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INNOVATIONS IN MICRO, SMALL AND MEDIUM ENTERPRISES WITH REFERENCE TO VISAKHAPATNAM CITY

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ABSTRACT

India is currently in the mode of encouraging Micro, Small and Medium enterprises which is very much necessary for sustainable economic development. One of the top most aims at faster, sustainable and inclusive growth of our country. This creates more jobs and can absorb the highest percentage of youth of our country. Therefore, MSMEs is expected to play a key driving role. This paper analyses different Acts which encourages more Small Scale, Cottage and Village industries with special reference to traditional, hand-made, non-agricultural and service related activities. This paper also explains how the Liberalization policies helping these Units. The study is in the city of Visakhapatnam where CSIR support towards research of these innovation-driven industries is highly appreciated. The analysis shows that majority are technology driven units and using market innovation techniques. Various suggestions are given to the entrepreneurs, different types of enterprises, Government, Various institutes from different angles of innovations.

KEYWORDS

MSMEs, innovations.

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INTRODUCTION

The 1990s is an era characterised by rapid social, political and technological change. Phrases such as globalisation, global warming, the borderless world, personal computer and the Internet have all entered the vocabulary. These words reflect the issues that individuals, societies and nations face today. History reminds us that the human race has experienced two great waves of change: the agricultural revolution and the industrial revolution. Numerous commentators suggest that we are in the midst of the 'third wave'¹.

The market of micro, small and medium-sized enterprises has emerged in the last five decades as a highly vibrant and competitive field of the Indian economy. MSMEs not only play significant role in providing employment opportunities at comparatively lower cost of capital than large scale industries but also help in establishment of industrialization of rural and Backward areas leading to regional imbalances being minimized and a fair distribution of national income and wealth ensuring. As ancillary units, MSMEs are complementary to large industries and contribute enormously to the country's socioeconomic growth. India's micro-sized businesses have to face many obstacles and harness the opportunities in rapidly evolving global markets.

The adoption of the MSMED Act, 2006 is one of many important steps by the Government of India in its ongoing efforts as part of its planned approach to nursing and developing the former SSIs, Cottage and Village Industries, Traditional Industries such as Coir, Khadi and Silk on the one hand and encouraging other non-agricultural and service-related activities which, on the other hand, require special care. The DC, MSME office launched MSME's Fourth All India Census, which was the first attempt in May 2005 to assess the magnitude and characteristics of the newly established MSME market.

Due to liberalization, shifts in manufacturing strategies, volatile and unpredictable business conditions and the need to implement other growth strategies, Indian MSMEs are facing intense competition from their global counterparts associated with this high growth level. Apart from MSMEs believing in importing technology, rather than developing it in-house or through/in association with, National Research and Development (R&D) centres, they also need to attract Venture Capitalists. Council of Scientific and Industrial Research (CSIR), through its different scientific research labs is carrying out cutting edge scientific and technological research and development with a vision to pursue science Targeting global effects, technology enabling innovation-driven industries and fostering transdisciplinary leadership for inclusive economic growth in the country CSIR is catalyzing innovative research through its 'New Millennium Indian Technology Leadership Initiative (NMITLI)' programme, a public-private-partnership initiative.

REVIEW OF LITERATURE

Masurel et al. (2003)² discovered, based on an extensive literature survey, 14 success factors of innovation within SMEs. They found that the entrepreneur is the most important factor in the innovation process.

Burrone and Jaiya (2005)³ The ability and innovative capacity of SMEs varies significantly, depending on their sector, size, focus, resources, and the business environment in which they operate.

Chaminade and Vang (2006)⁴ The flexibility of SMEs, their simple organizational structure, their low risk and receptivity are the essential features facilitating them to be innovative. Hoffman et al. 1998: There is substantial evidence to show that a number of SMEs in a wide variety of sectors do engage in technological innovations, and that these innovations are likely to be an important determinant of their success.

¹ Alvin Toffler, 1980. "Third wave" to describe the current wave of change in the world, The Third Wave, Batnam books, USA.

² Masurel, E., Montfort, van, C.A.G.M., Lentink, R., 2003. SME innovation and the crucial role of the entrepreneur. Research Memorandum, Vrije University, Amsterdam,

³ Burrone, E., and G. S. Jaiya, 2005. Intellectual Property (IP) Rights and Innovation in Small and Medium-Sized Enterprises, Geneva, World Intellectual Property Organization.

