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Editor's Desk

Brexit as it is popularly called is the attempt of Britain to leave the European Union. This decision was taken through a referendum on 23rd June 2016 and Britain was expected to have a great effect on the currency of the European Union (EU) which is the world's largest trading bloc. The immediate effect on the British Pound was that the pound fell by 10% in a single day. There was a high level of volatility in the global stock markets. The immediate reaction in tourism was a Brexit boom as a large number of foreign visitors were attracted to UK with the fall in the value of pound and this was depicted through full bookings in hotels, airlines and tourist attraction places. Indian market was exceptionally buoyant as it expected that Brexit a fall in British pound would have a positive effect for Indian's trade. It is the only country in the world which has a dedicated minister for India Britain trade so trade was expected to be positive. Its major trade partners were China and United States and the breaking away of Britain thus had a lot of global uncertainty as they were two strong countries and trade with them was considerable. Brexit would create a problem for American consumers for considering their expenditure plans. A strong dollar would not be good for US business to sell their product abroad as products become expensive and less attractive for consumers outside US. This is expected to affect business of companies like Apple, Deere, Caterpillar, Coca-Cola, Nike and several others. Yen and US dollar were the only two currencies which appreciated. This also impacted India.

Brexit's effect on India was noticeable as the immediate reaction was a fall in the BSE Index. It affected a lot of industrial sectors and a large number of companies. The motor industries especially Tata Motors were immediately affected as one third of the cars manufactured by them were sold in U.K. and Europe. Maruti Suzuki suffered losses as the Japanese Yen appreciated. The car manufacturers feared trade barriers and duties on vehicles as Britain would try to give impetus to its own manufacturer of cars like Mercedes and Audi. Another sector which was affected was the information technology sector. IT companies like Tech Mahindra LTd and HSL Technologies Ltd get most get their revenues from Europe. The immediate effect for them was loss of funds through low ebb in business. On analysis another sector in which trading declined was metals. Its trade also fell in India. Hindalco and Tata Steel immediately suffered as trading in the financial markets reduced. Crude oil prices also fell but this was positive for the Indian economy as India had a huge demand in the domestic markets. The aviation sector was expected to benefit with lower prices on international routes. The pressure on prices of oil would reduce but it would have a negative effect for oil producers such as Natural Gas Corp. Ltd (ONGC). These effects are immediate after Brexit referendum. This position is likely to change with the new government and its policies. There is positivity and a wait and watch situation as the future may be bright with Brexit.

Preeti Singh

(Preeti Singh)

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INVENTORS' AWARENESS ABOUT PATENTING IN INDIA: AN EMPIRICAL STUDY

Krishana Kumar Khandelwal★ M.S. Turan★★

The present paper attempts to examine the level of awareness among the researchers of different disciplines about the patent procedures in particular and IPRs in general according to their teaching and research experiences, number of national and international publications, number of national and international patents filed and granted, etc. The study is based on primary data collected via a structured questionnaire using five point scale i.e. not at all, little extent, some extent, large extent and full extent, which was administered online to faculties of various disciplines of educational institutes of national importance i.e. Central Universities, NITs, IITs, etc. The collected data are analyzed with the help of frequency distribution and percentage method using SPSS (18 Version). ANOVA technique is used to validate the results of the study. It is found that the respondents from IT and engineering discipline, having teaching experience of 17-24 years and research experience of 21-30 years, having 21-40 publications in national journals and 0-15 publications in international journals, and those who have filed and granted 0-3 patents agree to a full extent that they have the knowledge about the different aspects of IPR management, particularly patenting filing procedure and post filing challenges. The awareness does not differ across independent variables, except according to number of patents filed.

Keywords: Discipline, Patenting, Procedure, Administered, IPRs

An intellectual property, as the name suggests, is an asset which is creation of mind. Such properties may include art and literary works, inventions of new products and processes, signs, symbols or designs, etc. An intellectual property right may be like any other property right. Such rights give the owner an opportunity to get exclusive benefit from the creations of their minds. The popularity of intellectual property rights and their exclusive usage is now commonly known as 'knowledge economy'. However, it is felt that the existing management practices need to change to cope with the challenges of new knowledge economy. The management of knowledge based assets such as innovations and know-how makes their understanding all the more important. The success of institutions and enterprises is dependent on the time for grasping knowledge. The lesser time they take; higher will be the chances of their success. Thus, the velocity of time taken in grasping new knowledge is an important parameter for success. The changing trade environment has made intellectual property rights (IPR) more important. Such environment is characterized by the features of stiff global competition, high risk in innovations, short product life cycle, gale of disruptive technologies, high commitments in research and development (R&D) activities, newer investments in production and marketing and need for highly skilled human resources, etc.

The globalization has broken the geographical barriers, setting a new emerging economic order. But the new economic order has also introduced added variables causing uncertainties and complexities in global trade. The different countries simultaneously use many products and technologies which are facilitated by the opening up of trade in goods and services. This has made intellectual property rights (IPR) more susceptible to infringements.

This harms the creators of knowledge by reducing their return on time and money investments. To keep up the pace of new innovations, it is imperative that developers of such products and technologies not only get full compensation of R&D costs and other costs associated with introduction of new products in the market, but also generate enough profits to keep up the pace of their efforts. This will be possible only if their rights are protected and they get rights of exclusivity for a fairly long period of time. As creation of intellectual property requires huge investment of money and time along with very high mortality rate of new technology, its protection needs appropriate regulations, newer constructs and processes of management, facilities for commercialization of new ideas and technologies, etc. This more true of capital intensive industries like pharmaceuticals, software and hardware, biotechnology, agriculture and industry machinery, etc. No company would like to risk its intellectual property becoming a public property without adequate returns on

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it. The risks that a company takes are mostly at the developmental stage and the returns are generated at the stage of its commercialization.The realization of the potential of intellectual property as a catalyst for economic and cultural well being needs 'efficient and equitable intellectual property system'. Such a system helps strike a balance between the interests of innovators and the public interest, providing an environment in which creativity and invention can flourish, for the benefit of all.

I. Review of Literature

Articles appeared in different journals on different aspects of patenting are restrictive in nature and do not give a comprehensive view. Rady (2002) analysed the general intellectual property rights and concluded that intellectual property rights have been being a main driving force in economic development. But developed countries have still not reached a satisfactory level of enforcement. They have to permanently improved IP related laws in order of guarantee the adequate and effective protection of industrial property and to bring their legal framework in full compliance with internationally establishment rules for the protection of intellectual property including the TRIPTS-WTO agreement. David, Gene, Joseph, Edward and John (2005) found that companies which are skilled at managing intellectual property as a business strategy protect the core of the business while licensing intellectual property to generate a return on investment. For the success of any intellectual asset management program, the development of a reasonable and defensive valuation model is very necessary. Jain and Sharma (2006) evaluated the role of intellectual property management system in building organizational capabilities to achieve sustainable competitive advantage and recommended that IP needs to be managed according to the business strategy and innovation practices of the organization. Stiglitz (2008) studied the economic foundations of intellectual property rights and found that the importance of intellectual property rights has been exaggerated, as they form only one part of innovation system. He suggested that there is a need to strengthen the other elements of this portfolio and redesign the intellectual property regime to increase its benefits and reduce its costs. Musyuni (2011) emphasized that for IPR management is just beginning and more awareness is required for better growth and concluded that IPR is definitely a boon for all the mystery to fight against competition. There is still a long way to go for creating awareness among the business people of India for proper utilization of IP and government should compensate with adequate incentives and awards for the innovation. Lianos and Dryfuss (2013) studied the new challenges in the intersection of intellectual property rights with competition law and found that the intersection between these two gives rise to complex trade-offs between incentives to innovate and dissemination of innovation, static and dynamic efficiency. Cong Xu (2014) studied the comparative analysis of intellectual property between China and the West and found that the potential and inherent difficulties encountered by China's intellectual property protection and the current perception of the intellectual property system amongst its people affected by the deep-rooted Chinese culture. The Chinese intellectual property culture has been deemed as a result of the deficiency and low efficiency of the legal execution system.

Problem Statement

The review of literature presented in this paper and several other articles reviewed but could not be cited here to avoid details have revealed that studies have hardly touched the aspect of awareness about different aspects of IPR management, particularly patent filing procedure and post filing challenges. Therefore, this paper has been devoted to examining this research question.

Research Objective

The present paper attempts to examine the level of awareness among the researchers of different disciplines about the patenting procedures in particular and IPRs in general according to their teaching and research experiences, number of national and international publications, number of national and international patents filed and granted, etc.

Research Hypotheses

In the broader framework of above research objectives, an attempt has been made to test the following hypothesis:

Respondents' awareness about IPR management and patenting procedures does not significantly differ across their disciplines, teaching experience, research experience, number of national publications, international publications, number of patents filed and number of patents granted.

II. Data collection and data analysis

The present study is of exploratory-cum-analytical in nature. The use is made of mainly primary data collected with the help of questionnaire on five point scale i.e. not at all, little extent, some extent, large extent and full extent, which was administered online to faculties of various disciplines of educational institutes of national importance i.e. Central Universities, NITs, IITs, etc. 240 questionnaires were

received from the respondents and only 190 questionnaires of them were found complete and used for further analysis. The collected data are analyzed with the help of frequency distribution and percentage method using SPSS (18 Version). ANOVA technique is used to validate the results of the study.

III. Results and Discussion

The results about awareness of respondents towards patenting on the basis of discipline, teaching experience, research experience, papers published in national and international journals, patents filled and patents granted are given in Table 1-7.

1. Discipline-wise awareness

It would be interesting and instructive to ascertain the level of researcher respondents' awareness about management of IPRs, particularly the patent filing and grant procedures and post grant challenges. In this regard Table-1 depicts respondents' distribution on five different levels of awareness across four different disciplines as well as at the overall level. The table shows that the largest number of respondents i.e. 93 (48.9 percent) agree to a full extent that they have the knowledge about the patenting in India of which 49 respondents (25.8 percent) belong to IT and engineering, 25 respondents (13.2 percent) belong to physical sciences and 16 respondents (8.4 percent) belong to the life sciences, followed by the respondents of the same discipline in the category of large extent and some extent. The respondents discerning total absence of awareness (0.5 percent) or having little extent of awareness (4.7 percent) comprise merely 5.2 percent of the overall sample. The remaining respondents have either some awareness (19.5 percent) or awareness to large extent (26.3 percent) or full extent (48.9 percent). With a view to know inter-discipline significance of differences, ANOVA was run to test the hypotheses i.e. there are no significant inter-discipline differences with regard to respondents' level of awareness about IPR management and patenting procedures. Statistically, the results show that there is no significant difference among the discipline-wise respondents at 5 percent level of significance (p=0.488; df=3,186). Thus, the aforesaid null hypothesis stands accepted. Please see table 1.

2. Teaching experience wise awareness

The responses regarding teaching experience-wise awareness of the inventors towards patenting are given in Table-2, which shows that majority of the respondents i.e. 93 (48.9 percent) agree to a full extent that they have the knowledge about the patenting in India of which 19 respondents (10 percent) belong to the group of 25 years and above, 17 respondents (13.2 percent) belong to the group of 17-24 years, 30 respondents (15.8 percent) belong to the group of 9-16 years and 8 respondents (4.2 percent) belong to the group of 0-8 years, followed by the respondents of the same groups in the category of large extent and some extent. The respondents discerning total absence of awareness (0.5 percent) or having little extent of awareness (4.7 percent) comprise merely 5.2 percent of the overall sample. The remaining respondents have either some awareness (19.5 percent) or awareness to large extent (26.3 percent) or full extent (48.9 percent). With a view to know the significance of differences on the basis of teaching experience, ANOVA was run to test the hypotheses i.e. the length of teaching experience does not reveal significant differences about the respondents' level of awareness regarding IPR management and patenting procedures. Statistically, ANOVA results show that there is no significant difference among the respondents towards patenting on the basis of their teaching experience at 5 percent level of significance (p=0.117; df=3,186), therefore, the aforesaid null hypothesis is accepted. Please see Table 2.

3. Research experience wise

The responses regarding research experience-wise awareness of the inventors towards patenting are given in Table-3, which shows that majority of the respondents i.e. 93 (48.9 percent) agree to a full extent that they have the knowledge about the patenting in India of which 6 respondents (3.2 percent) belong to the group of 31 years and above, 42 respondents (22.1 percent) belong to the group of 21-30 years, 38 respondents (20 percent) belong to the group of 11-20 years and 7 respondents (3.7 percent) belong to the group of 0-10 years, followed by the respondents of the same groups in the category of large extent and some extent. The respondents discerning total absence of awareness (0.5 percent) or having little extent of awareness (4.7 percent) comprise merely 5.2 percent of the overall sample. The remaining respondents have either some awareness (19.5 percent) or awareness to large extent (26.3 percent) or full extent (48.9 percent). With a view to know the significance of differences on the basis of research experience, ANOVA was run to test the hypotheses i.e. the length of research experience does not reveal significant differences about the respondents' level of awareness regarding IPR management and patenting procedures. Statistically, ANOVA results show that there is no significant difference among the respondents towards patenting on the basis of their research experience at 5

percent level of significance (p=0.130; df=3,186), therefore, the aforesaid null hypothesis is accepted. Please see Table 3.

4. Number of national publications wise

The responses regarding awareness of the inventors towards patenting on the basis of research papers published in national journals are given in Table-4, which shows that majority of the respondents i.e. 93 (48.9 percent) agree to a full extent that they have the knowledge about the patenting in India of which 2 respondents (1.1 percent) belong to the group of 81 and above, 11 respondents (5.8 percent) belong to the group of 61-80, 20 respondents (10.5 percent) belong to the group of 41-60, 38 respondents (20 percent) belong to the group of 21-40 and 22 (11.6 percent) respondents belong to the group of 0-20, followed by the respondents of the same groups in the category of large extent and some extent. The respondents discerning total absence of awareness (0.5 percent) or having little extent of awareness (4.7 percent) comprise merely 5.2 percent of the overall sample. The remaining respondents have either some awareness (19.5 percent) or awareness to large extent (26.3 percent) or full extent (48.9 percent). With a view to know the significance of differences on the basis of national publications, ANOVA was run to test the hypotheses i.e. the number of publications in national journals does not reveal significant differences about the respondents' level of awareness regarding IPR management and patenting procedures. Statistically, ANOVA results show that there is no significant difference among the respondents towards patenting on the basis of the national publications at 5 percent level of significance (p=0.100; df=4,185), therefore, the aforesaid null hypothesis is accepted. Please see Table 4.

5. Number of international publications

The responses regarding awareness of the inventors towards patenting on the basis of research papers published in international journals are given in Table-5, which shows that majority of the respondents i.e. 93 (48.9 percent) agree to a full extent that they have the knowledge about the patenting in India of which 2 respondents (1.1 percent) belong to the group of 46 and above, 7 respondents (3.7 percent) belong to the group of 31-45, 34 respondents (17.9 percent) belong to the group of 14-30 and 50 respondents (26.3 percent) belong to the group of 0-15, followed by the respondents of the same groups in the category of large extent and some extent. The respondents discerning total absence of awareness (0.5 percent) or having little extent of awareness (4.7 percent) comprise merely 5.2 percent of the overall sample. The remaining respondents have either some awareness (19.5 percent) or awareness to large extent (26.3 percent) or full extent (48.9 percent). With a view to know the significance of differences on the basis of national publications, ANOVA was run to test the hypotheses i.e. the number of publications in international journals does not reveal significant differences about the respondents' level of awareness regarding IPR management and patenting procedures. Statistically, ANOVA results show that there is no significant difference among the respondents towards patenting on the basis of their international publications at 5 percent level of significance (p=0.902; df=3,186), therefore, the null hypothesis is accepted. Please see Table 5.

6. Number of patents filed wise

The responses regarding awareness of the inventors towards patenting on the basis of patents filed are given in Table-6, which shows that majority of the respondents i.e. 93 (48.9 percent) agree to a full extent that they have the knowledge about the patenting in India of which 6 respondents (3.2 percent) belong to the group of 7 and above, 40 respondents (21.1 percent) belong to the group of 4-7 and 47 respondents (24.7 percent) belong to the group of 0-3, followed by the respondents of the same groups in the category of large extent and some extent. The respondents discerning total absence of awareness (0.5 percent) or having little extent of awareness (4.7 percent) comprise merely 5.2 percent of the overall sample. The remaining respondents have either some awareness (19.5 percent) or awareness to large extent (26.3 percent) or full extent (48.9 percent). Please see Table 6.

With a view to know the significance of differences on the basis of patents filed, ANOVA was run to test the hypotheses i.e. the number of patents filed does not reveal significant differences about the respondents' level of awareness regarding IPR management and patenting procedures. Statistically, ANOVA results show that there is a significant difference among the respondents towards patenting on the basis of the patents filed at 5 percent level of significance (p=0.019; df=2,187), therefore, the aforesaid null hypothesis is rejected.

7. Number of patents granted wise

The responses regarding awareness of the inventors towards patenting on the basis of patents granted are given in Table-7, which shows that majority of the respondents i.e. 93 (48.9 percent) agree to a full extent that they have the knowledge about the patenting in India of which 75

respondents (39.5 percent) belong to the group of 0-3 and 18 respondents (9.5 percent) belong to the group of 4-6, followed by the respondents of the same groups in the category of large extent and some extent. However no respondent belong to the group of 7 and above. The respondents discerning total absence of awareness (0.5 percent) or having little extent of awareness (4.7 percent) comprise merely 5.2 percent of the overall sample. The remaining respondents have either some awareness (19.5 percent) or awareness to large extent (26.3 percent) or full extent (48.9 percent). Please see Table 7.

With a view to know the significance of differences on the basis of patents granted, ANOVA was run to test the hypotheses i.e. the number of patents granted does not reveal significant differences about the respondents' level of awareness regarding IPR management and patenting procedures. Statistically, ANOVA results show that there is no significant difference among the respondents towards patenting on the basis of the patents granted ($p=0.209$; $df=2,187$), therefore, the aforesaid null hypothesis is accepted.

Conclusion

As a summary, respondents from IT and engineering discipline, having teaching experience of 17-24 years and research experience of 21-30 years, having 21-40 publications in national journals and 0-15 publications in international journals, and those who have filed and granted 0-3 patents agree to a full extent that they have the knowledge about the different aspects of IPR management, particularly patenting filing procedure and post filing challenges. Further, the study reveals that the selected independent variables, except number of patents filed, did not make any significant difference with regard to the level of awareness in this regard. Therefore the null hypothesis stands accepted in the case six out of seven independent variables. However, in the case of the variable, number of 'patents filed', the hypothesis stands rejected, implying the perceived awareness of respondents differ across the numbers of patents they have filed.

References

Cong Xu (2014). Comparative Analysis of Intellectual Property between China and the West: A Cultural Perspective. Journal of Intellectual Property Rights, 19 (1), 202-208.

Goldheim David, Slowinski Gene, Daniele Joseph, Hummel Edward and Tao John (2005). Extracting Value from Intellectual Assets. Research Technology Management, 48 (2), 43-48.

Ioannis Lianos and Dryfuss, Rochelle C. (2013). New Challenges in Intersection of Intellectual Property Right with Competition Law. CLES Working Paper Series, 4, 1-157.

Jain, Karuna and Sharma, Vandana (2006). Intellectual Property Management System: An Organizational Perspective. Journal of Intellectual Property Rights, 11 (2), 330-333.

Musyni, Pankaj (2011). Overview of assets of Intellectual Property Rights: Strategic Management Option for Competitiveness and Globalization Challenges. International Journal of Pharmacy & Life Science, 7 (2), 940-944.

Rady, O. P. (2002). The General Intellectual Property Rights Research. The World Intellectual Property Organisation, 1-97.

Stiglitz, Joseph E. (2008). Economic Foundations of Intellectual Property Rights. Duke Law Journal, 57, 1693-1724.

Table 1: Discipline-wise Awareness

Disciplines	N/P	Not at all	Little Extent	Some Extent	Large Extent	Full Extent	Total	ANOVA	
								F (df=3,186)	Sig.
Management	N	0	0	0	0	3	3	0.813	0.488
	P	.0	.0	.0	.0	1.6	1.6		
Life science	N	0	1	7	9	16	33		
	P	.0	.5	3.7	4.7	8.4	17.4		
Physical sciences	N	1	2	8	15	25	51		
	P	.5	1.1	4.2	7.9	13.2	26.8		
IT and Engineering	N	0	6	22	26	49	103		
	P	.0	3.2	11.6	13.7	25.8	54.2		
Total	N	1	9	37	50	93	190		
	P	.5	4.7	19.5	26.3	48.9	100.0		

Source: Survey, Note: N= Number of Respondents, P= Percent.
Note: df=Degrees of freedom, *Significant at 5 percent level of Significance.

Table 2: Awareness on the Basis of Years of Teaching Experience

Experience (Years)	N/P	Not at all	Little Extent	Some Extent	Large Extent	Full Extent	Total	ANOVA	
								F (df=3,186)	Sig.
0-8	N	0	1	8	9	8	26	1.992	0.117
	P	.0	.5	4.2	4.7	4.2	13.7		
9-16	N	0	6	13	23	30	72		
	P	.0	3.2	6.8	12.1	15.8	37.9		
17-24	N	1	2	8	10	36	57		
	P	.5	1.1	4.2	5.3	18.9	30.0		
25 and above	N	0	0	8	8	19	35		
	P	.0	.0	4.2	4.2	10.0	18.4		
Total	N	1	9	37	50	93	190		
	P	.5	4.7	19.5	26.3	48.9	100.0		

Source: Survey, Note:N=No. of Respondents, P=Percent.
Note: df= Degrees of freedom, *Significant at 5 percent level of Significance.

Table 3: Awareness on the Basis of Years of Research Experience

Experience Years)	N/P	Not at all	Little Extent	Some Extent	Large Extent	Full Extent	Total	ANOVA	
								F (df=3,186)	Sig.
0-10 years	N	0	1	4	5	7	17	1.908	0.130
	P	.0	.5	2.1	2.6	3.7	8.9		
11-20 years	N	1	7	16	29	38	91		
	P	.5	3.7	8.4	15.3	20.0	47.9		
21-30 years	N	0	1	13	11	42	67		
	P	.0	.5	6.8	5.8	22.1	35.3		
31years and More	N	0	0	4	5	6	15		
	P	.0	.0	2.1	2.6	3.2	7.9		
Total	N	1	9	37	50	93	190		
	P	.5	4.7	19.5	26.3	48.9	100.0		

Source: Survey, Note: N=No. of Respondents, P= Percent.
Note: df= Degrees of freedom, *Significant at 5 percent level of Significance

Table 4: Awareness on the Basis of Number of National Publications

No. of Papers	N/P	Not at all	Little Extent	Some Extent	Large Extent	Full Extent	Total	ANOVA	
								F (df=4,185)	Sig.
0-20	N	0	5	9	18	22	54	1.974	0.100
	P	.0	2.6	4.7	9.5	11.6	28.4		
21-40	N	1	3	19	25	38	86		
	P	.5	1.6	10.0	13.2	20.0	45.3		
41-60	N	0	1	8	3	20	32		
	P	.0	.5	4.2	1.6	10.5	16.8		
61-80	N	0	0	0	3	11	14		
	P	.0	.0	.0	1.6	5.8	7.4		
81 and Above	N	0	0	1	1	2	4		
	P	.0	.0	.5	.5	1.1	2.1		
Total	N	1	9	37	50	93	190		
	P	.5	4.7	19.5	26.3	48.9	100.0		

Source: Survey, Note: N= No. of Respondents, P= Percent.
Note: df= Degrees of freedom, *Significant at 5 percent level of Significance.

Table 5: Awareness on the Basis of Number of International Publications

No of Papers	N/P	Not at all	Little Extent	Some Extent	Large Extent	Full Extent	Total	ANOVA	
								F (df=3,186)	Sig.
0-15	N	0	5	21	28	50	104	0.191	0.902
	P	.0	2.6	11.1	14.7	26.3	54.7		
16-30	N	1	3	11	14	34	63		
	P	.5	1.6	5.8	7.4	17.9	33.2		
31-45	N	0	1	4	8	7	20		
	P	.0	.5	2.1	4.2	3.7	10.5		
46 and above	N	0	0	1	0	2	3		
	P	.0	.0	.5	.0	1.1	1.6		
Total	N	1	9	37	50	93	190		
	P	.5	4.7	19.5	26.3	48.9	100.0		

Source: Survey, Note: N= No. of Respondents, P= Percent.
Note: df= Degrees of freedom, *Significant at 5 percent level of Significance.

Table 6: Awareness on the Basis of Number of Patents Filed

No. of Patents	N/P	Not at all	Little Extent	Some Extent	Large Extent	Full Extent	Total	ANOVA	
								F (df=2,187)	Sig.
0-3	N	1	6	28	36	47	118	4.074	0.019*
	P	.5	3.2	14.7	18.9	24.7	62.1		
4-6	N	0	3	7	13	40	63		
	P	.0	1.6	3.7	6.8	21.1	33.2		
7 and above	N	0	0	2	1	6	9		
	P	.0	.0	1.1	.5	3.2	4.7		
Total	N	1	9	37	50	93	190		
	P	.5	4.7	19.5	26.3	48.9	100.0		

Source: Survey, Note: N= No. of Respondents, P= Percent.
Note: df= Degrees of freedom, *Significant at 5 percent level of Significance.

Table 7: Awareness on the Basis of Number of Patents Granted

No. of Patents	N/P	Not at all	Little Extent	Some Extent	Large Extent	Full Extent	Total	ANOVA	
								F (df=2,187)	Sig.
0-3	N	1	8	34	44	75	162	1.579	0.209
	P	.5	4.2	17.9	23.2	39.5	85.3		
4-6	N	0	1	3	5	18	27		
	P	.0	.5	1.6	2.6	9.5	14.2		
7 and above	N	0	0	0	1	0	1		
	P	.0	.0	.0	.5	.0	.5		
Total	N	1	9	37	50	93	190		
	P	.5	4.7	19.5	26.3	48.9	100.0		

Source: Survey, Note: N= No. of Respondents, P= Percent.
Note: df= Degrees of freedom, *Significant at 5 percent level of Significance.

PERCEPTION OF EDUCATORS ON ENTREPRENEURSHIP EDUCATION: AN EMPIRICAL STUDY

Manish Madan★ Ankita Popli★★

The aim of the study is basically to analyze the perception of educators on relationship between encouraging entrepreneurs, development of incubation centers, subjects on entrepreneurship and entrepreneurship education in higher education institutions and also to find the association between perceptions of educators on entrepreneurial attitude, funding agencies and entrepreneurship education in higher education institutions.This study investigates the factors which affect the perception of educators on entrepreneurship education and to suggest strategies/model to motivate students to become entrepreneurs after completing their professional education from the higher education institutions.The study is exploratory in nature. A systemized and organized study was done to reach the desired objectives of the study. The responses are obtained from theteachers of various higher education institutions in National Capital Region of India. This study is restricted to teachers of various higher education institutions in Delhi and NCR. The importance of this study is that it focuses on identifying the various factors affecting the perception of educators on the entrepreneurship education in higher education institutions.

Keywords: Attitude, Educators, Entrepreneurship, Higher Education, Incubation Centers and Perception.

Wealth and a high majority of jobs are created by small businesses started by entrepreneurially minded individuals, many of whom go on to create big businesses. Entrepreneurship education can positively impact a learner at all levels in a wide number of contexts. This may explain why there are such a wide variety of entrepreneurship education programs, all of which can provide important outcomes at various stages of a learner's life. As supporters of entrepreneurship education the Consortium for Entrepreneurship Education applauds the great diversity of programs that fall under the framework of the National Standards for Entrepreneurship Education.The role of entrepreneurship in society has become more prominent and the general opinion is that entrepreneurial training should be included, not only in business economics, but also in other subjects. More entrepreneurship studies are especially required in technical training, and for example discussion on care entrepreneurship has made the topic of entrepreneurship studies also relevant to the healthcare business. At the Ministry of Education and the National Board of Education, in Finland promoting entrepreneurship is seen as a pedagogical target area throughout the whole educational system.Entrepreneurial teachers have a passion for teaching. They are inspirational, open-minded and confident, flexible and responsible but also, from time to time, rule-breakers. They listen well, can harness and sell ideas and can work student- and action-oriented. They are team players and have a good network.They seek to close the gap between education and economy and include external experts in their teaching; focusing on real-life experiences. They always refer to the economic aspect of a topic; and business-related subjects play an important role in their classes-across the disciplines.

