A STUDY OF EFFECTIVENESS OF INFORMATION AND COMMUNICATION TECHNOLOGY AS A TOOL FOR BUSINESS START-UPS IN WESTERN MAHARAHTRA

A thesis submitted to

TILAK MAHARASHTRA VIDYAPEETH, PUNE

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IN

MANAGEMENT

Under the Board of Management Studies

Submitted By

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UNDER THE GUIDANCE OF

Dr. Avinash Ganbote

September 2016

CERTIFICATE

This is to certify that the thesis entitled "A Study of Effectiveness of Information and Communication Technology as a Tool for Business Start-Ups in Western Maharashtra" which is being submitted herewith for the award of the Degree of Vidyavachaspati (Ph.D.) in Management of Tilak Maharashtra Vidyapeeth, Pune is the result of original research work completed by Shri. Dipak Uttamrao Tatpuje under my supervision and guidance. To the best of my knowledge and belief the work incorporated in this thesis has not formed the thesis for the award of any Degree or similar title of this or any other University or examining body upon him.

Place: Baramati

Date: 2nd Sept. 2016 Signature of the Research Guide

DECLARATION

I hereby declare that the thesis entitled "A Study of Effectiveness of Information and Communication Technology as a Tool for Business Start-Ups in Western Maharashtra" completed and written by me has not previously been formed as the thesis for the award of any Degree or other similar title upon me of this or any other Vidyapeeth or examining body.

Place: Satara

Date: 2nd Sept. 2016 Signature of the Research Student

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Place: Satara
Date: 2nd Sept. 2016

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CONTENTS

LIST OF TABLES

LIST OF FIGURES / GRAPHS

LIST OF ABBREVIATIONS

ICT	Information and Communication Technology
GEDI	Global Entrepreneurship and Development Index
Technopreneurship	Technology Entrepreneurship
ED	Entrepreneurship Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
PG	Post Graduate
EE	Entrepreneurship Education
WEF	World Entrepreneurship Forum
GEM	Global Entrepreneurship Monitor
OECD	The Organization for Economic Co-operation and Development
EDPs	Entrepreneurship Development programs
TEDP	Technology Entrepreneurship Development programs
EACs	Entrepreneurship Awareness Camps
EDII	Entrepreneurship Development Institute of India
NIMSME	National Institute for Micro, Small and Medium Enterprises
NIUSBUD	National Institute for Entrepreneurship and Small Business Development
NSTEDB	National Science and Technology Entrepreneurship Development Board
TBI	Technology Business Incubators
STP	Science and Technology Park
ITP	Information Technology Park
BRICS	Brazil - Russia - India - China - South Africa
Tele-Collaboration	Telecommunication Collaboration
Ideation	Idea Generation
Technopreneurs	Technology Entrepreneurs
TEA	Total early-stage Entrepreneurial Activity

NITI	National Institution for Transforming India
IT	Information Technology
BT	Bio Technology
TIE	The Indus Entrepreneurs
DST	Department of Science and Technology
FDP	Faculty Development Program
ILO	International Labor Organization
ASEAN	Association of Southeast Asian Nations
MOE	Ministry of Education
EE-Net	Entrepreneurship Education Network
MOHE	Ministry of Higher Education
PPP	Purchasing Power Parity
SMEs	Small and Medium Enterprises
MSME	Ministry Micro, Small and Medium Enterprises
SIDBI	Small Industries Development bank of India
NSIC	National Small Industries Corporation
SISI	Small Industries Service Institute
IDBI	Industrial Development Bank of India
ICICI	Industrial Credit and Investment Corporation of India
CBSE	Central Board of Secondary Education
ICSE	Indian Certificate of Secondary Education
IIE	Indian Institute of Entrepreneurship
EDC	Entrepreneurship Development Centers
NEB	National Entrepreneurship Development Board
TePP	Techno-entrepreneurship Promotion Program
TOCICs	TePP Outreach cum Cluster Innovation Centers
NKC	National Knowledge Commission
VET	Vocational Education and Training
FPM	Fellow Program in Business Management
OLPE	Open Learning program

IIM	Indian Institute of Management
VC	Venture Capital
PE	Private Equity
ISB	Indian School of Business
WCED	Wadhawani Center for Entrepreneurship Development
NITIE	National Institute of Industrial Engineering
NCSE	Nation Center for Student Enterprise
IBM	International Business Machines
NASSCOM	The National Association of Software and Services Companies
NSRCEL	NS Raghavan Center for Entrepreneurial Learning
IIT	Indian Institute of Technology
NGO	Non Govt. Organization
USASBE	United States Association for Small Business and Entrepreneurship
MBA	Master of Business Administration
LLPs	Limited Liability Partnerships
FICCI	Federation of Indian Chambers of Commerce and Industry
CII	Confederation of Indian Industries
NFIB	National Federation of Independent Business
NE	Neo-classical economics
R&D	Research and Development
ESDPs	Entrepreneurship and Skills Development Programs
SEDP	Social Entrepreneurship Development Programs
SUEIN	Single Unique Enterprise Identity Number
DIC	District Industries Center
BDCs	Business Development Centres
NSDC	National Skills Development Corporation
NSDA	National Skills Development Agency
NSQF	National Skills Qualification Framework

SSDMs	State Level Skill Development Missions
CSCs	Citizen Service Centers
ITI	Industrial Training Institutes
KVKs	Kaushal Vardhan Kendras
NOS	National Occupational Standards
SSCs	Sector Skills Councils
MOOC	Massive Open Online Courses
SETU	Self Employment and Talent Utilization
AMT	Achievement Motivation Training
TAT	Thematic Appreciation Test
UNCTAD	United Nations Conference on Trade and Development
SEZ	Special Economic Zones
MCVC	Minimum Competency Vocational Course
SSC	Secondary School Certificate
HSC	Higher Secondary Certificate
PMRY	Prime Minister's Rojgar Yojana
OS	Operating System
FDI	Foreign Direct Investment
BYOD	Bring Your Own Device
LMS	Learning Management System
SCORM	Sharable Content Object Reference Model
TLM	Technology Entrepreneurial Learning Materials
SaaS	Software as a Service
COPE	Corporate Owned Personally Enabled
IaaS	Infrastructure as a Service
BEP	Break Even Point
ERP	Enterprise Resource Planning
SPSS	Statistical Package for the Social Sciences
CAD	Computer Aided Design

CHAPTER ONE

INTRODUCTION

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1.1 Introduction

- 1.1.1 Asia Pacific Region & Entrepreneurship Development
- 1.1.2 Entrepreneurship Education and Economic Development
- 1.1.3 Changing Scenario of ED in India
- 1.1.4 ED Training in India: Present Status

1.2 Statement of study

1.3 Objectives and scope of study

1.4 Research Methodology adopted for the study

- 1.4.1 Approach
- 1.4.2 Sampling Design
- 1.4.3 Sample frame & Size
- 1.4.4 Sampling Method
- 1.4.5 Source of Data Collection
- 1.4.6 Survey Period
- 1.4.7 Tools Used
- 1.4.8 Scope and limitations of the study
- 1.4.9 Chapter Outlay

1.5 References

1.1 Introduction

The term "entrepreneurship" was specifically formulated around the 1920. According to Schumpeter (1930), "…….An entrepreneur is willing and able to convert a new idea or invention into a successful innovation….". Entrepreneurship has been also defined as the "...capacity and willingness to develop, organize, and manage a business venture along with any of its risks in order to make a profit." [1]

Entrepreneurship is one of the backbones of the economic development of country. The entrepreneurial activity in the different levels of Asia pacific region specifies growth. The use of "Information and Communication Technology" (ICT) for business promotion and business sustainability needs to be taken care of for the economic development. The first generation entrepreneurs are now seeking for the support of ICT and subsequent skills. Various Giant Players from the field of ICT like Google, Microsoft, HP life: learning initiative for entrepreneurs program has now started to provide "Software and online Platforms" even for the micro-entrepreneurs.

ICT has changed overall scenario of geographical limitations for sale, services and much more aspects of the business. With advancement in technology enabled services, the scenario of entrepreneurial training has changed tremendously and also changing so fast. The potential and first generation entrepreneurs are taking benefit of such change but it is possible only by providing insights and imparting proper skills.

One important aspect of students' entrepreneurial preparation refers to the competencies in Information and Communication Technologies (ICT) that must be shaped in accordance with the specificity of the 21st century digital economy. [2]

1.1.1 Asia Pacific Region and Entrepreneurship Development

According to Global Entrepreneurship and Development Index as GEDI (2015), "Asia pacific region shows diversity in terms of entrepreneurship development and economy…… Australia (3rd globally), Taiwan (8th), Singapore (10th), Korea (28th) and Japan (33rd) are some of the remarkable GEDI rankings in

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[1] http://www.businessdictionary.com/definition/entrepreneurship.html#ixzz3xv9ci0nt

[2] Daniela alexandra crișan, and et. (2014). *Integration of entrepreneurship with ICT competencies into higher education Institutions Curricula:* Retrieved 5 Dec. 2015, from ftp://ftp.repec.org/opt/ReDIF/RePEc/rau/jisomg/Su14/JISOM-SU14-A2.pdf

world's entrepreneurial economies……". Our country ranks at 104 positions compared to Pakistan, Myanmar, Indonesia and Bangladesh. Efforts upon entrepreneurial education and training and methodologies is playing specific role for development of entrepreneurial culture, and skills among the youths.

In most of the Asian country universities, entrepreneurial development cells, ED (Entrepreneurship Development) incubation centers, technopreneurship (Technology entrepreneurship) development institutes, Science and Technology parks, Tinkering labs, Entrepreneurship Innovation Centers have been setup. Country like Singapore has established EDI cells in universities and Nanyang Technopreneurship center to develop youths pace with time about innovation and technology entrepreneurship. It is one of the remarkable initiatives that show specific contribution in GEDI. According to UNESCO's ED report, "……In Malaysia, 100 percent higher level Institutes have corporate sector engagement as Industry-Institute partnership for promotion of ED". In Philippines, specialized entrepreneurship under graduate and PG level programs has been introduced with academic and professional practice for enterprise start-ups. According to Nomura Research Institute's report (2014), "……the country like Japan has 46.4% institutes implementing entrepreneurship education curricula as a part of the academic and professional activity".

In China, Entrepreneurship Education (EE) received more attention since 2014 when "mass entrepreneurship and innovation" idea was proposed. Entrepreneurship has become a one of the part of "Dream of China". A landmark policy was issued on May 13, 2015 by the State Council. The Reform of Innovation and Entrepreneurship Education in Higher Education Institutions gave the strategic goals of entrepreneurship education for 2017 and 2020, with nine tasks for further development. Other Asia and pacific countries have similar type of movements in EE for economic development.

According to the study of Idris Gautama So of Binus University, "Indonesia is ranked 34 in regards with global competitiveness index as WEF-2015". He further stated "Entrepreneurship level in Indonesia is still low compare to Malaysia and Singapore". Global Entrepreneurship Monitor (GEM) found (2015), "In 2014 Indonesia has 1.65% compare to Singapore 7% and Malaysia 5%".

According to GEM Framework report (2014), "One of most influential pillars in Entrepreneurship Ecosystem in Indonesia is Pilar 4b Post school entrepreneurial

education and training". This higher education entrepreneurship is an important component in stimulating economic growth, competitiveness, innovation, and even relieving from poverty for developing countries (Pennisi, 2012).

Dr. Francis Otieno of Ritsumeikan University, Japan presented his paper in UNESCO, Bangkok entrepreneurship meeting in (Oct. 2015) stating that, "An intercultural survey by Hofstede (1991); Japan showed one of the highest levels of uncertainty avoidance which can explain the unwillingness to take risk among Japanese". According to GEM (2000), "Japan showed one of the lowest rates of entrepreneurial activities after rating the 21 countries as 1.3%". Percentage of the people who has founded an enterprise is 17.6% and the total average with acquaintances the average 38.9%".

The Kauffman foundation found "one out of eight American adults is currently engaged in entrepreneurial activities that are about 11.9% compared to Japan at only 1.9%". The World Bank has shown that among the OECD countries, Japan ranks low as in the average annual entry rate of new businesses.

Tong Park of Korea did research on the EE in universities of Korea (2014). Based on his study, he stated "Current entrepreneurship education and training programs in Korean universities are performed mainly by professors and experts….. Further he stated that an additional support system of "Theorization, formulation, experiences and trials" needs to developed in Korea for strengthening of the ED programs……".

Dr. Syahira Hamidon from Malaysian Higher Education Ministry did study of EE in the universities of Malaysia and developed "Strategic Entrepreneurship Action Plan (2013 – 2015)". This action plan gave implementation attributes to strengthen EE graduate programs of the universities and also suggested impact analysis.

1.1.2 Entrepreneurship Education and Economic Development

In India, More than two decades, it is well organized that entrepreneurs can be nurtured and developed through appropriate technology interventions through Entrepreneurship Development programs (EDPs), Technology Entrepreneurship Development Programs (TEDPs), Entrepreneurship and skill Development Programs (ESDPs), Entrepreneurship Awareness Camps (EACs).

There are various forms of the ED programs developed in our country with experience of dedicated institutions like EDII, NIMSME, NIUSBUD and National

level boards like NSTEDB. Technology business incubators (TBI), Science and Technology parks (STPs), Tinkering Labs, and Information Technology Parks (ITPs) has been set up in the countries to promote and develop high end technopreneurships. Impact analysis and contribution of Entrepreneurship Development (ED) activities has been also assessed by the authorities from time to time regarding its contribution in the human resource development and economic development of the country.

According to Global Entrepreneurship Monitor (2014), "In India, adults are positive about entrepreneurship. 58% of Indian adults (18-64 years old) consider entrepreneurship a desirable career choice…… 66% think that entrepreneurs receive a high level of status and respect". However, on these measures India ranks below its peers in the factor-driven economies as well as among the BRICS (Brazil - Russia - India - China - South Africa) nations.

GEM further says, "There are more early-stage entrepreneurs in the range of 18 - 44 age groups than any other range. In India, about one third (34%) of early-stage entrepreneurs are women".

GEM surveys for special reports on women consistently confirm that early-stage entrepreneurial activity is totally gender sensitive for the reasons like cultural, societal and economics. Global findings suggest that early-stage entrepreneurial activity is dominated by the men. Women are more likely start businesses out of necessity. In India there are relatively more men who started their businesses out of necessity.

1.1.3 Changing Scenario of ED in India

In our country, number of efforts has been started to revolute traditional ED training with vocational components along ICT integration. Strategic Market place simulations and online platforms are now in use for the entrepreneurial training. This is the one of best example of the ICT module support. Such training has digital contents integrated with online platforms and sometimes also with the use of social media platforms, for the interactive tele-collaboration. Use of Mobile and Apps are now also taking dominant part in the field of such trainings.

Along with TBIs, STPs, ITPs, very few Ideation (Idea Generation) Labs, tinkering labs are now started functioning to promote and develop technopreneurs. Now engineering and technology institutes are also started ED cells to make awareness about ED during the academic tenure of the students. A separate ministry

for entrepreneurship and skills development has been set-up by the union government and also state government of Maharashtra.

According to GEM (2015), "In India, entrepreneurship is mostly motivated by necessity (no other option for work) accounts for 32% of early-stage activity, while 37% is improvement driven in pursuit of a business opportunity. Compare these rates with China 33% and 45% respectively". This data shows challenging scenario about entrepreneurship and role of ED training.