⁴ Chaminade, C and J Van-Lauridsen (2006): "Innovation Policies for Asian SMEs: An Innovation System Perspective", in Yeung, H W (Ed), *Handbook of Research on Asian Studies*, Edward Elger, London, pp 381-408

OBJECTIVES OF THE STUDY

1. To evaluate the growth and contribution of MSMEs in India.
2. To understand the role of the government in creating an innovative environment.
3. To trace and mention different aspects of innovations in MSMEs.

RESEARCH METHODOLOGY

The researcher has considered stratified random sampling technique to take the sample from the population. Sample size was determined by using known proportion with confined population formula, and calculated that is 202. The sampling frame is considered that the enterprises have been registered in between the years of 1999 to march of 2019, around 3554 micro, small and medium enterprises. Structured Questionnaire was also designed to measure the innovations among enterprises based on OSLO manual guidelines. Personal observation approach has been modified for the collection of data in this study.

LIMITATIONS OF THE STUDY

In this study, enterprise is considered as innovator when they have implemented innovation for multiple years only. Actually some technology curves may have more life than the considered period of multiple years. Such enterprises may implement innovation after or before years of considered period. This leads to misrepresentation of innovators.

ANALYSIS AND FINDINGS

The present study is intended to find out the innovations in Micro, Small & Medium Enterprises. The analysis and interpretation of the data is made with reference to objectives of the study. The collected data was analysed by applying relevant statistical techniques and interpreted for drawing conclusions.

It describes the demographic information of the respondents in order to highlight the important characteristics in relation to the innovative behaviour.

1. KIND OF THE ENTREPRENEUR**TABLE 1**

Type of Entrepreneur	Frequency	Percent
First Generation	166	82.2
Second Generation	26	12.9
Third Generation	10	5.0
Total	202	100.0

Source: Primary data

The table reveals the kind of the entrepreneurs in the 202 sample enterprises. It indicates that 82 per cent are first generation entrepreneurs, while 13 per cent are second generation entrepreneurs, and five per cent are third generation entrepreneurs. Therefore, which indicates that the number of start-ups are increasing, it also shows that quite a few enterprises have survived to become second or third generations.

2. AGE OF THE ENTREPRENEURS**TABLE 2**

Age	Frequency	Percent
< 30 Years	52	25.7
30-40 Years	85	42.1
40-50 Years	52	25.7
50-60 Years	8	4.0
Above 60	5	2.5
Total	202	100.0

Source: Primary data

The table reveals the different age group of entrepreneurs in the 202 sample enterprises. It indicates that 25.7 per cent of entrepreneurs are in the age of below 30 years, 42.1 per cent of entrepreneurs are in the age group of 30-40 years, while 25.7 per cent of entrepreneurs are in the age group of 40-50 years, four per cent of entrepreneurs in the age group of 50-60 years, while only 2.5 per cent of entrepreneurs are above the age of 60 years. It is inferred that comparatively more entrepreneurs (42.1 per cent) are in the age group of 30-40 years than other age groups of the entrepreneurs, and totally 94% of entrepreneurs are below the age of fifty years.

3. EDUCATION LEVEL OF THE ENTREPRENEURS**TABLE 3**

Education	Frequency	Percent
No formal Education	10	5.0
Inter/10th class	55	27.2
Graduation	107	53.0
Pg/Professional	30	14.9
Total	202	100.0

Source: Primary data

The table reveals the education level of the entrepreneurs in the sample of enterprises. It indicates that five per cent of entrepreneurs have no formal education, 27.2 per cent of entrepreneurs have 10th and intermediate level education, 53 per cent of entrepreneurs have graduation level, and 14.9 per cent of entrepreneurs have completed post-graduation or professional qualification. It is found that comparatively graduation level educated entrepreneurs (53 per cent) are more than other levels of educated entrepreneurs.

4. GENDER OF THE ENTREPRENEURS**TABLE 4**

Gender	Frequency	Percent
Male	192	95.0
Female	10	5.0
Total	202	100.0

Source: Primary data

The table reveals the male and female entrepreneurs in the sample of enterprises. It shows that 95 per cent of the entrepreneurs are male entrepreneurs, and only 5 per cent of entrepreneurs are the female entrepreneurs. It is inferred that female entrepreneurs are very few among the 202 sample enterprises.

5. MARITAL STATUS OF THE ENTREPRENEURS

TABLE 5

Marital status	Frequency	Percent
Married	170	84.2
Un Married	32	15.8
Total	202	100.0

Source: Primary data

The table reveal the marital status of entrepreneurs in the 202 sample enterprises. It indicates that 84.2 per cent of the entrepreneurs are married entrepreneurs, and only 15.8 per cent of entrepreneurs are the unmarried entrepreneurs. It is found that comparatively married entrepreneurs (84.2 per cent) are more than the unmarried entrepreneurs.