I. Review of Literature

Robinson et al. (1994) found in their study that there is a strong relationship between education and the probability of becoming an entrepreneur and the probability of having success as an entrepreneur. Kolvereid et al. (1997) found that graduates who majored in entrepreneurship had a higher likelihood of becoming entrepreneurs after graduation.Chen et al. (1998) found a correlation between the number of management coursestaken by students in non-management majors and entrepreneurial intention. Menzies et al. (2002, 2003) found that those who took electives in entrepreneurship were more likely to found a business and reach a higher management status than those who did not study entrepreneurship subjects. Not only in the USA but also in German-speaking countries, strong growth in entrepreneurship courses and professorships can be observed (Klandt, 2004).Linan (2004) found that there are four different kinds of entrepreneurship education programmes. The first, "Entrepreneurial Awareness Education", aims to increase knowledge about entrepreneurship and to influence attitudes that may impact intentions. The positive impact of entrepreneurship

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education is further complemented by meta-studies of entrepreneurship education (Bechard et al., 2005; Dickson, Solomon, & Weaver, 2008; Mwasalwiba, 2010; Pittaway et al., 2007).The past two decades have witnessed significant growth in entrepreneurship education in most industrialized countries (Matlay& Carey, 2006).If you ask the 5000+ entrepreneurship professors worldwide and the millions of students who join their entrepreneurship classes, you will most probably receive a different answer (Katz, 2007).The growth "can be seen as indicative of widespread governmental belief in the positive impact that entrepreneurship can have on the socio-economic and political infrastructure of a nation" (Matlay, 2008: 382).By offering new entrepreneurship education programmes, the initiators follow "conventional wisdom" (Souitaris, Zerbinati, & Al-Laham, 2007:566). Souitaris et al. (2007) recognized this challenge and provided a solution for it: Based on the literature, they define what constitutes a "good-practice" entrepreneurship education programme and then employ this basis to compare entrepreneurship education programmes According toAthayde (2009), an ex-ante/ex-post-test design will balance out any differences between the groups and focus only on the increase or decrease of the constructs (Athayde, 2009).If you want to become an entrepreneur, you need tolearn "how" first. Research has, to date, contributed to this belief and underlined thepositive impact of entrepreneurship education (Chrisman, 1997; Peterman & Kennedy, 2003; Zhao,Seibert, & Hills, 2005).

Objectives of the study

General Objective:

To Examine and Analyze the perception of educators on the entrepreneurship education in higher education institutions.

Specific Objectives:

1. To analyze the perception of educators on relationship between encouraging entrepreneurs, development of incubation centers, subjects on entrepreneurship and entrepreneurship education in higher education institutions.
2. To find the association between perceptions of educators on entrepreneurial attitude, funding agencies and entrepreneurship education in higher education institutions.
3. To develop a model for development of entrepreneurship education in higher education institutions.

II. Research Design & Methods

Hypothese of study

On the basis of review of literature and objectives, the following hypotheses were formulated: -

H1:Whether there is any significant relationship between genders towards perception of educators on entrepreneurship education.

H2:Whether there is any significant relationship between age groups towards perception of educators on entrepreneurship education.

H3:Whether there is any significant relationship between encouraging entrepreneurs and perception of educators on entrepreneurship education.

H4:Whether there is any significant relationship between development of incubation centers and perception of educators on entrepreneurship education.

H5:Whether there is any significant relationship between subjects on entrepreneurship and perception of educators on entrepreneurship education.

H6: Whether there is any significant relationship between entrepreneurial attitude and perception of educators on entrepreneurship education.

H7: Whether there is any significant relationship between funding agencies and perception of educators on entrepreneurship education.

Study Model

The study model based on hypotheses is given in Figure 1.

From the study model the equation of perception of educators on entrepreneurship education is derived as follows:-

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + E$$

In the above equation,

Y = Perception of Educators about Entrepreneurship Education

X_1 = Gender and Age of Educators

X_2 = Encouraging Entrepreneurs

X_3 = Development of Incubation Centers

X_4 = Subjects on Entrepreneurship

X_5 = Entrepreneurial Attitude

X_6 = Funding Agencies

The study is exploratory in nature. A systemized and organized study was done to reach the desired objectives of the study. The responses obtained from the respondents i.e. educators teaching in various higher education institutions in National Capital Region of India. The importance of this study is that it focuses on identifying the various entrepreneurial education factors and perception of educators on entrepreneurship education in higher education institutions.

Sources of Data

To cater the need of the research, the researchers have used primary data through structured Questionnaire and as far as the secondary data is concerned that was obtained from various web sites, and journals etc. to explore the entrepreneurial education factors and perception of educators on entrepreneurship education in higher education institutions.

Sampling Technique

Judgmental and Convenient sampling technique was used to gather data from the respondents, because of which respondents diverged from every age group, gender, religions, marital status, etc. but were restricted only to educators teaching in various higher education institutions in National Capital Region of India.

Data Collection Technique

Primary data were collected from various educators teaching in various higher education institutions in National Capital Region of India. There were532 respondents and out of which 422 were selected for study. Self-constructed structured questionnaire was used to interview the various educators teaching in various higher education institutions in National Capital Region of India.

Statistical Tools Used

IBM SPSS 20 (Statistical Package for the Social Sciences), for data analysis which includeMann Whitney U test, Kruskal Wallis H test, Correlation, and Regression analysis and for the reliability the Cronbach's Alpha was calculated and sample adequacy was tested on KMO and Bartlett's Test.

About the Questionnaire

A self-constructed well-structured questionnaire is used for the collection of data. It is designed in such a manner to explore the general opinion of various educators teaching in various higher education institutions in National Capital Region of India. The questionnaire was divided into three parts: First part contains questions related to the demographic profile of educators teaching in various higher education institutions in National Capital Region of India., Second part contains 21 items related to the perception of educators about entrepreneurship education and third part of the questionnaire contains 2 items related to the entrepreneurship education. So, overall perception of educators about entrepreneurship education is measured on 21 variables and five dimensions. The questionnaire was developed on five point Likert's scale where 1 is strongly disagree to 5 as strongly agree.

III. Results & Discussions

Reliability Analysis

In order to check the reliability of the questionnaire, the Cronbach's Alpha test was applied. The value of Cronbach's alpha is found to be 0.852 in Encouraging Entrepreneurs, 0.726 in Development of Incubation Centers, 0.717 in Subjects on Entrepreneurship, 0.828 in Entrepreneurial Attitude, 0.793 in Funding Agencies, and 0.785 in Whole Questionnaire, which is well above than 0.6.As the value of Cronbach's Alpha is more than 0.6, which considers the instrument to be reliable for the study.Therefore, the high Cronbach's Alpha coefficient in this study represents a high consistency and reliability among statements in questionnaire.

Validity Analysis

Kaiser-Meyer-Olkin test was done to measure the homogeneity of variables and Bartlett's test of sphericity was done to test for the correlation among the variables used. From table 2, it is found that the value for Kaiser-Meyer-Olkin Measure of Sampling Adequacy was more than 0.6 in all the parts of questionnaire, as it is 0.824. Also Bartlett's Test of Sphericity has significant value less than 0.05 at 5 % level of significance in all the parts of questionnaire. Thus it is concluded that instrument is accepted for the study.

Factor Analysis

Factor analysis was done using the principal component,varimax rotation was applied on 21 variables. Based on the factor loadings, these 21 items were divided into five factors namely:-

Factor 1: This factor explains the First component and is designated as "Encouraging Entrepreneurs" (EE).

Factor 2: This factor explains the Second component and is designated as Development of Incubation Centers (DIC).

Factor 3: This factor explains the Third component and is designated as "Subjects on Entrepreneurship" (SE).

Factor 4: This factor explains the Fourth component and is designated as "Entrepreneurial Attitude" (EA).

Factor 5: This factor explains the Fifth component and is designated as "Funding Agencies" (FA).

Coefficients of correlation

Karl Pearson Coefficient of correlation was calculated to find the significant relationships between dimensions.From Table 3, it is quite clear that the perception of educators (PE) on entrepreneurship education is found to be significantly associated with the Encouraging Entrepreneurs, Development of Incubation Centers, Subjects on Entrepreneurship, Entrepreneurial Attitude and Funding Agencies. However there is some association in some variables while some have no relationship at all.

Hypothesis testing

Hypothesis 1

H1:Whether there is any significant relationship between genders towards perception of educators on entrepreneurship education.

Mann Whitney U test was applied to find the significant relationship between genders of educators educating in the higher education institutions and the perception of educators on the entrepreneurship education.

Thus from table 5, it is quite clear that there is significant difference in the factors Subjects on Entrepreneurship, Entrepreneurial Attitude and Funding Agencies. The significant value for Subjects on Entrepreneurship, Entrepreneurial Attitude and Funding Agencies is found to be 0.034, 0.002 and 0.021 which is less than 0.05 that means these factors are found to be significant at 5% level of significance. Thus for these factors the null hypothesis is rejected and alternative hypothesis is accepted while for Encouraging Entrepreneur and Development of Incubation Centres, null hypothesis is accepted while alternative hypothesis is rejected. Thus there is significant relationship between genders towards perception of educators on entrepreneurship education for the factors Subjects on Entrepreneurship, Entrepreneurial Attitude and Funding Agencies.

Hypothesis 2

H2:Whether there is any significant relationship between age groups towards perception of educators on entrepreneurship education.

Kruskal Wallis test was applied to find the significant relationship between age groups of educators educating in the higher education institutions and the perception of educators on the entrepreneurship education.

Thus from table 7, it is quite clear that there is significant difference in the factors Subjects on Entrepreneurship, Entrepreneurial Attitude and Funding Agencies. The significant value for Subjects on Entrepreneurship, Entrepreneurial Attitude and Funding Agencies is found to be 0.037, 0.002 and 0.001 which is less than 0.05 that means these factors are found to be significant at 5% level of significance. Thus for these factors the null hypothesis is rejected and alternative hypothesis is accepted while for Encouraging Entrepreneur and Development of Incubation Centers, null hypothesis is accepted while alternative hypothesis is rejected. Thus there is significant relationship between age groups of educators towards perception of educators on entrepreneurship education for the factors Subjects on Entrepreneurship, Entrepreneurial Attitude and Funding Agencies.

Hypothesis 3

H3:Whether there is any significant relationship between encouraging entrepreneurs and perception of educators on entrepreneurship education.

The multiple regressionanalysis from Table 8 identifies that Perception of educators educating in higher education institutions is positively affected by Educating Entrepreneursand Table 9 also shows the positive association between the educating entrepreneurs andPerception of educators educating in higher education institutions. It is further observed that 68.4% of the variation in perception of educators on entrepreneurship education is explained by the encouraging entrepreneurs and the significant value shows the acceptance of alternate hypothesis.

Hypothesis 4

H4:Whether there is any significant relationship between development of incubation centers and perception of educators on entrepreneurship education.

The multiple regressionanalysis from Table 10 identifies that Perception of educators educating in higher education institutions is positively affected by Development of Incubation Centersand Table 11also shows the positive association between the Development of Incubation Centers andPerception of educators educating in higher education

institutions. It is further observed that54.2% of the variation in perception of educators on entrepreneurship education is explained by the Development of Incubation Centers and the significant value shows the acceptance of alternate hypothesis.

Hypothesis 5

H5:Whether there is any significant relationship between subjects on entrepreneurship and perception of educators on entrepreneurship education.

The multiple regressionanalysis from Table 11 identifies that Perception of educators educating in higher education institutions is positively affected by Subjects on Entrepreneurship and Table 12also shows the positive association between the Subjects on Entrepreneurship and Perception of educators educating in higher education institutions. It is further observed that 27.9% of the variation in perception of educators on entrepreneurship education is explained by the Subjects on Entrepreneurship and the significant value shows the acceptance of alternate hypothesis.

Hypothesis 6

H6: Whether there is any significant relationship between entrepreneurial attitude and perception of educators on entrepreneurship education.

The multiple regression analysis from Table 13 identifies that Perception of educators educating in higher education institutions is positively affected by Entrepreneurial Attitude and Table 14also shows the positive association between the Entrepreneurial Attitude andPerception of educators educating in higher education institutions. It is further observed that85.4% of the variation in perception of educators on entrepreneurship education is explained by the Entrepreneurial Attitudeand the significant value shows the acceptance of alternate hypothesis.

Hypothesis 7

H7: Whether there is any significant relationship between funding agencies and perception of educators on entrepreneurship education.

The multiple regressionanalysis from Table 15 identifies that Perception of educators educating in higher education institutions is positively affected by Funding Agenciesand Table 16also shows the positive association between the Funding AgenciesandPerception of educators educating in higher education institutions. It is further observed that38.1% of the variation in perception of educators on entrepreneurship education is explained by the Funding Agenciesand the significant value shows the acceptance of alternate hypothesis.

A – M ENTREPRENEURSHIP EDUCATION MODEL

The study model based on hypotheses is given in Figure 2.

VALIDATION OF A – M ENTREPRENEURSHIP EDUCATION MODEL

In order to validate the model, the researchers validated the developed model by studying the impact of recommendations on a small patch of 30educatorsteaching in one of the higher education institution in Delhi. Few concrete recommendations were made to the placement manager and she was asked to stringently apply these recommendations. Data which was collected, after one month of implementation, was analysed statistically. The response scores were put in the respective regression equations. The comparison with their original scores clearly revealed that there was similarity in the significant factors. Also, the percentage of students opting to become entrepreneurs was increased significantly. It was observed that A – M Entrepreneurship EducationModel was found to be effective if applied wisely.

IV. Conclusion

The perception of educators on relationship between encouraging entrepreneurs, development of incubation centers, subjects on entrepreneurship and entrepreneurship education in higher education institutions has been highlighted in the context of this research. The association between perceptions of educators and entrepreneurial attitude, funding agencies and entrepreneurship education in higher education institutions has also been highlighted in the study. The following are the major findings of the study conducted:

- There is significant relationship between genders towards perception of educators on entrepreneurship education for the factors Subjects on Entrepreneurship, Entrepreneurial Attitude and Funding Agencies.
- There is significant relationship between age groups of educators towards perception of educators on entrepreneurship education for the factors Subjects on Entrepreneurship, Entrepreneurial Attitude and Funding Agencies.
- The perception of educators educating in higher education institutions is positively affected by Educating Entrepreneursand there ispositive association between the educating entrepreneurs andPerception of educators educating in higher education institutions and also the

perception of educators educating in higher education institutions is positively affected by the development of incubation centers in the higher education institutions.

- The significant association is being found between the perception of educators on entrepreneurship educationand the attitude of the students towards the entrepreneurship and also perception of educators found to be significantly associated with that of the funding agencies.

Recommendations

- As per the analysis of the data, it is recommended to motivate students towards entrepreneurship.
- Entrepreneurial attitude plays a vital role in becoming the entrepreneur, it is recommended to the higher education institutions to motivate the students having entrepreneurial attitude to start their own enterprises.
- Higher education institutions are recommended to make partnering with the funding agencies so that the students can avail the facilities of availing funds with the help of the institutions in which they are studying.
- The subjects on entrepreneurship helps the students to develop overall entrepreneurship skills and practical knowledge, so higher education institutions are recommended to inculcate most practical based subjects on entrepreneurship in the curriculum.
- Higher education institutions are recommended to develop incubation centers in the institutions to promote entrepreneurship in the institutions.

Limitations of study

Every study has some limitations. As far as this study is concerned, it is limited to the higher education institutions of NCR only. Also, the numbers of variables considered for this study that are related to the perception of educators on entrepreneurship are limited. There may be some gaps related to the variables that are involved in this research. The scope for future research can be undertaken as an elaborate study considering larger samples outside the domain of Delhi/NCR to make it more effective.

References

Athayde, R. (2009). Measuring Enterprise Potential in Young People.Entrepreneurship: Theory & Practice, 33(2), 481-500.

Bechard, J.P., &Gregoire, D. (2005). Entrepreneurship Education Research Revisited: The Case of Higher Education. Academy of Management Learning & Education, 4(1), 22-43.

Chen, C.C., Greene, P. G., & Crick, A. (1998).Does Entrepreneurial Self-efficacy Distinguish.Journal of Business Venturing, 13(4), 295.

Chrisman, J.J. (1997). Program Evaluation and the Venture Development Program at the University of Calgary: A research note. Entrepreneurship Theory and Practice, 22(1), 59-73.

Katz, J.A.(2007). Education and Training in Entrepreneurship. In J.R. Baum, M. Frese, R. Baron (Eds.), The psychology of entrepreneurship (2007) (pp.209-235). Lawrence Erlbaum Associates, Inc.: Mahwah, NJ.

Klandt, H. (2004). Entrepreneurship Education and Research in German-Speaking Europe.Academy of Management Learning & Education, 3(3), 293-301.

Kolvereid, L., & Moen, O. (1997). Entrepreneurship among Business Graduates: Does a major in entrepreneurship make a difference? Journal of European Industrial Training, 21(4/5), 154-160.

Linan, F. (2004). Intention-based models of entrepreneurship education: University of Seville.

Matlay, H., & Carey, C. (2006). Entrepreneurship education in the UK: a critical perspective, ISBE Conference. Cardiff.

Matlay, H. (2008). The Impact of Entrepreneurship Education on Entrepreneurial Outcomes.Journal of Small Business and Enterprise Development, 15(2), 382-396.

Menzies, T. V., &Paradi, J. C. (2002). Encouraging technology-based ventures: entrepreneurship education and engineering graduates. New England Journal of Entrepreneurship & Regional Development, 5(2), 57-64.

Menzies, T. V., &Paradi, J. C. (2003).Entrepreneurship education and engineering students - Career path and business performance.International Journal of Entrepreneurship & Innovation, 4(2), 121.

Robinson, P.B., & Sexton, E.A.(1994). The Effect of Education and Experience on self-employment success. Journal of Business Venturing, 9(2), 141-156.

Souitaris, V., Zerbinati, S., & Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. Journal of Business Venturing, 22(4), 566-591.

Table 1: Reliability Statistics

Dimension	Cronbach's Alpha
Encouraging Entrepreneurs	**0.852**
Development of Incubation Centers	**0.726**
Subjects on Entrepreneurship	**0.717**
Entrepreneurial Attitude	**0.828**
Funding Agencies	**0.793**
Whole Questionnaire	**0.785**

Table 2: KMO and Barlett's test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**0.824**
Bartlett's Test of Sphericity	Approx. Chi-Square	8738.741
	Df	610
	Sig.	**0.000**

Table 3: Coefficients of Correlation

		EE	DIC	SE	EA	FA	PE
Pearson Correlation Coefficient	**PE**	0.827	0.736	0.528	0.924	0.617	1
N		21	21	21	21	21	21
Sig. (2–tailed)		**0.000***	**0.001***	**0.031***	**0.000***	**0.041***	-
Pearson Correlation Coefficient	**FA**	0.002	0.629	0.041	0.001	1	0.617
N		21	21	21	21	21	21
Sig. (2–tailed)		0.519	**0.000***	0.721	0.927	-	**0.041***
Pearson Correlation Coefficient	**EA**	0.724	0.031	0.062	1	0.001	0.924
N		21	21	21	21	21	21
Sig. (2–tailed)		**0.000***	0.528	0.882	-	0.927	**0.000***
Pearson Correlation Coefficient	**SE**	0.028	0.022	1	0.062	0.041	0.528
N		21	21	21	21	21	21
Sig. (2–tailed)		0.428	0.927	-	0.882	0.721	**0.031***
Pearson Correlation Coefficient	**DIC**	0.662	1	0.022	0.031	0.629	0.736
N		21	21	21	21	21	21
Sig. (2–tailed)		**0.000***	-	0.927	0.528	**0.000***	**0.001***
Pearson Correlation Coefficient	**EE**	1	0.662	0.028	0.724	0.002	0.827
N		21	21	21	21	21	21
Sig. (2–tailed)		-	**0.000***	0.428	**0.000***	0.519	**0.000***

Table 4: Results of Mann Whitney U test

Particulars		N	Mean Rank	Sum of Ranks
EE	Male	290	11.73	147.74
	Female	132	13.68	155.77
	Total	422		
DIC	Male	290	12.85	168.92
	Female	132	10.92	153.96
	Total	422		
SE	Male	290	13.88	148.31
	Female	132	12.94	158.55
	Total	422		
EA	Male	290	10.85	155.99
	Female	132	12.64	142.77
	Total	422		
FA	Male	290	13.82	132.72
	Female	132	12.95	167.92
	Total	422		

Table 5: Test Statistics of Mann Whitney U test

Particulars	EE	DIC	SE	EA	FA
Mann Whitney U test	62.520	68.662	57.820	56.500	54.520
Wilcoxon W	152.00	147.28	135.66	162.38	148.92
Z	-.545	-.138	-.924	-.984	-.958
Asymp. Sig. (2 tailed)	.559	.942	**.034***	**.002***	**.021***

***Significant at 5%**

Table 6: Results of Kruskal Wallis test

Particulars		N	Mean Rank
EE	25 – 30	180	12.82
	31 – 35	105	14.66
	36 – 40	97	11.72
	40 & Above	40	7.82
	Total	422	
DIC	25 – 30	180	14.99
	31 – 35	105	11.72
	36 – 40	97	10.88
	40 & Above	40	8.55
	Total	422	
SE	25 – 30	180	11.62
	31 – 35	105	12.62
	36 – 40	97	13.49
	40 & Above	40	8.44
	Total	422	
EA	25 – 30	180	12.88
	31 – 35	105	12.36
	36 – 40	97	10.72
	40 & Above	40	11.37
	Total	422	
FA	25 – 30	180	12.36
	31 – 35	105	13.82
	36 – 40	97	7.82
	40 & Above	40	10.92
	Total	422	

Table 7: Test Statistics of Kruskal Wallis test

Particulars	EE	DIC	SE	EA	FA
Chi – Square	2.358	2.229	.851	3.837	3.662
Df	3	3	3	3	3
Asymp. Sig. (2 tailed)	.552	.338	**.037***	**.002***	**.001***

***Significant at 5%**

Table 8: Relationship between Encouraging Entrepreneurs and Perception of Educators

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	β		
(Constant)	2.518	0.119		12.149	**0.000***
Encouraging Entrepreneurs	0.815	0.028	0.632	12.512	**0.000***

Table 9: Regression Analysis – Encouraging Entrepreneurs and Perception of Educators

Model	R	R^2	Adjusted R^2	S.E. of estimates	F	Sig.
1	0.827	0.684	0.653	0.8215	128.32	**0.000***

a: Predictors: (Constant), Encouraging Entrepreneurs
b: Dependent variable: Perception of Educators

Table 10: Relationship between Development of Incubation Centers and Perception of Educators on Entrepreneurship Education

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	β		
(Constant)	3.818	0.192		12.498	**0.000***
DIC	0.736	0.025	0.624	13.128	**0.000***

Table 11: Regression Analysis – Development of Incubation Centers and Perception of Educators on Entrepreneurship Education

Model	R	R^2	Adjusted R^2	S.E. of estimates	F	Sig.
1	0.736	0.542	0.534	0.2155	138.24	**0.000***

a: Predictors: (Constant), Development of Incubation Centers

b: Dependent variable: Perception of Educators

Table 11: Relationship between Subjects on Entrepreneurship and Perception of Educators on Entrepreneurship Education

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	β		
(Constant)	2.826	0.174		11.982	**0.000***
SE	0.512	0.051	0.498	12.826	**0.000***

Table 12: Regression Analysis – Subjects on Entrepreneurship and Perception of Educators on Entrepreneurship Education

Model	R	R^2	Adjusted R^2	S.E. of estimates	F	Sig.
1	0.528	0.279	0.268	0.1552	148.46	**0.000***

a: Predictors: (Constant), Subjects on Entrepreneurship

b: Dependent variable: Perception of Educators

Table 13: Relationship between Entrepreneurial Attitude and Perception of Educators on Entrepreneurship Education

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	β		
(Constant)	4.266	0.074		12.822	**0.000***
EA	0.828	0.012	0.812	11.264	**0.000***

Table 14: Regression Analysis – Entrepreneurial Attitude and Perception of Educators on Entrepreneurship Education

Model	R	R^2	Adjusted R^2	S.E. of estimates	F	Sig.
1	0.924	0.854	0.842	0.5528	168.68	**0.000***

a: Predictors: (Constant), Entrepreneurial Attitude

b: Dependent variable: Perception of Educators

Table 15: Relationship between Funding Agencies and Perception of Educators on Entrepreneurship Education

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	β		
(Constant)	3.668	0.041		13.225	**0.000***
FA	0.608	0.002	0.592	12.648	**0.000***

Table 16: Regression Analysis – Funding Agencies and Perception of Educators on Entrepreneurship Education

Model	R	R^2	Adjusted R^2	S.E. of estimates	F	Sig.
1	0.617	0.381	0.372	0.5282	146.82	**0.000***

a: Predictors: (Constant), Funding Agencies

b: Dependent variable: Perception of Educators

Fig.1: Study Model of perception of educators on entrepreneurship education

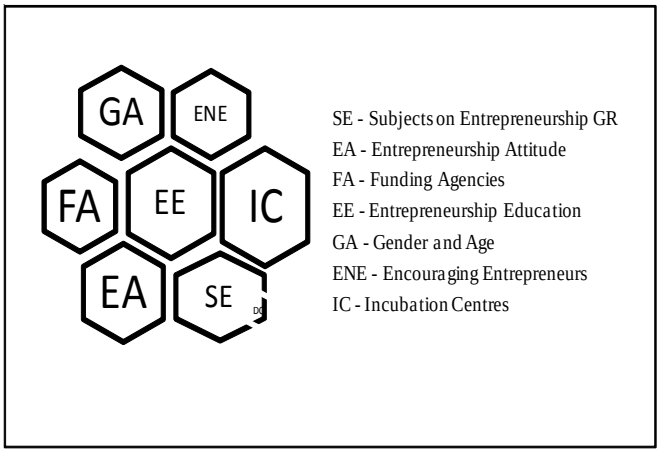
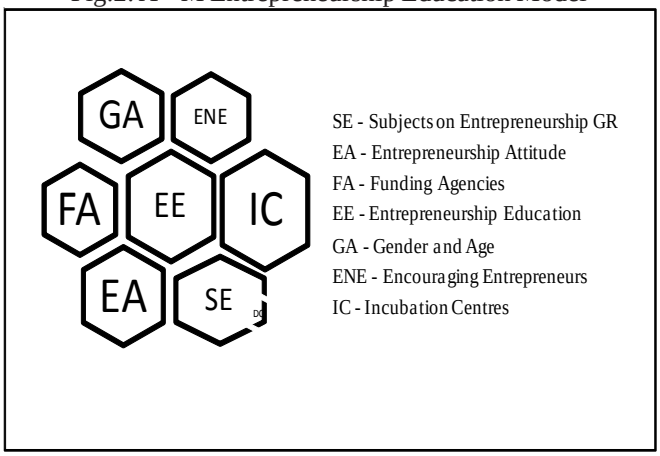


Fig.2: A – M Entrepreneurship Education Model



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VIEWS OF STUDENTS ON PHARMACY EDUCATION: A STUDY

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Pharmacy education is one of the professional courses which got a new dimension with the changing time and has shown significant growth in comparison with management and engineering education. Though the aim is high, the institutions offering pharmacy education fail to create necessary environment in producing the right quality output. As such the present study is aimed at exploring the views of respondents on various factors that influence the success of pharmacy education such as placement, laboratory facilities, infrastructure, availability of course material etc. A random sample of 150 student respondents studying pharmacy program in different colleges located in Nellore and Chittor districts of Andhrapradesh has been selected for the study. The study is aimed at identifying the relative importance of the factors, in addition to get opinion of sample respondents about their perceptions and expectations along with the gap on each of these factors. An analysis of the satisfaction of respondents shows that they have a low satisfaction on pharmacy education along with high expectation and poor perception on different factors. An appropriate statistical test such as Chi- square test of significance has been used to test the hypothesis. The test reveals that there is no significant difference of opinion on the satisfaction of the respondents in terms of gender, area of residence and place of location.