GEM 2014 found that "In India, 4.1% of adults are 'nascent entrepreneurs' (actively involved in setting up a business) while 2.5% are 'new business owners' (in operation for more than 3 but less than 42 months)….. Combining these rates gives us the Total early-stage Entrepreneurial Activity (TEA) rate, meaning that close to 7% of the Indian adult population or 1 in every 15 adults are engaged in some form of early-stage entrepreneurial activity". It shows need of ED training activities and concentrated efforts for start-ups.

Innovation and its conversion for commercially viable venture is the new mantra of this decade. In order to make cumulative efforts in this area, "Atal Innovation Mission" (AIM) has been started by the NITI Aayog. Information Technology (IT) and Biotechnology (BT) are the main sectors decided by AIM for the coming decade for ED. Information Technology venture are specifically termed Start-ups. In these days, multinational companies and venture capitalists are investing in start-ups on priority. IT hubs located in Pune, Bangalore, Gurgaon, and Hyderabad has contributed potentially in start-up economy.

Governments and local communities across the world have recognized that, key to building prosperity and stimulate regional growth is because of fostering entrepreneurship among their people especially among the youths. Promoting entrepreneurship among the youths is done with the help of imparting training and providing curriculum in academics of enterprise development. Youth entrepreneurship has become a topic of interest for research scholars and also a subject of major concern for the Government as it directly reflects upon the economy of the country.

Youth entrepreneurship is an under explored field, the main factor for its growing attention is the increased number of unemployed young people. According to World Bank (2015), "There will be about 3 billion youths less than 25 years old and a remarkable portion of that will be in India".

Promoting Youth entrepreneurship will not only help in reducing unemployment and prosperity but more importantly job generating venture. It also shows young people that they have alternatives to create their own destiny with innovative ideas by starting their own start-ups and just not waiting to find a job. A lot of constraints and barriers to youth entrepreneurship have been identified by the number of researchers. These barriers are entrepreneurial skills, lack of capital, poor infrastructure, generic skills, strict and cumbersome Government regulations, lack of guidance and awareness etc.

Boot camps, entrepreneurship incubations, startup grinds, innovision events, hackthons and immersion camps are making considerable change for present scenario. New startup action plan and Atal Innovation Mission (AIM) of Govt. of India will be the revolutionary steps towards the timely needed development in the process of EE.

1.1.4 ED Training in India: Present Status

Process of establishing sustainable business start-ups has been considered to be part of change agent. Appropriate method of selection of participants based on the specific levels of skills, personality factors with analyzing tools is well known entry level method of starting ED programs. ED Training, creativity and innovation theories, product development, post training mentoring, commercialization of product are the well defined stages for developmental system of sustainable enterprise.

In our country, we need to develop entrepreneurial culture because of jobs creation. According to TiE (The IndUS Entrepreneurs, a non-profit world-wide organization, promoting entrepreneurship), "Each entrepreneur creates 27 jobs. An entrepreneur creates jobs, creating a stage for a development of economy, unlike an individual who is a job seeker". Managers employed by large corporations use their creativity and intellect to make their corporations richer. Now those are called Intrapreneurs. The benefits of entrepreneurship to the society and the economy as a whole are enormous and it avoids monopolies.

Entrepreneurship specifies easier ways of checking large corporations and MNCs from exploiting the consumers. Entrepreneurs are the visualizers who realize the trends and also tremendous demand for goods / products in home country and or abroad. It is helpful to make the Indian market export competitive and thus affecting on the economy. Now a day entrepreneurs are also contributing significantly in 'Make in India'.

With the innovation, design, and increase in production, makes it possible to routing it in the government storehouse, which can be exported, and thus serving to earn foreign exchange. To make India as a developed country, only entrepreneurs of vision can help it to grow at the desired rate. Hence Indian government and other ED promoting agencies should frame its policies to nurture and promote budding entrepreneurs. It is going to be done with the help of "Sustainable Start-up promotion" specifically in the area of IT and BT.

There is a need for Indian entrepreneurs to venture out into the world of technology led entrepreneurship, build intellectual property and create wealth. India Innovation Growth Program is one of the initiatives of DST in this direction. India may be becoming a hub of innovation as an increasing share of global research and development. It also explores possible collaborations with Ideation (Idea Generation) labs established in European countries. But Indians are still not making the shift to ICT entrepreneurship and aiming to build the next to giants like Google, Microsoft, and IBM or else. To do this, the government needs to focus on Entrepreneurship education with specific skills development in technopreneurship to create a pool of trained and highly skilled entrepreneurs.

With the predominance ICT, its module has been incorporated at every stage of nurturing businesses. ICT incubation theories have been developed to get result for starting enterprises with its sustainability over a specified period of technological obsolesces. It needs to be assessed scientifically with its merits and demerits based upon nature of both start-ups i.e. Technology assisted micro-entrepreneurship and Technological Entrepreneurship. Numbers of such practices are now started at the national and international levels.

General entrepreneurship development module has been developed for ED programs with skills specific ICT contents. Technopreneurship module is available for Technology Entrepreneurship Development Programs (TEDPs). To spread culture of entrepreneurship in science and technology institutions, faculties of such institutions has been trained for entrepreneurship education with Faculty Development programs (FDPs). Trainers training program is also available for ED professionals practicing as mentors, consultants, and incubation managers for support mechanism of enterprise development. Boot camp, Immersion camp methodologies has been started in country to promote innovation for commercial viability of the innovation and also to address the emerging problems of the market conditions.

1.2. Statement of study

"A Study of Effectiveness of Information and Communication Technology as a Tool for Business Start-Ups in Western Maharashtra" is the statement of the study. Information and Communication Technology is playing a specific role in the enterprise education for development. Traditional technology entrepreneurship development programs have been carried out by giving two separate components of technology and entrepreneurship training. A combined technopreneurial (Technology Entrepreneurship) component is missing in most of the cases. Number of ICT platforms and tools are now integrated with such ED programs. Scientific assessment and its effectiveness of ICT tools is timely needed aspect in the field of ED training. ICT integration is also changing very fast. Activity based Technology ED materials with integration of digital contents, has been supported with different reference tools and also of social media platforms for tele-collaborative learning. Use of electronic gadgets, online integration along with print "Technopreneurial Management Materials" was adopted in the ED training. Impact of ICT on the business, is giving major effect for its sustainability. This scenario specifies need of the study.

NSTEDB report says, "A very few experiments has been carried out in this era with taking consideration of fast changing scenario of ICT and its effect for business start-ups". Innovative ICT product development incubation theories are now new immerging era. Scientific assessment and comparative study of such specific aspects with traditional methods of ED training is the significant aspect of this research.

1.3 Objectives and scope of study:

The main objectives of the study are:

1. To study traditional and ICT integrated ED training methods and changes in the ICT integrated Platforms used in Western Maharashtra.
2. To analyze evolution in ED training methodologies.
3. To assess impact of tele-collaboration in ED training adopted in Western Maharashtra.
4. To analyze the role of ICT integration platforms in ED training and factors affecting on skills and start-ups using ICT integrated ED materials to be used in Western Maharashtra.
5. To assess effectiveness of ICT integrated materials in ED training based upon skills and start-ups of the participants of Western Maharashtra.

6. To develop new model of ICT integrated technopreneurial training.

1.4 Research Methodology adopted for the study

After formulation the objectives, researcher used applied and empirical research methodology to find effectiveness of ICT tool for business startups. In this methodology, two control and experimental groups were formed. The conclusions are based upon the analysis of quantitative data using SPSS software. This methodology has been carried out to test and validate the formulated hypothesis and specified relationship.

As this research is conclusive in nature, it is well structured in the aspect of the design. "After-only with one control group" design is adopted for this study. It makes possible to control the variables systematically to establish causality of the relationship among the variables under this study.

In this methodology, researcher has manipulated more causal variables to measure their effectiveness on the variables of interest. In this methodology, post test measurements are taken on both experimental and control group at the same time. As pre test measurement is absent, the effect of instrumentation and interactive testing effect is ruled out.

1.4.1 Approach

The growth, evolution, factors responsible, the effectiveness of ICT tools on the entrepreneurial training have been mainly studied and analyzed based on the data collected from the respondents. Two "Experimental and Control Groups" has been taken into consideration for the data analysis. Researcher also collected data from total 100 listed enterprises as fifty in each group. It is out of 400 of entrepreneurs from Western Maharashtra with Satara, Sangli and Kolhapur district.

Parametric test approach is used to test the hypothesis. In these types of test, probability distribution is normal and it provides information about population in terms of parameters and confidence intervals. We used metric data for the analysis. With this approach, researcher draw samples with certain properties of parent population.

1.4.2 Sampling Design

The researcher did sampling design in this study by using the specific steps. Type of universe, sampling unit, source list, size of sample, parameters of interest, sampling procedure are the steps followed by the researcher. From the universe, researcher has selected sampling unit based upon the geographical area of Western Maharashtra including Satara, Sangli and Kolhapur districts. First generation of entrepreneurs who started enterprise, after the training was the selected sample of the study.

1.4.3 Sample frame and Size

Researcher prepared a sample frame of first generation ED trained entrepreneurs. It is the representative of the population. The researcher selected total 100 entrepreneurs with 50 each for experimental and control group from Western Maharashtra including Satara, Sangli and Kolhapur district, listed in the sample frame list. The population of data sample was 400. The margin of error is taken 5 percent and the confidence level is 95 percent. With consideration of 91 percent response distribution, the minimum sample size required is 96. To get more correct answer, researcher took sample size 100. Researcher used sample size calculator.[3] Experimental group was exposed to the advanced ICT training component which is related to the traditional EE components of the training.

1.4.4 Sampling Method

Probability sampling as simple random method has been used in selecting sample of entrepreneurs from the sample frame. In this sample design, every individual of the universe has equal chance of inclusion in the sample. The results from probability or simple random method can be assured in terms of the probability. This sampling ensures the law of statistical regularity. This method also gives each possible sample combination an equal probability of being chosen. This sampling is typically done without replacement.

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[3] Raosoftcom. (2015). *Raosoftcom*. Retrieved 3 Oct. 2014, from http://www.raosoft.com/samplesize.html

1.4.5 Source of Data Collection

The present study has been carried out by collecting primary data and secondary data. Primary data is collected through structured questionnaire. It is designed into two parts as questionnaire-basic and questionnaire-test. Both parts are of formalized and concealed type. The structure of questionnaire-basic is of three point scale and multi choice type. In questionnaire-test is of five point scale.

1.4.6 Survey Period

The literature survey period of the study to collect primary and secondary data was March 2014 to August 2014. The survey period of the study to collect primary data through questionnaire and also from online Google forms from the respondents of the control and experimental group was Jan. 2015 to Oct. 2015.

1.4.7 Tools Used

The researcher used statistical tool like SPSS for analysis of the present study. Further, factor analysis has been done to identify the effectiveness of ICT. Data processing for analysis has been done by coding, classification and tabulation. Parametric testing is used to test the hypothesis.

1.4.8 Scope and limitations of the study

Scope of this study covers the specific aspects of the start-ups established after entrepreneurial training with two categories as traditional inputs of entrepreneurship education and advanced inputs of ICT. The limitation of this study specifies available platforms of ICT for entrepreneurial training.

1.4.9 Chapter Outlay

The chapter scheme of the study consists of six chapters. First chapter aims to the present Introduction, Statement of the study, Objectives and research methodology adopted for study. Second chapter covers the review of literature on Entrepreneurship Development and the factors responsible to turn into Entrepreneurs and the evolution and role of traditional Entrepreneurship Development Programs and ICT integration. Chapter three specifies the profile of selected area and selected entrepreneurs. Fourth chapter contains analysis of factors affecting on the potential entrepreneurs to start the business units. It is a comparative study in between traditional ED programs and ED

programs with ICT integration. The factors of the respondent Entrepreneurs and its analysis have been discussed in details in fifth chapter. The last chapter gave details of the findings, recommendations and conclusions of the study.

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CHAPTER TWO

REVIEW OF LITERATURE

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Introduction

2.2 Entrepreneurship Education and entrepreneur

2.3 Entrepreneurship Education in Asia pacific

2.4 EE guideline case history of Finland

2.5 Evolution of Entrepreneurship and EE in India

2.6 Entrepreneurship Education-Present Scenario

2.7 Challenges for the Entrepreneurship Education in India

2.8 Role of B schools for entrepreneurship development.

2.9 Education and technology in entrepreneurship development of youths.

2.10 The role of Government and industry to promote EE

2.11 Driving Entrepreneurship & Innovation in Campus

2.12 Student E Cells and Entrepreneurial Community

2.13 Emerging Themes in Entrepreneurship Research and Education

2.14 The Technology Challenge in EE

2.15 The "Dotcom" Legacy for enterprise creation

2.16 The Academia and Venture creation

2.17 Entrepreneurship theories

2.18 Recent and modern theories and drafts of entrepreneurship

2.19 Innovation, Entrepreneurship, and Models of EE

2.20 Emerging themes in entrepreneurship research and education

2.21 References

2.1 Introduction

The word "entrepreneur" originates from a thirteenth-century French verb, entreprendre, meaning "to do something" or "to undertake.[1] The study of entrepreneurship came from late 17th and early 18th centuries of Richard Cantillon and Adam Smith, who contributed in the foundations of classical economics. Evolutionary developments in the EE have been originated from late 17th century. In 21st century, an entrepreneurship education has been recognized important which helps and directs first generation and potential entrepreneurs to understand and foster entrepreneurial intention and attitude.

The literature review about the Entrepreneurship Education (EE) specifies understanding of "entrepreneurship" varies with the various terminologies. According to Kuratko and Hodgetts (2004), "Entrepreneurship requires an application of knowledge, skills and passion towards the creation and implementation of new innovative ideas and creative solutions in the venture. The main focus might be on a dynamic process linking vision, change and creation for establishment of enterprise".

F. Ferrante (2005) says "……Entrepreneurship can be also understood as the ability to discover, select, process, interpret and use the necessary data to take decisions in an uncertain world and then to exploit market opportunities to achieve monitory gains through enterprise…" Training with scientific methods and EE develops entrepreneurial competencies among the trainees to start and run the successful venture with the support system. Ferrante, Arenius and Dirk De Clercq's also described entrepreneurship "……. it is an activity, which involves the discovery, creation and exploitation of opportunities aimed at the introduction of, e.g. new goods and services, new processes or new ways of organization in a network based approach of opportunity recognition…..".

According to Kuratko (2004) and Drucker (1985), "…….Entrepreneurship as a teaching subject, the literature review confirms that nowadays entrepreneurship is recognized as a scientific discipline which can be learned for start-ups or to gain the skills

[1] Russell s sobel. (2013). *The Concise Encyclopedia of Economics: Entrepreneurship*. Retrieved 16 May 2015, from http://www.econlib.org/library/Enc/Entrepreneurship.html

of entrepreneurship and also intrepreneurship……..” Entrepreneurship and Intrapreneurship are the two specific and basic terms with same approach but having different contexts.

Entrepreneur is a person possessing entrepreneurial abilities, skills and competencies for his venture whereas Intrapreneur with these is associated with a corporate sector; however Wennekers (2005) explored it in sense as, “……..A person who launches new project in his corporate sector by converting ideas or explores market opportunities in the number of other way…..”.

Entrepreneurship education with incubation support system is considered as one of the most influential and Intellectual forces that determine the health of the economy by knowing product commercialization for the venture.