6. STATUS OF THE SPOUSES OF MARRIED ENTREPRENEURS

TABLE 6

Status of Spouse	Frequency	Percent
House wife	149	87.65
Employee	8	4.70
Professional	4	2.35
Business	9	6.00
Total	170	100

Source: Primary data (considered married entrepreneurs 170 as 100%)

The table reveal that status of spouses in the married entrepreneurs' enterprises. It indicates that 87.65 per cent of entrepreneurs' spouses are house wives, 4.7 per cent of entrepreneurs' spouses are in employment, 2.35 percent of entrepreneurs' spouses are in professional work and six percent of entrepreneurs spouses are in business. It is found that most of the entrepreneurs' spouse's status are house wives (87.65 percent).

7. EXPERIENCE OF THE ENTREPRENEURS

TABLE 7

Experience	Frequency	Percent
No Experience/No EDP	8	4.0
Attended EDP	19	9.4
Employee Experience	159	78.7
Business experience	16	7.9
Total	202	100.0

Source: Primary data

The table reveal the status of the experience of entrepreneurs in the sample of enterprises. It indicates that 78.7 per cent of entrepreneurs have employee experience, 9.4 percent of entrepreneurs have attended EDPs, 7.9 per cent of entrepreneurs have business experience, and only four percent of entrepreneurs have no experience and EDPs. It is found that comparatively employee experience (78.7 per cent) is the most important experience which leads to entrepreneurship.

8. YEAR OF INCEPTION OF THE ENTERPRISES

TABLE 8

Year of Inception	Frequency	Percent
Before 1999	55	27.2
1999-2003	29	14.4
2003-2007	42	20.8
2007-2013	76	37.6
Total	202	100.0

Source: Primary data

The table reveal the ages of the enterprises in the 202 sample enterprises. It indicates that 27.2 per cent enterprises have been started before the year 1999, 14.4 percent of enterprises have been started in between the years of 1999-2003, 20.8 percent of enterprises have been started in between the years of 2003-2007, and 37.6 per cent of enterprises have been started in between the years of 2007-2013. It is found that more enterprises (37.6 percent) have been started after MSMD act 2006.

9. NATURE OF ACTIVITY OF THE ENTERPRISES

TABLE 9

Nature of activity	Frequency	Percent
Manufacturing	130	64.4
Services	55	27.2
Trading (service related)	17	8.4
Total	202	100.0

Source: Primary data

The table reveal the nature of activities of the enterprises in the sample of enterprises. It indicates that 64.4 per cent of the enterprises are in manufacturing, 27.2 percent of the enterprises are in services, and 8.4 per cent of enterprises are in trading. It is found that most of the registered enterprises (64.4 percent) are in manufacturing only.

10. TYPE OF OWNERSHIP CONSTITUTION

TABLE 10

Type of Ownership Constitution	Frequency	Percent
Proprietary	107	53.0
Partnership	47	23.3
Private Limited	45	22.3
Public Limited	3	1.5
Total	202	100.0

Source: Primary data

The table reveal the types of ownership constitution of the enterprises in the sample of enterprises. It indicates that 53 per cent of the enterprises are proprietary concerns, 23.3 percent of the enterprises are partnership concerns, 22.3 percent of the enterprises are private limited, and 1.5 per cent of the enterprises are public limited concerns. It is found that most of the enterprises are proprietary concern enterprises (53 percent).

11. CATEGORIES OF THE ENTERPRISES

TABLE 11

Category of the Enterprises	Frequency	Percent
Micro Enterprises	120	59.4
Small Enterprises	73	36.1
Medium Enterprises	9	4.5
Total	202	100.0

Source: Primary data

The table reveal the categories of the enterprises in the sample of enterprises. It indicates that 59.4 per cent of the enterprises are micro enterprises, 36.1 per cent of the enterprises are small enterprises, and 4.5 per cent of the enterprises are medium enterprises. It is found that most of the enterprises are under the category of micro enterprises (59.4 per cent).