Keywords:Education, infrastructure, pharmacy , placement, quality.

A large number of students, every year have been going to United States of America, United Kingdom, Germany and Australia to pursue their higher education. The trend is increasing year after year because; the quality in education is more superior than compare to its quality in India (Naik, B.M, 2006). The education system in India needs to pay more attention to innovation and ability of its students to function in a constantly changing global environment. Due to liberalization and privatization of Indian economy and its resulting robust growth, a large number of colleges, offering higher education under private management started in India and still the trend moves in the upward direction. Though the country has large youth with various skills and capabilities and willing to join in these colleges, they are limited by inadequate trained teachers (Mallesham, P, 2012), poor infrastructural facilities, absent of student development and placement related activities etc. As a result, the dissatisfied youth becoming one of the most serious constraints to economic growth. In the words of Bolton and Frederic (1971), considerable strengthen of the educational institutions must be required to develop the academic community towards relevant, purposeful and meaningful society as a whole.

The satisfaction of students mainly depends on the quality of education they received and the facilities they enjoyed during their course of study. The satisfaction of a student is said to be the combination of various psychological, physiological and other education related factors. It may be defined as "the willingness to express high level of satisfaction towards personal goals". Student satisfaction has been considered as a state where students are induced to develop their skills effectively and efficiently and promote the image of the institute more happily. It focuses on general attitude of students and is an emotion, a feeling and a matter of perception. It arises from the students' appraisal of their experience; requirements and facilities enjoyed as well as needs and want which are internal and external to the students. In the words of Yorke D M., (1987), the satisfaction of the student plays an important role in the success of any educational institute. It develops the state of healthy balance in the college in which teachers also make their respective contributions to achieve the goals set by the college management. With the Government policy of liberalization of economy, a large number of colleges in private sector were established during the last decade. As a result the competition also started among these colleges. In a competitive environment each college is interested to improve its position to create a strong base for its survival.

Lindsay A W.,(1982) opined that the competition among the educational institutions was developed in terms of attracting large number of students by providing various student related requirements, such as placements, supply of educational material, conducting various programs and extracurricular activities etc. As managements of these colleges plays a dominant role in fulfillment of various needs of students and to achieve the primary aim of students'

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satisfaction, studies of these kinds are helpful in identifying the areas of satisfaction and dissatisfaction.

I. Review of Literature

It is a fact that satisfaction is treated as an important factor in determining the demand of goods and services and also considered as an indicator that affects the competitive advantages of firms. The term satisfaction in service sector is different from the term used in the goods market. Since evaluating the satisfaction is more difficult, the measurements are in general made by means of perceptions of consumers. Student's satisfaction is the major indicator of quality in educational institutions. Many researchers on this issue believe that there is a relation between the perception and their satisfaction (Petersen 1988). Satisfaction of students appears to be a major device in order to take important decisions by the college managements. According to Ibekwe (2006), any higher educational Institute must design its basic goals and objectives, to satisfy students, by offering various academic and career oriented programs, developing quality teaching and learning environment and by providing adequate student support services. Therefore, the managements of the colleges, as a matter of fact, take satisfaction of students into account as a main goal of strategies of their colleges.

Bolton & Frederic (1971), Abbott & Doucouliagos (2003), in their studies also opined to get the satisfaction of students by providing relevant, purposeful and meaningful education for the academic community and for the society as a whole. Most of the service sectors consider that satisfaction of consumers is explained by expectations and perceptions. The expectations are based on one's own and others' experiences. Most of these studies based on the static model suggested by Parasuraman.et al (1985, 1988). The measurement of expectations and perceptions has been a controversial issue in the literature. While it seems to be logical that identifying the gap between the expectations and perceptions for the estimation of the satisfaction, the other researchers (Cronin and Taylor, 1992 and Teas, 1993) questioned the validity of the gap model. The study made by Zeithaml et al., (1996), suggests that measuring perceptions alone might be a better indicator of satisfaction related to service sector, than measuring the difference between expectations and perceptions. Aldlaigan and Buttle, (2002) are of the view that, it is not always easy to adopt the gap approach , since in real life setting it requires to collect the data twice from the same customers and compare their answers. However, from the education perspective it is always necessary to identify the gap between expectations and perceptions of the students, so that effective and suitable strategies can be designed to close the gaps or at least to minimize them. In the present study gap approach has been used, with the objective of identifying the gaps and to use these gaps for the prediction of the satisfaction of the students.

Some of the other researchers such as Stanley and Reynolds (1994), Srikanth and Dairymple (2007), Kealy and Rockel(1987), Anderson (2000), Hill et al (2003), in their studies suggested various factors like placement, education, infrastructure, college environment etc., contribute positive perceptions of the students. The essence of these studies is the consideration of various factors that are responsible for the satisfaction of students as well as finding out the relation among them giving least scope to identify their relative importance and the areas of their satisfaction and dissatisfaction. Hence, the present study may be considered as one among the few studies that bridges the gap. Each educational Institute has its own policies for the accomplishment of objectives. Continuous updating and monitoring of these policies is essential to keep the pace with change in time and to avoid any dissatisfaction of the students. The need for the study is to ascertain the views of the students that lead to satisfaction. This study will help the managements of the colleges in identifying the gap and to develop more appropriate policies for the better management of educational Institutions.

Objectives of the Study

Pharmacy education must be more and more effective in today's competitive environment, for which it requires quality education, suitable environment and other required facilities. As such the present study is aimed at exploring the perceptions of students on the factors that influence the pharmacy education. The study may identify the views of students, which may form a sound basis for better improvement. The following are the research objectives formulated to guide the study.

1. To identify the relative importance of various factors that influence pharmacy education,
2. To identify the gap between expectations and perceptions of the students,
3. To identify the overall satisfaction of the students on the factors that influence pharmacy education.

Hypothesis of the study:

The study infers that there is no association between perceptions and personal characteristics of the students.

As against this back ground, the following hypotheses have been formulated for the study.

Null hypothesis 1: There is no significant association between satisfaction and gender of the students

Null hypothesis 2: There is no significant association between satisfaction and area of residence of students

Null hypothesis 3: There is no significant association between satisfaction and place of location of students

II. Research Design & Methods

Instrument Development:

Education has been categorized as one of the important sectors that is necessary for society. The present study on pharmacy education tries to explore the views of the respondents on different factors which are considered as important. The satisfaction of the students depends on how well their needs, wants and expectations will be achieved. To develop the research instrument, some of the factors identified from the previous study done by Dalwinder Kaur et al (2010) on the views of students with reference to college management have been considered. These factors include placement, infrastructure, quality of education, student development, educational material and college environment, etc. In addition to these factors an extra factor laboratory facilities has been added to develop a questionnaire for the study.

The questionnaire consists of two parts. The first part of the questionnaire deals with demographic characteristics of respondents such as gender, age, year of study, area of residence and their place of location etc. The second part of the questionnaire has been designed to seek the expectations and perceptions of the students on the factors that influence the pharmacy education. Each of these factors was measured on a five point's Likert scale in which 1 indicated "least importance", 2 indicated "low importance", 3 indicated "medium importance", 4 indicated "high importance" and 5 indicated "most importance".

Data Collection:

To satisfy and to meet the objectives of the study both qualitative methodology and quantitative techniques have been used. Convenient sampling technique was employed in designing the sampling frame for the selection of different colleges offering Pharmacy education, located in Nellore and Chittor districts of Andhrapradesh. With reference to the sample, the students were selected from different colleges. A sample of 150 respondents in all the categories was possible and was covered for the study as a whole. Further, while selecting the respondents from the colleges for identifying the suitability, experience of the teachers was sought. Personal interview method was adopted to collect the primary data from the respondents. Contents and validity of the factors in the questionnaire were established by experts consists of teachers in pharmacy education working with different colleges. Each of the experts on the panel was asked to verify the instrument for clarity, wording, overall appearance and meaning in addition to content and validity. The instrument was pilot tested with a group of student respondents, not included in the sample; accordingly some of the minor modifications were done in the questionnaire. The data were systematically collected during the period between January 2014 and March 2014. Further, perfect representative respondents should be a microcosm of the total population from which it is drawn, reflecting the entire characteristics of the population in all the way (Cavana et al., 2001), proper care has been taken in selecting the respondents from diverse population to represent a balanced mix of various demographic factors. The secondary data for the study had gathered from journals, magazines and also from the internet websites related to pharmacy education.

Analysis of Data:

The primary data collected from the students have been sorted, classified and tabulated in a format that is amenable for analysis. The data were analyzed by using statistical package for social sciences (SPSS 16.0). Appropriate statistical procedures like average, standard deviation and the Chi –square test were used to analyze the data and to interpret the results. The Chi-square test has been used to test the significance of association between the variables under study.

III. Results & Analysis

Profile of the Respondents:

Of those responding to the questionnaire, it was found that 53.3 percent (80) were male while 46.7 percent (70) were female (Table 1). It shows that the respondents selected for the study were male dominated. Out of which 33.3 percent (50) of the respondents are residing in rural areas, followed by 20 percent (30) in suburban and 46.7 percent (70) in urban areas. The table also shows that 46.7 percent (70) were belongs to Nellore district and the remaining 53.3 percent (80) were belongs to Chittor district. An analysis of the socioeconomic and demographic profile of the sample respondents indicate that majority of them are male residing in urban areas, with their place of

location as Chittor district.

Relative Importance of Factors:

The relative importance of various factors that influence the pharmacy education as given by the sample respondents has been obtained by comparing the opinion scores. The arithmetic mean of the opinions assigned to each of these factors has been computed to arrive at the overall opinion. Since a five point scale has been used, the interval for breaking the range in measuring each variable is calculated as (5-1)/5 = 0.8. (Soumya Saha et al, 2010):

- The opinion score between 1 and 1.8 has been considered as least importance,
- The opinion score between 1.81 and 2.60 has been considered as low importance,
- The opinion score between 2.61 and 3.40 has been considered as medium importance,
- The opinion score between 3.41 and 4.20 has been considered as high importance,
- ♦ The opinion score above 4.20 has been considered as most importance,

It is clear from the table 2, that placement has obtained most important factor by the respondents. The corresponding mean value of the factor is 4.25. It shows that students want to get their placements immediately after completion of their course of study. The factor laboratory facilities has occupied second most important factor with a mean value of 4.22. Similarly, the factors such as student development, college infrastructure, college environment, quality of education provided and educational material supplied were proved as highly important factors. Though the factor educational material occupied the seventh position with a mean of 3.45, it is to be noted that almost all the factors that were considered for the study were rated as highly important and most important for the pharmacy education.

Expectations and Perceptions on Different Factors

The expectations and perceptions of the students on different factors that influence the pharmacy education were computed as per the data obtained using five point Likert scale in which 1 indicated strongly disagree and 5 indicated strongly agree. The mean values of each of these factors for two dimensions were computed along with the gap between them as shown in Table3.

It is clear from the table that, the students were shown highest expectation on placement factor followed by least expectation on educational material provided. Similarly their perception is high on college infrastructure followed by least perception on educational material provided. The average values for the expectation and perception dimensions are 4.163 and 2.552 respectively. It is also found from the table that the highest gap is found on placement factor followed by quality of education and student development. The least gap is found on educational material factor followed by college environment factor and the total gap found in all the factors is 11.279. An analysis of the expectations and perceptions of students on these factors indicate that they are satisfied with college infrastructure factor only, where as for all the remaining factors their expectations are high but in reality they were failed to get the same.

Satisfaction of Students with regard to Different Factors:

With a view to find out the level of satisfaction of sample respondents on pharmacy education, all the factors related to perceptions of the students have been taken into consideration i.e. the scale consists of seven factors with five points. The highest possible score by the individual is 35. On the basis of satisfaction score the sample respondents were divided into three groups i.e. low, average and high (Table.4). Those who scored between 7 and 12 were identified as having low satisfaction, between 13 and 25 were identified as having average satisfaction, and between 26 and 35 were identified as having satisfaction at high level. Thus it is clear from the table that 45.34 percent of the students were with low satisfaction followed by 31.34 percent of the respondents with average satisfaction and the remaining 23.32 percent were with high satisfaction on pharmacy education provided in the colleges. An analysis of the satisfaction of the respondents reveals that the majority of the respondents are having low satisfaction.

Test of Hypothesis: 1

Null hypothesis: 1.There is no significant association between satisfaction and gender of the students (Table.5).

Alternative hypothesis: There is a significant association between satisfaction and gender of the students

Interpretation 1:

For 2 degrees of freedom, the Pearson's chi-square value at 5% level of significance is 5.9915. The chi-square statistic is 2.3673. The P-Value is 0.306163. The calculated value of chi square is less than the table value of chi square at 5% level of significance. Thus, the null hypothesis is accepted.

Test of Hypothesis: 2

Null hypothesis 2: There is no significant association between satisfaction and area of residence of students (Table.6).

Alternative hypothesis: There is a significant association between satisfaction and area of residence of students

Interpretation 2:

For 4 degrees of freedom, the Pearson's chi-square value at 5% level of significance is 9.448. The chi-square statistic is 1.0616. The P-Value is 0.900318. The calculated value of chi square is less than the table value of chi square at 5% level of significance. Thus the null hypothesis is accepted.

Test of Hypothesis: 3

Null hypothesis: 3. There is no significant association between satisfaction and place of location of students (Table.7).

Alternative hypothesis: There is a significant association between satisfaction and place of location of students

Interpretation 3:

For 2 degrees of freedom, the Pearson's chi-square value at 5% level of significance is 5.9915. The chi-square statistic is 0.5554. The P-Value is 0.757525.The calculated value of chi square is less than the table value of chi square at 5% level of significance. Thus the null hypothesis is accepted.

IV. Conclusion

The views of the students towards different factors that influence the pharmacy education have been studied. The results of the study show that all the factors that were considered for the study are highly important. An analysis of the relative importance of these factors shows that placement factor (Stanley and Reynolds, 1994) has occupied most important factor followed by laboratory facilities. Student development (Hill et al, 2003, Kealy and Rocket,1987) and college infrastructure (Srikanthan and Dairymple, 2007), quality of education(Mallesham,2012) and educational material provided as highly important factors. The reasons for giving top priority for the placement factor may be due to the opinion that those students who pursue their job oriented courses get placements immediately than compare to the students who pursue other courses. Similarly, an analysis of the expectations and perceptions of the students also reveal that they have highest expectation on placement factor followed by poor perception. It shows that they are highly dissatisfied with the placements provided in the colleges. Their dissatisfaction may be mainly due to non- functioning of the placement cell effectively, absence of arranging career counseling sessions regularly in the college and providing poor number of on-college placements etc,. Hence it is necessary to give top priority to this factor as it provides high satisfaction to the students. Further the students are not satisfied with all other remaining factors as evident by the gap on all these factors except the infrastructure available in the colleges. Therefore it is necessary to consider them as they influence the satisfaction of students on pharmacy education. An analysis on the level of satisfaction of the students reveal that a large percentage of the students are not satisfied with the present system of providing pharmacy education in the colleges. This may be mainly due to absence of providing proper placements and absence of proper laboratory facilities in the colleges as concluded from the previous analysis on expectations and perceptions of the students along with the gap on the remaining factors. Chi-square test of significance has been applied to test the satisfaction of the students with their personal characteristics. The test reveals that gender of the respondents, the area of residence and the place of location of the students did not find any significant difference of opinion with respect to satisfaction scores.

Areas of Future Research:

The study conducted has touched upon the factors that are most important for the pharmacy education, but it has not taken into the consideration of a holistic impact of other factors like quality of students joined in the colleges, job opportunities available outside the college environment, competition existing in the industry and the problems faced by the college managements etc,. The study has laid a foundation to understand the preferences of the students and the areas of their dissatisfaction. The study has opened the door for the further research to be conducted that will study the impact of the above mentioned factors along with the satisfaction of the students.

Limitations & Contributions:

The results of the study should be interpreted with some unavoidable limitations taking into consideration. Firstly, the present study is a survey research and is based on the structured questionnaire as such the traditional limitations like selection error; measurement error may hamper the results. Secondly, the study was limited to the factors which have been identified as most important ones by the previous researchers. Thirdly, the study is confined to only two selected places in Andhrapradesh, as such there is a need

to test the framework further with a more conclusive research method and a nation based representative sample in terms of geography and demographics, as well as, additional factors would improve the validity of the results.

Despite these limitations, the study makes several contributions. The major contributions of the study lie in an understanding of the importance of various factors that affect the pharmacy education. It substantiates the claim that perceptions of the students on different factors provide an evidence of the areas of their dissatisfaction. An examination of the results presented in the study by the sample respondents may lead to better understanding of how different factors play dominant role in getting the students satisfaction. The empirical findings of the present study provide a bench mark for further studies.

References

Abbott. M and Doucouliagos.C (2003)," The Efficiency of Australian Universities: A Data Envelopment Analysis", Economics of Education Review, No.22 Pp.89-97.

Aldlaigan A, and Buttle A., (2002),: Systra-SQ: A New Measure of Bank Service Quality", International Journal of Service Industry Pharmacy, Vol.13, No.4,Pp.362-381.

Bolton E.C and Frederic G.H (1971), 'Universities and Management of Educational Institutes", The Journal of Higher Education, Vol. 42, Pp. 279 -291.

Cavana R, Delahaye B, and Sekaran U (2001), Applied Business Research: Qualitative and Quantitative Methods, John Wiley & Sons Ltd, Brisbane.

Cronin. J.J Jr and Taylor,S.A, (1992), "Measuring the Service Quality: A Reexamination and Extension", Journal of Marketing,Vol.56,July, Pp.55-68.

Dalwinder Kaur and Gurwinder Singh Bhalla (2010), College Management: Views of Students, The IUP Journal of Management Research, Vol.9, No.5, Pp.6-26.

Hill. Y,Lomas.L and Macgregor (2003),"Students Perceptions of Quality in Higher Education", Quality Assurance in Education, Vol. 11, No. 1, Pp15-20

Ibekwe (2006),"Using Total Quality Pharmacy to Achieve Academic Program Effectiveness: An Evaluation of Administrator and Faculty Perceptions in Business Schools at Historically Black Colleges and Universities ", Un Published PhD Thesis, Capella University, Minneapolis

Kealy. M.J and Rockel.M.L(1987), "Students Perceptions of College Quality : The Influence of College Recruitment Policies", The Journal of Higher Education, Vol.58,No.6,Pp.683-703.

Lindsay A W.,(1982), "Institutional Performance in Higher Education – The Efficiency Dimension", Review of Educational Research, Vol.52, No.2, Pp.175-199.

Mallesham P.,(2012), "Quality of Technical Education", The Indian Journal of Technical Education, Vol.35, No.4, Pp.48-61.

Naik. B M.,(2006), "Quality Assurance System in Higher and Technical Education", The Indian Journal of Technical Education, Vol.29, No.4, Pp.10-16.

Parasuraman,A.,Zeithamal V.A., and Berry L.,(1985) " a Conceptual Model of Service Quality and its Implications for Future Research". Journal of Marketing 49; Pp 41-50.

Parasuraman,A.,Zeithamal V.A., and Berry L.,(1988)"SERVQUL- A Multiple Item Scale for Measuring Consumer Perceptions of Service Quality" Journal of Retailing 64(1); Pp 12-40.

Petersen, M.B.H (1988). Measuring satisfaction; collecting useful data, Journal of Nursing Quality Assurance,2(3), Pp 25-35.

Soumya Saha, Munmun Dey and Sumantha Bhattacharya (2010), Factors affecting Consumer Buying Behavior of Shoes in Kolkata: Case Study, The IUP Journal of Management Research, Vol.9, No.4, Pp.39-60.

Srikanathan. G and DairympleJ.F (2007), "A Conceptual Overview of a Holistic Model for Quality in Higher Education", International Journal of Educational Management, Vol.21, No.3, Pp.173-193.

Stanley. G and Reynolds.P(1994),"The relationship between students levels of school achievement, their preferences for future enrollments and their images of universities", higher education,Vol.27,No.1,Pp. 85-93.

Teas R, (1993),"Expectations, Performance Evaluation and Consumer Perceptions of Quality and Satisfaction". Journal of Retailing, Vol. 72, No.2, Pp.201-214.

Yorke D M., (1987),"Indicators of Institutional Achievements- Some Theoretical and Empirical Considerations", Higher Education, Vol.16, No.1, Pp.3-20.

Zeithamal V.A, Berry L and Parasuraman.A (1996),"The Behavioral Consequences of Service Quality", Journal of Marketing, Vol .60 April, Pp.31-46.

Table 1: Demographic profile of the Respondents

1.Gender	No. of Respondents	Percentage
a) Male	80	53.3
a) Female	70	46.7
Total	150	100.0
2Area of residence		
(a) Rural	50	33.3
(a) Suburban	30	20.0
(c) Urban	70	46.7
Total	150	100.0
3.Place of Location		
(a) Nellore	70	46.7
(b) Chittor	80	53.3
Total	150	100.0

Table 2: Relative Importance of Factors

Factors	Mean	Standard Deviation	Rank	Importance
Placement	4.25	1.17	1	Most
Infrastructure	4.09	1.24	4	High
Laboratory Facilities	4.22	1.72	2	Most
Quality of Education	3.76	1.42	6	High
Student Development	4.18	1.29	3	High
Educational Material	3.45	1.12	7	High
College Environment	3.89	1.14	5	High

Table 3: Expectations and Perceptions of Students on Different Factors

S.No.	(Factors 1-7)	Mean Score		Gap
		Expectation	Perception	
1.	Placement	4.657	2.149	2.508
2.	Infrastructure	3.899	4.237	-0.338
3.	Laboratory Facilities	4.611	2.724	1.887
4.	Education	4.269	2.132	2.137
5.	Student Development	4.107	2.172	1.935
6.	Educational Material	3.497	2.127	1.37
7.	College Environment	4.101	2.321	1.78
Average value for Dimension		4.163	2.552	Total gap=11.279

Table 4: Level of Satisfaction of Students

Level of Satisfaction	Number of Respondents	Percentage
Low (7-12)	68	45.34
Average (13-25)	47	31.34
High (26-35)	35	23.32
Total	150	100.0

Table 5: Chi square test for Satisfaction and Gender of Students

Level of Satisfaction	Actual & Expected Values	Gender		Total
		Male	Female	
Low	Actual Value	40	28	68
	Expected Value	36.2666667	31.73333	68
Average	Actual Value	25	22	47
	Expected Value	25.0666667	21.93333	47
High	Actual Value	15	20	35
	Expected Value	18.6666667	16.33333	35
Total respondents		80	70	150
Df = (r-1)(c-1) =2		Chi square value = 2.3673		

Table 6: Chi square test for Satisfaction and Area of Residence of Students

Level of Satisfaction	Actual & Expected Values	Area of Residence			Total
		Rural	Suburban	Urban	
Low	Actual Value	22	14	32	68
	Expected Value	22.66667	13.6	31.73333	68
Average	Actual Value	15	10	22	47
	Expected Value	15.66667	9.4	21.93333	47
High	Actual Value	13	6	16	35
	Expected Value	11.66667	6	16.33333	35
Total respondents		50	30	70	150
Df = (r-1)(c-1) =4				Chi square value = 1.0616	

Table 7: Chi square test for Satisfaction and Place of Location of Students

Level of Satisfaction	Actual & Expected Values	Gender		Total
		Nellore	Chittor	
Low	Actual Value	30	38	68
	Expected Value	31.7333333	36.26667	68
Average	Actual Value	24	23	47
	Expected Value	21.9333333	25.06667	47
High	Actual Value	16	19	35
	Expected Value	16.3333333	18.66667	35
Total respondents		70	80	150
Df = (r-1)(c-1) =2			Chi square value = 0.5554	

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MOTIVATORS OF WOMEN ENTREPRENEURSHIP IN INDIA
AN EXPLORATORY STUDY

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This is an exploratory study conducted in the National Capital Region of Delhi to understand the motivators that stimulate women to be entrepreneurs. Quantitative analysis is employed in this paper based on field survey and empirical findings conducted in Delhi NCR from 118 women entrepreneurs running their owned business since the last two years or more. Data has been gathered through a judgemental sampling through a structured questionnaire and subjected to statistical analysis using SPSS. Seven factors that motivate women entrepreneurship have been identified and the impact of various demographic variables like age, education, No. of kids, work experience. category of enterprise and type of enterprise has been done. Results obtained from factor analysis have shown that women entrepreneurship is motivated by seven factors termed as Work life factor, economic factor, environment factor, internal opportunity factor, achievement factor, passion, social status. Anova tests using post hoc analysis has been done to study the impact of demographic variables on these motivators with varying results which have been elaborated.

Keywords:Women entrepreneurs, Motivators, Demographics, India

Time immemorial, women are described as the better half of men. But in reality, the women in developing countries do not tally with this description. It is well known fact that women have played and continue to play a key role in conservation of basic life support systems such as land, water, flora and fauna. The latest "MAKE IN INDIA" initiative of the Indian prime minister aimed at enhancing entrepreneurship and economic growth thereby cannot see success until women are involved in it, however their inclusion is little and this can be attributed to various factors, one among them being are women motivated to be entrepreneurs, if yes what is it that acts as a stimulant to them to take up self employment shall be of interest to researchers as well as policy makers. The Constitution of India lays that an Indian Woman will function as a citizen and as an individual partner in the task of nation building whatever her social position role or activities may be. While motherhood is an important function, the constitution implies that this is not the 'only role' for women of India. There are so many other roles for the Indian Women as a partner in the nation building. It also becomes imperative to find the triggers to women entrepreneurship for a socio economic reason which is to empower women and to facilitate the process of women participation in income generation. India at large and even the national capital of India- Delhi also paints a gruesome picture of women, where of the total people employed by establishments in the city, 26,20,993 were male while 3,63,857 were females. With women forming only 12.19% of the city's workforce, Delhi is way behind the national average of 25.56%. For every woman employed in an establishment, there are seven men that are hired. These details were revealed by the sixth economic census report on Delhi-2013, released by the directorate of economics and statistics of Delhi government 19 September 2014. So this brings us to an important that making rules and policies can help only if we as a society are determined to bring empowerment to women and entrepreneurship is one way to provide this.

Women Entrepreneurs may be defined as the women or a group of women who initiate, organize and operate a business enterprise. The Government of India has defined women entrepreneurs as-an enterprise owned and controlled by women having a minimum financial interest of 51 per cent of the capital and giving at least 51 per cent of the employment generated in the enterprise to women. Women entrepreneurs engaged in business due to push and pull factors which encourage women to have an independent occupation and stands on their on legs. A sense towards independent decision-making on their life and career is the motivational factor behind this urge. Saddled with household chores and domestic responsibilities women want to get independence. Under the influence of these factors the women entrepreneurs choose a profession as a challenge and as an urge to do some thing new. Such a situation is described as pull factors. While in push factors women engaged in business activities due to family compulsion and the responsibility is thrust upon them.

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- It is estimated that presently women entrepreneurs comprise about 10% of the total entrepreneurs in India. The term "Women Entrepreneurship" mean, an act of business ownership and business creation that empowers women economically, increases their economic strength as well as position in society. Hence women-entrepreneurs have been making a considerable impact in all most all the segments of the economy which is more than 25 percent of all kinds of business.

I. Review of Literature

In India, women entrepreneurship is still in its infancy because women entrepreneurs are not easily accepted by Indian society (Moitra, 2001). A study conducted by Manickaval (1997) shows that in India, 56% of the women are unemployed. Hence, development of women entrepreneurship is essential to provide economic opportunities to women. In most countries, regions and sectors, the majority of business owner/managers are male (from 65 percent to 75 percent).

However, there is increasing evidence that more and more women are becoming interested in small business ownership and/or actually starting up in business. Recent research presents interesting trends for women entrepreneurs. Some previous research has suggested that it is more difficult for women to raise start-up and recurrent business finance than men and those women are more likely to encounter credibility problems when dealing with bankers (Carter et.al. and Cannon, 2006). Ray & Ray (2011) focused on issues and challenges of woman entrepreneur in India from multidimensional aspects. Specifically, their study critically analyzed the status of woman entrepreneurs, role played by them in managing the entrepreneurship and the problems faced by them when they set up and managed their own businesses in the spirited world of business environment. Finally, some general measures have been suggested to encourage women entrepreneurship in India. Women entrepreneurs need to be lauded for their increased utilization of modern technology, increased investments, finding a niche in the export market, creating a sizable employment for others and setting the trend for other women entrepreneurs in the organized sector.