Top business schools, entrepreneurship development organizations, some universities in India offer entrepreneurship education with integrated elective courses, programs, project competitions, incubations, immersion camps etc. to inculcate a wide range of skills encompassing a multi-disciplinary approach among the first generation entrepreneurs. In the core management subjects such as marketing and entrepreneurship, gave an opportunity to develop unique solutions to satisfy customer needs. The studies of entrepreneurial aspects are a pre-requisite for management education and research seems important when specifically catering to the growing entrepreneurial intent for start-ups in developing economies and thus to ensure sustainability.

Pittaway and Cope (2007) explored the definition of entrepreneurship education with the focus not only on higher education but also on educating entrepreneurs for development of skills and competencies. Entrepreneurship is a domain of venture creative education in which the content is derived from diverse disciplines. It includes those of strategy, finance, project management, marketing and even digital marketing.

Various approaches to the EE gave significant contribution to the pedagogical development of EE. Few of them described here. Bechard and Toulouse (1991) has drawn on a framework from the educational sciences to the orientations of EE. Conformist, adaptive and transformative, and pedagogical approaches needs to be focused on course curriculum. The pedagogical model is the dominant model of EE for the courses and it recommend a transition to the alternative orientation of EE. Thomas. A.

Ulrich and GS Cole (1987) gave the importance of successful learning experiences in EE for generating and increasing interest in venture creation and specific details about psychological characteristics and personality traits of the entrepreneur.

LP Dana's paper (1987) suggested experiential learning in EE with style preferences are that is consistent with active participation to increase opportunities for better participation in the classroom to enhance the ability to learn from experiences. Dana further gave emphasis on improving entrepreneurial skill development and on the importance of learning the skills with process rather than on traditional management contents. LP Dana correlated activity based learning with aptitudes. It is desirable for a universal entrepreneurial skill development, as opposed to concentrating only on the traditional courses. It has been elaborated further in content of "Skill Model for Entrepreneurs".

McMullan and Long (1987), and Plaschka and Welsh (1990), Ivancevich (1991) contributed in the EE, "…..As an academic discipline and its further role within the business school structure. Every component of entrepreneurship literature and systematic theories are necessary for recognition as an established discipline. Every aspect must specify the role of entrepreneurship education…..".

G. Plaschka and H. Welsch (1990) gave two frameworks of entrepreneurship programs for developing pedagogy of EE, "…..The first framework, a matrix of two dimensions, identifies four optimal combinations. The second framework is built upon two paths: stages of transition in a firm and a functional approach…..".

Entrepreneurship programs are developed with multiple components and alternative structures by learning mechanisms that are needed to meet the needs of sector specific individuals. Revolution in the EE has two dimensions as the absolute number of academic entrepreneurship courses and degree of integration of the entrepreneurial courses. The treatment in both dimensions is different. The first combines the number of entrepreneurship courses and degree of integration and the second combines the number of disciplines and transition stages in a firm. The value of such models lies in their presence with pace of time and study of designing entrepreneurship programs.

RT Harrison and CM Leitch (1994) gave an insight to utilize recent developments in the field of leadership research during study of entrepreneurship by suggesting

organizational transformation and continuous learning to reflect the new paradigm associated with EE. Harrison & Leitch also elaborated that there has been a significant reawakening of interest in the applicability of action learning. It is a paradigm shift for management development programs, particularly in a pedagogical aspect as both in classroom and in executive development of EE.

Another remarkable contribution of JN Hood and JE Young (1993) resulted in the theoretical framework development of four primary areas where successful first generation entrepreneurs must be developed. These areas are personality traits, content, skills and behavior, and mentality. They related the first three areas as the areas of creative knowledge it's because of new knowledge existence for creation of venture and subsequent management of growing business entities.

JA Schumpeter (1934) gave theory of economic development through entrepreneurship. PF Drucker (1985) called entrepreneurship as a "……innovative act, which includes endowing existing resources for new wealth-producing capacity……." WB Gartner (1985) described it as the "…creation of a new organization….".

Entrepreneurship can be applied to all kinds of organizations including non-profit organizations. It is called Social Entrepreneurship. This is the new emerging discipline of EE. Although many research studies assert that entrepreneurs are different from non–entrepreneurs. There is no unified and specific definition and description of entrepreneurs. Instead of this many research scholars have developed and tried to make various definitions of entrepreneurs.

According to RH Brockhaus (1980) and WB Gartner (1985), "…..Entrepreneurs and non-entrepreneurs both are cultivated in different environments by cultural, economic, social, political, and educational backgrounds….The determination level and act of finding the things are also different with them…..". S. Hogarth-Scott, K. Watson, and F. Wilson (1998) deliberately cited personal background, motivation for start-up, and growth orientation in societal culture as factors for successful venture creation.

According to GT Solomon (1987), "…..An entrepreneur is one who is intelligent and analytical and risk taker. He has ability to network and possesses a strong set of moral, social, generic and business ethics. He also exhibits a basic trader's instinct, and dedicated to life-long learning in many forms…..".

P. A. Peterson (2000) further state, "…. Entrepreneurs are motivated by factors such as financial rewards, achievement, social, career, and individual to fulfill a need of national culture that supports and encourages entrepreneurial activity for the new venture creation……".

EE science has been developed with such varied and different approaches by the social scientists for establishment of successful venture and thus for the economic revolution.

2.2. Entrepreneurship education and entrepreneur

According to Alberta Charney and Gary D. Libecap (2000), "……Entrepreneurship education attracts knowledge and substantial private sector financial contributions to earn the profit. EE produces self-sufficient and self sustaining enterprise and self reliant individuals. EE produces successful business and industry leaders……..". EE enhances a learner's ability to create wealth. This impact has been assessed with Berger Entrepreneurship Program of the University of Arizona.

Karl H. Vesper and William B. Gartner (1997) suggested, "…….The top seven criteria for ranking entrepreneurship programs. These programs should be courses or subjects offered, faculty publications and contributions, impact on community, alumni exploits, innovations, alumni start-ups, and outreach to scholars……..". They measured progress and effectiveness of the development in EE with entrepreneurship program with these criteria. Further the outcomes are from the entrepreneurship courses at undergraduate and graduate levels that have been surveyed on the basis of entrepreneurship or startup, small business management, consulting for field projects/venture, starting and running a firm, writing of venture plan writing, and venture finance.

Traditional EE has specific modules to train the youths for development of their skills. EE in academia and training differs much with the methodology adopted. Tony J. Watson (1998) pointed out, "…….Entrepreneurs are different from non-entrepreneurs in many aspects. Many past research studies have tried to prove this. EE plays a vital role to improve competencies…..". Achievement motivation training (AMT) and assessment is one of the important activities of the ED programs. Gartner developed his own

conceptual framework of new venture creation based on past research studies. With this study Gartner (1985) explored "….. The difference among entrepreneurs or new ventures is more considerable than between entrepreneurs and non-entrepreneurs in terms of personality and background and trained personality…..". It specifies that entrepreneurial talents can be "matured-up" by postnatal education. The specific impact factors are: inborn nature is not sufficient to sustain the venture, most skills identified were achievable through EE, an individual's personality and ability can be uniquely developed according to requirements of the venture creation trough entrepreneurial education. According to the W. B. Gartner, "…..Willpower and motivation can be differentiated according to mentor's role. It shows great diversity existence among entrepreneurs based on their growing background of social, personal, cultural, educational and even financial environments……..".

W. B. Gartner (1989) suggested, "…… Job satisfaction, previous work experiences, family entrepreneurship, age, and education are the factors which differentiate entrepreneurs from non-entrepreneurs……..". EE in particular is one of the critical factors in distinguishing entrepreneurs from non-entrepreneurs. Home-education and entrepreneurial culture of parents has a significant impact on an individual's life. Many organizations allocate a great deal of resources regarding family entrepreneurship to train their members through external as well as internal EE opportunities. Past work experiences and analytical study can be included in the category of EE in a broad sense. Consequently, we can generalize that the relative importance of EE is very high.

According to AH Cho (1998) "……EE would lose significance and entrepreneurial talent, if not be perceived as innate…..". AH Cho's did study on EE and specified, "……EE promotes the intention of venture creation because entrepreneurship-related knowledge, personality traits and skills stimulate an individual's motivation to create a new venture……". Timmons (1999) stated, "…… Team based venture creation by the different skills persons is more common than individual venture creation. It is difficult for every entrepreneur to have all required skills and managerial knowledge. Individuals with complementary backgrounds and venture supportive skills make effective teams for creating new venture companies……".

In India, entrepreneurship education (EE) is one of the fastest growing areas of education as one of the academic discipline. (G. Solomon, 2007). This is an indication for the importance of EE for the economy of the society. It is a fact that, the links between providing EE and promised economic growth generates employment opportunity and enhancing economic development at large. It was examined by many researchers and some evidence was found to support it.[2]

There is a debate amongst academics and business means about whether entrepreneurship can be taught in the first place (A. Fayolle & B. Gailly, 2013). Some may support entrepreneurship as a talent with which one is born and cannot be taught. However, this can also be said of other professions, as lawyer, engineering or medicine, and nobody will dispute the need to teach students of these subjects (A. Fayolle, 2013).

EE and Training methodologies are found useful to nurture the business ideas. According to research of A. Fayolle (2013), "……Impact of an EE on entrepreneurial intention is strongly affected by the youths' initial level of intention and prior exposure to entrepreneurship. In particular, the impact of the EE on the level of intention is significantly correlated negatively with the initial level of intention……". The EE could have had strong positive effects for some of the potential entrepreneurs, whereas for others affected negatively with their entrepreneurial intention.

At the same time with this discussion, there is an established recognition about the increasing demand for EE (H. Matlay, & C. Jones 2011). Hence, the discussion as A. Fayolle (2013) and H. Matlay suggested, "……As an attempt to avoid stagnation, should move from whether EE can be taught or not but to focus on the basic questions coming from education as what, how, why and for which results is the EE program to design….".

The movement of this discussion could help to further to design EE programs that are able to contribute to the challenge of specifying entrepreneurial skills like idea generation, project preparation, budgeting, selling, financing, managing people and product development into a curriculum. Focusing on EE questions could contribute to the design of effective ED programs that correlate with practices recommended by

[2] A. Ligthelm (2007), S. Dzisi (2008), DF Pacheco, TJ Dean and DS. Payne (2010), M. N. Mojica, TG Gebremedhin, and P. V. Schaeffer (2010).

entrepreneurial learning (C. Jones, 2010). The learning methodologies should be able to adapt to the resources and timetable constraints of training institutions (PS. Vincett & S. Farlow, 2008).

L. Pittaway and J. Cope's (2007) further suggested for the complex nature of EE, "…..Entrepreneurial training provides the ability to distinguish the factors of inputs of a system, educational processes, and outputs where as the EE process includes the programs objectives, audiences, assessments, contents, and methods of teaching etc……".

According to Solomon, (2007) and C. Jones and H. Matlay (2011), "……..A detailed map of common and best practices in terms of EE curriculum content and methods of teaching entrepreneurship at the specific level correlates the findings with entrepreneurial learning suggestions for EE practices. Teaching entrepreneurship needs further in depth description (activity or lesson plans) to contribute in the efforts for extracting best EE programmed practices with possibility of using technology……".

According to S. Dutta (2012), "……In the past Indian literature, it is clearly demonstrated the need for sound government policies or institutions to promote and support entrepreneurship in a country……". The contextual differences between developed and developing economies specifies the advance of indigenous standards for appropriate EE with relevant and generic knowledge on related sociopolitical governance, infrastructure, chronic shortages, or sensitivity to local culture adds to the concern for development of specific and targeted sectors.

EE mainly refers to wide range work done within the educational administration with a view to enhance entrepreneurship. EE is also provided and supported by many ED organizations and incubators. Practical measures are geared to inculcate positive attitudes and develop knowledge and skills relating to entrepreneurship, new ventures, upgrading of entrepreneurs and their personnel competencies and bring about an entrepreneurial mode of operation at the workplace and in all other activities. It necessitates EE needs to be rooted in lifelong learning and a networked with mode of operation.

In India, there are qualitative responses from the number of cases suggested with a largely uniform approach to incorporating and approaching entrepreneurship education across reputed business schools & Universities. These schools or organizations are

offering entrepreneurship as a course with an elective subject for the final year students of academic disciplines. The emerging business school offering it as a core compulsory course for its final year students is a notable aspect.

In general most of the emerging business schools are offering entrepreneurship as a core compulsory course for their final year students. In most of the cases these schools already tried EE as an elective course in the initial years of their operation. In general, the top league schools are offering two or more elective courses on entrepreneurship out of many EE specializations i.e. entrepreneurship, social entrepreneurship, entrepreneurial finance, agri-preneurship, edu-preneurship, entrepreneurial strategy, entrepreneurship and HR.

In Entrepreneurial Motivation Laboratory, the rest of the lot chose to offer only one elective along the lines of entrepreneurship or entrepreneurship and New Ventures with the activity and or games of Achievement Motivation Training (AMT).

2.3 Entrepreneurship Education in Asia pacific

Based on statistics from OECD, ILO and the World Bank (2014), UNESCO stated details of unemployment as follows:

More young people of Asia-pacific region are being idle about 200 million people of whom 75 million are under 25 years old are unemployed…… At least 600 million jobs are needed over the next 15 years to keep current employment rates…..If left unattended, idle and jobless young people will represent a lost generation of valuable human resource.

According to Ernst & Young (2000), "……. As many as 5.6 million younger than age 34 are actively trying to start their own ventures. One third of new entrepreneurs are younger than age 30, more than 60 percent of 18 to 29 year olds. They say that they want to own their businesses…….".

Entrepreneurship is attracting more attention from Asia pacific policy makers, educators, financial experts and among the young people themselves as a driver of economic growth and innovations. Peter Drucker said that, "……. Entrepreneurship is a

discipline, and like any discipline, it can be learned…..". The increasing numbers of EE programs and courses indicate that policy makers, academicians, educators and future entrepreneurs agree with Drucker. To better understand these factors and market conditions, and to provide recommendations and action plans for effective entrepreneurship education, UNESCO, Bangkok has initiated a research study on the ecosystem needed to support entrepreneurship education in universities of nine Asia-pacific countries.

In Asia pacific region, an area of substantial change is the deceasing of agriculture based employment. According to Dobb et al. (2012), "…..Between 1990 and 2008, more than one billion non-farm jobs were created worldwide, of which 84% were in developing countries, thus helping to lift 620 million people out of poverty……".

During this time, advanced economies saw their service and technology industries expanding to provide millions of new high paying jobs for timely paced skilled workers. Data from the Asia-Pacific region showed similar trends in the service sector increasing its share of employment (from 37.1% in 2010 to 39% in 2013) against a drop in the agriculture sector (38.4% in 2010 to less than 35% in 2013).

The Association of Southeast Asian Nations (ASEAN) members are attentive as they launched the ASEAN Economic Community at the end of 2015 to promote entrepreneurial activities. Many Asia pacific countries are suffering with high unemployment rates or disengaged community of youths. Globally, about 200 million people were unemployed in 2013, of which 74.5 million were between 15 and 24 years old. The global youth unemployment rate stood at 13.1 %, which was almost three times higher than adult unemployment rate.[3] Timely needed solutions are necessary to address the unemployment issue and also to ensure the millions of unemployed youth should get the jobs. Entrepreneurial movement is the best solution over the problem of unemployment. This movement will be fruitful only by taking efforts in all aspects of developing ED programs and implementation of ED policies. Research findings are

[3] ILO report (2014). *Global Employment Trends*. Retrieved 24 May, 2015, from www.ilo.org/wcmsp5/groups/public/---dgreports/---.../wcms_233953.pdf

always helpful to draft the appropriate policies. Based on the UNESCO-EE meet, researcher has taken EE scenarios of five selected countries in this study.