12. NUMBER OF EMPLOYEES

TABLE 12

Number of Employees	Frequency	Percent
<5employees	55	27.2
5-15 Employees	70	34.7
15-25 Employees	51	25.2
25-50 Employees	12	5.9
Above 50 Employees	14	6.9
Total	202	100.0

Source: Primary data

The table reveal the number of employees working with the enterprises in the sample of enterprises. It indicates that 27.2 per cent of the enterprises have less than five employees, 34.7 per cent of the enterprises have in between 5-15 employees, 25.2 percent of the enterprises have in between 15-25 employees, 5.9 per cent of the enterprises have in between 25-50 employees, and 6.9 percent of the enterprises have above 50 employees. It can be inferred that about 87 percent enterprises have employees below 25 only.

13. LEVEL OF MARKETS OPERATED BY THE ENTERPRISES

TABLE 13

Level of Markets	Frequency	Percent
Local	170	84.2
Local & National	24	11.9
Local & national & International	8	3.9
Total	202	100.0

Source: Primary data

The table and figure reveal the level of markets in which enterprises offer their products in the sample of enterprises. It is observed that 84.2 per cent of the enterprises are serving in local market, 11.9 per cent of the enterprises are serving in local and national markets, and 3.9per cent of the enterprises are serving in local, national and international markets. It is found that most of the enterprises are serving in local markets (84.2 percent) only.

14. NATURE OF POWER USED BY THE ENTERPRISES

TABLE 14

Nature of power using by Enterprises	Frequency	Percent
Electrical	166	82.2
Both Electrical &Generator	36	17.8
Total	202	100.0

Source: Primary data

The table reveal that nature of power used by enterprises in the sample of enterprises. It indicates that 82.2 per cent of the enterprises are using only electrical power and 17.8 per cent of enterprises are using both electrical and generator power. It is found that most of the enterprises (82.2 percent) used only electrical power.

15. LOCATION OF THE ENTERPRISES

TABLE 15

Location	Frequency	Percent
Rural	6	3.0
Semi Urban	31	15.3
Urban	165	81.7
Total	202	100.0

Source: Primary data

The table reveal the areas where the enterprises are located in the sample of enterprises. It is observed that 81.7 per cent of enterprises are located in urban areas, 15.3 per cent of enterprises are located in semi urban areas, and three percent of enterprises are located in rural areas. It is found that most of the enterprises are located and operated (81.7 per cent) in urban areas.

16. TYPE OF CONSUMERS SERVED BY THE ENTERPRISES

TABLE 16

Type Consumer of the enterprises	Frequency	Percent
Industrial Consumer	89	44.1
Only Individual	62	30.7
Both	51	25.2
Total	202	100.0

Source: Primary data

The table reveal to which consumers the enterprises are offering their products in the sample of enterprises. It is observed that 44.1 per cent of enterprises are offering products to industrial consumers, 30.7 per cent of enterprises are offering products to only individual consumers, and 25.2 percent of enterprises are offering products to both industrial and individual consumers. It is found that most of the enterprises are offering their products to the industrial consumers.

17. A REVENUE GROWTH RATE OF THE ENTERPRISES

TABLE 17

Revenue growth rate of the enterprises	Frequency	Percent
0-10 %	10	5.0
10-15 %	54	26.7
15-20 %	67	33.2
20-25%	51	25.2
Above 25%	20	9.9
Total	202	100.0

Source: Primary data

The table reveal that the enterprises have registered different revenue growth rates in the sample of enterprises. It indicates that five per cent of enterprises registered 0-10 percent rate of revenue growth, 26.7 per cent of enterprises registered 10-15 percent rate of revenue growth, 33.2 per cent of enterprises registered 15-20 percent rate of revenue growth, 25.2 percent enterprises registered 20-25 percent rate of revenue growth, and 9.9 per cent of enterprises registered above 25 per cent rate of revenue growth. It is found that most of enterprises have registered around 20 percent of revenue growth.

18. RESOURCES/ENABLING FACTORS FOR IMPLEMENTATION OF INNOVATIONS

TABLE 18

S. No	Resources/ Enabling factors	No	Yes
1	Enterprises having quality policy/ certification	130(64.4%)	72(35.6%)
2	Enterprises attended trade fairs/ /exhibitions	145(71.78%)	57(28.22%)
3	Enterprises having marketing personnel	130(64.4%)	72(35.6%)
4	Enterprises have attended training/learning	154(76.24%)	48(23.76%)
5	Enterprises have HR manager/Welfare officer	151(74.75%)	51(25.24%)
6	Enterprises have R&D/product development Personnel	188(93.1%)	14(6.9%)