Since the 21st century, the status of women in global world has been changing as a result to growing industrialization and urbanization, spasmodic mobility and social legislation. Over the years, more and more women are going in for higher education, technical and professional education and their proportion in the workforce has also been increased. With the spread of education and awareness, women have shifted from the kitchen, handicrafts and traditional cottage industries to non-traditional higher levels of activities. Even the government has laid special emphasis on the need for conducting special entrepreneurial training programs for women to enable them to start their own ventures. Financial institutions and banks have also set up special cells to assist women entrepreneurs. This has boomerang the women entrepreneurs on the economic scene in the recent years although many women's entrepreneurship enterprises are still remained a much neglected field. However, for women there are several handicaps to enter into and manage business ownership due to the deeply embedded traditional mindset and stringent values of the Indian society.

In India, women's' entry into business is a new phenomenon. It can be traced out as an extension of their kitchen activities mainly to 3Ps viz Pickles, Powder & Pappad. But with growing awareness about business and spread of education among women over the period, they have started shifting from 3Ps to engross to 3 modern E's viz Engineering, Electronics & Energy. They have excelled in these activities. Women entrepreneurs manufacturing solar cookers in Gujarat or owning small foundries in Maharashtra or manufacturing capacitors in Orrisa, have proved beyond doubt that given the opportunities, they can excel their male counterparts. Indian women are fast catching up with men as entrepreneurs, as a recent global survey pointed out that among all early-stage entrepreneurs, around one-third or 32% are women. The Global Entrepreneurship Monitor (GEM) Survey 2013, touted as the largest annual study of entrepreneurial dynamics in the world, stated that most of the early stage entrepreneurs fall in the age group of 25-34 years. Around 61% of people in India consider entrepreneurship as a good career choice, it said, adding that a large number of women are getting involved in starting and owning-managing new businesses in the country.

Current entrepreneurship theory explaining venture creation is generally organised around three basic constructs, namely market, money and management "3Ms". An entrepreneur needs to have access to markets (Schumpeter, 1934; Kirzner, 1985; Shane, 2003), money (Penrose, 1959; Bruno and Tyebjee, 1982) and management (in the form of human and organizational capital) (Aldrich, 2003) in order to launch a venture. These encompass what Bates et al. (2007,) describe as the three "fundamental building blocks" of business viability. These building blocks derive from a mainstream economics and managementdriven view of entrepreneurship. Bates et al. (2007) argue that these

3Ms are central to the foundation of any business, yet for minority business enterprises there are barriers when attempting to access these building blocks.

In the Indian context a very important factor is "Motherhood" which represents the household/family context, thus drawing attention to the fact that family/ household contexts might have a larger impact on women than men (Jennings and McDougald, 2007). The "macro/ meso environment" captures considerations beyond the market, including factors such as expectations of society and cultural norms, for example reflected in media representations of female entrepreneurs. Macro environment typically includes national policies, strategies, cultural and economic influences; while meso environment reflects regional support policies, services and initiatives (Dopfer et al., 2004; Pitelis, 2005). This dimension includes what Aldrich (1989) labelled as work and organized social life. Both motherhood and the mesomacro environment mediate the entrepreneurial activity of women in different ways, though we strongly emphasise at the outset, that access to money, markets and management (the 3Ms) are essential for founding any venture.

When it comes to women entrepreneurs, it appears that only a small part of entrepreneurial motivations are acknowledged as genderbased. Instead, "pull" and "push" factors are now a common way of explaining different motivations for women to start a business (Brush, 1990, 2009; Buttner and Moore, 1997). Push factors are elements of necessity such as insufficient family income, dissatisfaction with a salaried job, difficulty in finding work and a need for a flexible work schedule because of family responsibilities. Pull factors relate to independence, selffulfilment, entrepreneurial drive and desire for wealth, social status and power (Duchéneaut, 1997).

Objectives of the study:

This study aims at studying women entrepreneurship within the women entrepreneurs and to find what motivates them to become entrepreneurs and how do demographic factors affect the entrepreneurial intention of women.

II. Research Design & Methods

Methodology: The scope of the research is limited to Delhi/ NCR region comprising of women entrepreneurs who have been running their enterprise for the last two years and own 51% stake in the enterprise. This study is based on the empirical research and data has been gathered from a structured questionnaire framed to gather information on the various factors that have been cited to motivate entrepreneurship among women. Fifteen women entrepreneurs who are running successful business have been consulted to have a first hand knowledge about what motivated them to take up entrepreneurship, what challenges they faced while running their enterprise and five experts in the area of social science research who are engaged in research specific to women issues were consulted to discuss the final questionnaire so framed so as to get the content and face validity of the questionnaire designed. The data has been gathered from 118 entrepreneurs from the region of Delhi NCR through a questionnaire-based survey through snowball sampling, a method of judgmental sampling. The data has been analyzed statistically using SPSS software. The present study was designed to study the various aspects of women entrepreneurs. The sample of 118 women entrepreneurs (boutique, fashion designers, beauticians, women engaged in gift & stationery shop business, confectionery and bakery item manufacturers,) represented the sample. Statistical Package for Social Science (SPSS) version 17.0 for Windows was used.

Reliability Assessment

Internal consistency reliability measures were assessed on the factor structures derived from both analyses reported above, using the Chronbach's procedure available in the SPSS statistical package. Those variables have been retained for which the values of Chronbach alpha are more than 0.5

III. Results & Analysis

A total of 118 valid responses were received for the final analysis from the data gathered from 200 targeted women entrepreneurs (response rate of 59%) Majority (55%) were Post graduate and were in Full time employment (54.6%). They were almost equally distributed among age categories of 26-44 (47.6%) and 45-64 (45%). Please refer Table 1.

Objective 1- To identify the various factors that motivate entrepreneurship among women.

Factor analysis is a good way of identifying latent or underlying factors from an array of seemingly important variables. Please refer Table 2.

Measures of sampling adequacy such as Barlett's test of sphericity (approx chi-square is 1893.277, degree of freedom is435, significance is 0.000) and KMO value (0.874) showed that data were fit for factor analysis. Principal component analysis along with varimax rotation method was used for extracting factors and 7 factors were retained on the basis of Eigen values and variance explained.

Eigen value represents the total variance explained by each factor.

The standard practice normally used is that all the factors with Eigen value of more than 1 should be extracted. Thus 7 factors were extracted that explained 66.62% of the total variance. The name of the factors, variable labels and factor loadings are summarized in table 3.

Objective 2 - To determine the effect of demographic variables on these motivating factors

One way ANOVA was used to measure the effect of various demographic variables on the various factors obtained from Factor analysis. One form the assumption of ANOVA is Homogeneity of Variance. Levene tests check for this assumption. Whenever significant value for the Levene statistics is less than 0.05, the assumption of Homogenity of Variance is violated. In that case SPSS gives another value for the t-statistics (for the assumption Equal variance not assumed). Decision rule for the t-test statistic is that whenever the significant value for the t-statistics is less than 0.05, the two groups differ in their mean scores.

Effect of age on various factors motivating women entrepreneurship

H0: There is no significant difference between the mean scores of various factors motivating women entrepreneurship for different age groups.

Analysis of variance in Table 4 reflects that social status as a motivating factors differs significantly on the basis of age. No significant difference was observed on the remaining variables that motivate entrepreneurship between the age groups. Please refer Table 5.1 & 5.2. When we see the post Hoc table of social status across age groups we find that there exists significant differences among the age group of women entrepreneurs below 30 years and the age group 31-40 years. In case of social status the mean score is higher for the age group below 30 years (M=3.5290) as compared to the age group 31-40 years(M= 3.0617). The respondents of the age group below 30 years are more social status oriented while starting a business enterprise. Being young they tend to have higher zeal and desire towards attaining a respectable social status which they feel would come from being a woman entrepreneur which ignites the spirit of entrepreneurship among them and motivates them to start an enterprise.

Effect of education on various factors motivating women entrepreneurship

H0: There is no significant difference between the mean scores of various factors motivating women entrepreneurship for different education groups.

Analysis of variance in Table 6 indicates that Internal Opportunity and Achievement differ significant across education groups as motivating factors for women entrepreneurship.

When we see the Post Hoc table of Internal Opportunity across different Education groups we find that there exists a significant difference between the three education groups represented in the respondent sample of women entrepreneurs. There is a significant difference on the factor of internal opportunity for those who are graduate as against those who possess post graduate qualifications (M= 4.0694). There is also a significant difference between the education groups. Women entrepreneurs who have post graduate qualification score highest on seeking internal opportunity that drives their entrepreneurial spirit. They are highly motivated to utilize their innate talent and potential to be entrepreneurs and have a keen desire to do something innovative and creative so that they can have their own preferred work and life style, be masters of their own time and work for themselves. Their knowledge gained through education propels in them the internal desire to be an entrepreneur. The women entrepreneur who are nor graduates(M=3.3158) follow the post graduate ones in their motivation to be an entrepreneur kindled by an internal opportunity. These women do not have a formal graduate degree but have the keen desire to lead their preferred work and life style and utilize their inner talent which enables them to be entrepreneurs. Please refer 7.1 & 7.2.

Effect of no. of kids on various factors motivating women entrepreneurship

H0: There is no significant difference between the mean scores of various factors motivating women entrepreneurship on account of the number of kids they have.

Analysis of variance in Table 8 indicates that Environment factor differs significant across various groups of women entrepreneurs classified on the basis of the number of kids they have.

Post Hoc analysis upon study reveals that there exists a significant difference between women entrepreneurs motivation based on the number of kids they have. Women with two kids are more motivated to start an enterprise than women who have one kid. This difference can be attributed to the fact that women with two kids have a higher responsibility of raising kids and devoting them time while balancing their work which they are able to

effectively manage running their own enterprise. The challenging role of a mother finds a balance with the work life when women can be masters of their own time and suit the business devotion hours to match with their life responsibilities. The women with two kids show a difference on the environment factors to start an enterprise as these women are keen to utilize the concessions and boost provided by the government to set up an enterprise and the attractive market opportunities provide them the selling place in their chosen filed to generate revenue while utilizing their confidence to run their enterprise. Please refer 9.1 & 9.2.

Effect of work experience on various factors motivating women entrepreneurship

H0: There is no significant difference between the mean scores of various factors motivating women entrepreneurship for different work experience groups.

Analysis of variance for different work experience groups among women entrepreneurs reveals that There exists a significant difference between the groups of work experience on the internal opportunity factor and the work life itself. Please refer Table 10.

Post Hoc analysis for different work experience groups highlights that there exists a significant difference between the groups on the basis of work life factor. Women entrepreneurs with work experience of up to three years are more influenced by the work life factor(M= 3.5060) to set up an enterprise than women with four to six years of work experience (M=2.9643) as they have a fuelling desire to be an employer, have independence and be their own boss and enjoy the best luxuries of life while getting over the monotony of being In job. Differences on similar grounds also exist between women having 4-6 years of work experience (M= 2.9643) and women with more than six years of work experience(M=3.5875) Women with more than six years of work experience show a greater motivation to start an enterprise due to work life factors as they want to get over the monotony of their routine job and experience change and be independent. Please refer 11.1 & 11.2.

Effect of category of enterprise on various factors motivating women entrepreneurship

H0: There is no significant difference between the mean scores of various factors motivating women entrepreneurship for different categories of enterprises of women entrepreneurs. Please refer Table 12.

Findings of the analysis of variance across different categories of women entrepreneurs and their motivation to start a business brings forth an interesting result that there esixts significant differences between the categories of women entrepreneurs for their motivation to start an enterprise across all factors that motivate women to be an entrepreneur.

Post Hoc analysis to understand where do the differences between the groups exist on the various parameters reveals that significant differences exist between the two groups on the work life factor. Women are more inclined to join their parents business as an entrepreneur (M= 3.4384) for work life conditions so that they can be independent and enjoy the best luxuries of life than being sole first generation entrepreneurs(M= 2.7895)

On the grounds of economic reasons to be an entrepreneur women are more likely to join parents business as entrepreneurs (M= 3.609) as against women taking up the first hand sole entrepreneur initiative(M= 2.695) There also exists significant differences between the two groups on the economic front that women join husbands/ in laws business as entrepreneurs(M= 2.967) than joining parents business as entrepreneurs. A in depth analysis brings forth the fact that women exhibit first preference to join their parents business as entrepreneurs so that they can overcome the economic conditions and get over the shortage of money in the family, make money to clear debts and ensure financial stability of their children. The second preferred option is to join their husbands business or in laws business as entrepreneurs rather than taking the plunge to be a sole first generation entrepreneur. This can also be attributed to take the up the lesser risk option and be able to run the business without tension and fear. Please refer 13.1 & 13.2.

On the environment factors of government support to set up enterprises and utilize attractive market opportunities women prefer to join their parents business as an entrepreneur(M= 3.4457) than being first generation entrepreneurs(M= 2.6184). The option to do a business with lesser risk while utilizing available benefits from the government and set up an enterprise while generating wealth and utilizing their talent again is responsible for such an effect.

While being motivated on the internal factors to set up an enterprise and utilize their innate talent to be an entrepreneur while doing something creative and innovative women entrepreneurs prefer to join their parents business as entrepreneurs (M= 3.6715) than be first generation sole entrepreneurs (M= 2.8246). On the factor of achievement to get complete satisfaction for their work, be a leader and

utilize their keen business sense, women entrepreneurs prefer to join their parents business (M= 3.5652) or join their husbands/ in laws business (M= 3.0566) than taking the plunge on their own to be first generation sole entrepreneurs(M= 2.8596)

To satisfy their passion to be an entrepreneur also women do not prefer to take the risk of being a first generation entrepreneur (M=2.7368) and show inclination to join their parents business as an entrepreneur(M= 3.6087) or join husbands/ in laws business as an entrepreneur (M= 3.00)

The desire to attain a high Social status as a motivating factor to be an entrepreneur is also is chosen by women preferentially to join their parents business as an entrepreneur(M= 3.5072) or join their husband's business as an entrepreneur (M= 2.9667) and the option to be first generation sole entrepreneur is the least preferred one(M= 2.8421)

This brings us to an interesting finding that women are not so keen to take up high risks to be an entrepreneur and prefer lesser risky options to join parents business as entrepreneurs or join their husbands/ in laws business to be an entrepreneur rather than getting head on in being an entrepreneur right from that scratch as that would involve higher risks and ambiguity.

Effect of type of enterprise on various factors motivating women entrepreneurship

H0: There is no significant difference between the mean scores of various factors motivating women entrepreneurship for different types of enterprises of women entrepreneurs. Please refer Table 14.

Analysis of variance reveals that there exists significant differences between the types of enterprises opted by women to be set up on the various factors that motivate women to be entrepreneurs.

Post Hoc Analysis reveals that there exist significant differences between the groups on the internal opportunity factor to start an enterprise. Traditionally tailoring and fashion boutiques as small business enterprises were the most common among women, however the representative sample shows the preference of starting confectionery. Bakery shops(M= 3.8925) than a tailoring shop (M= 2.8952) Women entrepreneurs prefer to else start a venture of selling gift items & stationery (M= 3.8235) than opening a tailoring shop. There exists no difference between the preference to start a confectioner/ bakery business or start a venture of gift items & stationery. This brings us to emerging areas that are being explored by women to start enterprises taking a trend away from traditional businesses that women have been engaged in. Please refer Tables 15.1 & 15.2.

Where environment is concerned to be a motivator to start an enterprise again similar differences as seen in the internal opportunity factor are seen where to utilize the concessions form government and make use of attractive market opportunities women prefer to start confectionery& bakery businesses (M= 3.6290) than opening tailoring shops or ventures of gift & stationery items (M= 3.4412).

To satisfy their achievement factor of deriving complete satisfaction of their work and being a leader women have shown preference to start a confectionery/ bakery business (M= 3.6882) than the traditional business of opening a tailoring shop (M= 2.8667) and so is the case of fulfilling their passion of being an entrepreneur and utilizing their decision making ability successfully women have shown preference to like what they have shown on the internal opportunity front of setting up confectionery/ bakery units(M= 3.6674) than setting up tailoring and fashion boutiques.

IV. Conclusion

The present study shows that women in emerging country such as India start their own businesses from a desire for self-determination and for career challenge and that they expect the corresponding respect, recognition, and self-esteem that both self-determination and challenge provide. Primarily, entrepreneurship is a survival instinct for the micro, small and medium enterprise women owners that motivates them to start a business. Results obtained from factor analysis have shown that women entrepreneurship is motivated by seven factors termed as Work life factor, economic factor, environment factor, internal opportunity factor, achievement factor, passion, social status. Anova tests using post hoc analysis has been done to study the impact of demographic variables on these motivators with varying results revealing that women below the age group of 30 when start a business do so for attaining a social status than any other reason while older women tend to do it for attaining a work life balance and the flexibility to spend time with family and kids.

Education plays an important role in motivating women to be entrepreneurs thereby highlighting the role institutions and academicians could play in enhancing this entrepreneurial spirit across gender. Women entrepreneurs who have post graduate qualification score highest on seeking internal opportunity that drives their entrepreneurial

spirit. They are highly motivated to utilize their innate talent and potential to be entrepreneurs and have a keen desire to do something innovative and creative so that they can have their own preferred work and life style, be masters of their own time and work for themselves. Their knowledge gained through education propels in them the internal desire to be an entrepreneur.

Women with two kids are more motivated to start an enterprise than women who have one kid bringing us again to a sharp reality that Indian women have always closely associated themselves with the family which assumes a larger role tot hem than attaining their self. The challenging role of a mother finds a balance with the work life when women can be masters of their own time and suit the business devotion hours to match with their life responsibilities. Women with more than six years of work experience show a greater motivation to start an enterprise due to work life factors as they want to get over the monotony of their routine job and experience change and be independent. This finding brings us to a glass ceiling dimension faced by women which poses resistance to them to rise above certain positions and forbids their entry into C-suites and to come over this, women seek entrepreneurship as a solution.

Implications and Scope and future research:

This study is also useful to policy makers and institutions for incubating women entrepreneurs and training them to create growth and development of the India. Various initiatives have been launched by the government of India which can see the light of success only if women are motivated to start enterprises and the joint role of academic institutions, NGO's and financial bodies shall enable the "Make In India" dream be a true reality. Women entrepreneurs are mostly not sure of their competitive strength and fear whether they shall actually be able to break the glass ceiling which can be of sue tot training institutions like NEISBUD to tailor appropriate programs targeted at women. Academic institutions into graduate and undergraduate education in commerce and business have a compulsory course on entrepreneurship which has inclusions of topics on women entrepreneurship, which can benefit from the results of this study being used to motivate and encourage women entrepreneurs to take the matter carefully with confidence. Mentors and NGO's can utilise this study to capture women entrepreneurs with various programs and groups ENACTUS to bring about a change in women entrepreneurial journey. This study using a limited sample from Delhi NCR of small and micro women entrepreneurs has wide implications for generalisation by pan Indian studies and cross cultural analysis across continents. Further studies into women entrepreneurial motivations are encouraged.

References

Aldrich, H.E. (1989), "Networking among women entrepreneurs", in Hagan, O., Rivchun, C. and Sexton, D. (Eds), Womenowned Businesses, Praeger, New York, NY, pp. 103-132 .

Aldrich, H.E. and Cliff, J. (2003), "The pervasive effects of family on entrepreneurship: toward a family embeddedness perspective", Journal of Business Venturing, Vol. 18, pp. 57396.

Bates, T., Jackson, W.E. III and Johnson, J.H. Jr (2007), "Introduction to the special issue on advancing research on minority entrepreneurship", Annals of the American Academy of Political Science and Social Science, Vol. 613, pp. 1017

Bruno, A. and Tyebjee, T. (1982), "The environment for entrepreneurship", in Kent, C.A., Sexton, D.L.and Vesper, K. (Eds), The Encyclopedia of Entrepreneurship, PrenticeHall, Englewood Cliffs, NJ, pp.288307.

Brush, C.G. (1990), "Women and enterprise creation: barriers and opportunities", Entreprising Women: Local Initiatives for Job Creation, OECD, Paris.

Brush, G. C., Bruin, Anne De, Welter, F. (2009) "A genderaware framework for women's entrepreneurship", International Journal of Gender and Entrepreneurship, Vol. 1 Iss: 1, pp.8 -

Buttner, E. Holly; Moore, Dorothy P. (1997) Women's Organizational Exodus to Entrepreneurship: Self-Reported Motivations and Correlates with Success, Journal of Small Business Management, Vol. 35 Issue 1, p34-46.

Carter, S. and Shaw, E. (2006), "Women's business ownership: recent research and policy developments", report to the Small Business Service, available at: http://tna.europarchive.org/20081112122150/http://www.berr.gov.uk/files/file38330.pdf (accessed 20 October 2011).

Dopfer, K., Foster, J. and Potts, J. (2004), "Micromesomacro", Journal of Evolutionary Economics, Vol. 14, pp. 26379

Duchéneaut, B. (1997), "Women entrepreneurs in small and medium enterprises: a major force for innovation and job creation", Report prepared for the OECD Conference, Paris, 1618 April.

Jennings, J.E. and McDougald, M.S. (2007), "Workfamily interface experiences and coping strategies: implications for entrepreneurship

Kirzner, I. (1985), Discovery and the Capitalist Process, University of Chicago Press, Chicago, IL.

Manickavel, S. 1997. Small industries: Need for entrepreneurs in villages. Social Welfare. 32(7): 19-21

Moitra, B. 2001. Women and entrepreneurship: Sunderbans women show the way. Kurushetra. 49(3): 28-30

Penrose, E. (1959), The Theory of Growth of the Firm, Wiley, New York, NY.

Pitelis, C. (2005), "On globalisation and governance: some issues", Contributions to Political Economy, Vol. 24, pp. 112

Ray, S. and Ray, I.A. 2011. Women Entrepreneurship In and M. A. Farooq, 2012. Problems Faced By Women India: Some Critical Issues And Challenges. Entrepreneurs In Kohat City Of Khyber International Journal Of Contemporary Business Pakhtunkhaw, Pakistan. International Journal Of Studies, pp: 6-30

Schumpeter, J. (1934), The Theory of Economic Development, Harvard University Press, Cambridge, MA.

Shane, S. (2003), A General Theory of Entrepreneurship, Edward Elgar, Cheltenham.

Table 1: Demographics Profile of Women Entrepreneurs

Age

Description	Frequency
Below 30 years	46
31-40 years	54
>40 years	18
Total	118

Education

Description	Frequency
Graduate	75
Post Graduate	24
Below Graduation	19
Total	118

Marital Status

Description	Frequency
Married	87
Unmarried	31
Total	118

No. of Kids

Description	Frequency
0	48
1	21
2	39
>2	10
Total	118

Work Experience

Description	Frequency
0-3 YEARS	42
4-6 YEARS	56
>6 YEARS	20
Total	118

Family Type

Description	Frequency
Nuclear family	78
Joint family	40
Total	118

Category of Entrepreneur

Description	Frequency
Sole first generation entrepreneur	19
Joined Parents business as entrepreneur	69
Joined In laws/ Husband business as entrepreneur	30

Type of Enterprise

Description	Frequency
Fashion design & Tailoring	35
Confectionery/ Bakery	31
Gift Items& Stationery	17
Coaching center	18
Herbal & Beauty Salon	17
Total	118

No. of Employees in the Organisation

Description	Frequency
1-3	41
4-7	61
>7	16
Total	118

Hours put in per day in the Organisation

Description	Frequency
1-4 HRS	21
5-7 HRS	49
8-10 HRS	39
>10 HRS	13
Total	118

Table 2: KMO & Barlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.874
Bartlett's Test of Sphericity	Approx. Chi-Square	1893.277
	df	435
	Sig.	.000

Table 3: Factors, Labels & Factor Loadings

Factor	Statements	Factor Loadings	% Variance Explained
Work Life Factor			11.41%
6	Be an employer	.686	
17	Be independent and be my own boss than work under someone	.685	
22	Enjoy the best luxuries of life	.774	
23	Get over the monotony and experience change	.758	
Economic Factor			10.82%
1	Get over the shortage of money	.539	
4	Make my family rich	.558	
13	Supplement the family income	.679	
16	Ensure financial stability of children	.809	
19	Make money to clear debts	.736	
Environment Factor			10.63%
25	Utilize concessions from the government, banks etc.	.633	
28	I have always been confident to start my own enterprise	.820	
29	Lack of fair compensation in job prompted me to set up my enterprise	.846	
30	Utilize attractive market opportunities in my chosen field	.756	
Internal Opportunity Factor			9.6%
8	Utilize my innate talent & potential in a profession	.704	
11	Do something creative/ innovative	.683	
20	Have my own preferred work style and life style	.685	
Achievement Factor			9.1%
2	Get Complete satisfaction for my work	.726	
3	Be a leader	.804	
5	Utilize my keen business sense	.678	
Passion			8.89%
14	Make effective use of my risk taking ability and succeed	.671	
26	Use my decision making and problem solving skills to make profit	.652	
27	Compete with others and prove to be the best	.656	
Social Status			6.19%
9	Attain high social status	.648	
12	Show that I am inferior to none	.636	
21	Earn respect of people	.530	
Total variance explained			**66.62%**

Table 4: ANOVA between age and various factors motivating women entrepreneurship (Test of Homogeneity of Variances)

	Levene Statistic	Sig.	F	Sig.	Welch	Sig.
Work Life	1.001	.371	1.824	.166	1.900	.161
Economic	.727	.485	.041	.960	.040	.961
Environment	1.555	.216	1.120	.330	1.179	.317
Int. Opportunity	.658	.520	.891	.413	.912	.409
Achievement	1.810	.168	2.677	.073	3.086	.054
Passion	1.191	.308	.885	.415	.818	.448
Social Status	.459	.633	3.310	.040	3.470	.040

Table 5.1: Post HOC Analysis of social status across age groups (Multiple Comparisons)

Dependent Variable		(I) AGE	(J) AGE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Social Status	Tukey HSD	1	2	.46726	.18372	**.033**	.0310	.9035
			3	.34380	.25457	.370	-.2607	.9483
		2	1	-.46726	.18372	**.033**	-.9035	-.0310
			3	-.12346	.24921	.874	-.7152	.4683
		3	1	-.34380	.25457	.370	-.9483	.2607
			2	.12346	.24921	.874	-.4683	.7152

Table 5.2: Descriptives of Social Status

Variable	Age	N	Mean
Social status	Below 30 Years	46	3.5290
	31-40 years	54	3.0617
	>40 years	18	3.1852
	Total	118	3.2627

Table 6: ANOVA between Education and various factors motivating women entrepreneurship (Test of Homogeneity of Variances)

	Levene Statistic	Sig.	F	Sig.	Welch	Sig.
Work Life	.108	.897	.659	.519	.568	.571
Economic	.891	.413	.513	.600	.406	.669
Environment	1.135	.325	.046	.955	.044	.957
Int. Opportunity	1.902	.154	8.410	**.000**	10.426	.000
Achievement	3.545	.032	5.220	.007	4.708	**.015**
Passion	.172	.843	.463	.631	.501	.610
Social Status	1.307	.275	1.025	.362	.805	.454

Table 7.1: ANOVA between Education and various factors motivating women entrepreneurship (Multiple Comparisons)

Dependent Variable	Edu	Edu	Mean Difference (I-J)	Std. Error		Sig.		
Internal Opportunity	Tukey HSD					.000	-1.2343	-.3179
			4	-.02246	.21134	.994	-.5243	.4794
		2	1	.77611	.19298	**.000**	.3179	1.2343
			4	.75365	.25269	**.010**	.1537	1.3537
		4	1	.02246	.21134	.994	-.4794	.5243
			2	-.75365	.25269	.010	-1.3537	-.1537
Achievement	Games-Howell	1	2	-.51167	.19982	.038	-.9984	-.0249
			4	.38526	.29744	.412	-.3603	1.1308
		2	1	.51167	.19982	**.038**	.0249	.9984
			4	.89693	.32981	**.028**	.0850	1.7088
		4	1	-.38526	.29744	.412	-1.1308	.3603
			2	-.89693	.32981	.028	-1.7088	-.0850