2.3.1 China:

Mei Weihui (2015) of Zhejiang University made several observations and presented china case study in UNESCO EE meet. He explored three stages of china's entrepreneurial education policy i.e. spontaneous exploration stage (1998), the pilot stage (2002) and strategy development stage (2010). The EE policies have been placed with the parameters of education, financial support, entrepreneurial platforms, and ease entry in entrepreneurship. Ministry of Education (MOE) has also defined basic requirement of entrepreneurial education and training in higher education institutes in 2012.

According to Weihui, ".....A landmark policy was issued on May 13, 2015 by the State Council of china, Implementation Opinions on Deepening the Reform of Innovation and Entrepreneurship Education in Higher Education Institutions, which cleared the strategic goals of entrepreneurship education in 2017 and 2020, and put forward nine tasks for further development.....".

In China, three networks have been developed as Innovation and Entrepreneurship Education Branch of China Higher Education Association (IEEC), 2009, UNESCO Entrepreneurship Education Network (EE-Net) National Chapter in China, 2014, and Universities Alliance on Innovation and Entrepreneurship Education in China (UAIEEC), 2015 for making effective policy of EE.

According to Li, Zhang and Matlay (2003), ".....China set up 106 rural enterprise training centers and colleges nationwide with about 1.7 million participants trained between the year 1996 – 2000. Most of the programs are short-term training programs and tailor-made vocational education and training. In the early 1990s, there had been efforts to coordinate management education and training for rural enterprises by the Ministry of Agriculture.....". In China, after 1990s, entrepreneurship programs at the undergraduate and post-graduate levels began to emerge. In 1998, student business plan competition took place to promote awareness about culture of entrepreneurship. In November 2000, the National Entrepreneurship Research Centre has been set up. A Graduate Venture Park and four venture capital fund by Tsinghua University which

would be soon emulated by other universities. The Ministry of Education launched a pilot scheme in nine universities to encourage EE at the undergraduate level.

In the pre directed efforts about EE in China, three models of entrepreneurship education have emerged which are A Personal Quality Development Approach, A Business Venture Skills Development Approach, and An awareness Raising and Skills Development Approach does well to achieve the objectives set by the policy makers. The key drivers for the development of entrepreneurship education were also set. These are sensitivity to changes in the environments of socio-economic and political aspects, technological advancement in specific sectors, development in rural areas and rural enterprises.

In the recent trends, there demand for management programs to ensure growing hype of the Internet economy especially the dot.com start-ups. Growing awareness and perception of entrepreneurship education has now become an integral part of skills, competence and capability among the potential entrepreneurs. The impressive economic growth gave entrepreneurial spirit and development endeavor in China.

Li, Zhang and Matlay (2003) also in a surveyed 26 top business schools in China and identified, " EE in terms of modules, the emphasis on functional management skills, strategic management, human resource management, organizational behavior, financial management, marketing, and accounting being the main priority……. Six universities offered venture programs and five concentrated on entrepreneurship modules…..".

Millman, Matlay and Fan Liu (2008) in did the evaluation of the "Know About your Business (KAB)" program of the International Labor Organization (ILO) and China Youth University for Political Sciences of Beijing. In report they remarked as, "…..It shows high satisfaction (43.9% very satisfied, 52.6% satisfied and 3.5% not satisfied) among the participants…….". The identified few problems after evaluation are: indications of lack of market research knowledge, limited contact hours, a shortage of business plans models and difficulties in managing related team work. Cordelia Mason (2011) of International School of Entrepreneurship, University of Kuala Lumpur also elaborated trends in emerging china.

2.3.2 Malaysia:

According to Syahira Hamidon (2015) of Ministry of higher education of Malaysia (MOHE), "….. There were three mechanism of MOHE that supports EE i.e. policy of entrepreneurship development, strategic entrepreneurship plan (2013-2015), and entrepreneurship research and funding grants. Entrepreneurship education in Malaysia mirrors that in the global scene. It is an important national agenda and is pursued relentlessly by the various stakeholders. At the tertiary level, entrepreneurship education is offered at the diploma, graduate and post graduate levels……".

As at August, 2010 a survey did over the Internet reveals found that there thirty-five institutions of higher learning offer programs in entrepreneurship. Content analysis of the programs specifies that the programs offered are either entrepreneurship or blended with other disciplines or areas. University Utara Malaysia took number of initiatives to lead in the area of entrepreneurship education in Malaysia by offering the specializations at various levels of degrees where students can choose areas like International Business, Supply Chain Management, New Venture creation, Inventory management, Management of Innovation, Project Management, Management of Research & Development, Project Management, Quality Management, Technology Assessment, Technology entrepreneurship, Technology Forecasting, Technology Transfer etc.

University Pendidikan Sultan Idris (UPSI) offers Bachelor of Education with specialization in Entrepreneurship. University Putra Malaysia has blended entrepreneurship with technical education, one of the timely paced initiatives. Even with BBA in Entrepreneurship, Multimedia University also offers various specializations in Media Innovation and Entrepreneurship and Financial Engineering. University Kuala Lumpur is the university to offer Bachelor in Business Technology with specialization in computer management in entrepreneurial perspective.

There is also increasing interest in research on entrepreneurship and entrepreneurship education in Malaysia. Entrepreneurship is emphasized and viewed as a major thrust for economic development of Malaysia to plan for the New Economic Model policy of entrepreneurship. It is considered as an engine of growth. There are increasing numbers of programs offered at the tertiary level.

There are number of studies specifically context to the Malaysia. Few of them listed here to know more about the research efforts done in EE. A study on how polytechnics in Malaysia develop entrepreneurship curriculum by Ismail (2009) concluded that the current practice is ineffective and recommend a new approach. The various factors of ineffectiveness were attributed by the researcher specifies as shortage of lecturers expert in EE, teaching methods and absence of using EE models. Cheng and Chan (2004) gave focused on the development of entrepreneurship education in terms of student knowledge regarding entrepreneurial skills, decision making ability to become entrepreneur, and lack of motives for establishing a new startup.

A study done by Buang, and Halim (2009) on entrepreneurial science thinking connects entrepreneurial attitude with science education indicating its applicability in EE in various specializations. Abdullah and Othman's (2010) research on the acceptance of the entrepreneurship culture gave a module. A year after it was launched by the Ministry of Higher Education, Malaysia. It shows a significant difference of entrepreneurial cuture between male and female graduates. Baharuddin and Arokiasamy (2010) examine how to initiate cyber entrepreneur in higher education system of Malaysia but did not come with conclusive or robust solution with action plans or model but it shows trending of using technology in business. According to World Bank Report (2009), Malaysia is ranked 23rd out of 183 countries in the scenario of doing business.

According to Warisan Global report, the universities are still lagging in producing highly competent graduates in both technical and non-technical fields and it is the perception of many respondents in the survey that the Malaysian education system has not contributed effectively acting for the creation of a competitive workforce still implementation of many initiatives.

2.3.3 Japan:

Francis Otieno (2015) of Ritsumeikan University did research on the EE in Japan and presented scenario in UNESCO meeting based on the survey of 527 universities (2003). He counted 44 universities which had established entrepreneurship education courses and 236 which had introduced entrepreneurship as a subject. According to Etoand Suzuki (2006), "……..Entrepreneurship Education in Japan falls into three

categories i.e. MBA courses (52%) are to train students in management and business skills. MOT courses (20%) are to provide students of technology with management skills. Career education courses for undergraduate students (28%), are for the reason that entrepreneurship education is useful, even for students who have no intention to set up an enterprise……". Nomura Research Institute data source (2014) shows that out of 756 institutions of higher learning, 420 institutions responded (54.0%) and further noted that 195 institutions are implementing EE education (46.4%) in Japan. A new value Entrepreneurship 2.0 model is based on individualism verses collectivism and universalism verses perticularism.

The Japanese government is playing important role at integrating social resources, promoting the technology transfer, developing high potential emerging industries. At present, after many efforts over the number of years, Japan finally is forming a country as an innovation system of combined industry, government, and education with a model. The policy orientation of Japanese government is based upon the science and technology, which greatly stimulated to the large number of universities for development of ventures to be developed. The relationships between universities for EE and enterprises in Japan are linked very closely. At present, the number of schools with implementation of entrepreneurship curriculum is significantly increased and very rapidly changing as compared with the past time.

2.3.4 Philippines:

Antonio M. Lopez, DBA and Maria Luisa B. Gatchalian did descriptive study about the EE in Philippines specifically related to demographic area of Luzon, Visayas, and Mindanao (2015). They found that social entrepreneurship, technopreneurship and impact programs are the emerging hybrids. The EE modules have been introduced at graduate level with specialized branch at macro level. EE networks also have been set with Young Entrepreneurship Society Philippines (YES), Youth for Sustainable Development Assembly (YSDA), Enactus Philippines and Ashoka Philippines.

Govt. of Philippines also developed incubation centers of technopreneurship, IdeaSpace, Philippine development foundation and many other agencies to promote entrepreneurial culture with timely driven technology. EE Trends Setting is related to

active academia, government, industry, and community involvement, collaboration and partnerships. Industry focused entrepreneurship hybrids and impact programs are academic in nature and also with MASKARA model (motivation, awareness, skills, knowledge, attitude, responsibility, and advocacy).

Entrepreneurship education in the Philippines may be considered as a new and nascent education discipline, in which the academic community is only getting to understand better how EE works. It is the crossroad of change, reforms being implemented and the new directions are being mapped for venture creations. The study of Antonio M. Lopez, and Maria Luisa B. Gatchalian highlighted that the challenges can be addressed through a purposeful collaboration towards reaching a common goal for development of entrepreneurial excellence.

2.3.5 Indonesia:

Idris Gautama So, and Asep Mulyana of Binus University presented study on EE scenario of Indonesia in UNESCO EE-meet (2015). According to their study along with references, Indonesia is ranked 34 in regards with global competitiveness index (WEF, 2015). Entrepreneurship level in Indonesia is still low compare to Malaysia and Singapore.

In 2014 Indonesia has 1.65% compare to Singapore 7% and Malaysia 5% (GEM, 2015). One of most influential pillars (GEM report 2014 called Framework) in Entrepreneurship Ecosystem in Indonesia is “Pilar 4b”, Post school entrepreneurial education and training.

Indonesian Qualification Framework (KKNI) and Entrepreneurship Profile Model adopted GEDI (Global Entrepreneurship and Development Index) indicator with utilizing GEM and WEF data. Unique curriculum has been implemented by the Binus University to generate entrepreneurial potential with EE. This model has three stages of teaching methods along with entrepreneurial activities and business startup category. In advanced module of entrepreneurship, COBLAS model has been adopted by the Indonesian universities to get better results.

Technology based curriculum, business oriented curriculum, and business startup focus are the program positions decided by the experts to implement during program

execution. Creative Entrepreneurship Laboratory (CEL) and Business Startup Centre with allied services are the major components of the EE system in the Indonesia. Many new initiatives have been promoted by the Govt. to promote EE.

2.4 EE case history of Finland:

According to report published by Ministry of Education, Finland, a case study for the guideline of EE is specifically turned out. According to this report, "……The first stage in the promotion of entrepreneurship in Finland is a period of economic education in the 1950s and 1960s, the second phase entrepreneurial training is in the 1980s and the third is the era of entrepreneurship education in the 1990s, when the EE and entrepreneur training began to develop much more than before……..".

Most of the deliberations of this report have been referred by the researcher as a part of the study. The first reference to entrepreneur training over the internet is in 1993 and then to entrepreneurship education from 1997. During the economic recession in the early 1990s, the contents of EE were specific to labor and industrial policy for the promotion of creating ventures, primarily because of the difficulty in employment situation at the time. The problem of unemployment was seen which was ruled out of the school to educate young people for self employment at least at particular stage in their lives instead of always seeking new employment. It was timely demanded that system must offer education and training to help people for earnings to their livelihood independently or to improve their employability. This is the first stage in entrepreneurship education.

The present form of entrepreneurship education in Finland is considered to get started in the mid 1990s. In 1992 the National Board of Education appointed a committee to define the concept of entrepreneurship, entrepreneurship education, and to propose different development paradigms for its implementation. It was based on the review to empower the youths as first generation entrepreneurs.

This set off strong networking among different stakeholders of EE system. The curricular development launched by the committee resulted in a more systematic inclusion of entrepreneurship and entrepreneurial culture in the basic education, upper secondary and vocational core curricula of 1994–1995. In addition to this action, plans

were made for teachers for in service training of entrepreneurship, a further qualification and certification for entrepreneurs, and learning materials suitable for different forms of education. Pilot projects in entrepreneurship education were launched in many comprehensive schools in different parts of the country.

The initiative of Entrepreneurship during 1995–2005 came in the Philippines from the Ministry of Trade and Industry, the Ministry of Labor, the Ministry of Education, the National Board of Education and the Federation of Finnish Employers (present Confederation of Finnish Industries EK). This decade gave three themes: entrepreneurship in and for the society, entrepreneurship in securing and developing jobs, and the promotion of entrepreneurship for youths.

One of the aim of the policy creators of the Finland was to create 1,00,000 new jobs. The form of the project implementation changed slightly at the threshold to the new millennium when, on the initiative of the Ministry of Trade and Industry, the Government recorded a specific entrepreneurship project in its program. Entrepreneurship education with vocational skills was the change. The basic education core curriculum was adapted gradually during the period of 2003 to 2006 and the upper secondary core curriculum in 2005.

In the design of curriculum, entrepreneurship is linked to participatory, active citizenship and constitutes one of the seven cross curricular themes in basic education. One of the six themes was linked with upper secondary vocational schools. These themes are the key priorities in implementation of education and training.

Some universities have drawn up curriculum and training of entrepreneurship strategies of their own. The polytechnic institutes adopted a joint strategy about EE in 2006. It includes an aim that in 2010, one in seven polytechnic graduates will have to select a career in business within ten years of their graduation and thus to create a venture. The Finnish entrepreneurship qualifications are unique in international terms. According to report, nearly 8,800 degrees and certificates have been awarded in ten years.

In 2002, the Ministry of Education, Finland appointed an entrepreneurship steering group. The Ministry has also appointed a national training committee for entrepreneurship. The term of the committee was decided till January 2010. These steps

have been taken for effective implementation of the program. The National Board of Education has also appointed a qualification and certification committee for entrepreneurship up to July 2010. A higher education cooperation group on entrepreneurship issued its recommendations about EE at the end of 2008.

Regional action models (YES entrepreneurship education centers), the Junior Achievement, Young Enterprise Finland are the concepts and also mock enterprise activities are now expanded by the agencies.

The entrepreneurship education strategy has nine specific dimensions as a policy outlined by the Government. Information steering by the central government, teachers initial and in service training, development of entrepreneur's competencies, development projects, and research and evaluation were taken priority stages of implementation of EE.