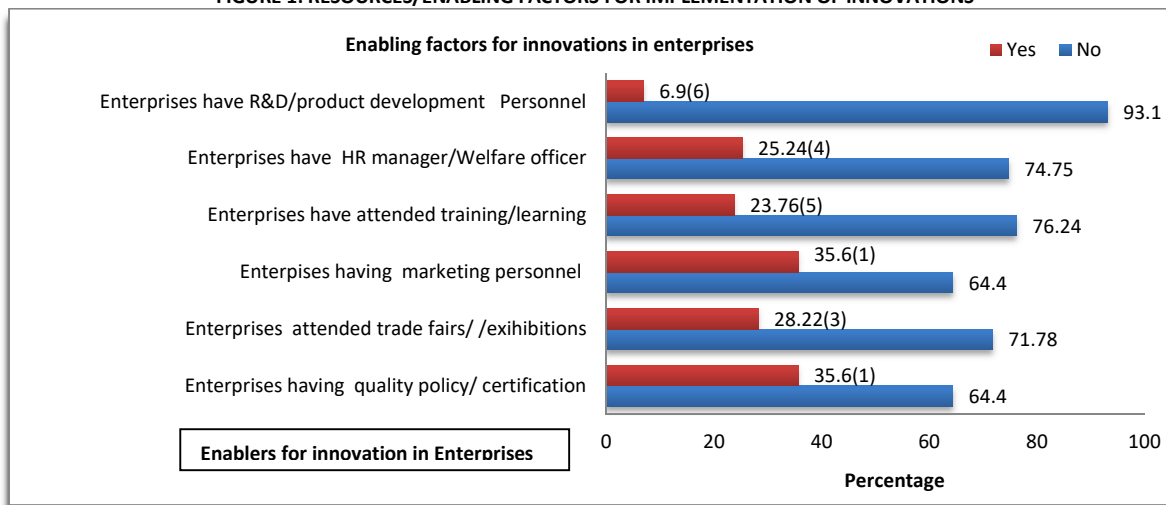
Sources: Primary data

The table reveals that the resources/enabling factors, which help enterprises for implementing innovation in their enterprises, and also reveals the percentage of enterprises, have those enabling factors.

It indicates that that 35.6 per cent of the enterprises have quality policy/certification and also have marketing personnel to the same extent, while 28.22 percent of enterprises have attended trade fairs and exhibitions, 25.22per cent of enterprises have HR managers, 23.76 per cent of enterprises have attended training and learning, and 6.9per cent of enterprises have R&D/Product development personnel.

It is found that above 2/3 enterprises do not have enough resources/enabling factors, and most of MSMEs are unable to afford product development personnel. This may adversely effect on innovativeness of the enterprises.

FIGURE 1: RESOURCES/ENABLING FACTORS FOR IMPLEMENTATION OF INNOVATIONS



The figure reveals the order of the resources enabled by enterprises. It indicates that comparatively highest enabled resources are quality policy/ certification, next comes marketing personnel, next the enterprises which have attended trade fairs/ /exhibitions resources, next the enterprises which have HR managers, and next which have attended training/learning and then enterprises which have R&D/Product development personnel.

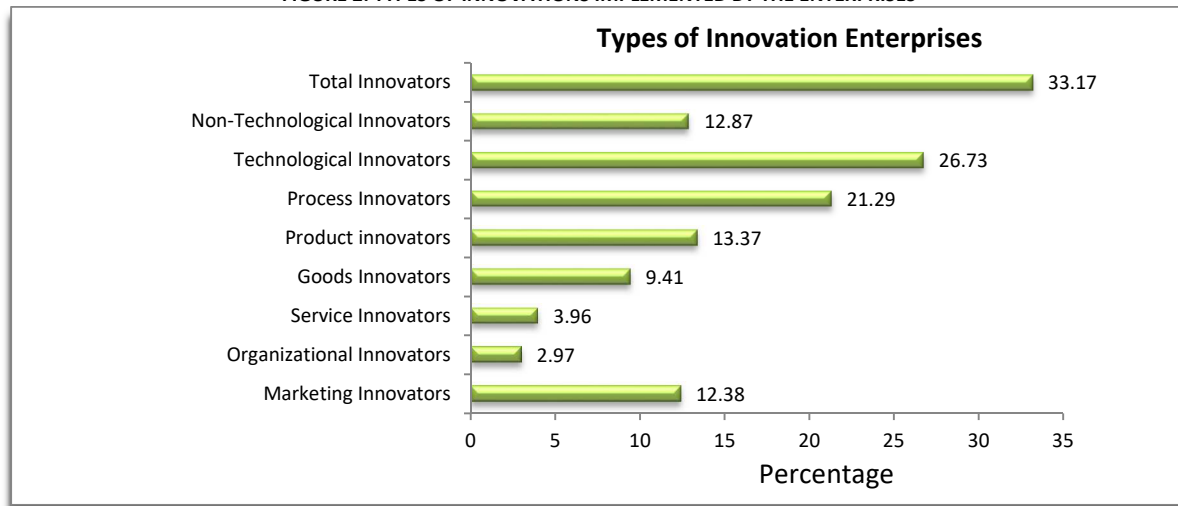
19. Enterprises in all types of Innovations (Total Innovators): Researcher has cross tabulated and identified that 13 enterprises have implemented both technological and non-technological innovations in their business practices, 41 enterprises have implemented exclusively technological innovation, and 13 enterprises have implemented exclusively non-technological innovation. It is computed that the 67 enterprises have implemented all types of innovations.