Table 7.2: Descriptives of Education

Education		N	Mean
Internal Opportunity	Graduate	75	3.2933
	Post Graduate	24	4.0694
	Below Graduation	19	3.3158
	Total	118	3.4548
Achievement	Graduate	75	3.2800
	Post Graduate	24	3.7917
	Below Graduation	19	2.8947
	Total	118	3.3220

Table 8: ANOVA between No. of Kids and various factors motivating women entrepreneurship (Test of Homogeneity of Variances)

	Levene Statistic	Sig.	F	Sig.	Welch	Sig.
Work Life	2.966	.035	.403	.751	.438	.728
Economic factor	1.205	.311	.095	.963	.124	.946
Environment factor	.949	.420	3.112	**.029**	3.373	.030
Internal Opportunity	1.745	.162	.920	.434	.921	.440
Achievement	3.156	.028	3.886	.011	2.903	.050
Passion	2.471	.065	1.191	.316	1.113	.358
Social Status	.620	.604	.442	.723	.523	.670

Table 9.1: ANOVA between NO. OF KIDS and various factors motivating women entrepreneurship

Dependent Variable		(I) No_Kids	(J) No_Kids	Mean Difference (I-J)	Std. Error	Sig.
Enviro-nment	Tukey HSD	1	2	.43676	.25029	.305
			3	-.32973	.20623	.383
			4	-.24896	.33254	.877
		2	1	-.43676	.25029	.305
			3	-.76648	.25893	**.019**
			4	-.68571	.36755	.249
		3	1	.32973	.20623	.383
			2	.76648	.25893	.019
			4	.08077	.33909	.995
		4	1	.24896	.33254	.877
			2	.68571	.36755	.249
			3	-.08077	.33909	.995

Table 9.2: Descriptives of no. of kids

		N	Mean
Environment	No kids	48	3.1510
	1 Kid	21	2.7143
	2 Kids	39	3.4808
	>2 Kids	10	3.4000
	Total	118	3.2034

Table 10: ANOVA between Work Experience and various factors motivating women entrepreneurship (Test of Homogeneity of Variances)

	Levene Statistic	Sig.	F	Sig.	Welch	Sig.
Work Life	.934	.396	5.474	**.005**	5.639	.006
Economic	.798	.453	.155	.857	.173	.842
Environment	.244	.784	.519	.597	.528	.593
Int. Opportunity	1.099	.337	3.685	**.028**	3.613	.034
Achievement	6.754	.002	2.050	.133	1.995	.147
Passion	2.735	.069	.644	.527	.556	.577
Social Status	.283	.754	1.904	.154	1.906	.159

Table 11.1: ANOVA between Work Experience and various factors motivating women entrepreneurship

Dependent Variable		(I) Workexp	(J) Workexp	Mean Difference (I-J)	Std. Error	Sig.
Work Life	Tukey HSD	1	2	.54167	.19096	**.015**
			3	-.08155	.25416	.945
		2	1	-.54167	.19096	.015
			3	-.62321	.24370	**.032**
		3	1	.08155	.25416	.945
			2	.62321	.24370	.032
Int. Opportunity	Tukey HSD	1	2	.45040	.17433	**.029**
			3	.08254	.23203	.933
		2	1	-.45040	.17433	.029
			3	-.36786	.22248	.228
		3	1	-.08254	.23203	.933
			2	.36786	.22248	.228

Table 11.2: Descriptives of Work Experience

		Mean
Work Life	1	3.5060
	2	2.9643
	3	3.5875
	Total	3.2627
Int. Opportunity	1	3.6825
	2	3.2321
	3	3.6000
	Total	3.4548

Table 12: ANOVA between category of Enterprise and various factors motivating women entrepreneurship (Test of Homogeneity of variance)

	Levene Statistic	Sig.	F	Sig.	Welch	Sig.
Work Life	.289	.749	3.728	.027	3.766	.031
Economic	.225	.799	10.138	.000	10.020	.000
Environment	2.686	.072	6.585	.002	6.025	.005
Int. Opportunity	.640	.529	8.151	.000	6.680	.003
Achievement	.501	.607	6.115	.003	5.861	.006
Passion	1.900	.154	11.961	.000	10.449	.000
Social Status	.093	.911	6.333	.002	6.040	.005

Table 13.1: ANOVA between category of Enterprise and various factors motivating women entrepreneurship

Dependent Variable		(I) Catego	(J) catego	Mean Difference (I-J)	Std. Error	Sig.
Work Life	Tukey HSD	0	1	-.64893	.24581	.025
			2	-.36886	.27818	.384
		1	0	.64893	.24581	.025
			2	.28007	.20749	.371
		2	0	.36886	.27818	.384
			1	-.28007	.20749	.371
Eco-nomic	Tukey HSD	0	1	-.9140	.2363	.001
			2	-.2719	.2674	.568
		1	0	.9140	.2363	.001
			2	.6420	.1995	.005
		2	0	.2719	.2674	.568
			1	-.6420	.1995	.005
Envir-onment	Tukey SD	0	1	-.82723	.24313	.003
			2	-.39825	.27514	.320
		1	0	.82723	.24313	.003
			2	.42899	.20522	.096
		2	0	.39825	.27514	.320
			1	-.42899	.20522	.096
Int. Oppo-rtunity	Tukey HSD	0	1	-.84694	.21361	.000
			2	-.53099	.24174	.076
		1	0	.84694	.21361	.000
			2	.31594	.18031	.190
		2	0	.53099	.24174	.076
			1	-.31594	.18031	.190
Achie-Vement	Tukey HSD	0	1	-.70557	.23746	.010
			2	-.19591	.26872	.747
		1	0	.70557	.23746	.010
			2	.50966	.20044	.033
		2	0	.19591	.26872	.747
			1	-.50966	.20044	.033
Passion	Tukey HSD	0	1	-.87185	.20706	.000
			2	-.26316	.23432	.502
		1	0	.87185	.20706	.000
			2	.60870	.17478	.002
		2	0	.26316	.23432	.502
			1	-.60870	.17478	.002
Social Status	Tukey HSD	0	1	-.66514	.23154	.013
			2	-.12456	.26203	.883
		1	0	.66514	.23154	.013
			2	.54058	.19544	.018
		2	0	.12456	.26203	.883
			1	-.54058	.19544	.018

Table 13.2: Descriptives of category of Enterprise

		N	Mean
Work Life	0	19	2.7895
	1	69	3.4384
	2	30	3.1583
	Total	118	3.2627
Economic	0	19	2.695
	1	69	3.609
	2	30	2.967
	Total	118	3.298
Environment	0	19	2.6184
	1	69	3.4457
	2	30	3.0167
	Total	118	3.2034
Int. Opportunity	0	19	2.8246
	1	69	3.6715
	2	30	3.3556
	Total	118	3.4548
Achievement	0	19	2.8596
	1	69	3.5652
	2	30	3.0556
	Total	118	3.3220
Passion	0	19	2.7368
	1	69	3.6087
	2	30	3.0000
	Total	118	3.3136
Social Status	0	19	2.8421
	1	69	3.5072
	2	30	2.9667
	Total	118	3.2627

0 - Sole First Generation Entrepreneur 1- Joined parents business an entrepreneur
1- Joined husbands'/ in laws business as entrepreneur

Table 14: ANOVA between type of Enterprise and various factors motivating women entrepreneurship (Test of Homogeneity of variance)

	Levene Statistic	Sig.	F	Sig.	Welch	Sig.
Work Life	.757	.555	2.296	.063	2.399	.064
Economic	1.460	.219	2.197	.074	2.097	.095
Environment	1.387	.243	5.525	**.000**	6.060	.001
Int. Opportunity	2.509	.046	7.843	.000	8.442	**.000**
Achievement	.077	.989	3.702	**.007**	3.421	.015
Passion	2.812	.029	6.080	.000	5.949	**.001**
Social Status	1.257	.291	2.258	.067	2.269	.076

Table 15.1: ANOVA between type of Enterprise and various factors motivating women entrepreneurship

Dependent Variable		(I) Entrp	(J) Entrp.	Mean Diff.	Std. Error	Sig.
Environment	Tukey HSD	0	1	-1.00046	.22543	.000
			3	-.81261	.27021	.026
			11	-.70476	.26511	.067
			13	-.60672	.27021	.171
		1	0	1.00046	.22543	.000
			3	.18786	.27585	.960
			11	.29570	.27086	.810
			13	.39374	.27585	.611
		3	0	.81261	.27021	.026
			1	-.18786	.27585	.960
			11	.10784	.30912	.997
			13	.20588	.31351	.965
		11	0	.70476	.26511	.067
			1	-.29570	.27086	.810
			3	-.10784	.30912	.997
			13	.09804	.30912	.998
		13	0	.60672	.27021	.171
			1	-.39374	.27585	.611
			3	-.20588	.31351	.965
			11	-.09804	.30912	.998

Table 15.2: Descriptive for type of Enterprise and various factors motivating women entrepreneurship

		N	Mean
Environment	0	35	2.6286
	1	31	3.6290
	3	17	3.4412
	11	18	3.3333
	13	17	3.2353
	Total	118	3.2034
Int. Opportunity	0	35	2.8952
	1	31	3.8925
	3	17	3.8235
	11	18	3.5185
	13	17	3.3725
	Total	118	3.4548
Achievement	0	35	2.8667
	1	31	3.6882
	3	17	3.2941
	11	18	3.3889
	13	17	3.5490
	Total	118	3.3220
Passion	0	35	2.8095
	1	31	3.6774
	3	17	3.6471
	11	18	3.4815
	13	17	3.1765
	Total	118	3.3136
	1	31	3.5161
	3	17	3.3922
	11	18	3.5000
	13	17	3.0980
	Total	118	3.2627

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LEVERAGING KNOWLEDGE PROCESSES FOR BUILDING HIGHER-ORDER DYNAMIC CAPABILITIES

AN EMPIRICAL EVIDENCE FROM IT SECTOR IN INDIA

Vaneet Kaur★ Versha Mehta★★

The study aims to integrate the two prominent Views of Strategic Management namely Dynamic Capability View and Knowledge-Based View and posit a Knowledge-Based View to the capabilities of an organization by establishing a relationship between Knowledge Management Processes and Higher-Order Dynamic Capabilities. The paper makes an attempt to supplement the strategically oriented concept of dynamic capabilities with Knowledge Processes of a firm by suggesting that Knowledge Processes can be leveraged to build advanced capabilities like Adaptability, Absorptiveness and Innovativeness. It was concluded that the three Knowledge Processes namely Knowledge Acquisition, Knowledge Conversion and Knowledge Application are critical for the development of Higher-Order Dynamic Capabilities of a firm. The research also focuses on evaluating organizations in the IT sector operating in India in light of the knowledge-based view of capabilities of dynamism and suggests strategies for enhancing the knowledge orientation and thus improving the capabilities of organizations.

Keywords:Knowledge Processes, Dynamic Capabilities, Innovative Capability, Absorptive Capability, Adaptive Capability

The key competencies developed by Information Technology (IT) sector in India have placed it on the international canvas, thereby transforming image of the country on the global platform and facilitate its emergence as the largest sourcing destination for IT industry worldwide (Soni, 2013). The sector has contributed remarkably to India's foreign reserves and presence in the global landscape in terms of qualified workforce and exports in the sector, thereby signifying the huge potential the industry holds in the global arena.

The reason for selecting Information Technology sector for the present study is that the cut-throat competition in global high technology industries such as IT mandates the need for an extended paradigm to guide firms in gaining distinctive advantages (Teece & Pisano, 1994). The Resource-Based View of the firm which states Valuable, Rare, Inimitable and Non-Substitutable (VRIN) resources as a source of competitiveness does not fully explain the rise of IT sector in India (Soni, 2013). Comparatively, the Dynamic Capabilities View is more pertinent in studying the evolution and growth potential of the sector. Therefore, IT companies form conceptually interesting and challenging units of analysis for the purpose of the present study.

Moreover, while the sector has the potential to generate revenues of USD 225 billion by 2020 (Mittal, 2009), this opportunity may be difficult to seize due to emerging problems such as increasing cost of doing business in India, lack of infrastructure and rise of alternate off-shoring locations such as Vietnam, China and the Philippines. Unless the sector addresses these concerns, low-cost leadership, which is the unique selling proposition of the sector, may not last long. Information Technology firms in India have been exploiting the existing capabilities, resulting into the present worth of the sector, howbeit, now diminishing returns begin to stare at the industry (Soni, 2013). This changing scenario, therefore, calls for building of Higher-Order Dynamic Capabilities by IT firms in India, which can be done through leveraging various Knowledge Processes.

A paradigm shift in business occurred with the dawn of new economy (Gold, Malhotra, & Segars, 2001) in which knowledge has replaced the basic factors of production namely land, labour and capital to thereby emerge as the prime source of competitiveness for an organization (Sher & Lee, 2004). The capability of firms to realize the economic value of knowledge resources is termed to be the 'hallmark of the new economy' (Gold et al., 2001). Owing to the complex, uncertain and ever-changing environment faced by organizations, researchers have acknowledged the importance of building knowledge competences for ensuring organizational success and

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growth (Sorensen & Stuart, 2000). Research suggests that competitive advantage can be gained and sustained through "economies of knowing" (Agbim, Zever, & Oriarewo, 2014) but in spite of the increased significance of knowledge and its related processes in IT firms, currently managers lack proper understanding regarding the best possible ways of leveraging knowledge as a resource (Foss & Pedersen, 2004). Therefore, better comprehension of knowledge processes and competences can aid in the significant enhancement of higher-order organizational capabilities.

On the other hand, companies may succeed with static organizational capabilities in the short-run, nonetheless, imitation by competitors will eventually lead to the abrasion of advantages gained from such capabilities. In this scenario, dynamic capabilities can become the reason for lasting advantage as these capabilities are deep rooted in the values and history of an organization, and hence not easily replicated by competitors (Teece, 2014). Such capabilities depend not solely on finest practices and resources but on signature practices and VRIN resources (Teece, 2014). Moreover, these are not merely a subset of capabilities, rather the paramount capabilities of an organization, which mandates greater focus on such competences in the present-day context (Jiang, 2014; Teece & Pisano, 1994).

Although the proposition of dynamic capabilities has its foundations in Resource-Based View, it appears to be closely related to the Knowledge-Based View of strategic management (Acedo, Barroso & Galan, 2006). Research suggests that focus on knowledge processes in isolation is insufficient in creating a consistent flow of knowledge to and from the stocks of knowledge within a company, and in contrast, over-emphasis on dynamic capabilities alone can create problems in the absence of comprehension of detailed processes involved in managing knowledge effectively (Andersén, 2012; Nielsen, 2006). It has been stated that in order to know the significance of dynamic capabilities, it is important to analyze the relationship between dynamic capabilities and organizational processes (Sher & Lee, 2004). This lays a foundation for supplementing the strategically oriented concept of dynamic capabilities with knowledge processes of a firm (Nielsen, 2006). Hence, the present research sets out to integrate the knowledge processes with the dynamic capabilities of a firm which can bring the research in the field of dynamic capabilities one step ahead (Nielsen, 2006).

Moreover, the concept of dynamic capabilities is relatively new to the strategic management literature (Teece, 2012) and the present empirical research in the field of dynamic capabilities is scant and warrants further investigation. Furthermore, using India as a testing field for the present study is essential for validating the universal applicability of the western generated Dynamic Capabilities theory for reasons like India's wide dissimilarities from western countries and its increasing inclusion in the world economy. Also, the development of new knowledge and capabilities is especially essential in emerging and changing markets like India (Hong, Kianto, & Kyla, 2008).

I. Review of Literature

An organizational capability refers to "the ability of an organization to perform a coordinated set of tasks, utilizing organizational resources, for the purpose of achieving a particular end result" (Helfat & Peteraf, 2003, p. 999). Capabilities can be classified into two types viz. Operational/ Ordinary Capabilities and Dynamic Capabilities (Ali & Christofferson, 2011). Former constitutes the "zero-order capabilities" that help a firm to earn a living at present (Ali & Christofferson, 2011; Helfat & Winter, 2011; Winter, 2003). However, these capabilities are not enough to keep up with the constantly evolving business environment. Infact, Dynamic Capabilities act as cornerstones of organisational success (Jiang, 2014) by enabling organizations to meet the challenges posed by the environmental dynamism which otherwise would threaten and make the existing capabilities obsolete (Winter, 2003). Dynamic Capabilities can be best defined "as the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environment" (Teece et al., 1997, p. 516). Dynamic capabilities promote continual adaptation within an organization which would reduce the possibility of a need to make any disruptive change (O'Reilly & Tushman, 2008). An important implication of this approach of strategic management is that an organization would need to simultaneously augment its ability to exploit new resources as well as its ability to renew existing capabilities and resources (Agbim & Idris, 2015; Hou, 2008; Teece et al., 1997). This in turn will equip an organization to react to changing market conditions, thereby gaining a competitive advantage (Breznik & Lahovnik, 2014; Ogunkoya, Hassan & Shobayo, 2014). Thus, dynamic capabilities are considered to be at the heart of a firm's strategy and value creation.

Knowledge Management Processes

Knowledge management and its related processes have been represented as a subset of dynamic capabilities (Nguyen

& Neck, 2008) and are considered as the First-Order Capabilities (Gold et al., 2001) which contribute to the reconfiguration of other organizational resources (Nguyen & Neck, 2008). Knowledge Management Processes are comprised of three processes namely Knowledge Acquisition, Knowledge Conversion and Knowledge Application (Daud & Yusoff, 2010).

Knowledge Acquisition Processes mainly deal with the accumulation of knowledge (Gold et al., 2001), which can be achieved either through novel or improved use of existing knowledge, or by facilitating a flow of knowledge from external stocks into the internal knowledge stocks of a firm (Nguyen & Neck, 2008; Nielsen, 2006). It encompasses processes for generating new knowledge about customers, suppliers, competitors as well as knowledge about new products, services and processes (Nguyen & Neck, 2008).

Knowledge Conversion Processes include filtering of information, transfer of knowledge between individuals and organization, as well as integration of varied types and sources of knowledge and distribution of knowledge (Nguyen & Neck, 2008). Knowledge needs to be converted and integrated for strong organisational capabilities to emerge (Lee & Suh, 2003; Nguyen & Neck, 2008).

Knowledge Application Processes includes storage, retrieval and sharing of knowledge and helps in realizing the full value creating potential of knowledge (Nguyen & Neck, 2008). Application processes constitute searching for maximum possible novel ways to exploit the knowledge resources of the firm (Nguyen & Neck, 2008; Nielsen, 2006; Wang & Ahmed, 2004). Such processes are aimed towards utilizing knowledge to solve new problems, to enhance efficiency by taking advantage of exclusive knowledge and to adapt to changing competitive dynamics in the industry (Nguyen & Neck, 2008).

Higher-Order Dynamic Capabilities

Adaptive, Innovative and Absorptive Capabilities are the most important industry-level dynamic capabilities that transcend firm level capabilities of dynamism (Wang & Ahmed, 2007).

Adaptive Capability refers to the proficiency of a firm to rapidly reconfigure and coordinate resources in response to swift environmental changes (Gibson & Birkinshaw, 2004). It encompasses the ability of a firm (i) to reconfigure resources and coordinate processes promptly in order to develop more successful products (Akgün, Keskin & Byrne, 2012); (ii) to respond to environmental turbulence while maintaining the previous level of performance (Aggarwal, Posen & Workiewicz, 2015); (iii) to identify and seize the opportunities emerging in the market (Hofer, Niehoff & Wuehrer, 2015), (iv) to respond to external changes through renewal and re-combination of internal processes (Adeniran & Johnston, 2012; Zhou & Li, 2010), and (v) to analyze markets, customers as well as competitors and accordingly allocate resources in response to environmental changes (Oktemgil & Gordon, 1997). The aforesaid capability is related to those processes in an organization which facilitate strategic flexibility (Monferrer et al., 2015) and help an organization in adjusting to new trends reflected by a firm's external environment (Gibson & Birkinshaw, 2004), thereby making resources and capabilities of a firm more aligned with environmental changes.

Absorptive Capability refers to a firm's ability of identifying, assimilating and applying valuable external information towards commercialization (Cohen & Levinthal, 1990; Helfat & Peteraf, 2003). It exemplifies a learning processes which includes ability to identify, grasp and employ knowledge (Lane et al., 2006). It encapsulates comprehension and acceptance of knowledge products by the recipient (Wang & Gan, 2010) and ascertains an organization's ability to acquire and utilize the external knowledge in its favour (Bergh & Lim, 2008; Helfat & Peteraf, 2003). Absorptiveness is a function of firm's existing knowledge stock (Liao, Fei & Chen, 2007), which can be relayed into products, processes and personnel (Cohen & Levinthal, 1990; Monferrer et al., 2015). It is affirmed that the aforementioned capability depends on the effectiveness of a firm to access environmental knowledge (Monferrer et al., 2015). Absorptive Capability incorporates the ability to convert new knowledge into usable knowledge through various organizational processes (Cadiz, Sawyer & Griffith, 2009).

Innovative Capability refers to the firm's ability to venture into new products or new markets, by aligning strategic orientation with processes (Wang & Ahmed, 2004). It refers to a "firm's ability to develop something new in response to the change in external factors" (Ali & Christofferson, 2011, p. 20). Such Capabilities are "bundles and patterns of skills used by firms to formulate and implement an innovation strategy involving the creation, extension and modification of those resources used for innovation" (Dodgson, Gann & Salter, 2008, p. 97).

Knowledge Management Processes and Higher-Order Dynamic Capabilities

Literature suggests that a firm's ability to manage knowledge determines its adaptability (Monferrer et al., 2015). Once knowledge is integrated into a firm's knowledge base, it serves as an incentive to develop a greater ability to adapt to changes by encouraging the employees of an organization to be innovative and to take initiatives in seeking methods of adapting to new techniques, technologies and approaches (Monferrer et al., 2015; Riemenschneider et al., 2010). Therefore, H_1 has been postulated as:

$H_{1:}$ Knowledge Management Processes have a significant impact on firm's Adaptive Capability.

Absorptive Capability is said to be built upon four foundations viz. knowledge acquisition, transformation, assimilation and exploitation (García-Morales, Bolívar-Ramos & Martín-Rojas, 2014; Mirkovski et al., 2015; Zahra & George, 2002). Literature suggests that sourcing of both internal and external knowledge is essential in developing absorptive capability (Adeniran & Johnston, 2012). It has also been proposed that organizations with higher knowledge acquisition proficiency have a greater level of absorptive capacity (Liao, Wu, Hu & Tsuei, 2009). Knowledge process capabilities are viewed as complementary capabilities that can enhance absorptive capability of a firm (Agbim et al., 2014). Effective management of knowledge resources through the process of generation, access, integration and exchange of knowledge can contribute to the development of such capabilities (Monferrer et al., 2015). Thus, it can be deduced that knowledge processes enhances firm's absorptive capacity (Kheng, 2008; Zheng et al., 2011). Hence, it is proposed that:

H_2: There is a significant relationship between Knowledge Management Processes and Absorptive Capability of an organization.

Employing practices to encourage assimilation of external knowledge facilitates research and development, which in turn leads to an improvement in the innovation capabilities of a firm (Monferrer et al., 2015). Moreover, previous research proposes that continual innovation requires concurrent processes of creation, absorption, integration as well as reconfiguration of knowledge (Verona & Ravasi, 2003; Monferrer et al., 2015). Research suggests that knowledge flows and knowledge stocks are crucial for sustaining innovative performance (Jantunen, 2005; Monferrer et al., 2015). It has been stated that if an organization is considered as a system, knowledge is its input and innovation capability is its output (Liao et al., 2009). Since, knowledge is essential for continual innovation, it can be assumed that knowledge capabilities are closely related to innovation (Liao, Fei & Chen, 2007). Thus, knowledge process capabilities can be said to be an antecedent to innovation capability (Adeniran & Johnston, 2012; Kheng, 2008; Liao, Fei & Chen, 2007; Monferrer et al., 2015; Zheng et al., 2011). Based on these insights, the following Hypothesis is proposed:

H_3: Knowledge Management Processes significantly impact Innovative Capability of a firm.

II. Research Design & Methods

This section deals with developing measures of various theoretical constructs which form a part of the study as well as outlines statistical techniques applied for data collection and data analysis.

Measurement of Variables

All measurement items of variables are derived from the existing literature. The constructs of Knowledge Management Processes (KMP) i.e. Acquisition Processes (AC), Conversion Processes (CP) and Application Processes (AP) are adapted from the study of Gold et al. (2001) and Nguyen and Neck (2008). The items for measuring Adaptive Capability (ADC) were adapted from Akgün, Keskin and Byrne (2012), while the items for measuring Absorptive Capability (ABC) were adapted from Liao et al. (2007) and Kaehler et al. (2014) and those for measuring Innovative Capability (IC) were adapted from Liao et al. (2007). The items were measured using a seven point Likert scale ranging from (1) 'strongly disagree' to (7) 'strongly agree'. The operational definitions of the variables, derived from the literature for the purpose of this study are given in Table 1.

Validity and Reliability

A study formed the part of pilot survey which was conducted in order to preliminarily examine the validity and reliability of the instrument. Online questionnaire was sent to 120 employees working in IT Companies in India. After the data was entered into IBM SPSS 21.0 software, exploratory data analysis was conducted to examine the data for normality and outliers (Leech, Barrett, & Morgan, 2005). A Shapiro-Wilk's test (P> 0.05) and a visual inspection of histograms, normal Q-Q plots and box plots confirmed the normality of data.

In order to pre-test the instrument, an exploratory factor analysis using Principal Components Analysis was performed with Varimax rotation and criteria of eigenvalue e"1, factor loading e"0.50 and total variance extracted e"50

per cent (Gerbing & Anderson, 1988). Orthogonal rotation (varimax) was used with a purpose of getting factors that are as uncorrelated as possible with each other (Leech et al., 2005). Further, to ensure uni-dimensionality of constructs no item was allowed to load on more than one factor (Nguyen & Aoyama, 2014) and those items comprising a scale were retained that loaded highly on one factor thus ensuring discriminant validity (Hair et al., 1998). The factor analysis for all the scales met the basic requirements of the determinant being above .00001, Kaiser-Meyer-Olkin (KMO) being greater than .70 (Table 2) and the Bartlett test being significant (Leech et al., 2005).

The final measurement items for various scales are given in Table 3. All the items loaded on a single factor with the total variance explained equal to 72.515% and communalities being above .550. In addition, Cronbach's alpha was applied to determine the reliability of the scales which yielded results within the acceptable range of 0.70 to 0.95 (Tavakol & Dennick, 2011).

III. Results & Discussion

Correlations and multiple regression analysis was performed to test the hypotheses. Before running the multiple regression analysis, a test for multicollinearity was conducted which yielded a Variance Inflation Factor (VIF) equal to 1 which is well below the red sign of value ranging between 5 and 10 (O'Brien, 2007).

The results of bivariate correlation showed moderate to strong positive and significant relationships between all the variables which are illustrated in Table 4.

The results of multiple regression analysis (Table 5) using Enter method proved the first hypothesis that Knowledge Management Processes have a significant impact ($p < .001$) on firm's Adaptive Capability as the processes explain around 50% variation in Adaptive Capability. The value of standardized Beta coefficient at .716 as well as t and F values are statistically significant at p value less than .001.

The results of multiple regression analysis (Table 6) also provided support for the second hypothesis that there is a significant relationship ($p < .001$) between Knowledge Management Processes and Absorptive Capability of an organization as the Knowledge Processes explain around 40% variation in Absorptive Capability. The value of standardized Beta coefficient at 0.638 as well as t and F values are also statistically significant at p value less than .001.

The results of multiple regression analysis (Table 7) also proved the third hypothesis that Knowledge Management Processes significantly impact ($p < .001$) Innovative Capability of a firm as the Knowledge Processes explain around 44% variation in Innovative Capability. The value of standardized Beta coefficient at 0.671 as well as t and F values are also statistically significant at p value less than .001.

The results of Correlation and Multiple Regression Analysis suggest that Knowledge Management Processes contribute to the development and enhancement of Adaptive Capability the most, followed by Innovative Capability and Absorptive Capability respectively.