Entrepreneurship is on the priority agenda at the European level. The European Commission initiated number of project. A project called "Best" was one of them. It was reviewed in the country by collecting indicator data concerning entrepreneurship education. Another Commission has evaluated mini enterprise activities project in secondary education. Commission recommended key competencies for the future that every citizen must have. Entrepreneurship is found one of the initiatives.

2.5 Evolution of Entrepreneurship and EE in India

The history of entrepreneurship is important worldwide because of evolutionary changes. In the pre colonial times the Indian trade and business was at its peak. Proper understanding of the growth of entrepreneurship of any country would evolve within the context and scenario of the economic history of that country. The history of entrepreneurship development in our country is, therefore considered entrepreneurship during Pre Independence and Post Independence. Refer Annexure – I for colonial entrepreneurship before, after and during British rule in India.

India is one of the fastest growing economies of the world. Our country has GDP growth of 7.4 short of the assumption 7.8 of this year (2014-2015). Today India is the 2nd fastest growing economy and 4th largest in terms of Purchasing Power Parity (PPP). By 2015, India is expected to become the 5th largest consumer market. India's large market and a diversified industrial base, is expected to help to a 9% growth to overcome

the global financial crisis. A baseline path for inflation in 2015-16 in which it would be pulled down from by base effects but it is expected to start increasing thereafter to below 6.0 per cent.

In the 1990s, India did better efforts to promote and nurture entrepreneurship at various levels. It has been taken place mainly on availability of finance, EE and nurturing of new ventures. Entrepreneurship Education after independence India has been focused on measures designed to encourage self employment, microenterprises and funding of small and medium enterprises (SMEs). Number of govt. agencies did role of promoting entrepreneurship including Ministry Micro, Small and Medium Enterprises (MSME), and National Science and Technology Entrepreneurship Development Board (NSTEDB), DST, New Delhi.

The Indian Industrial Policy Resolution of 1956 has a very strong effect on the SME sector. In the decades 60s and 70s, EE was exclusively delivered in the form of training programs by institutions under state and central government and also by financial institutions receiving support from Government or else. Some of financial institutions who played crucial role are: Industrial Credit and Investment Corporation of India (ICICI), Small Industries Development bank of India (SIDBI), National Small Industries corporations (NSIC), Small Industries Service Institute (SISI), and Industrial Development Bank of India (IDBI) etc.

Over a period of time EE has gone through a significant change from entrepreneurship training program to entrepreneurial approach. Central Board of Secondary Education (CBSE) and Indian Certificate of Secondary Education (ICSE) have introduced entrepreneurship development as a subject in its higher secondary course from academic year 2001 – 2002.

Ministry of small scale industries, Government of India is encouraging National Level Entrepreneurship Training institutions, like NIESBUD Noida, NIMSME (Formerly NISIET), Hyderabad, EDII Ahmedabad, and Indian Institute of Entrepreneurship, Guwahati for entrepreneurial promotion. Science and Technology Ministry has also established Entrepreneurship and Business Development Centers (EDCs), Entrepreneurship and Innovation cells in selected universities, colleges, regional engineering colleges, institutions and organizations under plan scheme of National

Entrepreneurship Development Board (NEB). These programs have been set up with number of objectives, these are:

1. To promote entrepreneurial culture and inculcate entrepreneurial values among the students for innovations having potential for commercialization.
2. To motivate students for entrepreneurship as career.
3. To create entrepreneurial ventures in the host Institution and thereby to promote related activities in the region.
4. To provide mentoring support to students by networking with collaborative agencies like Bank, Technology providers, consultants, Infrastructure providers etc. to help them in setting up their new venture.
5. To facilitate linkages as Industry Institute participation with venture capitalists and other Government and Non government organizations engaged in support of entrepreneurship.
6. To generate and disseminate knowledge data base of entrepreneurship through research, conferences, seminars and workshops at different levels.
7. To contribute in the policy making process of entrepreneurship development by interacting with the concerned Government and other related agencies.

Besides these initiatives, Technology Business Incubators (TBIs), Growth Centers, Science & Technology Parks (STPs), Bio Technology Incubators (BTIs), Tinkering labs, Information Technology (IT) Parks, Venture Centers, Techno-entrepreneurship promotion program (TePP), Innovation Centers, TePP Outreach cum Cluster Innovation Centers (TOCICs) have been established by the various ministries for the high end solutions with entrepreneurial insights. Many multinationals set their specific Tinkering Labs for idea to venture conversions. Google's Launchpad is one of the initiatives of such efforts.

According to the study report of National Knowledge Commission (2008), "…….Entrepreneurship in India has the need to enact a uniform legislation for funded research that would grant Intellectual Property rights (IPR) for successful results of research to research centers or universities. It also entitles the inventor to a share of the royalties from product commercialization come out from innovation, for entrepreneurial advancement…….".

National Knowledge Commission (NKC) further elaborates, "……. India's innovation culture could improve significantly if more PhDs and other research scholars are encouraged to develop commercially viable product by providing a supportive environment of their research product for Entrepreneurship…….".

There is also a need to increase Business Incubation Centers for Entrepreneurship development or may be TBIs by comprehensively exploring policy formulations and options to improve access to financing. Valuable work is being done by Indian incubators, there is scope for product commercialization and to become entrepreneurial themselves by taking services of money lenders, market data, helping in preparing business models, recruiting skilled employees, etc.

Growing the pool of skilled people is an also a key priority. This entirely depends upon access and availability to quality education system and its implementation. The key challenges in higher education relate to ensuring affordability, access, inclusiveness and excellence.

In Vocational Education and Training (VET), there is needed to change overall scenario and also to modernize current institutions. The practices with reforms in curriculum structures along with recent technology are also need of time in our country. Reforms in VET also required in innovative delivery models within a class room, out of class room and also in laboratories. Providing financial aid, incentives for states is to ensure performance based training and assessment. Project based methodology for training, rebranding, certification, encouraging learning by doing, incentivizing English speaking skills, ensuring flexibility of VET are the skills along with the higher education system. It is for easier crossover and choice. Economic liberalization has been a key catalyst to encourage entrepreneurial culture. There are a number of initiatives at the central and state levels which aim to improve the system of entrepreneurship.

The Doing Business Report of World Bank IFC (2008) states that, "…….India can jump 55 places from its current rank of 120 if some of the best locally relevant practices are adopted throughout the country. It would be possible by giving priority to the "MCA-21" project initiated by the Ministry of Company Affairs to fully automate processes of enforcement and compliance……..". To enhance Entrepreneurship, some recommendations have also been given in the DBR report (2008). It highlighted

meaningful implementation of the Single Window System, a concept of 'Single Unique Company Number' (for company, tax and social security registrations), new implementation of, a Single Composite Application Form, reducing the frequency of tax payments with installments for entrepreneurs from monthly to quarterly, starting specialized commercial courts, ideology of Limited Liability Partnerships; and creating 'one-stop solutions' to provide all relevant information for starting an entrepreneurial activity.

There are a number of websites of Entrepreneurship in India. In this regard, NKC proposes one stop information portal to explore the possibility of having an all to encompass the current and aspiring entrepreneurs. Entrepreneurship in India will also grow significantly with sustainable solutions with the spread of e-governance, infrastructure development and also access to various ICT platforms.

2.6 Entrepreneurship Education-Present Scenario:

Entrepreneurship is a key driver in economic engine and growth as it has an immense potential to generate employment opportunities. At present, in our country, more than 100 different departments of various universities offer different level courses of entrepreneurship in India. According to the National Policy for skill development and entrepreneurship, the new entrants or aspirators which needs to be vocationally skilled with and without technology for entrepreneurship is 119.5 in millions (2015 – 2022).

India's higher education system produces a large number of graduates, post graduates every year but the economy does not allow absorbing those graduates. It leads to educated unemployment. In the last two decades entrepreneurship education has grown rapidly which is reflected in the organizing of national and international business plan competition, boot-camps, startup grinds, immersion camps, new entrepreneurship curricula and program.

Approaches to entrepreneurship education have varied across colleges and universities from offering courses. These approaches are locally relevant in new business development or business plan preparation. Most of these aspects are integrated to curricula that include marketing, finance, competitive analysis and business plan

competition. Techno-camps, Ideation explorative are also the new initiatives that took place in various universities, institutes for hunting innovations having potential of startup.

Entrepreneurship development institute of India (EDII), Ahmedabad has launched number of programs including PGDBEM (post graduate diploma in business entrepreneurship and management), Fellow Program in Business Management (FPM) for ED. This plays a vital role in developing youth either to take up new enterprise as a career option or join their family business after training or gaining knowledge inputs. The open learning program (OLPE), a correspondence course with personal counseling has given a boost to the process of "new enterprise creation" nationwide.

"Tracking Creative Boundaries" course at IIM Bangalore, Fellow program of ISB, Hyderabad and the popular course titled "Laboratory in entrepreneurial motivation" at IIM Ahmadabad are all about the dreams of the entrepreneurs, but there are limited numbers of such institutions doing practices differently. Now a day's such efforts are increasing.

The prime objective of a developing country like India is to achieve required GDP for economic growth. This is possible by increasing the number of sustainable ventures with ability to export substantially. Economic reforms after liberalization in 1991 have made India one of the leading economies in the world. Entrepreneurship is considered as an instrument and developmental tool for economic growth. Developing the culture of entrepreneurship has become now a main focus area for Government, policy makers and the society. Government is promoting culture of Innovation and creation of new venture for the economic growth. New venture creation with advanced technology is the result of excellent human skill and availability of resources.

Education systems are now focused in this direction. Business and entrepreneurial development has been listed as one of the major subject and activity areas of many universities. Few traditional education institutes did tie-ups with corporate to generate creativity for commercially viable ventures.

The findings of National Knowledge Commission (2008) about EE and ecosystem of India are important to know the present scenario of the EE in India. The important findings are:

1. A successful Entrepreneurship ecosystem is the outcome of a number of factors working in it. Major Key 'Entrepreneurial Triggers' are: Individuality & Motivations, Socio-economic cultural Factors, Access to finance and education, Business Environment, and exposure to Innovation theories.
2. The most prominent Motivation Triggers are: New Idea, Independence, Market Opportunities, Challenge, Family Background, and also specifically 'Dream Desire'. These may vary according to number of parameters such as region, gender, family background, work experience, and age. Challenge is one of the principal motivational drivers. Ninety nine point four percent (99.4%) of the entrepreneurs interviewed in this study did not want to be in a routine job and Seventy four percent (74%) of the entrepreneurs received family support.
3. Sixty Three percent (63%) of the entrepreneurs interviewed were self supported by financed, while other sources included terms loan from banks, venture capital (VC), angel investors and also from state finance corporations. Majority entrepreneurs who approached leading banks, sixty one percent (61%) did receive bank finance. It shows perception among entrepreneurs that it is very difficult to get bank loans at the early stage of the start-ups while becoming comparatively easier at later growth stage. Perceptions of the potential entrepreneurs regarding bank finance have not improved who started ventures after 2000.
4. Ninety five percent (95%) of entrepreneurs believe education and training is a critical for success factor. Education and training is a key trigger to evoke entrepreneurial inclinations. Ninety eight (98%) of the entrepreneurs are under graduates. However, only (Sixteen) 16% chose a specific area of enterprise as a result of their educational background. Nearly one in two entrepreneurs has skill shortages in recruitment to be a problem of average importance. One in three considered it somewhat difficult or very difficult to find right candidates with the right skills. More than a third of the entrepreneurs faced problems in accessing as well as retaining employees of right skills generally.
5. Fifty percent (50%) of the existing entrepreneurs experienced difficulties while seeking statutory clearances and licenses from concerned authorities. Two thirds of the interviewed faced hassles while filing taxes. The sixty percent (60%)

claimed to have encountered corruption during the process of venture existence and even in venture operations. Major hurdle was in accessing reliable information on legal aspects with registration procedures, finance and other schemes.

6. Fifty six percent (56%) interviewed entrepreneurs claimed that the poor quality infrastructure facilities especially transports, water availability, power, and telecommunications was a critical barrier.

NKC gave number recommendations about EE and ecosystem. These are based upon the key finding of the study. These recommendations are as follows:

1. There is a need to remove perceptions of risk and failure by facilitating dissemination of prototype models, best practices, case studies as well as documentation of unsuccessful ideas in the entrepreneurial space for lesson taking actions. Recognition and rewards for outstanding contributions from the local up to the national level will energize and encourage new and potential entrepreneurs. Strengthening entrepreneurial networks, entrepreneurship awareness camps and industry associations will also help in giving visibility and encouragement to entrepreneurship and its practices.
2. Assessment of debt and equity would require specific positive efforts on the part of banks, financial institutions, VCs, credit lenders, angel investors and private equity (PE) funds. In India, money lenders need to be more proactive in assessing the business opportunities and new startups generated by Indian entrepreneurs. Innovations in risk management, proper product commercialization will also reduce information asymmetry and make funding procedures more accessible.
3. Angel investors, Venture Capitalists, Money Lenders and PE funds are needed fully to become more active, particularly in knowledge intensive and intellectual based enterprises. To create incentives and support for seed capital funding, some steps needs to include as establishing a secondary market for SMEs, creating new instruments and policy procedures for start-up funding and providing financial literacy to rural startups.
4. Synergizing activities between Education (including modern vocational education training/skill development), Ideation (Business Idea Generation), Innovation

(converting ideas into wealth and employment) and Entrepreneurship should be encouraged.

2.7 Challenges for the entrepreneurship education in India

EE and Entrepreneurship Development Programs (EDPs) in India are well established and in also in stage of continuous redevelopment hence trying to cover shortcomings. The Entrepreneurship education scenario is subjected to many changes and hence gave several challenges. The most important challenge is about turning the idea of student into commercially viable product and thus creation of venture in the present system of education. It requires a range of motive, attitude that is required for both the creation and the success of entrepreneurs.

EE is an important component for entrepreneurship policy framework. However, Z. Liyan (2003), "……Entrepreneurship education imparted by many Indian Universities and institutions is not holistic enough……". Stevenson (2000) stated, "……..Entrepreneurial educators must be more than cheerleaders, directors and guiders. We can no longer simply say entrepreneurship is different…….". EE is now a part and one of the streams of education. The greatest awakening part of it is that very few entrepreneurial scholars will become like many successful entrepreneurs. Guarding the past, inability to adopt for a change and refusing to see the wisdom are inherent challenges for the young and inexperienced entrepreneurs. It leads the same problems in education as in business.

Z. Liyan (2003) stated about Indian EE programs as, "……. only offering training and coursework, but not the other related components…..". Even when support framework and system exist, they are often not getting coordinated with the other major components of the EE programs.

Another important issue is that entrepreneurship education is often conflated with business and management education. As a result, technology processes, negotiation, new product development, creative thinking, leadership, exposure to technology innovation, etc. do not often receive the required attention that the every potential entrepreneur deserves. Another aspect of EE among educational institutions is entrepreneurial training.

In most of the universities and institutions, entrepreneurship courses are similar to the general business courses as purely academic in nature.

The aim of EE as taught by textbooks is optimal, effective and efficient use of available resources. The existing EE fails to inculcate and incubate such a vision among the young students as a whole treatment of EE is academic. Most of the students prefer jobs with multinational companies as it is socially more rewarding and satisfying. The development of such mindset is because of social acceptability and partly due to the academic inputs given to them.