TABLE 19: ENTERPRISES IN ALL TYPES OF INNOVATIONS (INNOVATORS)

Types of Innovation Enterprise	Frequency	Percentage
Marketing Innovation Enterprises	25	12.37
Organizational Innovation Enterprises	6	2.97
Service Innovation Enterprises	8	3.96
Goods Innovation Enterprises	19	9.40
Product innovation Enterprises	27	13.37
Process Innovation Enterprises	43	21.29
Technological Innovation Enterprises	54	26.73
Non-Technological Innovation Enterprises	26	12.87
Total Innovation Enterprises	67	33.17
Total Non-innovation Enterprises	135	66.83
Total Sample Enterprises	202	100

Source: Output of all tables

FIGURE 2: TYPES OF INNOVATIONS IMPLEMENTED BY THE ENTERPRISES



The table and figure reveal the figures of all types of innovations implemented in the sample of enterprises. It indicates that 33.17 per cent of enterprises are implementing all types innovations, 26.73 percent of enterprises are in technological innovations, 21.29 per cent of enterprises in process innovations, 13.37 per cent of enterprises are in product innovations, 12.87 per cent of enterprises are in non-technological innovations, 12.38 percent of enterprises are in marketing innovations, 9.41 percent of enterprises in goods innovations, 3.96 per cent of enterprises in service innovations and only 2.97% of enterprises in organizational innovation. It is identified that comparatively enterprises more technological innovation than non-technological innovation.

FINDINGS

1. Technical Education and experience is the mostly driving factor for innovation practices in MSMEs. So Entrepreneur must have or improve technical knowledge about machinery, equipment's, technology, and process used for their business operations.
2. It is found that entrepreneurs have attended EDP programmes and have business experience are more innovative than other experience entrepreneurs. So every entrepreneur must attend EDP programmes for sector of business operations.
3. Second and third generation entrepreneurs have comparatively better knowledge about the implementation of innovations in MSMEs. So entrepreneurs must encourage their kith and kin to take up entrepreneurship for their career growth.
4. It is found that below 30 years and above 60 years age group of entrepreneurs more innovative nature than other group of entrepreneurs. Innovation could not be implemented without taking any risk. It is assumed that 30-60 years age group do not have intention to take any risk. So, it is suggested to cultivate behaviour of taking tolerable risk for improving the business.
5. It is proved that here is significant difference in awareness among the Innovators and Non-innovators on government innovation fostering schemes for different stages of innovation process. It is concluded that innovators are more aware than non-innovators. It means awareness plays sort of influential role for implementation of innovation process in to the enterprises. So, entrepreneurs must have open mind to make network all stake holders of knowing business environment.

CONCLUSIONS

Most of the studies revealed that innovation is crucial factor for MSMEs sustaining in open market economies. In this study, it is concluded that around 2/3 of MSMEs are not in any aspects of innovation in all business practices. It is assumed that 1) Entrepreneurs, have responsible for improving innovation practices in MSMEs. Researcher has made suggestions towards these stake holders.

In spite of all things, there is big need to change the culture and passion of entrepreneurs to some extent. By blaming entrepreneurs, the government should take first step to create business aspirations among the younger generations from the student life. It needs to have a curriculum at the graduation level education. For all things, government must have strategic plan and required resources for implementing the evolved plans.

Scope for further research: This study has made some findings about innovations in Micro, Small & Medium enterprises. Future work could extend this research in various directions. One could extend the study by taking R&D expenditure and training expenditure on human resources for implementation of innovation practices. Others could extend the work by taking the sample only from the manufacturing enterprises or only the services enterprises / trading ones.

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