As evident from the table (Table 8), nine companies chosen for the study depict inter-organizational as well as intra-organizational differences in respect of scores obtained for various dimensions of knowledge processes and capabilities. The inter-organizational comparison shows that Accenture leads comparative companies both in terms of Knowledge Management Processes (KMP) and Higher-Order Dynamic Capabilities (HDC) as the mean scores of all the processes and capabilities are highest in case of Accenture. Although Accenture seems to be leading on all the dimensions, it can further improve upon its Absorptive Capability where it lags behind in comparison to its own other capabilities.

In case of Infosys and Wipro Technologies which are multinational companies headquartered in India, emphasis needs to be laid on building absorptive capability. Whereas in case of other IT companies like Cognizant, Insight PLM and NIIT Technologies, focus needs to be on strengthening both Knowledge Processes as well as Higher-Order Capabilities. On the other hand, in case of companies like Aricent, Tech Mahindra and TCS, knowledge processes can be leveraged to enhance higher-order dynamic capabilities by effectively reconfiguring the firm's resource base with the help of such knowledge assets.

The empirical examination of data from various companies suggests that even if knowledge processes are in place, in certain cases the knowledge resources are not assuring improved higher-order capabilities. There can be several reasons for the same. The presence of knowledge resources in itself are not enough as such resources need to be supplemented with proactive and dedicated efforts directed towards the strengthening of capabilities of a firm (Wang & Ahmed, 2005). In order to reap the benefits of Knowledge Processes a firm needs to undertake several interventions and match its knowledge strategy with its capability requirements (Zack, 1999). There needs to a proper inter-linkage and alignment between various knowledge processes for building and improving

organizational capabilities (Kim & Lee, 2010). Moreover, knowledge processes also call for availability of knowledge management architecture like organizational memory infrastructures in the absence of which newly acquired knowledge cannot be effectively stored for future use (Singh, Chan, & McKeen, 2006).

IV. Conclusion

As the three Knowledge Management Processes viz. Knowledge Acquisition, Application and Conversion are critical for the development of Higher-Order Dynamic Capabilities of a firm, it can be concluded that the former precedes and therefore leads to the development of the latter (Ali & Christofferson, 2011; Lee et al., 2011; Nieves & Haller, 2014). Higher-Order Dynamic capabilities indeed evolve through organizational knowledge (Zollo & Winter, 2002) as its possession facilitates reconfiguration of a firm's resource base, which in turn is a prerequisite for building such capabilities of dynamism (Eisenhardt & Martin, 2000; Gibson & Birkinshaw, 2004; Liao et al., 2009). Knowledge processes that change, regenerate and exploit the knowledge resources of an organization can underpin Higher-Order Capabilities like Adaptability, Absorptiveness and Innovativeness (Andersén, 2012; Nielsen, 2006; Nguyen & Neck, 2008). Knowledge can thus be viewed as a pre-eminent resource which can serve as a base for building various other capabilities (Alfirevic & Talaja, 2013). Thus, it can be established that knowledge processes can be leveraged to build higher-order dynamic capabilities (Theriou et al., 2009; Zollo & Winter, 2002).

It was asserted in the literature that some relationship exists between knowledge resources and dynamic capabilities of a firm, but the details of the relationship were unclear (Prieto & Easterby-Smith, 2006). There was a lacuna in literature regarding the role of knowledge processes as determinants of dynamic capabilities (Nieves & Haller, 2014). Thus, an in-depth examination of this relationship in the present study was an attempt to provide deeper understanding of the complex relationships between the two concepts.

As knowledge has emerged as the key resource promising enhanced competitiveness for a firm (Teece et al., 1997), it can become more useful to industry when its component parts and processes are thoroughly understood through such studies and brought to practice. A holistic approach of Knowledge-Based Dynamic Competences adapted in the current research can enable firms to build their resource base through knowledge process capabilities while directing the activities of a firm towards building Higher-Order Dynamic Capabilities. As managers have to regularly make decisions about renewing existing operational capabilities in alignment with the changing global environment, development of Knowledge-Based Dynamic Capabilities are of utmost importance for firms.

The repetition of this study in other industries and countries can form a promising future work of research and can further help in validating the proposed framework. As the present factors explains 40 to 50 % variation the dependent variables, it paves ways for future studies which can help in identifying other factors that can enhance capabilities of an organization. In a review of literature on dynamic capabilities, it was found that the research on this concept is still at a nascent stage. In addition, the field of Process Capabilities has also been left comparatively under-researched (Sandhawalia & Dalcher, 2011). Hence, there are possibilities for future studies on knowledge-based dynamic capabilities, both qualitative and quantitative, as well as for new literature reviews.

References

Acedo, F.J., Barroso C., & Galan, J.L.(2006). The resourcebased theory: dissemination and main trends. Strategic Management Journal, 27(7),621-636.

Adeniran, T.V., & Johnston, K. A. (2012). Investigating the dynamic capabilities and competitive advantage of South African SMEs. African Journal of Business Management, 6(11), 4088-4099.

Agbim, K.C., & Idris, A. J. (2015). Competitive advantage through knowledge dissemination: An empirical analysis of hotels in Makurdi metropolis, Benue state, Nigeria. European Journal of Business and Innovation Research, 3(1), 22–35.

Agbim, K.C., Zever, T. A., & Oriarewo, G. O. (2014). Assessing the Effect of Knowledge Acquisition on Competitive Advantage/: A Knowledge-Based and Resource-Based Study. Information and Knowledge Management, 4(11), 131–142.

Aggarwal, V. A., Posen, H. E., & Workiewicz, M. (2015). Adaptive Capacity and the Dynamics of Operational Capabilities.

Akgün, A.E., Keskin, H., & Byrne, J. (2012). Antecedents and Contingent Effects of Organizational Adaptive Capability on Firm Product Innovativeness. Journal of Production and Innovtion Management, 29(S1), 171–189.

Alfirevic, N., & Talaja, A. (2013). Managing Knowledge through Dynamic Capabilities. Learning Models for Innovation in Organizations: Examining Roles

of Knowledge Transfer and Human Resources Management, 157.

Ali, A., & Christofferson, K. (2011). Internal Internationalization - A peek into the black box. University of Gothenburg.

Andersén, J. (2012). Protective capacity and absorptive capacity: Managing the balance between retention and creation of knowledge-based resources. The Learning Organization, 19(5), 440–452.

Breznik, L., & Lahovnik, M. (2014). Renewing the resource base in line with the dynamic capabilities view: A key to sustained competitive advantage in the IT industry. Journal for East European Management Studies, 19(4), 453–485.

Cadiz, D., Sawyer, J. E., & Griffith, T. L. (2009). Developing and Validating Field Measurement Scales for Absorptive Capacity and Experienced Community of Practice. Educational and Psychological Measurement, 69(6), 1035-1058.

Cohen, W.M., & Levinthal, D.A.(1990). Absorptive capacity: A new perspective on learning and innovation. Administrative Science Quarterly, 128-152.

Dodgson, M., Gann, D., & Salter, A. (2008). The management of technological innovation. Oxford: Oxford University Press.

Daud, S., & Yusoff, W. F. W. (2010). Knowledge management and firm performance in SMEs: The role of social capital as a mediating variable.Asian Academy of Management Journal, 15(2), 135-155.

Eisenhardt, K. M., & Martin, J. K. (2000). 'Dynamic capabilities: what are they?', Strategic Management Journal, 21, 1105–1121.

Foss, N. J., & Pedersen, T. (2004). Organizing knowledge processes in the multinational corporation: an introduction. Journal of International Business Studies, 35(5), 340–349.

García-Morales, V. J., Bolívar-Ramos, M. T., & Martín-Rojas, R. (2014). Technological variables and absorptive capacity's influence on performance through corporate entrepreneurship. Journal of Business Research, 67(7), 1468-1477.

Gerbing, D. W., & Anderson, J. C. (1988). An updated paradigm for scale development incorporating unidimensionality and its assessment. Journal of marketing research, 186-192.

Gibson, C. B., & J. Birkinshaw (2004). 'The antecedents, consequences, and mediating role of organizational ambidexterity', Academy of Management Journal, 47(2), 209–226.

Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management: An organisational capabilities perspective. Journal of Management Information Systems, 18 (1), 185-214.

Hair, J.F., Anderson, R.E., Tatham, R.L., & Black, W.C. (1998). Multivariate data analysis (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Helfat, C. E., & Peteraf, M. A. (2003). The dynamic resourcebased view: Capability lifecycles. Strategic Management Journal, 24(10), 997-1010.

Helfat, C. E., & Winter, S. G. (2011). Untangling dynamic and operational capabilities: Strategy for the (N) everchanging world. Strategic Management Journal, 32(11), 1243-1250.

Hong, J., Kianto, A., & Kyla, K. (2008). Moving Cultures and the Creation of New Knowledge and Dynamic Capabilities in Emerging Markets. Knowledge and Process Management, 15(3), 196–202.

Hofer, K. M., Niehoff, L. M., & Wuehrer, G. A. (2015). The Effects of Dynamic Capabilities on Valued-based Pricing and Export Performance. Entrepreneurship in International Marketing, 109–127.

Hou, J. J. (2008). Toward a Research Model of Market Orientation and Dynamic Capabilities. Social Behavior & Personality: An International Journal, 36(9), 1251–1268.

Jantunen, A. (2005). Knowledgeprocessing capabilities and innovative performance: An empirical study. European Journal of Innovation Management, 8(3), 336-349.

Jiang, W. (2014). Business Partnerships and Organizational Performance. Retrieved from http://doi.org/10.1007/978-3-642-53989-3

Kaehler, C., Busatto, F., Becker, G. V., Hansen, P. B., & Santos, J. L. S. (2014). Relationship between Adaptive Capability and Strategic Orientation: An Empirical Study in a Brazilian Company. IBusiness, 2014.

Kheng, K. K. (2008). Relationship between Knowledge and Innovation performance: The Mediating role of Absorptive Capacity.

Kim, S., & Lee, H. (2010). Factors affecting employee knowledge acquisition and application capabilities. Asia-Pacific Journal of Business Administration, 2(2), 133–152.

Lane, P. J., Koka, B. R., & Pathak, S. (2006). The reification

of absorptive capacity: a critical review and rejuvenation of the construct, The Academy of Management Review, 31(4), 833-863.

Lee, P. Y., Chen, H. H., & Shyr, Y. H. (2011). Driving dynamic knowledge articulation and dynamic capabilities development of service alliance firms. The Service Industries Journal, 31(13), 2223-2242.

Leech, N.L., Barrett, K.C., & Morgan, G. A. (2005). SPSS for intermediate statistics: Use and interpretation. Psychology Press.

Li, D.Y., & Liu, J. (2014). Dynamic capabilities, environmental dynamism, and competitive advantage: Evidence from China. Journal of Business Research, 67(1), 2793–2799.

Liao, S. H., Fei, W. C., & Chen, C. C. (2007). Knowledge sharing, absorptive capacity, and innovation capability: an empirical study of Taiwan's knowledge-intensive industries. Journal of Information Science, 33(3), 340–359.

Liao, S., Wu, C., Hu, D., & Tsuei, G. A. (2009). Knowledge Acquisition, Absorptive Capacity, and Innovation Capability: An Empirical Study of Taiwan's Knowledge-Intensive Industries. World Academy of Science, Engineering and Technology, 53, 160–167.

Mittal, S. (2009) 'Indian IT Industry: Road Ahead' Silicon India: December, pp: 6-7.

Mirkovski, K., Lowry, P.B., Von Briel, F., & Liu, L.I. (2015). The Role of Innovation Intermediaries in Collaborative Networks of Small and Medium-Sized Enterprises. In 19th Pacific Asia Conference on Information Systems (PACIS 2015), Singapore, July (pp. 5-9).

Monferrer, D., Blesa, A., & Ripollés, M. (2015). Born globals trough knowledge-based dynamic capabilities and network market orientation. BRQ Business Research Quarterly, 18(1), 18-36.

Nguyen, N.T.D., & Aoyama, A.(2014). Impact of Corporate Culture on the Relationship between Efficient Technology Transfer and Business Performance. Global Business Review, 15(4), 637-661.

Nguyen, & Neck. (2008). Knowledge Management as Dynamic Capabilities: Does It Work in Emerging Less Developed Countries?, 1–18.

Nguyen, T.N.Q. (2010). Knowledge management capability and competitive advantage: an empirical study of Vietnamese enterprises.

Nielsen , A.P . (2006). Understanding dynamic capabilities through knowledge management. Journal of Knowledge Management, 10(4), 59–71.

Nieves, J., & Haller, S.(2014). Building dynamic capabilities through knowledge resources. Tourism Management, 40 (February), 224–232.

O'Brien, R.M. (2007). A Caution Regarding Rules of Thumb for Variance Inflation Factors. Quality & Quantity, 41(5), 673.

Ogunkoya, A., Hassan, B. A., & Shobayo, P. A. (2014). Dynamic Capabilities And Competitive Advantage/ : An Analysis Of The Nigerian Banking Sector. Journal of Accounting and Management, 4(2), 29–36.

Oktemgil, M., & Gordon, G. (1997). Consequences of high and low adaptive capability in UK Companies. European Journal of Marketing, 31(7), 445-466.

O'Reilly, C. A., & Tushman, M. L. (2008). Ambidexterity as a dynamic capability: Resolving the innovator's dilemma. Research in organizational behavior, 28, 185-206.

Prieto, I.M., & Easterby-Smith, M. (2006). Dynamic capabilities and the role of organizational knowledge: an exploration. European Journal of Information Systems, 15(5), 500–510.

Riemenschneider, C. K., Allen, M. W., Armstrong, D. J., & Reid, M. F. (2010). Potential absorptive capacity of state it departments: a comparison of perceptions of CIOs and it managers. Journal of Organizational Computing and Electronic Commerce, 20, 68—90.

Rouse, M. J., & Ziestma, C. (2008). Responding To Weak Signals/: The Emergence of Adaptive Dyanmic Capabilities for Strategic Renewal. In The International Conference on Organizational Learning, Knowledge and Capabilities Copenhagen, Denmark (1-23).

Sandhawalia, B.S., & Dalcher, D. (2011). Developing knowledge management capabilities: A structured approach. Journal of Knowledge Management, 15(2), 313–328.

Sher, P.I., & Lee, V.C. (2004). Information technology as a facilitator for enhancing dynamic capabilities through knowledge management. Information and Management, 41(8), 933-945.

Singh, S., Chan, Y. E., & McKeen, J. D. (2006). Knowledge Management Capability and Organizational Performance: A Theoretical Foundation. In OLKC 2006 Conference at the University of Warwick

(pp. 1-54).

Soni, P. (2013). Innovation in Indian IT industry: A Dynamic capabilities view.

Sorensen, J.B., & Stuart, T.E. (2000). Aging, obsolescence, and organizational innovation. Administrative science quarterly, 45(1), 81-112.

Su, Z., Ahlstrom, D., Li, J., & Cheng, D.(2013). Knowledge creation capability, absorptive capacity, and product innovativeness. R&D Management, 473–486.

Tavakol, M., & Dennick, R.(2011). Making sense of Cronbach's alpha. International Journal of Medical Education, 2, 53–55.

Teece, D.J. (2007). "Explicating Dynamic Capabilities: The Nature and Microfoundations of (Sustainable) Enterprise Performance". Strategic Management Journal (John Wiley & Sons) 28(13), 1319–1350.

Teece, D. J. (2012). Dynamic capabilities: Routines versus entrepreneurial action. Journal of Management Studies, 49(8), 1395-1401.

Teece,D.J.(2014). A dynamic capabilities-based entrepreneurial theory of the multinational enterprise. Journal of International Business Studies,45(1), 8-37.

Teece, D. J., & Pisano, G. (1994). The dynamic capabilities of firms: An introduction. Industrial and Corporate Change, 3(3), 537–556.

Teece, D.J., Pisano, G., & Shuen, A. (1997). 'Dynamic capabilities and strategic management'. Strategic Management Journal, 18(7), 509–533.

Theriou, N.G., Aggelidis, V., & Theriou, G.N. (2009). A theoretical framework contrasting the resource-based perspective and the knowledge-based view. European Research Studies Journal, 12(3), 177-190.

Verona, G., & Ravasi, D. (2003). Unbundling dynamic capabilities: an exploratory study of continuous product innovation. Industrial and corporate change, 12(3), 577-606.

Wang, C.L., & Ahmed, P. K. (2004). Leveraging knowledge in the innovation and learning process at GKN. International Journal of Technology Management, 27 (6/7), 674-688.

Wang, C.L., & Ahmed, P.K. (2005). The knowledge value chain-A pragmatic knowledge implementation network. Handbook of Business Strategy, 6(1), 321-326.

Wang, C. L., & Ahmed, P. K. (2007). Dynamic capabilities: A review and research agenda. International Journal of Management Reviews, 9(1), 31–51.

Wang, W., & Gan, C. (2010). Study on knowledge transfer in Knowledge Process Outsourcing (KPO). PACIS 2010 - 14th Pacific Asia Conference on Information Systems, 1874–1881.

Winter, S. (2003) 'Understanding dynamic capabilities', Strategic Management Journal, 24, 991–995.

Zahra, S.A., & George, G. (2002). Absorptive capacity: a review, reconceptualization, and extension, Academy of Management Review, 27 (2), 185–203.

Zack, M.H. (1999). Managing codified knowledge. MIT Sloan Management Review, 40(4), 45.

Zheng, S., Zhang, W., & Du, J. (2011). Knowledge-based dynamic capabilities and innovation in networked environments. Journal of Knowledge Management, 15(6), 1035–1051.

Zhou, K. Z., & Li, C. B. (2010). How strategic orientations influence the building of dynamic capability in emerging economies. Journal of Business Research, 63(3), 224-231.

Table 1: Operational Definitions of Variables

Knowledge Management Processes	Knowledge Management Processes include processes for gathering knowledge from various sources, organizing various kinds of knowledge and effectively utilizing the assimilated and integrated knowledge (Gold et al., 2001; Nguyen & Neck, 2008; Nielsen, 2006).
Adaptive Capability	The ability to monitor changes in the market and to come at par with techniques and skills of other companies (Akgün, Keskin & Byrne, 2012).
Absorptive Capability	The ability to collect and comprehend new knowledge gained through business collaborations and enhance working skills with the use of such knowledge (Kaehler et al., 2014; Liao et al.; 2007)
Innovative Capability	The ability to acquire new skills/equipment to improve the service process and provide clients with products and services that offer unique benefits superior to those of competitors (Liao et al., 2007).
Higher-Order Capabilities	A Higher Order construct comprising of three Dynamic Capabilities namely Adaptive Capability, Absorptive Capability and Innovative Capability.

Table 2: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.929
Bartlett's Test of Sphericity	Approx. Chi-Square	2206.460
	Df	300
	Sig.	.000

Table 3: Measurement Scales

Items	Factor Loadings				Cronbach's Alpha
Knowledge Management Processes					
AC1 - My Company has processes for acquiring knowledge about our customers.	.781				.947
AC2 - My Company has processes for generating new knowledge from existing knowledge.	.748				
CP4 - My company has processes for organizing and storing knowledge.	.722				
CP3 - My company has processes for transferring organizational knowledge to individuals.	.712				
CP1 - My company has processes for converting knowledge into the design of new products/services.	.707				
AC3 - My Company has processes for acquiring knowledge about our suppliers.	.705				
AP1 - My company has processes for applying knowledge learned from experiences.	.690				
AC4 - My Company uses feedback from previous projects to improve future projects.	.682				
AC5 - My Company has processes for exchanging knowledge with our business partners.	.667				
AP3 - My company has processes for using knowledge to solve new problems.	.660				
CP2 - My company has processes for converting competitive intelligence into plans of action.	.657				
AP2 - My company has processes for using knowledge in development of new products/ services.	.627				
Innovative Capability					
IC4 - My company encourages employees to contribute to activities like product development and development of new ideas.		.833			.927
IC3 - My company emphasizes innovative and creative capability while recruiting staff.		.825			
IC5 - My company provides clients with services/products that offer unique benefits superior to those of competitors.		.679			
IC2 - My company inspires me to provide clients with innovative ideas and solutions.		.673			
IC1 - I am encouraged to acquire new skills/equipment to improve the service process.		.583			
Adaptive Capability					
ADC1 - My company keeps a check on changes in the market.			.759		.909
ADC2 - My company encourages me to adopt new marketing techniques.			.755		
ADC3 - My company constantly observes competitors' actions.			.700		
ADC4 - Employees in my company keep a check on technical changes in the industry.			.596		
Absorptive Capability					
ABC4 - I am encouraged to collect industry information through informal means (e.g., lunch with industry friends, talks with trade partners).				.830	.878
ABC3 - Employees in my company regularly approach third parties such as accountants and consultants.				.810	
ABC2 - Employees in my company regularly visit other firms in the industry.				.651	
ABC1 - I am encouraged to make frequent interactions with other companies to acquire new knowledge.				.524	

Table 4: Correlation Analysis

Correlations	KMP	ADC	ABC	IC
KMP	1	.716**	.638**	.671**
ADC	.716**	1	.631**	.740**
ABC	.638**	.631**	1	.718**
IC	.671**	.740**	.718**	1
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 5: Model summarizing Relationship between KMP and ADC

R	R Square	Adjusted R Square	Std. Error of the Estimate
.716	.513	.508	.71495

Table 6: Model summarizing Relationship between KMP and ABC

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.638	.407	.401	.93854

Table 7: Model summarizing Relationship between KMP and IC

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.671	.450	.445	.78092

Table 8: Descriptive Analysis of IT firms in India

Company		AC	CP	AP	KMP	ADC	ABC	IC	HDC
Accenture	Mean	6.02	6.12	6.06	**6.06**	6.30	5.81	6.18	**6.10**
	Std. Deviation	1.24	1.17	1.21	1.19	0.85	1.41	1.02	1.05
	Std. Error of Mean	0.24	0.23	0.24	0.23	0.17	0.28	0.20	0.21
Aricent	Mean	5.33	5.08	5.33	**5.25**	5.08	5.17	5.27	**5.18**
	Std. Deviation	0.70	0.52	0.33	0.51	1.18	0.80	0.64	0.74
	Std. Error of Mean	0.41	0.30	0.19	0.29	0.68	0.46	0.37	0.43
Cognizant	Mean	4.73	4.92	5.00	**4.86**	4.42	4.67	4.73	**4.62**
	Std. Deviation	0.42	0.52	0.67	0.49	0.52	0.38	0.42	0.34
	Std. Error of Mean	0.24	0.30	0.38	0.28	0.30	0.22	0.24	0.19
Infosys	Mean	4.85	5.63	5.83	**5.35**	5.19	3.94	5.20	**4.81**
	Std. Deviation	2.01	1.60	1.35	1.67	1.43	0.43	1.06	0.80
	Std. Error of Mean	1.00	0.80	0.67	0.84	0.72	0.21	0.53	0.40
Insight PLM	Mean	3.70	3.33	3.72	**3.58**	4.79	3.13	4.37	**4.12**
	Std. Deviation	1.04	1.22	1.16	1.04	1.62	1.03	0.77	0.89
	Std. Error of Mean	0.43	0.50	0.47	0.42	0.66	0.42	0.32	0.36
NIIT Technologies	Mean	3.75	4.06	4.00	**3.92**	4.06	4.06	3.75	**3.94**
	Std. Deviation	0.41	1.13	0.94	0.71	0.31	0.38	0.70	0.33
	Std. Error of Mean	0.21	0.56	0.47	0.35	0.16	0.19	0.35	0.16
TCS	Mean	5.19	5.03	5.02	**5.09**	5.40	5.07	5.12	**5.19**
	Std. Deviation	1.12	1.10	1.17	1.09	1.32	1.54	1.19	1.27
	Std. Error of Mean	0.26	0.26	0.28	0.26	0.31	0.36	0.28	0.30
Tech Mahindra	Mean	5.88	5.65	5.40	**5.68**	5.55	5.40	5.44	**5.46**
	Std. Deviation	1.20	1.58	2.13	1.53	2.15	1.91	2.09	2.04
	Std. Error of Mean	0.54	0.71	0.95	0.68	0.96	0.85	0.93	0.91
Wipro Technologies	Mean	5.24	5.09	5.29	**5.20**	5.39	4.86	5.45	**5.25**
	Std. Deviation	1.07	1.11	1.09	0.99	1.13	1.30	1.12	1.04
	Std. Error of Mean	0.16	0.17	0.16	0.15	0.17	0.20	0.17	0.16

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DE-STRESSING ASSETS OF INDIAN TEXTILE INDUSTRY: THE ROLE OF CDR

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Indian textile industry occupies a place of special significance in Indian economy. Its economic contributions are enormous in terms of employment and income generation. However, due to a host of internal as well as external problems, this sector is overburdened with stressed assets. The recent economic downturn made the situation even worse, forcing many companies to go into liquidation. CDR support was provided to textile industry so as relieve the industry from the pressure of stressed assets. This study presented the case of five textile industries that received CDR support. The performance of the five indicated that CDR has met with partial success in the revival of textile companies.

Keywords: Corporate Debt Restructuring, Performance, Stressed Assets, Textile Industry

Indian textile industry is well known all over the world for its superb quality and design, since time immemorial. India has been a major supplier of textiles to countries located across all continents. Therefore, its significance can be well understood for Indian economy. It is one the largest and oldest sectors in the country, and also among the most important in the economy in terms of output, investment, and employment. The textile industry provides employment to about 35 million people, directly or indirectly. Furthermore, its economic contributions are significant. It accounts for 4% of Gross Domestic Product, 14% of total industrial production, 9% of excise collection, 18% of employment in industrial sector, and 16% of total exports earnings. It has been estimated that one in every six households in the country is dependent on this sector, either directly or indirectly, for its livelihood (Dun & Bradstreet India, 2012). Due to its strong backward and forward linkages, it has special significance for rural economy.

Economic Reforms of 1991 in India significantly altered the landscape of Indian economy especially manufacturing sector. The significant changes included deregulation of industries and entry of foreign firms. Indian economy was integrated with the world economy. It represented both, a challenge and an opportunity, to the protected manufacturing sector of which textile was the most important. Besides eliminating the system of licensing, the textile sector was removed from the list of reservation for the small scale industries. In 2000, a new textile policy was announced by the Government with the aim of modernizing the textile industry to meet the global competition and implemented in a time bound manner with the technology up-gradation fund scheme (TUFS) covering all manufacturing sectors of the textile industry.

However, the Indian textile industry continues to suffer from sickness. The economic downturn severely hit the textile industry. With a serious contraction in both export and domestic demand and a pervasive liquidity crunch, losses accumulated and many textile firms went bankrupt. The CDR (Corporate Debt Restructuring) was aggressively adopted by textile companies to restructure them. In fact, it has been one of the biggest beneficiaries of CDR.

Hence, this study analyzes the role played by CDR in managing the stressed assets of Indian textile industry. The study presents cases of five textile companies to achieve its objective. Given the fact that textile industry has significant implications for Indian economy, there should be focus on managing the stressed assets in this industry. Since CDR was specially designed to manage stressed assets and avoid bankruptcy, the extent to which it benefited textile industry is an important issue to examine.

The rest of the study is organized as follow: Section 2 describes the current status of Indian textile industry. Section 3 documents a brief account of methodology adopted for the study. Section 4 presents the case of five textile companies which were restructured under the CDR. Last section summarizes and concludes.

I. Review of literature

The restructuring of loans and advances is not an entirely new phenomenon in India. Similar terms as of restructuring have been used by the Reserve Bank of India (RBI) and

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banks since long. However, with the changed circumstances in financial and real markets, the need for evolving an appropriate mechanism for Corporate Debt Restructuring in India, on the lines of similar mechanism practised in countries like the U.K., Thailand, Korea, Malaysia, etc., was felt by the Government of India, Reserve Bank of India, banks and financial institutions. Restructuring and related topics have been studied widely by the researchers.

Riany, Musa, Odera & Okaka (2012) in their study on the effects of restructuring on organization performance of mobile phone service providers in Kenya conclude that restructuring has a favourable effect on the companies' market share and market growth. Their results indicate that financial restructuring had the greatest impact on a company's market share followed by portfolio restructuring and organization restructuring.