The present EE in India just concentrates on courses which are similar to the business structured courses. There is a necessity and demand for EE programs specifically designed to expand students' knowledge and skills experience in entrepreneurship and with need of technology integration. EE in India also faces cultural and financial constraints along with inappropriate government strategy. The significant challenges faced by entrepreneurship education in India are as follows:

1. Cultural barriers:

Entrepreneurship culture can develop a society. Various barriers permit variability in the choice of paths of life and also by creating confidence about the different occupations. Unfortunately, the Indian culture supports a network of benefits that in many ways run counter to entrepreneurship. In general, Indians believe that being passive with the status quo is healthier for the inner soul than striving to improve one's situation. Most of the Indians believe that peace of mind can be achieved from spiritual calm rather than from materialism.

In general, satisfactory conditions and standard of living parameters are also affected by the cultural trends. Indians are more sensitive to emotional affinity in the workplace than to work and also to improve the productivity. An entrepreneur needs to work around the clock, struggling for sustainability and this has kept some people away from their own start-ups. After all, compared with other country cultures, family life in India is more important without stress in day to day routines.

2. Difficulties towards Start-ups:

Starting a business in India through licensing is time consuming and also it is costly. Now time is changing but it needs revolutionary changes. While it takes just few days to start a business in the United States, in Australia and in many other countries. What really hurts is that even in neighbor Asian countries like Pakistan, Nepal, and Bangladesh; it is also possible in few days. Ashish Gupta (2004) gave remark, "….. The reason for delay to start the business is bureaucratic with involvement too many rules and regulations, and too much paperwork….. On an average, it would cost an entrepreneur nearly half of his/her total income as nearly 45% of the gross national income per capita to set up a business in India…….. It is 100 times more than what is needed to set up a business in the United States……..".

Doing business in India is difficult proposition. The lack of mentoring facilities at local level, absence of an appropriate entrepreneurial culture and climate, the lack of required infrastructure facilities i.e. business incubators, and the lack of access to relevant technology are the main difficulties for start-ups. Most of the time, the Indian entrepreneurs have to tackle electricity, transportation, water, and licensing problems for day to day operations of the enterprise.

3. Incomplete Entrepreneurship Education:

A survey done by the Entrepreneurship Development Institute, India (EDII) in (2003) shows, "……. Young people are afraid to start their own business because they are not confident, not capable, and lack knowledge in starting a business….. Young people can acquire entrepreneurial skill only by modular and related vocational training…..". Many youths have the opportunity to change jobs or become an entrepreneur if they are properly trained and groomed. The students in India are not confident with the traditional education that they receive in the University for starting an enterprise.

4. Lack of a standardized single framework:

EE is widely spread, has diverse forms in training and has a large number of stakeholders from different sectors. The overall state of affairs is needs to be streamlined

in few aspects of the EE. If anyone lacks broad vision, goals, and systematic planning, it loses entrepreneurial spirit. The lack of a standardized single framework is a big challenge to the development of EE system in India.

5. Dependency on government policies:

High degree of dependency on government policies and actions is another challenge before entrepreneurship education in India. Insufficient and unorganized private sector participation and lack of sustainable business models in the EE acts main barriers to its development in India. Confidence level of Indians to work with private institutions for development issues is very less. Few Private Partnership Program (PPP) models are in India in the field of EE. Industry Institute Participation (IIP) for the promotion of EE is now the anvil but again have dependency upon the govt. policies.

2.8 Role of B schools for EE:

The B-Schools are the most appropriate agency and acts as a nursery for shaping and developing management graduates for entrepreneurship who possess entrepreneurial qualities with integrity and ethical standards. The first generation entrepreneurs who have a deep sense of social responsibility, a commitment to the income generation of their communities, understand protection and financial sustainability of the business environment, and also the improvement of the people's quality of life would find the successful entrepreneurs after incubating their ideas in B schools.

The B-Schools are in a position to develop case studies on EE and entrepreneurship practices relevance to Indian industrial scenario because of intelligent and practicing EE trainers. While doing this, the aspirants will gain new insights into the entrepreneurship and walk away not only with tools but also with a clearer sense of their role as change drivers. They also facilitate the way of doing businesses to their followers.

To promote and develop EE, some B-Schools are starting entrepreneurial education in their course structure along with the tools like boot-camps, immersion camps etc. Most of the B-schools are providing the elective subject in their course structure by which students will give their interest in that field and open their own enterprise.

Courses on entrepreneurship at B-Schools are the core activity of EE in India. A number of B-Schools offer courses and various forms on entrepreneurship. Numbers of institutes are conducting a one or two year, fulltime programs on family business management. Most of the courses cover the legal and managerial aspects of entrepreneurship with theory of Ideation. But there is need to concentrate upon the motivational aspect. It is useful to create an aspiration and to improve confidence level among the family business of forthcoming generations. This program needs to be equipped with students for the skills, knowledge, and mind set to run their family business. Few selected institutes where EE models are running in different perspectives than the traditional system of education.

The Indian School of Business (ISB) at Hyderabad has tied-up with non-profit organization Wadhwani Foundation to promote entrepreneurship. Wadhawani Center for Entrepreneurship Development (WCED) and ED cell has been working ISB, Hyderabad and started developing outstanding entrepreneurial leaders. ISB's program is designed primarily to prepare managers and leaders to respond the challenges of rapidly changing business environments and venture creation. Within an environment of entrepreneurial vibrancy, there are more than 600 students who graduate every year after studying entrepreneurship, strategy, skills and the impact of technology on commerce. They spend time developing their ideas to transfer it into business plans with utilizing state of the art technology after interacting with members of industry and experts worldwide. Young leader and visionary program of WCED for industry professionals is well structured to groom entrepreneurs.

The ISB, Hyderabad is taking efforts to open an activity of International Entrepreneurship Centre which will be founded, led and managed by several leading Silicon Valley entrepreneurs, who are on the school's Governing Board. This Centre will help students to become successful entrepreneurs by offering a diverse set of programs, activities and facilities including on campus incubator, an Entrepreneur in Residence program, a Young Entrepreneurs Club, and overseas field programs.

The efforts of ISB to establish entrepreneurial eco-system is also worth commanding. ISB Center of Entrepreneurship (ICE) with Human Centered Design Lab (D. Lab), Technology Accelerator Program (T Hub) and Technology Entrepreneurship

Program (TEP) have their own standings in the field of EE. These are timely needed revolutionary initiates.

National Institute of Industrial Engineering (NITIE) is one of the Institutes in India which took the initiative in starting EE so early to contribute in economic development of the country. There is also NCSE (Nation center for student enterprise) where the main purpose is to help the student to start their enterprises and encourage the students to think about the future of entrepreneurship. Centre for Technology Innovation Management, Center for SME, Centre for Entrepreneurship has been set up by NITIE in Mumbai campus to nurture entrepreneurial culture.

In India, many entrepreneurship centers have been started to coordinate the broad array of business incubations, activities, programs, and resources within the B-Schools. NS Raghavan Center for Entrepreneurial Learning in IIM Bangalore (NSRCEL: IIMB) carries out international collaboration projects with corporate and with venture capitalists. Ties, IBM, NASSCOM are few of them. Launchpad, incubate are the few programs of NSRCEL for hunting ideas and to incubate further for start-ups with Google.

The Global Entrepreneurship Monitor (GEM) Project along with the London Business School, Kaufmann Foundation, and Babson College has been a major project for the last four years in India with the entrepreneurship institutes about EE. IIM Calcutta (IIMC), activities on ideation, innovation, product development and entrepreneurship are more practical and driven by students, along with the faculty advisors. IIM Calcutta Innovation Park offers both physical and virtual incubation facilities for start-ups.

The incubator at the IIMC has an Innovation Park. Now a day, it focuses on lifestyle, healthcare, education, clean technology, analytics, and Internet of Things. The IIMC's entrepreneurship cell holds one of the biggest business plan contest with Ideation in Asia, i2I: ideas to implementation. It is collaborated with Yale University's Yale Entrepreneurial Society (YES). Also E-summit initiative of IIMCs centre for entrepreneurship and innovation gave idea repository for commercialization of products.

Such partnerships and centers are also gave number of happenings in the technical schools as much as in the business schools. The notable names include the trec-step, Trichy, Technology Business Incubation unit Delhi, the SIDBI Innovation and Incubation Centre in IIT Kanpur, and the Society for Innovation and Development (SID) at the

Indian Institute of Science Bangalore. These are one of the oldest centers in India. In fact trec-step's UNDP skills program gave notable achievement.

A program of Sustainable Transformation of Rural Areas (SuTRA) which uses non-edible oils from indigenous neem trees as solving the problems of rural poverty is one of the notable innovations developed by the TBI. Most of the TBIs, STPs are developed by the NSTEDB of DST. All most all Indian Institute of Technology (IITs) have either e-Cells or TBIs.

In 2009, management graduates have opted to take the path of Entrepreneurship by obtaining entrepreneurial skills. B-schools are supporting and promoting this trend. B-schools are also going out of their way to promote entrepreneurship on their campuses with arranging the number of events, grooming camps and workshops. Many institutes like IIM-Bangalore, IIM-Ahmadabad, and SPJIMR, Mumbai have modified their placement strategies to offer 'placement holidays' where students can try of setting up their own ventures and can come back to campus for placements. There has been an interesting trend among top B-School students to opt out of placement process to start their own entrepreneurial venture. Developing Intrapreneurs is now main streaming in the B-schools. Number of students gets out of placement process in various B-Schools to start their own entrepreneurial venture from 2009.

In the present scenario, the challenge is to outgrow with ideation (Idea Generation) treatment of entrepreneurship education and categorically shift the focus from its short-term objectives. The key is to develop entrepreneurship as a foundation course in business education, especially one that covers the managerial aspects of new ventures as well as corporate entrepreneurship (Intrapreneuship) or entrepreneurship.

Given the obstacles of teaching or developing entrepreneurship in the scenario of management education, the need for an effective entrepreneurial eco-system seems to be the only solution. Hence, drawing insights from the literature and the qualitative evidence presented earlier in this research, the structured framework needs to apply for ED.

In general, the structured framework is based on qualitative evidence and expert opinions. The initiation of entrepreneurship as a core subject or course does have the potential to drive the entrepreneurial culture, development and promotion of an effective EE ecosystem, particularly among management students in India. Such initiation is

useful to push the overall knowledge gain based on research and practice pertaining to the specific emerging economies of venture apart from encouraging the practice of entrepreneurship. It is must to take care of with specific skills for making sustainable enterprise. Such knowledge creation should add to the pedagogical wealth in EE. Increasing the effectiveness of the course should lead to further development of entrepreneurship as a core discipline in EE.

Developments in entrepreneurship, in theory as well as in practice, will fuel its growth in all terms and skills. More practice would mean more instances of introspection, adding to the existing entrepreneurial knowledge base with simultaneous development of the theoretical precision should be the result of getting more startups. The academic framework at both ends by pushing entrepreneurial intentions, skills and higher levels of knowledge supports the needs of a core business course. Academia, field work and practicing skills should be the main components of business course.

In emerging and developing countries like India, there is urgency for the development and promotion of effective indigenous EE systems tested scientifically. Although EE is a practice driven and field work subject, the need to supplement it with contemporary theoretical knowledge for implementation of specific strategy.

The synergies of EE as a field of study are with another fundamental aspect of business management courses. It includes plan making and marketing that necessitate a framework for developing entrepreneurship as a core course for students of business management to ensure integrated learning platform.

The need to develop such a course with the purpose of introducing this platform at foundation levels becomes imperative under various such circumstances. A framework for building effective entrepreneurship education ecosystem is surely the need of the hour and it requires a greater focus on knowledge creation to support the framework with latest developments in ICT.

The attempt to develop a working framework for an entrepreneurship education ecosystem in India is supported by research, preliminary inputs and evidences. It should therefore be considered as a conceptual beginning to work out an improvised design with validation of the ideas with innovations to start an enterprise. Future research ideas are necessary to facilitate the adoption and development of the framework with empirical

results. Confirmations will not only add to the existing research base on EE but will also aid the policy makers of a developing nation for generating business eco-system.

2.9 Education and technology in entrepreneurship development of youths.

Ideation, Validation and Innovation are the stages of mentoring, incubating business plans to turn into sustainable enterprise. Government, Corporate sector, Educational Institutes, Start up community, and Non Govt. Organizations (NGOs) have embraced short term and long term agendas to cooperate and collaborate in formulation of strategies and implementation EE plans to recognize the need for investment into creating and building entrepreneurship amongst the youth in the country. This involves designing training programs, building awareness amongst the youth and the families and empowering the youth with the required skills and knowledge to pursue entrepreneurship as a viable career option.

Creating and building a youth entrepreneurial culture in the society needs strategies in many ways. The first and foremost aspect of building the awareness and initiating the youth into the concept of youth entrepreneurship is by investing and inculcating into Entrepreneurship Education (EE). This involves creating and including Entrepreneurial and Management studies at different levels of education. This aspect also includes building the content and syllabus and making it available to the teaching communities for training. The training the teachers, trainers and counselors to become entrepreneurial educators is important. It is necessary to provide them an infrastructure with facilities required for mentoring. When a young entrepreneur becomes successful and receives a reward, his success story gets to be known to everyone. Seeing someone from entrepreneurship and becoming a successful, it does make other aspirants more confident of trying his or her venture. Sharing of success stories gives good impact over the potential entrepreneurs. Success always prompts people to take risks especially for youths and help the families and further society to accept the idea to take up entrepreneurial ventures.

Use of technology in education, entrepreneurship education and also in business has changed whole scenario. Youths have an access to the electronic gadgets and hence they are techno-savvy. Professional use of such gadgets with promotion of business

activity needs to be addressed with specific module in the entrepreneurship development programs. Rapid and fast change in technology and their application with conceptual development would be the part of youth development. Technology entrepreneurship, ICT integrated business competencies, ICT product development for the business, and technology assisted entrepreneurial learning are the different parameters of the EE system.

2.10 The role of Government and industry to promote EE

Government policies and support for entrepreneurial ventures could contribute substantially in economic growth and also support the struggling venture capital industry. In every successful scenario and public intervention there are many failed efforts, wasting billions of taxpayer's currency across the world. Government and industrial consortiums together can help in these two ways as follows.

1. By ensuring the development of economic environment for conducive to entrepreneurial activity, and also to provide mechanism for direct investments. There is a keen awareness in government. The industry and corporations of the high potential firms will lead growth after the recession. Government can encourage entrepreneurial growth by giving access, tax breaks, research, protection, and policies. Government should encourage venture capital and entrepreneurial activity related to economic environment as conducive to the EE Venture capital investments by companies and funds from Money lenders or Venture capitalists needs to be channelized.
2. The role of government is to intervene directly in the entrepreneurial process by providing EE framework. But these programs must be executed carefully to make them effective.

Industrial corporations and industries are now promoting EE in many ways. HP's hp-life program, Intel's EE program, Google for entrepreneurs, Microsoft for enterprises are the few remarkable initiatives of the industries to promote EE culture.

2.11 Driving Entrepreneurship and Innovation in Campus

"Entrepreneurship and Innovation in Universities" is highly valued in the scenario of changing enterprise start-up environment. It creates interest in all academicians, aspirants to facilitate entrepreneurship of their subject expertise and thus possibility of new avenues of success for entrepreneurial faculty and students. The main goal is to inspire higher education to make EE available to entire student community and also in campus. The team of experts will try to bring out the innovation and entrepreneurial momentum in programs and support structures for students and faculty in the areas of entrepreneurship and curricula, entrepreneurship and faculty, and entrepreneurship and infrastructure.

