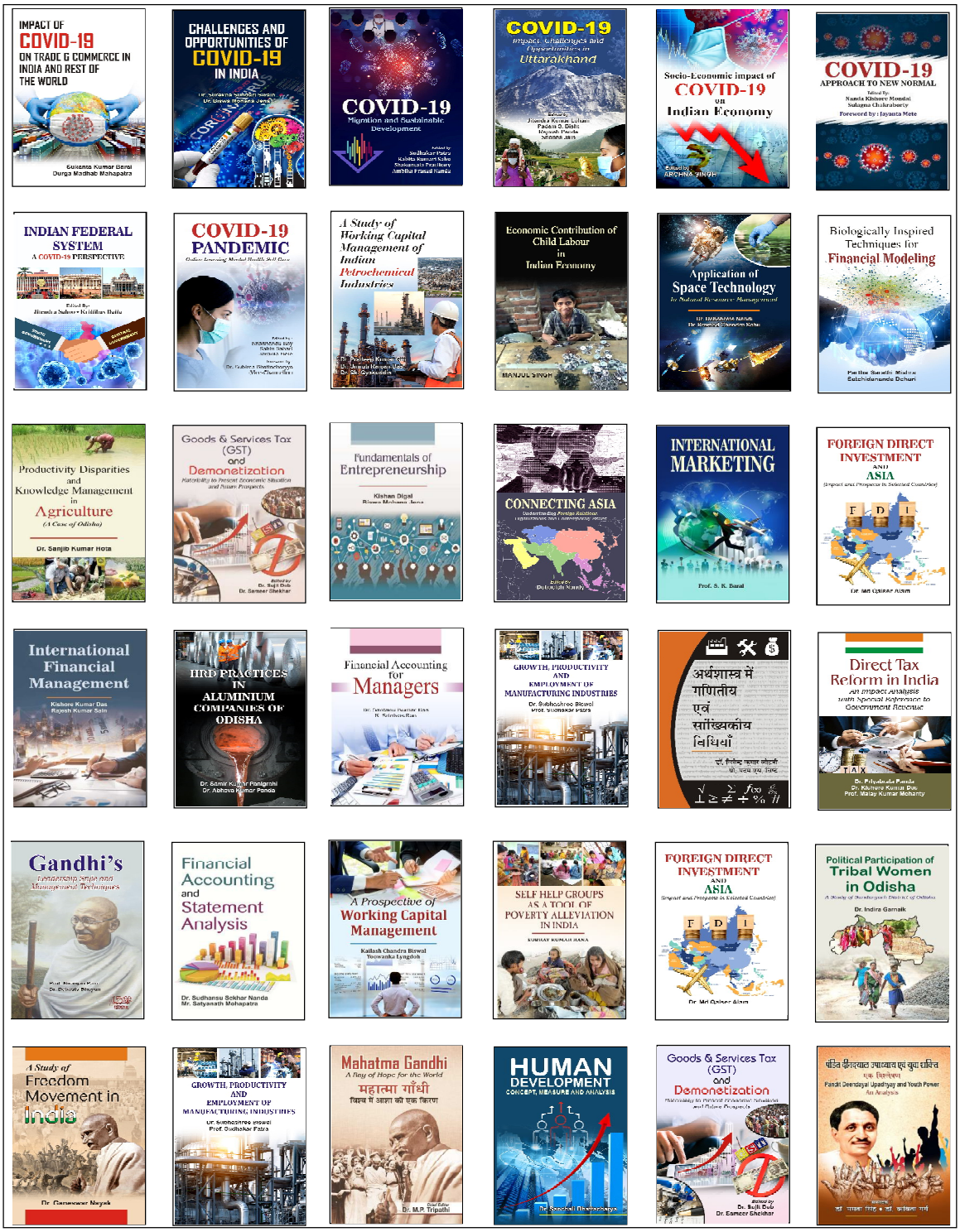
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