Ahamed and Mallick (2012) studied the effects of CDR on the Indian banks and found that after the genesis of CDR, member banks with generous regulatory forbearance on asset classification and provisioning experience an improvement in stability. It indicates that soundness of member banks increased by 43.6% after the implementation of CDR mechanism. However, the recent up-trend in restructuring corporate debt is worrisome and therefore, regulators should tighten the macro-prudential norms and emphasise on international best practice in asset classification and provisioning of restructured corporate loans ensuring no scope for ever-greening (Peek and Rosengren, 2005)

Mbogo & Waweru (2014) in their study on the corporate turnaround response by financially distressed companies listed on the NSE, found out that Debt restructuring and top management change were the least preferred turn around strategies.

Tandon & Reddy (2013) studied emerging trends in the Indian Textiles industry. They observed that labour relations are undergoing profound changes. The retail market has opened and the producers' control over the product market has increased. Improved schemes of credit and skill development for workers have the potential to increase the contribution of textiles in the GDP. The Government and the industry need to collaborate and establish a plan of action that addresses key issues and identifies and removes barriers to growth and sourcing strategies.

Shrimali (2013) studied performance of Indian Textile Industry in the United States post the Agreement on Textiles and Clothing (ATC), which put an end to quota system and lead to turnaround in the global trade. He concluded that post ATC quota free environment in textiles & clothing has opened the door for global competition and if India wants to compete with global players, it should put up its competitive muscles otherwise small & least developed countries like Bangladesh and Cambodia can give stiff competition to Indian firms.

Indian Textile Industry

India is one of the few nations in the world other than China, that has a vertically integrated textile and garment sector, which includes all stages of fiber, textile and apparel production (Staritz and Frederick, 2012). No other country, can boast of such a strong legacy, excellent skill base and presence of the whole value chain within the country (with global competitive strengths), as that of India. China lacks hand-made embroidery skills, Bangladesh lacks cotton and fabrics, Indonesia and Sri Lanka lack cotton and so on. A strong raw material production base, a vast pool of skilled and unskilled labour, good export potential and low import content are some of the strengths of this industry. The textile industry has two broad segments. First, the unorganised sector consists of handloom, handicrafts and sericulture, which are operated on a small scale and through traditional tools and methods. The second is the organised sector consisting of spinning, apparel and garments segment which apply modern machinery and techniques such as economies of scale.

Indian textile industry started to integrate fully with WTO from January 2005. The system of bilateral quotas regulating global textile industry for many years in the name of MFA was phased out before 31 December 2004. In 2005-06, after the end of Quota regime, the textiles sector in India grew by 10%. The Indian textile industry was valued at US$ 36 bn. with exports totalling US$ 17 bn. in the same year.

In 2008-09, the sector registered a de growth of 5.7% owing to weak global demand. Thereafter, the sector started recovering and registered positive growth in next two years due to the stimulus provided by Government of India. According to the Ministry of Textiles, India's textile exports during FY09 was USD 20.9 bn (Rs 963.1 bn) and registered a negative growth of 5%, in dollar terms, over the previous year. Table 1 shows the promising facts about the Current Indian Textile Trade.

India's presence in the international market is significant in the areas of fabrics and yarn as evident from the following facts:

- India is the largest exporter of yarn in the international market and has a share of 25% in world cotton yarn exports
- India accounts for 12% of the world's production of textile fibres and yarn
- In terms of spindleage, the Indian textile industry is ranked second, after China, and accounts for 23% of the world's spindle capacity
- Around 6% of global rotor capacity is in India
- The country has the highest loom capacity, including handlooms with a share of 61% in world loomage.

The textiles sector has witnessed a spurt in investment during the last five years. The industry (including dyed and printed) attracted foreign direct investment (FDI) worth Rs 6,710.94 crore (US$ 1.11 billion) during April 2000 to February 2014 (AEPC Report, 2014). Textiles exports stood at US$ 28.53 billion during April 2013-January 2014 as compared to US$ 24.90 billion during the corresponding period of the previous year, registering a growth of 12.72 per cent. Garment exports from India expected to touch US$ 60 billion over the next three years, with the help of government support.

The Indian textiles industry, currently estimated at around US$ 108 billion, is expected to reach US$ 223 billion by 2021.

II. Research Design & Methods

The prime objective of this study was to examine the efficacy of CDR in managing the 'Stressed Assets' in Indian Textile Industry. A case study research design was adopted for the study. The case study is not itself a research method, but researchers select methods of data collection and analysis that will generate material suitable for case studies such as semi-structured interviews, participant observation, or official document (e.g. case notes, clinical notes, appraisal reports). The advantage of the case study research design is that the researcher can focus on specific and interesting cases.

Population for this study consisted of companies that received CDR support and whose cases were closed till March, 2014. The population size was 30. It was decided to include one sixth of the total population in the sample. Thus, purposive sampling was done. A total of five companies were included. The names of the companies have not been revealed due to their commercial interest. Since a CDR tag would hit the rating of these companies, they would find it nearly impossible to get new loans to get their business going. The companies included in the study are from western, northern and southern zone of the country.

The Study was conducted using Primary as well as Secondary Data/information. Since the information furnished by the companies was of sensitive nature, they were convinced that the information provided by them will be used only for academic purposes and will not be shared publicly. Further, the questions were designed in such a way so as to provide comfort and freedom to the respondents.

To collect the primary data, in depth interview was conducted. Interview was conducted with officials from textile companies and banks and TEV agencies. In depth, interview of promoter and CFOs was conducted from textile companies. In case of banks, GMs and DGMs of banks who have extended credit facilities to them were interviewed. In case of TEV agencies, professionals were interviewed.

Further secondary data was also used in the study. Secondary data was collected through Annual reports of textile companies, industry publications and various reports and journals of RBI and Government. The secondary data (obtained mainly from balance sheet) was analyzed to assess the performance of textile companies included in the study. The performance has been evaluated on the following parameters:

- Debt/interest servicing
- Turnover
- Profitability (EBIDTA and PAT)
- Net worth
- TOL/TNW

III. Results & Analysis

In this section, we present five case studies of textile companies that received CDR support. But prior to that, a brief introduction of CDR support to textile industry is discussed.

Restructuring of loans and advances is a mechanism to modify the terms and conditions of an existing loan in order to overcome the difficulties in repayment by the borrower due to temporary cash flow inadequacy on account of a general economic downturn or deterioration in a particular sector. It should be noted that corporate debt restructuring is a part of the external restructuring mechanism of the company where it has to ensure that it has the assets to

back the restructuring program. Corporate debt restructuring may take several forms. As for instance,

- Rescheduling of repayment
- Conversion of debt into equity or preferential shares
- A change in interest rate
- Indexing of interest payments to earnings etc.

The need for evolving an appropriate mechanism for Corporate Debt Restructuring in India, on the lines of similar mechanism practised in countries like the U.K., Thailand, Korea, Malaysia, etc., was felt by the Government of India, Reserve Bank of India, banks and financial institutions. Based on the extensive discussions the Government of India and RBI had with banks and financial institutions, the scheme of Corporate Debt Restructuring was finalised and the same was issued by RBI in August 2001, for implementation by banks. Subsequently, based on various working groups under RBI Deputy Governors, the guidelines were revised by RBI in February 2003, November 2005, August 2008 and May 2013. CDR in India can be best understood as a specialised institutional arrangement for restructuring of large credit exposures of multiple banks to corporates.

The RBI guidelines explicitly mentions the objectives of CDR. It includes,

i. To ensure timely and transparent mechanism for restructuring
ii. To minimize losses of creditors and other stake holders
iii. To make the corporates financially viable

The CDR facility is available to all borrowers engaged in any type of activity. The important features of CDR in India are as follows. First, it is a voluntary, non statutory system. Second, any company with a debt of more than Rs. 10 Crores funded by two or more lenders can avail benefits under CDR. Third, CDR can be done if there is consent of lenders representing 75% or more in value and 60% or more by number.

Let us have a look at industry wise trend of CDR. The results are shown in figure 1. It is crystal clear that only 3 industries namely Infrastructure, Iron and Steel and Textiles alone account of half of the cases. All these sectors are heavily leveraged and capital intensive. If construction, power and telecom cases are added it is beyond 65%. Individually, textile industry ranks third with respect to approved CDR cases.

The performance of CDR system in textile industry is depicted in table 2. The period of analysis is FY 2012-13 to 2014-15. From table 2, it is clear that only one fifth of the total exited cases were successful by number and about 10% by value. Thus, in the last 3 years, the CDR system has not worked well in the textile industry.

Case 1: Company A

This company is located in Western India. The debt size of this company was Rs. 353 Crores. This company applied for CDR and the same was approved in FY 2008-09. The performance of company is depicted in table 3. From the table it is clear that, this company has been a successful case of CDR.

The company never faced problem in servicing its debt. The profitability as measured by EBDITA has risen continuously from Rs. 17 Crores in 2010 to 275 Crores in 2015. Net worth too has been quite healthy. The PAT in the last 3 years has become more than five-fold.

Case 2: Company B

This company had a debt size of Rs. 158 Crores when it applied for CDR. It is a company located in Western India. The case was approved in FY 2008-09. The performance of company after the implementation of CDR is shown in table 4.

From the analysis of above table it is clear that, company B also is also reasonably successful case of CDR, however, not to the extent as company A. Though it has been able to service its debt till 2014, and net worth is positive, its performance has dipped in the last three years. The most disturbing fact is that its turnover has been declining in last two years.

Case 3: Company C

This company is located in Northern India. The debt size which was restructured under the CDR was Rs. 947 Crore. It was approved in FY 2009-10. The performance of the company on chosen five indicators is presented in table 5.

The table clearly reveals that this CDR case has been a failure. It was able to service its debt just for two years after it was approved under CDR. In the last three years, its performance has steadily worsened. Not only its turnover declined after 2014, but also it failed to have a positive TOL/TNW ratio even after it was restructured due to continuous losses.

Case 4: Company D

This company is headquartered in Northern India. It was approved under the CDR during FY 2008-09. Its debt size

was Rs. 685 Crores. The performance of the company is shown below in table 6.

This company has a negative TOL/TNW ratio since the year 2012. The turnover of the company has also been declining and so does the PAT. It is thus an unsuccessful case of CDR.

Case 5: Company E

Our last company of the sample, has it's headquarter in Southern India. The company's case was approved under CDR in FY 2008-09. It had a debt size of Rs.372 Crores. The performance of company has been summarized in table 7.

A quick glance at the table reveals that the company has not performed well even after it had gone for restructuring. It has a negative TOL//TNW ratio consecutively for the last 3 years. The most serious problem is that its turnover has rapidly reduced, from Rs.208 Crore in 2011 to Rs.74 Crore in 2015.

From the foregoing analysis, it is clear that CDR has met with partial success in de-stressing assets of textile industry in India. Most of the companies have not been able to use the opportunity for reviving themselves.

IV. Conclusion

Textile industry is an important industry in India contributing significantly to employment and national income. Given the competitive advantage of India in this industry, it is a must to ensure that the textile companies remain healthy thereby driving the growth of Indian economy. This study presented the case of five textile companies that were restructured under the CDR. The results clearly showed that only two (one completely and the other one for a reasonable period) out of five sample companies were able to improve their performance. This finding is in line with the fact that the percentage of successful case in textile industry has been quite low- a little more than one fifth of the cases have been successful.

Some important suggestions to improve the functioning of CDR with respect to textile industry are mentioned below:

1. Adequacy and Timely Availability of Funds: Funds should be made available to the companies by taking into account their long term revival.

2. Active Co-operation from promoters: Promoters should infuse maximum possible contribution and not keep it limited to the mandatory RBI requirement of 20%.

3. Monetisation of Assets including sale/divestment of Assets/Investments in Subsidiaries and associates: Banks should be in a position to handover the assets to a specialized agency so that the sale could be effected without the intervention of the borrower.

4. Credit Rating Agencies need to be made more accountable: In most of the cases, banks blindly lend to a company if the external credit rating is high say AAA or AA or even BBB. It has been seen in many cases that credit rating has been downgraded within a short span of six months to one year from earlier rating.

5. Change in management: Change in management should be explored whenever it is felt by the lenders that the present management is ineffective or incompetent. Already introduced by RBI as SDR guidelines in case of failure of restructuring/rectification proposals. Efforts should be made by the banks to develop some management agencies who could gain expertise in managing companies during the transition phase of management.

References

Textile Industry Report (2014). Dun & Bradstreet India

Frederick, S., &Staritz, C. (2012). Developments in the global apparel industry after the MFA phaseout. Sewing Success, 41-85.

Texprocil Benchmarking report, 2012, India

www.cdrindia.org

Staritz, C., & Frederick, S. (2012). Summaries of the Country Case Studies on Apparel Industry Development, Structure, and Policies. Lopez-Acevedo/Robertson (eds): Sewing Success.

Uchikawa, S. (1998). Indian textile industry: State policy, liberalization and growth. Manohar Publishers.

Bhandari, A. K., & Maiti, P. (2007). Efficiency of Indian manufacturing firms: textile industry as a case study. International Journal of Business and Economics, 6(1), 71-88.

RBI Circular dated February 26, 2014 on Framework for Revitalising Distressed Assets in the Economy

RBI Circular dated December 15, 2014 on Flexible Structuring of Existing Long Term Project Loans to Infrastructure and Core Industries

RBI Master Circular dated July 1, 2015 on Prudential norms on Income Recognition, Asset Classification and Provisioning pertaining to Advances

Table 1: Promising Facts of the Current Indian Textile Trade

India's position in the World Textile Economy	Importance of Textile Sector to India
• 2nd largest producer of raw cotton • 2nd largest producer of cotton yarn • 2nd largest producer of cellulosic fibre • 2nd largest producer of silk • 4th largest producer of synthetic fibre/yarn. • Largest producer of jute	Textile &Apparel industry accounts for: • 26% of the manufacturing sector, • 14% of the total industrial production • 18% of industrial employment • Direct employment is 45 million • 17% of the total export earnings • 4% to the GDP.

(Compiled from Texprocil Benchmarking Report, 2012)

Table 2: Performance of CDR in Textile Industry for the Period 2012-2015

Industry	Successful Exited Cases		Failed Exited Cases		Total Exited Cases	
	Number	Value	Number	Value	Number	Value
Textile	5	660	20	6,278	25	6,938
Values are in Rs. Crores						

Table 3: Performance of Company A

Parameters	Years								
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Debt/Interest Servicing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Turnover	257	307	286	427	705	779	1210	1457	1711
EBDITA	21	18	(30)	17	63	53	98	180	275
PAT	7	(19)	(52)	(19)	9	1	27	105	139
Net Worth	108	81	186	172	173	162	179	277	403
TOL/TNW	2.57	3.68	1.81	2.03	2.12	2.18	2.30	1.48	0.82

(All figures except TOL/ TNW in Rs. Crore)

Table 4: Performance of Company B

Parameters	Years								
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Debt/Interest Servicing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Turnover	188	192	157	207	178	266	322	272	225
EBDITA	30	13	2	4	30	33	41	19	(30)
PAT	6	(18)	(28)	(19)	(5)	(7)	(2)	(13)	(33)
Net Worth	145	127	105	89	85	77	75	62	27
TOL/TNW	1.00	1.24	1.76	2.07	2.17	2.57	2.69	3.05	6.44

(All figures except TOL/ TNW in Rs. Crore)

Table 5: Performance of Company C

Parameters	Years								
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Debt/Interest Servicing	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Turnover	429	634	994	469	693	668	723	822	649
EBDITA	68	65	(109)	(18)	9	(130)	29	42	21
PAT	30	12	(250)	(107)	(97)	(276)	(116)	(117)	(29)
Net Worth	275	300	54	37	31	159	236	253	384
TOL/TNW	1.35	2.35	18.24	-ve	-ve	-ve	-ve	-ve	-ve

(All figures except TOL/ TNW in Rs. Crore)

Table 6: Performance of Company D

Parameters	Years								
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Debt/Interest Servicing	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Turnover	897	1312	1194	1221	1637	10-91	1190	1143	911
EBDITA	114	133	(57)	110	169	(98)	121	86	20
PAT	14	(23)	(243)	(45)	2	(277)	(43)	(28)	(85)
Net Worth	206	238	18	46	128	(179)	(229)	(219)	(281)
TOL/TNW	5.33	5.79	77.33	28.04	9.65	-ve	-ve	-ve	-ve

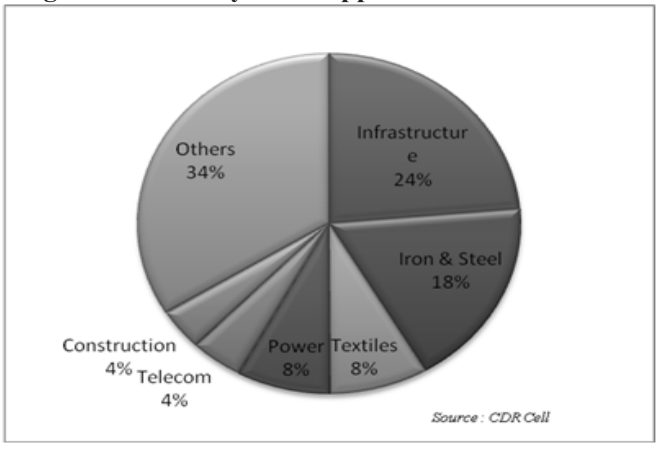
(All figures except TOL/ TNW in Rs. Crore)

Table 7: Performance of Company E

Parameters	Years								
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Debt/Interest Servicing	Yes	Yes	Yes	Yes	No	No	No	No	No
Turnover	165	159	120	143	208	162	87	81	74
EBDITA	25	21	(14)	10	31	2	(59)	(9)	6
PAT	3	(7)	(49)	(32)	(14)	(44)	(108)	(55)	(46)
Net Worth	89	85	35	93	77	31	(77)	(132)	(197)
TOL/TNW	1.80	2.12	5.57	2.23	2.67	6.39	-ve	-ve	-ve

(All figures except TOL/ TNW in Rs. Crore)

Figure 1: Industry Wise Approved Cases for CDR



IMPACT OF CAPITAL STRUCTURE ON FINANCIAL PERFORMANCE OF BANKS

Prakash Pinto★ Jennifer Maria Quadras★★

This study attempts to analyze the impact of capital structure on financial performance, of banks i.e. how the proportion of debt and equity will have an impact on financial performance. The proportion of debt and equity is determined by the corporate managers. The financial performance of a firm is directly affected by the capital structure decision. Maximization of shareholders' wealth is one of the main objectives of firm's management. To achieve this objective proper care and attention must be given while taking rational financial decisions regarding optimal capital structure which in turn reduces the cost of capital. Corporate managers should choose the combination which will maximize profitability and the firm's market value.

Keywords: Capital structure, financial performance, Debt to equity, Debt to total assets

Capital structure is all about how a company finances its overall activities and growth by using various sources of funds. In financial literature, the relationship between capital structure and financial performance has received a lot of attention. Capital structure is the combination of debt and equity. A company which depends more on debt poses greater risk, which means the firm is highly levered. While deciding on the capital structure the main objective of every firm is profit maximization. Capital structure decision is vital for every business organization. This decision is important because of the need of maximizing the returns and also the impact of such decisions on the firm's ability to deal with the competitive environment. The firm can choose any proportion of debt and equity. It can issue more debt and less equity or less debt and more equity.

In capital investment decision capital structure decision is the important one as it affects the profitability. Therefore, proper care must be given while capital structure decision is made. While comparing debt with equity, debt is less costly but it has some limitations as it affects the company's leverage after a certain limit. A debt to equity is calculated by dividing total liabilities by stockholder's equity. It indicates the proportion of debt and equity. A high debt equity ratio means company is highly levered and it is more depending on debt than equity. Due to additional interest expense it can result in volatile earnings. Profitability means the ability of a firm to make profit from all their business activities. It shows by using all the available resources in the market how efficiently the firm makes profit. In business, profit means the excess of income over expenditure and it's the measure of a firm's performance. In the context of banking industry, size of the bank may vary based on its number of branches or the volume of the business held. So, to measure their performance profitability is an absolute measure. Profitability is an index to measure efficiency. The net profit is considered as a better measure for firm's performance. In addition to the net profit, net interest margin and the return on capital employed are also considered for assessing the profitability.

I. Review of Literature

Vitor, D.A. & Badu, J. (2012) studied the capital structure and performance of listed banks in Ghana. The results indicate a negative relationship between capital structure and financial performance. High level gearing among listed banks lead to over dependency on short term debt due to which there was high lending rate and low level of bond market activities. The regression analysis revealed that there is an inverse relationship between capital structure & banks performance in terms of return on equity and Tobin's q.

Velnampy, T. & Niresh, J.A. (2012) examined the relationship between capital structure and profitability of ten listed Srilankan banks over the past 8 year period from 2002 to 2009.The data was analyzed using descriptive statistics and correlation analysis to find out the association between the variables. Results of the analysis show that there is a negative association between capital structure and profitability except the association between debt to equity and return on equity. Further the results suggest that 89% of total assets in the banking sector of Sri Lanka are represented by debt, confirming the fact that banks

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are highly geared institutions. The outcomes of the study may guide banks, loan -creditors and policy planners to formulate better policy decisions as far as the capital structure is concerned.

Abbadi, S.M. & Abu-Rub, N. (2012) examined the relationship between the market efficiency and capital structure of Palestinian financial institutions. ROE, ROA, total deposit to assets, total loan to assets were used to measure the impact of capital structure on bank efficiency. The impact of all these variables on bank market value was measured by Tobin's q which showed a negative effect on the market value of the bank, a strong and positive relationship between market value and ROA and bank deposits to total deposits.

Taani, K. (2013) studied the impact of capital structure on performance of Jordanian banks. To estimate the relationship between capital structure and banking performance multiple regressions is applied on performance indicators and capital structure variable. Net profit, return on capital employed and net interest margin was used to measure the bank performance which showed positive relation with total debt, but total debt is insignificant in determining return on equity in the banking industry of Jordon.

Goyal, A.M. (2013) studied the impact of capital structure on performance of listed public sector banks in India. For establishing relationship between return on equity, return on assets and EPS with capital structure, regression analysis has been used which showed a positive relationship of short term debt with profitability.

Rajkumar, P.(2014) examined the relationship between the financial leverage and the financial performance of the John Keells Holdings plc in Sri Lanka during the periods of 2006-2012. The findings of the study show a negative relationship between the financial leverage and the financial performance of the John Keells Holdings plc. But the financial leverage has a significant impact on the financial performance of the John Keells Holding splc in Sri Lanka.

Need for the study

The present study focused on the impact of capital structure on financial performance of banks. Every investment decision taken by the manager affects performance of the banks. Profitability of the bank also depends upon the proportion of debt and equity in the capital structure. The difficulty associated with designing an optimum capital structure policy to enhance profitability is the primary reason for undertaking the present study.

Objectives of the Study

1. To examine impact of capital structure on the financial performance of banking industry.
2. To find out the interrelation between financial leverage on the financial performance of banking industry.

II. Research Design & Methods

The present study is undertaken to find out the impact of capital structure on financial performance banking industry. To measure the capital structure, capital structure ratios like, debt to total assets ratio and debt to equity ratios are used and to measure the financial performance profitability ratios return on capital employed (ROCE), net profit ratio (NP) and net interest margin (NIM) are used. Regression analysis is carried out to test the impact of capital structure on profitability where capital structure is independent variable and profitability is the dependent variable.

Variable description

Independent variable: Debt to equity and debt to total assets

Dependent variable: net profit, net interest margin, return on capital employed

Data and Sample

As the study focused on the impact of capital structure on profitability for the banking industry as a whole, a sample of 21 banks listed below are considered for the present study. The study considered the data for 5 years for the identified financial variables.

1. Kotak Mahindra Bank
2. Yes Bank
3. Corporation Bank
4. ICICI Bank
5. Karnataka Bank
6. Indian Overseas Bank
7. Federal Bank
8. South Indian Bank
9. State Bank of India
10. HDFC Bank
11. Dhanalaxmi Bank
12. Oriental Bank of Commerce
13. Axis Bank
14. City Union Bank
15. Syndicate Bank
16. Indusind Bank
17. Canara Bank
18. Union Bank of India
19. Vijaya Bank
20. IDBI Bank
21. Bank of Baroda

Model specification

Four regression models are formulated to check the relationship between capital structure and banking performance. The general model for this study is represented by;

P=f(CS)

This shows that performance is a function of the capital structure.

P=Performance

CS=capital structure

Performance is measured with the help of three ratios namely Net profit, return on capital employed (ROCE), net interest margin (NIM). Capital structure is measured through Debt to total assets and Debt to Equity ratio. The regression model is given below. Please refer Table 1 and Figure 1.

Model 1:

Net Profit=â0+â1×1…….

Net Profit=â0+â1×2……..

Model 2:

Net Interest Margin=â0+â1×1…….

Net Interest Margin=â0+â1×2……..

Model 3:

Return on Capital Employed=â0+â1×1…….

Return on Capital Employed =â0+â1×2……..

Where;

XI=Debt to Equity ratio

X2=Debt to Total Assets ratio

â0=Constant

Hypothesis Formulated for the Study:

The following hypotheses were formulated in order to study the impact of capital structure on financial performance of banking industry.

H1: Debt to equity has no significant impact on net profit

H2: There is no significant impact of debt to total assets on net profit

H3: Debt to equity has no significant impact on net interest margin

H4: Debt to total asset has no significant impact on net interest margin

H5: There is no significant impact of debt to equity on return on capital employed

H6: Debt to total assets does not have a significant impact on return on capital employed

III. Results & Analysis

Table 2 shows the collected data of the variables under study. Debt equity ratio explains the proportion of debt and equity used in financing the assets. Higher the debt equity ratio higher is the proportion of debt used. The data shows that debt to equity ratio was high in 2010 i.e. around 14%. It has decreased during the period of study. Debt to total assets indicates the proportion of total assets financed by debt. Higher the ratio higher is the leverage. Debt to total assets ratio of the banking industry does not show much variation during the sample period.Net profit ratio was high in 2011 i.e. 12.02%. However it has decreased to 8.09% in 2014. The data indicates that the banking industry showed poor performance in 2014. For net interest margin for the period of study the data indicates a decreasing trend. Return of capital employed (ROCE) was was 9.36% in 2010 which reduced to 9.12% in 2011. For the years 2012 and 2013 a rise in ROCE is documented i.e. 10.09% and 10.26%. Overall the position of ROCE has improved during the period of the study.

Descriptive Statistics & Regression Analysis

The following section presents the descriptive statistics of the variables under study for banking industry and the regression results to measure the impact of capital structure on profitability of banking industry. The table 3 presents the descriptive statistics of the variables under study. This table shows a summary of descriptive statistics for dependent and independent variables for the banking industry. It is clear from the above table that the mean net profit ratio was 10.36% mean net interest margin was 3.0990 and mean ROCE was 9.7791 for the banking industry for the period under study. The debt to equity ratio stood at 13.04% and debt to total assets stood at 89.14% on an average for the banking industry.

Regression Analysis

Table 4 show regression results of banking industry. It shows the coefficient of determination for the variables. The R^2 values were 0.258, 0.269, 0.269 for net profit, net interest margin and return on capital employed respectively.

Table 5 shows a significant relationship in case of model 1, model 2 and model 3 as indicated by p value of 0.000. It is clear that net profit, net interest margin and ROCE are significantly related to the Debt to Equity ratio.

Table 6 shows the coefficient of determination for the variables. The R^2 values were 0.297, 0.398, 0.152 for net profit, net interest margin and return on capital employed respectively.

The p value for model 1 is 0.000, which is less than 0.05. So it is highly significant and changes in the independent variable (debt to total assets) will have an impact on the dependent variable (net profit). Model 2 and 3 also have p value as 0.000 which again shows that changes in debt to equity will influence net interest margin and return on capital employed. Please refer Table 7.