An important aspect of any university's culture is derived from a unique blend of colleges, disciplines, and majors. The academic strengths of any institutions have long way to create environment for teaching young entrepreneurs. Academia Industry collaboration for development of course specifies entrepreneurial zeal among the student community. The other equally important component is to create an entrepreneurial culture, a university must encourage entrepreneurship by utilizing support to enhance curricular offerings in entrepreneurship, facilitate faculty entrepreneurship, strengthen the entrepreneurial infrastructure on campus and provide opportunities to interact with global entrepreneurs through the global entrepreneurship and Innovation opportunities as well. It is possibly done by using tech-events and boot camps. Ideation labs in the campus with availability of venture capitalists would be the part of future incubation centers. Industry academia venture funding cell can formulate commercially viable innovation hubs in the campus.

2.12 Student E Cells and Entrepreneurial Community

Entrepreneurship zeal is a very powerful force that can uplift the industrial face of India. As India becomes one of the youngest nations of the world, entrepreneurship will become the tool that will hold the key to shape our future even in eco-system. However as this young country formulates its way in entrepreneurship, it will not be the same model as we see elsewhere in the world. It will be a very unique Indian model and structure of entrepreneurship more relevant to the local needs.

The scale and propagation of India brings into this game something that is fundamentally different than elsewhere. It is necessary only because of multicultural understanding. Entrepreneurship cell of an institute aims to provide a common platform by arranging Immersion and boot camps to facilitate interaction among budding entrepreneurs to discuss with aspiring and existing entrepreneurs, angel investors, venture capital firms, industry experts and other capitalists from the corporate world. The main motive for the existence of E-cell is to motivate participants towards the path of entrepreneurship by facilitating a channel of valuable entrepreneurial resources. Use of such resources can develop their ideas into effective business plans. The panel of mentors can play a vital role in this act. The team of facilitators is used to nurture the entrepreneurial spirit among students through various initiatives like interactive sessions, competitions, workshops and conferences. Industry Institute Partnership (IIP) can play specific role with ED cells for product and service development. Most of the industrial giants are now partnering with institutes for development of human resource as they desire.

2.13 Emerging Themes in Entrepreneurship Research and Education

According to USASBE's researcher's study in the field of entrepreneurship, it is important to note the research and educational developments that have occurred over the past few years in the various disciplines of EE. The major themes that characterize recent research about entrepreneurs and new-venture creation can be summarized as follows:

1. The domains of entrepreneurial and managerial aspects are not mutually exclusive but overlap to ascertain extent. According to Stewart, et al (1999), "……. In general, the entrepreneurial domain is more opportunity driven, and managerial domain is more resource and conversation driven……..".
2. Shepherd & Zacharakis (2001) stated that, "……Venture financing (venture capital and angel capital financing) as well as other innovative financing techniques, emerged in the 1990s with unprecedented strength is fueling another decade of entrepreneurship……".

3. Intrapreneurship (corporate entrepreneurship) and the need for entrepreneurial cultures have gained much attention and priority during the past few years in corporate sectors worldwide. (Kuratko and Morris, 2000).
4. Entrepreneurial strategies that have been identified as important are: common denominators, issues, and trade-offs between entrepreneurship and strategy. (Kuratko and Welsch, 2004).
5. According to Kickul and Gundry (2002), "……..The great variety among types of entrepreneurs and the methods they have used to achieve success have motivated research on the psychological and environmental aspects that can predict future success…….".
6. McGrath (1992) stated, "…….The risks and trade off in an entrepreneurial career is particularly unavoidable and stressful in nature that is a subject of keen research relevant to practicing entrepreneurs……".
7. Women and minority entrepreneurs have emerged in unprecedented numbers. They face obstacles and difficulties differently from those than that of other entrepreneurs. (Chaganti & Greene, 2002)
8. The entrepreneurial spirit is universal, judging by the enormous growth of interest in entrepreneurial research around the world in the past few years. (Peng, 2001).
9. The individual, economic and social contributions of entrepreneurs, new corporate companies, and family businesses have been shown disproportionate contributions to job creation, innovation, and economic renewal. (Chrisman, J.J., et. 2003).

2.14 The Technology Challenge in EE

Solomon, et al., (2002) found a negative trend with regards to technology in their national survey on EE during early days of technological revolution and development for the enterprise. A surprising trend has been further emerged from the data regarding EE and the use of technology. This positive trending shows remarkable development in technology enabled SMEs. In earlier days (2002), only 21 percent of the respondents indicated they use distance learning technologies in their EE courses or in training. Now

this trend has been changed because of many revolutionary tools of ICT came for the SME platforms and also for out of classroom practice.

Entrepreneurship is a discipline not for stagnation. It recognizes and applies technology in the educational and professional settings. In many respects EE, it actually transforms the both the settings as listed earlier. Some universities are applying unique technological applications as it took place in the Washington University. They developed a software tool entitled, "Prometheus." Ball State University's is award winning for MBA in Entrepreneurship with use of digital media as television (Kuratko, 1996). The entrepreneurial contents are taught in a state of the art television studio. Students on campus attend class in the digital studio while off-campus students attend class at designated reception sites. A television signal is transmitted by satellite to sites in Indiana, Kentucky, and New Jersey through interactive technologies along with the television. The entrepreneurship degree is delivered at convenient locations and at times it is conducive to working professionals.

Stanford University also started StartupX with incubation process. Researcher visited StartupX incubator under "India Innovation Growth Program 2014) of the "DST, Govt. of India, Stanford University and Indo-US Science and Technology Forum" to know more about the Silicon Valley perspective on the EE with involvement of Universities. The digital materials are also made available by the Stanford for creation of enterprise. There is no question that this mode of delivering entrepreneurship education will continue to expand in the 21st century with digital media.

Optimal use of technology gadgets, selection of proper app with ICT platform, Compatibility of various platforms for mutual transactions and or communication, obsolesces of technology and version compatibility is the major challenges of the technology in EE.

2.15 The "Dotcom" Legacy for enterprise creation

In 1999, the dot-coms burned right through some billion to achieve well, nothing really. The dotcom burst gave impact on the cash burning Internet startups and the Venture Capitalists that funded them. This was spread like wildfire and collapsing the true entrepreneurial talent of potential entrepreneurs building one's dream into an

enduring entity. Later on rising of ICT startups with innovations came up with development in different sectors. It is further pursued as an "investment mentality" rather than facilitating or supporting the search for an "enduring enterprise."

We must again focus on the real goals of entrepreneurs, EE environment (Kuratko, 1997) and the motivation that permeates from them. It is necessary to educate our next and potential generation of entrepreneurs to learn more from the dotcom threats and opportunities return to the roots of venture creation by ICT integrated services. Exit strategies from start-ups are fine but they should not dominate the pursuit of entrepreneurial opportunity.

In early days of dot-coms, M. Useem (2001) referred to the dotcom individuals as an opportuneurs (opportunity taking entrepreneurs) rather than entrepreneurs. This scenario has been changed completely within a decade. Hence it is our mission to educate the students of today back to the true entrepreneur with the tools, skills of new generation to become information technoprenurs.

Online presence of traditional businesses and its promotion for development of enterprise, ICT product business and its compatibility with gadgets and software platforms, integrated venture supported services for the customers are the main areas of development after dotcom legacy. Online integrated services are developed on the vast scale to promote business beyond geographical boundaries. This strength of ICT generated lot of opportunities in this sector: A true legacy of Dotcom.

2.16 The Academia and Venture creation

John Hughes and Michael Hennessy author of "Entrepreneurship: The way ahead" have argued for the integration of entrepreneurs ("E's") into the classroom setting with academics ("A's). Both of them associated with of the Coleman Foundation working in the field of EE. Even with their constant efforts and worldwide development of EE, the question still remains as to whether we have "bridged" the gap or simply slowed the divide. Knowledge conversion into skills plays a specific role to inter relate academics and process of venture creation. We need to be sure that our practicing entrepreneurs, business managers present more than interesting stories and answer the real problems and issues involved with their ventures. To enhance academic and practicing enterprise

creation training, collaborative efforts of faculty and industry personnel are found useful. This is challenge for entrepreneurship educators and trainers for effective development common platform. Students need the exposure to those entrepreneurs who faced the challenges, and endured the failures. It is the need of time to make the lessons learned from our experienced entrepreneurs "make a difference" that would be useful for first generation entrepreneurs.

Entrepreneurship in India has already recommended with research and draft by the policy makers about the need to enact a uniform legislation that would grant IP (Intellectual Property) rights for successful results of research to universities. Research centers also entitle Intellectual property rights of the inventor to a share of the royalties from commercialization, as a source of innovation and entrepreneurial advancement.

India's innovation scenario and intensity could also improve significantly if more PhD and other research scholars get encouraged by providing a supportive environment for Entrepreneurship. Cosmos club of Washington D. C. is the best example of scientists-entrepreneurs. Researcher experienced this fact by true discussions with them in Washington D. C. There is also a need to significantly increase Business Incubation for Entrepreneurship (TBIs) by comprehensively exploring policy options to improve access to financing. While valuable work is being done by Indian incubators, there is huge scope for them to become entrepreneurial themselves by providing various services such as market data, helping in preparing business models, recruiting skilled employees, providing market support etc.

Growing the pool of skilled people with innovation is a key priority. This entirely depends upon access to quality education delivery methods integrated with venture creation skills. The key challenges in EE higher education relate to ensuring access, inclusiveness and excellence for improving passage from academic to enterprise creation with sense of sustainability.

In Vocational Education and Training (VET) there is need to completely overhaul and modernize current institutions and practices by providing "component of technopreneurship". Reforms in VET require innovative delivery models, providing incentives for states, ensuring performance and result based training and assessment, re-branding, certification, encouraging learning-by-doing, incentivizing English speaking

skills, ensuring flexibility of VET alongside the higher education stream, for easier crossover and choice, as critical success factors. Vocational education and entrepreneurial training are the two sides of the coin for securing & sustainable start-ups.

Economic liberalization has been a key catalyst to encourage Entrepreneurship among the various sectors. There are a number of initiatives at the central and state levels which aim to improve the ease of doing business after liberalization.

NKC proposes to explore the possibility of having an all encompassing website on entrepreneurship as a one stop information portal for current and aspiring entrepreneurs. Entrepreneurship in India will also grow significantly with the spread of e-governance and quality infrastructure development by the support of ICT.

The Entrepreneurship in India in terms of sectors can be considered with different levels as a part of developing strategies for entrepreneurial education and training.

Sector 1: Agriculture and related other activities: Crop production, Fishing, Plantation, Livestock, Forestry, Mining and Quarrying.

Sector 2: Trading services: Wholesale and retail trade, Hotels and restaurants, Resorts

Sector 3: Old economy or traditional sectors: Manufacturing and production, Electricity supply, Gas and Water supply

Sector 4: Emerging sectors (including knowledge intensive sectors): IT, Finance, Insurance and Business services, Insurance, Construction, Community, Social and personal Services, Supply and multilevel chain marketing, and transport storage communications etc.

2.17 Entrepreneurship Theories:

Evolution of entrepreneurship theories helps and guides us to comprehend and understand phenomenon better to make them in practice through EE. Entrepreneurship models are always based upon the practice based theory and case study to get it into desired results. Experimentation through activity based innovation is always useful to prove and develop such models. In this context, entrepreneurship theories and their understanding play a vital role. The evolution of entrepreneurship theory, different scholars have posited different characteristics and features that they believe are common

among most entrepreneurs. Even though certain theme and case based theories continually resurface throughout the history of entrepreneurship.

Richard Cantillon's theory (1755), Frank Knight's Risk Bearing Theory (1885-1972), Alfred Marshall's approach to entrepreneurship (1890), Max Weber's Sociological Theory (1895), Theodore Schultz approach for entrepreneurial theory (1975), Israel M. Kirzner's alert entrepreneur (1997), Frank Knight approach (1971), Neoclassical constraints theory of entrepreneurship, Biological theory of entrepreneurship, Equilibrium destruction theory of Joseph Schumpeter, and Sociological theories of entrepreneurship are the main theories of entrepreneurship that shows evolution in the field of entrepreneurship (Refer Annexure – II)

Presently there is no single definition of entrepreneurship come out from entrepreneurship theories and practices that is accepted by all economists or EE researchers. Entrepreneurship is applicable in any type of economy. Sociological, economical and cultural are the three main types of entrepreneurial theories.

2.18 Recent and modern theories and drafts of entrepreneurship:

Recent and modern theories of entrepreneurship build on the number of research entrepreneurship theories and research. It is significant as well as an important factor to the development of the entrepreneurship education and related fields. There are such six recent entrepreneurship theories with underlying empirical and other studies i.e. opportunity based entrepreneurship theory, sociological entrepreneurship theory, economic entrepreneurship theory, resource-based entrepreneurship theory, psychological entrepreneurship theory, and anthropological entrepreneurship theory. These theories are useful to offer us best opportunities, perspectives to refocus our efforts and treatments at integrating the various viewpoints to make successful ventures after implementing theories into practice.

New classical growth models do not drive or stimulate the growth and thus do not succeed in bringing population and households into this scenario. To get break through from the development trap, a mathematical concept "open set" is used. The main approach of the open set unleashes the power for unlimited growth in the present structure. According to Hak Choi (2008), "……In case of productive entrepreneurs, it

also describes the behaviors of those unproductive and destructive ones, these are responsible for many financial crises, including the current mortgage back crisis……".

The theory of entrepreneurship and the economic theory of the firm thus have much to know and learn from each other. Any theory of entrepreneurship is always explaining the conditions under which entrepreneurship takes place. The concept of entrepreneurship provides the clear link between entrepreneurship, asset ownership, and also economic organization. Similarly, the economic theory of the firm can be improved substantially by taking the essential heterogeneity of capital in goods and the subsequent need for entrepreneurial attitude for the venture.

2.18.1 Economic entrepreneurship theories:

Most of the economic entrepreneurship theories have been developed from the classical and neoclassical theories of economics. These theories explore the economic factors that enhance entrepreneurial behavior into two types as Classical and Neo-classical.

2.18.1.1 Classical Theory:

According to Ricardo (1817) and Smith (1776), "……..Classical theory is based on the virtues of free trade, specialization, and competition…..". Many researchers contributed in this theory. According to Jean Baptiste, "……The classical theory and movement describes the leadership role of the entrepreneur that directs in the context of production and distribution of goods in a competitive marketplace. Classical theory developers formulated three modes of production as land, capital, and labor. There also have been number of objections to the classical theory …….". But according to P. J. Murphy, J. Liao and H. P. Welsch (2006), "…….These theorists failed to explain the dynamic upheaval generated by entrepreneurs of the industrial age……". Most of the economist contributed in such theories by the research findings of their own in the different contexts.

2.18.1.2 Neo-classical Theory:

This theory gives set of solutions to economics of enterprise specifically focusing on the determination of goods, outputs, and income distributions in markets through services, supply and demand. This neo classical model has been emerged from the criticisms and limitations of the classical model. It further narrated that economic phenomena could be reformed to instances of pure exchange, transpire in an economic system, and reflect an optimal ratio that was closed.