Results of Hypothesis Testing

H1, Debt to equity has no significant impact on net profit, Rejected, Regression

H2, There is no significant impact of debt to total assets on net profit, Rejected, Regression

H3, Debt to equity has no significant impact on net interest margin, Rejected, Regression

H4, Debt to total asset has no significant impact on net interest margin, Rejected, Regression

H5, There is no significant impact of debt to equity on return on capital employed, Rejected, Regression

H6, Debt to total assets does not have a significant impact on return on capital employed, Rejected, Regression

IV. Conclusion

The study examined the impact of capital structure on financial performance with reference to the banking industry. The study covered a sample of 21 banks from both public sector and private sector. A period of five years was considered for the study. Three variables, viz., Net Profit, Net Interest Margin and Return on Capital Employed were considered as profitability control variables for the study. The debt to equity and debt to total assets have been used as proxy for capital structure. It is observed that the financial risk of the banking industry is reducing as their debt to equity ratio is decreasing year by year. The results of the hypothesis testing reveal that there is significant impact of debt equity ratio and debt to total assets on the net profit, net interest margin as well as return on capital employed indicating that capital structure has a significant impact on the financial performance in the banking industry. The results from this study have important implications for financial stability as higher ratios of debt to equity and debt to total assets makes the banking sector vulnerable to changes in the economic conditions. Therefore the optimum capital structure needs to identify in order to maximize the value. Hence while framing capital structure banks should plan a proper mix of debt and equity.

References

Abbadi, S. M. & Abu-Rub, N. (2012). The effect of capital structure on the performance of Palestinian Financial institutions. British Journal of Economics, Finance and Management Sciences.3(2),92-101.

Abor, J., (2005). The effect of capital structure on profitability: empirical analysis of listed firms in Ghana. Journal of Risk Finance, 6(5),438-445.

Anafo, S.A., Amponteng, E. & Yin ,L. (2015). The Impact of Capital Structure on Profitability of Banks Listed on the Ghana Stock Exchange. Research Journal of Finance and accounting.6 (16),26-34.

Azhagaiah, R., & Candasamy, G., (2011). The Impact of Capital Structure on Profitability with Special Reference to IT Industry in India. Managing Global Transitions 9 (4), 371–392.

Bhaduri, S. N. (2002). Determinants of Capital Structure Choice: A Study of the Indian Corporate Sector. Applied Financial Economics 12 (9), 655–665.

Chechet,I.L.,& Olayiwola., A.B.(2014).Capital Structure and Profitability of Nigerian Quoted Firms: The Agency Cost Theory Perspective. American International Journal of Social Science,3(1),139-158

Chisti,K.A., Ali,K., & Sangmi,M.D. (2013). Impact of Capital Structure on Profitability of Listed Companies (Evidence From India). The USV Annals of Economics and Public Administration,13(1), 183-191.

Ferati, R., & Ejupi, E. (2012). Capital Structure and Profitability: The Macedonian case. European Scientific Journal, 8(7), 51-58.

Goyal, A.M. (2013. Impact of Capital Structure on Performance of Listed Public Sector Banks in India. International Journal of Business Management Invention, 2 (10), 35-43.

Hung, C. Y. (2002). Capital Structure and Profitability. Journal of Property Investment and Finance 20 (6), 434–453.

Mesquita, J. M. C., and J. E. Lara. (2003). Capital Structure and Profitability: The Brazilian Case. The Journal of Finance 57 (3), 1383–1420.

Mohammadzadeh, M. Rahimi, F., Rahimi, F., Aarab, S.

M., & Salamzadeh, J. (2013). The effect of capital structure on the profitability of pharmaceutical companies: The case of Iran. Iranian Journal of Pharmaceutical Research, 12(3), 573-577.

Muritala, T. A. (2012). An empirical analysis of capital structure on firms' performance in Nigeria. International Journal of Advances in Management and Economics, 1(5), 116- 124.

Pandey, I. M. (2004) . Capital Structure, Profitability and Market Structure: Evidence from Malaysia. Asia Pacific Journal of Economics and Business 8(2), 78–91.

Rajkumar,P.(2014). Impact of Financial Leverage on Financial Performance: Special Reference to John Keels Holdings plc in Srilanka. Scientific Research Journal, 2(2),15-20.

Salawu, R..O., & Awolowo,A. (2009). The Effect of Capital Structure on Profitability: An Empirical Analysis Of Listed Firms In Nigeria. The International Journal of Business and Finance Research,3(2),121-129.

Shubita, M. F., & Alsawalhah, J. M. (2012). The relationship between capital structure and profitability. International Journal of Business and Social Science, 3(16), 104-112.

Singh, G. (2013). Interrelationship between capital structure and profitability with special reference to manufacturing industry in India. International Journal of Management and Social Sciences Research , 2(8), 55-61

Taani, K. (2013). Capital structure effects on banking performance: a case study of Jordon. International Journal of Economics, Finance and Management Sciences, 1(5), 227-233.

Taub, A. J. (1975).Determinants of the Firm's Capital Structure, Review of Economics and Statistics, 57,410-416.

Titman, S. & Wessels, R. (1988). The Determinants of Capital Structure Choice. Journal of Finance, 43 (1),1-19.

Vitor, D.A. & Badu, J.(2012). Capital structure and performance of listed banks in Ghana. Global Journal of Human Social Science,12(5),56-62.

Velnampy,T. & Niresh,J.A.(2012). The Relationship between Capital Structure & Profitability. Global Journal of Management and Business Research.12(13), 66-72.

Table 1: Variables and measurements

Concept	Variable	Measurement
Capital Structure	Debt to equity	Debt/Equity
	Debt to total assets	Debt/Total assets
Financial Performance	Net profit ratio (NP)	Net Profit/Sales
	Net interest margin (NIM)	(Investment Returns-Interest Expenses)/Average Earning Assets
	Return on capital employed(ROCE)	Profit Before Interest and Tax/ Capital Employed

Table 2: Table showing the growth of variables

Variables	Period				
	2010	2011	2012	2013	2014
Debt to equity ratio (%)	13.99	13.34	13.11	12.45	12.39
Debt to total assets (%)	88.70	89.07	89.22	89.51	89.19
Net Profit Ratio (%)	11.36	12.02	10.19	10.17	8.09
Net Interest Margin (%)	3.69	3.29	3.13	2.74	2.65
Return on capital employed (%)	9.36	9.12	10.09	10.26	10.06

Table 3: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Debt to equity	105	3.91	23.44	13.0456	4.78385
Debt to total assets	105	80.07	93.94	89.1403	3.58630
Net profit	105	-18.45	17.96	10.3670	5.35682
Net interest Margin	105	1.68	6.83	3.0990	0.90632
Return on Capital employed	105	7.19	12.77	9.7791	1.13062

Table 4: Model Summary I

Model	Dependent variable	R	R^2	Adjusted R Square	Standard Error of the Estimate
1	Net Profit	0.508	0.258	0.251	4.63556
2	Net Interest Margin	0.518	0.269	0.262	0.77880
3	Return on Capital Employed	0.519	0.269	0.262	0.97111

Dependent variables: NP, NIM, ROCE
Predictors: (constant), Debt to Equity Ratio

Table 5: Results of ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig
1.Regression	771.033	1	771.033	35.881	0.000[b]
Residual	2213.306	103	21.488		
Total	2984.339	104			
2.Regression	22.955	1	22.955	37.846	0.000[b]
Residual	62.473	103	0.607		
Total	85.428	104			
3.Regression	35.808	1	35.808	37.970	0.000[b]
Residual	97.135	103	0.943		
Total	132.943	104			

Dependent variables: NP, NIM, ROCE
Predictors: (constant), Debt to Equity

Table 6: Model Summary II

Model	Dependent variable	R	R^2	Adjusted R Square	Standard Error of the estimate
1	Net Profit	0.545	0.297	0.290	4.51240
2	Net Interest Margin	0.631	0.398	0.392	0.70688
3	Return on Capital Employed	0.390	0.152	0.144	1.04620

Dependent variables: NP, NIM, ROCE
Predictors: (constant), Debt to Total Assets

Table 7: Results of ANOVA

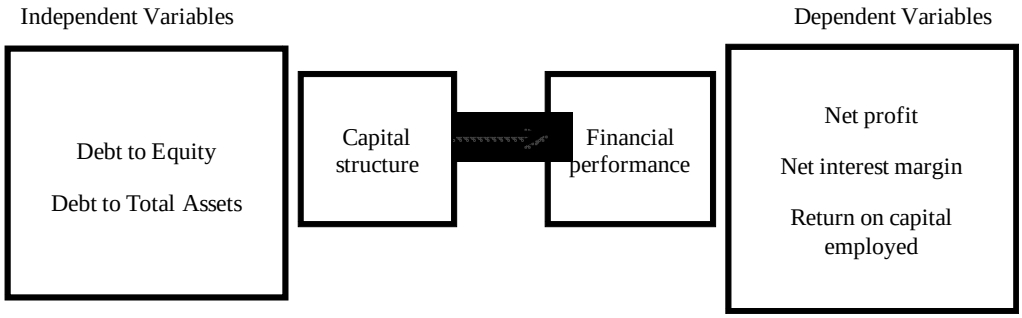
Model	Sum of Squares	df	Mean Square	F	Sig
1.Regression	887.082	1	887.082	43.566	0.000[b]
Residual	2097.257	103	20.362		
Total	2984.339	104			
2.Regression	33.961	1	33.961	67.967	0.000[b]
Residual	51.466	103	0.500		
Total	85.428	104			
3.Regression	20.206	1	20.206	18.461	0.000[b]
Residual	112.737	103	1.095		
Total	132.943	104			

Dependent variables: NP, NIM, ROCE
Predictors: (constant), Debt to total assets

Table 8: Coefficients

Model	Unstandardized Coefficients		Standardized coefficient	T	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1. NP							
(constant)	17.792	1.320		13.484	0.000	15.175	20.409
Debt to Equity	-0.569	0.095	-0.508	-5.990	0.000	-0.758	-0.381
Debt to total assets	-0.814	0.123	0.545	-6.600	0.000	-1.059	-0.570
2.NIM							
(constant)	4.380	0.222		19.758	0.000	3.941	4.820
Debt to Equity	-0.098	0.016	-0.518	-6.152	0.000	-0.130	-0.067
Debt to total assets	-0.159	0.019	-0.631	-8.244	0.000	-0.198	-0.121
3.ROCE							
(constant)	11.379	0.276		41.165	0.000	10.831	11.928
Debt to Equity	-0.123	0.020	-0.519	-6.162	0.000	-0.162	-0.083
Debt to total assets	-0.123	0.029	-0.390	-4.297	0.000	-0.180	-0.066

Figure 1: Conceptual Framework



IMPACT OF LIBERALIZATION AND GLOBALIZATION ON STOCK EXCHANGE MARKETS

A STUDY OF INTERDEPENDENCE AND CO-MOVEMENT OF SELECTED ASIAN, EUROPEAN AND AMERICAN MARKET

Abhishek Tripathi★ Rekha Rathore★★

It has been observed that there has been increasing interdependence between most of the developed and emerging stock markets since the 1987 Stock Market Crash. This interdependence intensified after the 1997 Asian Financial Crisis.The objective of this paper is to examine the interdependence and co-movement betweenselected stock market of different economies between USA & European market, Asian & European market and Asian and USA markets by studying correlations in the index returns which will guide FIIs to invest in which type of international stock exchange markets. Thus, it will be conclude that all the Asian markets are moderately correlated, but China (Shanghai) has low degree of correlation with European market.

Keywords: Correlation, Co-movement, globalization, Liberalization, GDP

The International Monetary Fund (IMF) defines globalization as "the growing economic interdependence of countries worldwide through increasing volume and variety of cross-border transactions in goods and services, freer international capital flows, and more rapid and widespread diffusion of technology". Meanwhile, The International Forum on Globalization defines it as "the present worldwide drive toward a globalized economic system dominated by supranational corporate trade and banking institutions that are not accountable to democratic processes or national governments".

From last many decades due to Liberalization and globalization all countries becomes a global village and there has been increasing capital flows. Liberalization and reforms in stock exchange market provide a platform for the investors to invest in different stock markets in different countries. The behavior of aggregate stock prices is a subject of enduring fascination to investors, policymakers, and economists alike. A casual inspection of stock market prices and GDP in developed market economies reveals that these tend to move together. Countries doing well in terms of GDP performance tend to experience gains in domestic stock exchanges(Duca, 2007).

I. Review of Literature

Ang, A. et al. (2002) Downside correlations better capture the asymmetric nature of risk than downside betas, since conditional betas exhibit little asymmetry across falling and rising markets. We find that stocks with high downside correlations with the market, which are correlations over periods when excess market returns are below the mean, have high expected returns. Controlling for the market beta, the size effect, and the book-to-market effect, the expected return on a portfolio of stocks with the greatest downside correlations exceeds the expected return on a portfolio of stocks with the least downside correlations by 6.55% per annum. We find that part of the profitability of investing in momentum strategies can be explained as compensation for bearing high exposure to downside risk.

Prasad, E.et al. (2003) recent wave of financial globalization that has occurred since the mid-1980s has been marked by a surge in capital flows among industrial countries and, more notably, between industrial and developing countries. Although capital inflows have been associated with high growth rates in some developing countries, a number of them have also experienced periodic collapses in growth rates and significant financial crises that have had substantial macroeconomic and social costs. As a result, an intense debate has emerged in both academic and policy circles on the effects of financial integration on developing economies. But much of the debate has been based on only casual and limited empirical evidence.

Brasoveanu et al. (2008) examines the correlation between capital market development and economic growth in Romania using a regression function and VAR models. The results show that the capital market development is

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positively correlated with economic growth, with feed-back effect, but the strongest link is from economic growth to capital market, suggesting that financial development follows economic growth, economic growth determining financial institutions to change and develop.

Duca (2007) explaining that the relationship involves assessing theunderlying direction of causality. Does the stock market affect GDP,or is the causality in the opposite direction, such that GDP triggersfluctuations in the stock market? This paper employs the Grangercausality test in order to examine causality direction. The focus ofthe paper is on long-term trends and the evidence presented isgarnered from five of the top ten stock markets in the world in termsof market capitalization.

II. Research Methodology

Objective of the study is to know the correlation and co-movement between European, American and Asian stock markets.The study is conducted for the period of seven years, spans from 1st January 2005 to 31st December, 2011. This period issufficient to examine the co variability because this period covers all the major events, such as depression,recession, boom, political turmoil's, coalition government, full convertibility of currency, passing of right toinformation Act, etc. Please refer Table 1.

Seven years monthly data of 6 Asian Stock Markets i.e. Hangseng (Hongkong), Shanghai (China), STRITS TIMES (Singapore), Taiwan (Taiwan), NIKKEI (Japan), BSE (India), European markets DAX (German), CAC (France), FTSE (UK) and United states of America DOW is used for the research which iscollected from secondary sources and correlation technique is used. scatter diagram is a used for interpreting relationships between variables. These countries are selected randomly and are among top ten Asian countrieson the basis of market capitalization.

About Correlation

- 0 indicates no linear relationship.
- +1 indicates a perfect positive linear relationship: as one variable increases in its values, the other variable also increases in its values via an exact linear rule.
- -1 indicates a perfect negative linear relationship: as one variable increases in its values, the other variable decreases in its values via an exact linear rule.
- Values between 0 and 0.3 (0 and -0.3) indicate a weak positive (negative) linear relationship via a shaky linear rule.
- Values between 0.3 and 0.7 (0.3 and -0.7) indicate a moderate positive (negative) linear relationship via a fuzzy-firm linear rule.
- Values between 0.7 and 1.0 (-0.7 and -1.0) indicate a strong positive (negative) linear relationship via a firm linear rule.

III. Data Analysis & Interpretation

1.4 (a) Relationship between stock market of United States of America with Asian Markets

Fig. 1 & Table 2 shows that among the selected Asian markets, highest positive degree of correlation is founded between United States of America and Singapore (.740).China is least positively correlated with United States of America as its degree of correlation is founded to be (.456). No Asian stock market is having negative correlation with United States of America.

1.4 (b) Relationship between stock markets of United States of America with European markets

Fig.2 & Table 3 shows that among the selected European markets, highest positive degree of correlation is founded between United States of America and CAC (France) (.899).Least correlation is (.827) between Dow Jones and FTSE (UK) and the correlation with DAX (German) is (.830). we have studied that correlation among all European countries is highly positive (more than .75) and there is no larger difference among all the European countries correlation with American market.

1.4 (c) Relationship between stock markets of European Markets with Asian markets

Fig. 3 & Table 4 shows that highest positive degree of correlation is founded between European market and Singapore (.749). China is again least positively correlated with European market as its degree of correlation is found to be (.399). This study conclude that all the Asian markets are moderate correlated, but China (Shanghai) has low degree of correlation with European market.

IV. Conclusion

1. Among the selected Asian markets, highest positive degree of correlation is founded between UnitedStates of America and Singapore (.740). China is low positively correlated with United States of America as its degree of correlation is founded to be (.456). No Asian stock market is having negativecorrelation with United States of America.

2. Among the selected European markets, highest positive degree of correlation is founded betweenUnited States of America and CAC (France) (.899). Low degree correlation is (.827) between DowJones and FTSE (UK) and the correlation with DAX (German) is (.830). We have studied thatcorrelation among all European countries is highly positive (more than .75) and there is no largerdifference among all the European countries correlation with American market.

3. Highest positive degree of correlation is founded between European market and Singapore (.749). China is again low degree positively correlated with European market as its degree of correlation isfound to be (.399). This study conclude that all the Asian markets are moderate correlated, but China(Shanghai) has low degree of correlation with European market.

References

Brasoveanu, L., Dragota, V., Catrama, D. and Semenescu, A. (2008),"Correlations between Capital Market development & Economic growth: The Case of Romania", Journal of Applied Quantitative Methods, Vol. 3, No. 1, pp.64-75

Click, R. W and Plummer, M.G. (2005), "Stock Market integration in ASEAN after the Asian Financial Crises", Journal of Asian Economics, Vol. 16, No.1, pp 5-28.

Duca, G. (2007), "The relationship between the stock market and the Economy: Experience from international Financial Markets", Bank of Valletta Review, No. 36, Autumn 2007.

Flavin, T. and Hurley, M., (2001), "Explaining Stock Market Correlation: A Gravity Model Approach", retrieved from http://eprints.nuim.ie/87/1/N1101101.pdf, accessed on dated 15-01-2012.

Hatemi, J.A. and E. Rocha (2004), "An Examination of Equity Market price linkage between Australia and European Union using Leveraged Boot strap Metho", European Journal of Finance, Vol. 3, Issue1,pp 475-488.

Larsen, K., (2009), "A primer on Correlation", retrieved fromhttp://www.brigusgroup.com/Essays/correlation.htm, accessed on dated 13-01-2012.

Prasad, E, Kenneth , R, Wei, S. and Kose, A. (2003), "Effects of Financial Globalisation on Developing Countries", retrieved fromhttp://www.imf.org/external/pubs/nft/op/220/index.htm, accessed on dated 12-01-2012.

Sakoui, A., Kaminska, L., (2010), "The Rise and Rise of Correlation", retrieved fromhttp://www.ft.com/cms/s/0/5a40b6a8-d176-11df-96d1-00144feabdc0.html#axzz1jscW1d9T, accessed on dated 18-01-2012.

Summers, G. (2010), "Stock Market Timing Correlation Against Currencies", retrieved fromhttp://www.marketoracle.co.uk/Article20302.html, accessed on dated 12-01-2012.

Wichard, J., Merkwirth,C., OgorzaÃlek,m., (2003), "Detecting Correlation in Stock Market", retrieved fromhttp://www.j-wichard.de/publications/crosspredPaper.pdf, accessed on dated 10-01-2012.

Websites Visited

http://in.finance.yahoo.com/q/hp?s=%5EBSESN&a=00&b=1&c=2005&d=11&e=31&f=2011&g=m

http://in.finance.yahoo.com/q/hp?s=%5EHSI&a=00&b=1&c=2005&d=11&e=31&f=2011&g=m

http://in.finance.yahoo.com/q/hp?s=000001.SS&a=00&b=1&c=2005&d=11&e=31&f=2011&g=m

http://in.finance.yahoo.com/q/hp?s=%5EN225&a=00&b=1&c=2005&d=11&e=31&f=2011&g=m

http://in.finance.yahoo.com/q/hp?s=%5ESTI&a=00&b=1&c=2005&d=11&e=31&f=2011&g=m

http://in.finance.yahoo.com/q/hp?s=%5ETWII&a=00&b=1&c=2005&d=11&e=31&f=2011&g=m

http://in.finance.yahoo.com/q/hp?s=%5EFCHI&a=00&b=1&c=2005&d=11&e=31&f=2011&g=m

http://in.finance.yahoo.com/q/hp?s=%5EGDAXI&a=00&b=1&c=2005&d=11&e=31&f=2011&g=m

http://in.finance.yahoo.com/q/hp?s=%5EFTSE&a=00&b=1&c=2005&d=11&e=31&f=2011&g=m

http://in.finance.yahoo.com/q/hp?s=%5EDJI&a=00&b=1&c=2005&d=11&e=31&f=2011&g=m

Table 1: Stock Exchange Market Selected for the study

Index	Country	Markets
Hangseng	HongKong	Asian Markets
Shanghai	China	
STRITS TIMES	Singapore	
Taiwan	Taiwan	
NIKKEI	Japan	
BSE	India	
DAX	German	European Markets
CAC	France	
FTSE	UK	
DOW	United states of America	American Markets

Table 2: Correlations stock market of United States of America with Asian Markets

		BSE	HENGSENG	Shanghai	STI	Tiwan	Nikkai	Dow
BSE	Pearson Correlation	1	.779**	.522**	.773**	.684**	.577**	.664**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	84	84	84	84	84	84	84
HENGSENG	Pearson Correlation	.779**	1	.627**	.833**	.743**	.585**	.693**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	84	84	84	84	84	84	84
Shanghai	Pearson Correlation	.522**	.627**	1	.532**	.446**	.340**	.456**
	Sig. (2-tailed)	.000	.000		.000	.000	.002	.000
	N	84	84	84	84	84	84	84
STI	Pearson Correlation	.773**	.833**	.532**	1	.788**	.715**	.740**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	84	84	84	84	84	84	84
Tiwan	Pearson Correlation	.684**	.743**	.446**	.788**	1	.599**	.655**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	84	84	84	84	84	84	84
Nikkai	Pearson Correlation	.577**	.585**	.340**	.715**	.599**	1	.624**
	Sig. (2-tailed)	.000	.000	.002	.000	.000		.000
	N	84	84	84	84	84	84	84
Dow	Pearson Correlation	.664**	.693**	.456**	.740**	.655**	.624**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	84	84	84	84	84	84	84

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

Table 3: Correlations Relationship between stock markets of United States of America with European markets

		DOW	CAC	DAX	FTSE
DOW	Pearson Correlation	1	.835**	.798**	.827**
	Sig. (2-tailed)		.000	.000	.000
	N	84	84	84	84
CAC	Pearson Correlation	.835**	1	.899**	.899**
	Sig. (2-tailed)	.000		.000	.000
	N	84	84	84	84
DAX	Pearson Correlation	.798**	.899**	1	.830**
	Sig. (2-tailed)	.000	.000		.000
	N	84	84	84	84
FTSE	Pearson Correlation	.827**	.899**	.830**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	84	84	84	84

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

Table 4: Correlation relationship between stock markets of European Markets with Asian markets

		FTSE	BSE	HENGSENG	Shanghai	Tiwan	STI	Nikkai
FTSE	Pearson Correlation	1	.704**	.710**	.399**	.720**	.749**	.742**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	84	84	84	84	84	84	84
BSE	Pearson Correlation	.704**	1	.779**	.522**	.684**	.773**	.577**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	84	84	84	84	84	84	84
Hengseng	Pearson Correlation	.710**	.779**	1	.627**	.743**	.833**	.585**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	84	84	84	84	84	84	84
Shanghai	Pearson Correlation	.399**	.522**	.627**	1	.446**	.532**	.340**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.002
	N	84	84	84	84	84	84	84
Tiwan	Pearson Correlation	.720**	.684**	.743**	.446**	1	.788**	.599**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	84	84	84	84	84	84	84
STI	Pearson Correlation	.749**	.773**	.833**	.532**	.788**	1	.715**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	84	84	84	84	84	84	84
Nikkai	Pearson Correlation	.742**	.577**	.585**	.340**	.599**	.715**	1
	Sig. (2-tailed)	.000	.000	.000	.002	.000	.000	
	N	84	84	84	84	84	84	84

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

Fig. No. 1 Scatter Diagram between stock market of United States of America with Asian Markets

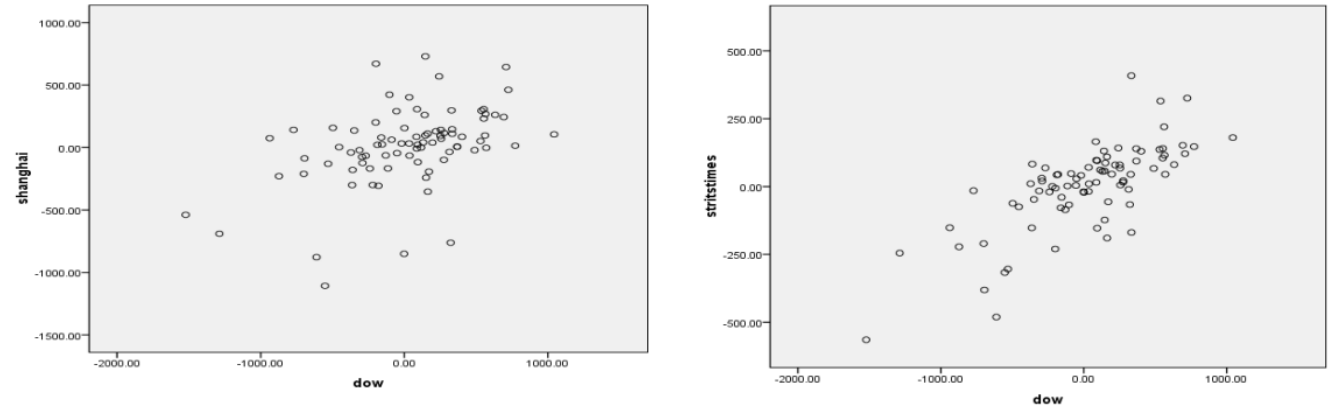

Fig.2: Relationship between stock markets of United States of America with European markets

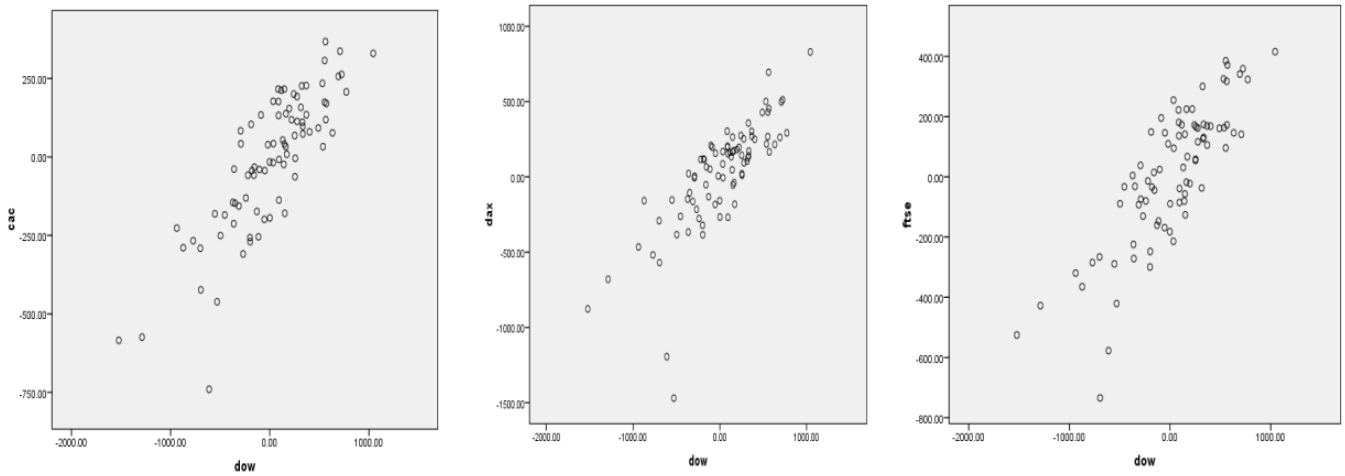

Fig. 3: Scatter Diagram between stock markets of European Markets with Asian markets