Neoclassical economics gave treatment of mathematical equations in the study of various aspects of the entrepreneurial economy. The economic system consisted of exchange occurrences, exchange participants, and also the impact of results of the exchange on other market and market actors. Mathematical approach to the theory created number of new avenues and procedures to the entrepreneurial environment. In this context, P. J. Murphy and H. P. Welsch (2006), elaborates that, "…….. The importance of exchange is always coupled with diminishing marginal utility created enough impetus for entrepreneurship in the neoclassical movement. The neoclassical school of economic thought is a wide ranging school of ideas from which recent economic theory evolved…….".

2.18.2 Psychological Entrepreneurship Theories:

These theories emphasize personality traits and characteristics of entrepreneurs that define entrepreneurship. According to B. Landstrom (1998), "…..The level of analysis in psychological theories is related to the personality traits, habitual behavior and characteristics needed for achievement. Locus of control is reviewed and empirical evidence presented for three other new characteristics that have been found to be associated with entrepreneurial inclination…….". Further Rotter's theory holds that, "…….. People with a strong internal locus of control believe their actions upon the entrepreneurship that can influence the external world and research suggests most entrepreneurs possess such trait. Psychological theories of entrepreneurship focus on the individual and the mental or emotional elements that drive entrepreneurial zeal of individuals…….".

One of other important aspects of psychological theory of entrepreneurship is "Need for Achievement Motivation theory". According to Pervin (1980), "……..The trait model focuses more on enduring inborn qualities and also locus of control on the individual's perceptions about the rewards and losses in his or her life…..". To build entrepreneurial qualities among the potential business men, AMT (Achievement Motivation Training) training is required. A theory by McClelland (1961) also explained human beings have a need to succeed, accomplish, excel or achieve.

Achievement Motivation Training (AMT) and its theory are based upon this concept. Entrepreneurs are driven by this need to achieve and excel. Johnson (1990) specified, "……..In the context when there is no much research evidence to support personality traits, there is evidence for the relationship between achievement motivation and entrepreneurship……".

According to Shaver and Scott (1991), "……Achievement motivation may be the only convincing person logical factor related to new venture creation…..". Mohar, Singh and Kishore (2007) further specified, "….. Risk taking and innovativeness, need for achievement, and tolerance for ambiguity had positive and significant influence on entrepreneurial inclination and intention…….".

However, Most of the times, locus of control (LOC) had negative influence on entrepreneurial inclination. The construct locus of control was one of the aspects that highly correlated and important with variables such as tolerance for ambiguity, need for achievement, and risk taking. AMT gives abilities to understand LOC. Szpiro's and Eisenhauer (1995) experimentation suggests, "…… Success in entrepreneurship, by increasing wealth, can reduce the entrepreneur's degree of risk version, and encourage for sustainable long lasting venturing and hence in their view, entrepreneurship may therefore be a self perpetuating process……..".

2.18.3 Sociological entrepreneurship theories:

The sociological theory and its explanation gave for entrepreneurship on the various social contexts. It enables the opportunity leverage for entrepreneurs. There are two perspectives for viewing the socioeconomic system. One of the explanations provides details as to why current socioeconomic systems appear capable of handling

some of the overwhelming pressures. Another perspective shows that pressures are inflicted by large, governing productive organizations and also the research regarding the impact of societal and contextual factors. It indicates that entrepreneurial activity, as well as favorable government policies, significantly impacts a society's economic development with various schemes of entrepreneurship.

2.18.4 Anthropological entrepreneurship theories:

The anthropological model gives the question of entrepreneurship by placing it within the context of culture and examining how cultural forces upon it. Social attitudes and structure both are the perception of entrepreneurship and also the behaviors of entrepreneurs. Anthropological attitude on society and culture is useful in developing theory in entrepreneurship. Most common themes in it are research trends that include the accumulation of knowledge and skills, and also the use of informal networks to acquire access to resources, and opportunity structure.

2.18.5 Opportunity based entrepreneurship theories:

According to Dublin (1978), "…….Entrepreneurial opportunity identification and development, theory building framework is useful for theory of the opportunity identification process. It specifies entrepreneur's personality traits, social networks, and prior knowledge, entrepreneurial alertness to grab business opportunities. Entrepreneurial alertness is a condition for the success of the opportunity identification and recognition with further two parameters of development, and evaluation……..".

Scott Shane and S. Venkataraman (2000), states "……Entrepreneurship involves the nexus of two phenomena. One the presence of lucrative opportunities and the other is presence of enterprising individuals……". Their theory is inspired by the Kirznerian entrepreneurial discovery process but they gave more emphasize that prior information is necessary to complement the new information in the business opportunities. In this regard, they are similar in opinion to Schultz who argues and further specified that human capital is an important determinant of entrepreneurial ability. The Schumpeterian entrepreneur applies information and knowledge about inventions to create new combinations of venture and is ultimately the one who decides if the new combinations

are profitable to develop sustainable venture activities. There is also a theoretical model in which interaction, a set of propositions, suggestions, and recommendations for further research are taken into consideration.

Mark Casson (2003) contributed to encompass both the Schumpeterian and the Knightian definitions and models. It is achieved by specifying that entrepreneurs are individuals who specialize in decision making for opportunity identification, recognition and search.

2.18.6 Resource-based entrepreneurship theories:

The relationship between resource based theory and entrepreneurship is the cognitive ability of individual entrepreneurs. Entrepreneurs have individual specific resources that facilitate the recognition and identification of new opportunities and the assembling of resources for the successful venture. Focusing on resources, from opportunity recognition and also searching to the ability to organize these resources into venture and then to the creation of heterogeneous outputs is achieved through the enterprise that are always superior in the market.

According to Peteraf (1993), "……..Resource based entrepreneurship theory has become a dominant paradigm for strategic management research. The interface between this theory and entrepreneurship has amounted to little more than providing a research setting for empirical work……". Barney (2001) further say , "…….Lack of consideration given to entrepreneurship by most resource based research, current theories largely fails to integrate creativity and the entrepreneurial act in the modern and technological age of entrepreneurship……".

2.18.7 Recent Entrepreneurship drafts of the Policies:

According to the 12th Development Plan of India, "……..India, China and other Asian economies, are poised to reverse the huge declines in their relative share in world economic output. Between 1500 and 1700, India and China had each accounted for about one quarter of world economic output, while the share of Asia as a whole was over 60 per cent. It shows huge potential for the development of entrepreneurships in different sectors……."

One action plan for start-ups, 12th Plan details on entrepreneurship, and two major drafts of policies were prepared for the development of entrepreneurship in India. Entrepreneurship Development Institute of India (EDII), Ahmedabad prepared "National policy draft of entrepreneurship" whereas another draft was prepared by Ministry of skill development and entrepreneurship in May 2015, referred as "National policy draft of skill development and entrepreneurship". Both the documents gave planned actions to promote sustainable entrepreneurship in future. (Refer Annexure – III)

2.19 Innovation, Entrepreneurship and Models of EE:

In the era of technological development, Innovation and Entrepreneurship plays a vital role in the new generation's ideation (idea generation) environment. Ideation, Innovation, Product commercialization and entrepreneurship are the steps to be followed in the new scenario of ICT enable enterprises. Entrepreneur in economic modeling, Kakinada model of entrepreneurship education, AIM pyramid framework for entrepreneurship, twenty first century model of EE, Model of entrepreneurial learning, and COBLAS model are the few EE models reviewed by the researcher to develop timely paced model of EE. (Refer Annexure - IV).

NITI Aayog of Govt. of India also contributed significantly directed the efforts in the field of EE and also defined framework for innovation and entrepreneurship.

2.20 Emerging themes in Entrepreneurship Research and Education:

According to the A Coleman Foundation white paper presented in the USASBE national conference by Donald F. Kuratko, the major themes that characterize recent research about entrepreneurs and new venture business creation is summarized as:

According to Stewart, et al. (1999), "……The entrepreneurial and managerial domains are not mutually exclusive but overlap to ascertain extent. The former is more opportunity driven, and the latter is more resource and conversation driven….".

Shepherd & Zacharakis, (2001 and 2003) states as, ".....Venture financing, including both venture capital and angel capital financing as well as other innovative

financing techniques, emerged in the 1990s with unprecedented strength, fueling another decade of entrepreneurship…..".

According to Zahra, Kuratko, and Jennings (1999), ".…….Intrapreneurship (corporate entrepreneurship) and the need for entrepreneurial cultures have gained much attention during the past few years……..".

Kuratko & Welsch (2004) wrote as ".……Entrepreneurial strategies have been identified that show some important common denominators, issues, and trade-offs between entrepreneurship and strategy……..".

Kickul and Gundry (2002) further stated, ".……The great variety among types of entrepreneurs and the methods they have used to achieve success have motivated research on the psychological aspects that can predict future success…..".

According to McGrath, et al. (1992), "……..The risks and trade-offs of an entrepreneurial career particularly its demanding and stressful nature have been subject of keen research interest relevant to would-be and practicing entrepreneurs alike……".

Gundry & Welsch (2001) wrote about "……Women and minority entrepreneurs have emerged in unprecedented numbers. They appear to face obstacles and difficulties different from those that other entrepreneurs face…….".

McDougall, P.P. and Oviatt B.M. (2003) stated as ".…….The entrepreneurial spirit is universal, judging by the enormous growth of interest in entrepreneurship around the world in the past few years……".

According to Chrisman, J.J., et (2003), "……The economic and social contributions of entrepreneurs, new companies, and family businesses have been shown to make immensely disproportionate contributions to job creation, innovation, and economic renewal, compared with the contributions that the 500 or so largest companies make…….".

This is the indicate list of entrepreneurial research given by Donald F. Kuratko. It has been referred with the various researchers. Apart from these themes ICT integrated entrepreneurial education gave new and developing concepts like digital marketing, enterprise resource planning (ERP), computerized system of accounting and auditing, e-customer relationship management (e-CRM) etc. for entrepreneurial research of twenty first century.

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CHAPTER THREE

PROFILE OF SELECTED AREA AND SELECTED ENTREPRENURS

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3.1 Introduction:

This chapter gives main focus of the present study on the profile of the newly venture started entrepreneurs specifically micro-entrepreneurs and trainees from Western Maharashtra and of the Entrepreneurship Development Programs and Technology Entrepreneurship Development Programs trained in three districts of Satara, Sangli and Kolhapur. A brief on the profile of Western Maharashtra participants of these three districts with overall scenario of promotion micro enterprises has been covered in this chapter.

In this chapter, the profile of the respondents is covered. It is related to the all factors of analyzing comprising data of 100 entrepreneurs and trainees. Details of various analyzing factors of participants of Control Group and Experimental Group like socio economic background followed by pre training status, reasons for joining the training programs, and study subjects were described in detail.

3.2 The Profile of Satara, Sangli & Kolhapur districts:

Satara, Sangli & Kolhapur are the main districts of western Maharashtra. The Geo-physical area is (10,484 + 2942 + 6682) total 20,188 square kilometer. Sugar cane, turmeric, raw material for leather processing, raw material for textile, grapes, and bio-diversity products in Western Ghats are the major natural resources of this area. Strawberry, heavy production of Gerbera and other flowers gave opportunity for export from this area.

According to 2001 Census, the total working population in the district was 21.86 lakhs. It was 43.77% of total district population. Out of total working population, 50.88% are from agriculture and allied activities, 1.60% is from Cottage industries and remaining of 47.52% is in other manufacturing and other service industries. Enterprise units registered in DIC till 1984 are 716 whereas it reaches to 3177 in 2011 – 12. This number is increasing with 56 large scale industries and 14 medium scale industries so far in the district. [1]

[1] dcmsmegovin. (2015). *Dcmsmegovin*. Retrieved 12 Nov. 2015, from http://dcmsme.gov.in/dips/satara ips.pdf

Population in Sangli district is mostly rural area and based on agriculture related activities. It is the main source of employment in the district. The enterprises in the area of Cultivators 354, Small and Marginal Farmers 309, Agricultural labors 197, Artisans 12, Household cottage industries 11, Allied Agro activities 17, and Other workers 238 shows classification of the workers in the district. Total industrial units in the sangli district are 5224 including 125 large scale, 4035 micro-scale, 1060 small scale, and 4 medium scale. [2]

The industrial clusters identified and at the stage of development in Kolhapur district are Foundry and Engineering cluster Kolhapur, Silver ornaments Cluster Hupri, Jaggery cluster Kolhapur, Chappal cluster Kolhapur, and textile in Ichalkaranji. Number of units registered in the DIC in 2006 are 725. This number is reached at 8349 in 2012, it shows high growth rate. Total industrial units in the district are 22173 including 553 large scale industries, 16225 micro scales, 5378 small scale, and 17 are medium scale. [3]

Figure 3.1 Demographic Area

Sugar industries, wine production through grapes, turmeric processing, foundry, food processing units, leather tanning, textile processing units, garment production units is the present scenario of these three districts. Textile park, Wine park, food park are

[2] Dcmsmegovin. (2015). *Dcmsmegovin*. Retrieved 12 Nov. 2015, from http://dcmsme.gov.in/dips/sangli ips.pdf

[3] Dcmsmegovin. (2015). *Dcmsmegovin*. Retrieved 12 Nov. 2015, from http://dcmsme.gov.in/dips/kolhapur ips.pdf

concentrated in the few parts of the Sangli and Kolhapur district. With substantial number of units, use of ICT to promote globally is not up to the mark. Two SEZ (Special Economic Zones with IT Park) are under development located in Satara and Sangli district.

Leather Goods particularly Kolhapuri Chappal and Belt, ceramic items, silver ornaments are the few artisanal and craft skills of this area. More than 31 engineering colleges, 36 polytechnic institutes, 67 Industrial Training Institutes are functioning in three districts of Western Maharashtra. Shivaji University is located at Kolhapur. Two autonomous Engineering colleges and one Textile Park are functioning in this area. Two Special economic zones (SEZs) are located in this area and they are at full stage of development. It needs skill manpower, and entrepreneurial spirit.

Development Index of the people from East part of the area of these three districts needs to be developed as it is a draught prone area. There is much difference in socio economic conditions of the people living in both east west sides of these three districts. Empowering youths is possible by giving them a training of ICT (Information and Communication Technology) and by developing skills. Most of the Industries, service units are located in the west part of these three districts. Technology business incubation centre of textile sector located at Kolhapur is the single TBI available for services in the profile districts of the study. Industrial clusters were identified for the sectors of foundry industry, grape processing, winery, turmeric processing, and leather processing by the department of industries for the promotion of SMEs. District Industries Center (DIC) at every district plays a vital role of implementing entrepreneurial schemes by providing training, funding assistance with the help of lead banks for capital requirement, and registration process of SMEs.

Table 3.1 shows development indicators of the three districts for comparison with indexes of Maharashtra. Per capita income, unemployment rate, wage and salaried persons, labor force participation rate, persons who received vocational training but not in labor force, density of population per sq. km, and percentage literacy rate are the development index parameters considered for study.

Table 3.1 Development Index Table for Comparison

Sr.No.	Development Index	Maharashtra	Satara	Sangli	Kolhapur
1.	Per Capita Income	1,17,091/-	81,488/-	1,03,991/-	1,05,623/-
2.	Unemployment Rate				
	Male	24	14	19	13
	Female	26	19	10	18
3.	Wage / Salaried persons	551	492	702	714
4.	Labor force participation rate				
	Male	763	763	761	753
	Female	354	388	436	337
5.	Persons who received vocational training but not in labor force	242	307	151	166
6.	Density population per sq.km	365	286	329	504
7.	Percentage Literacy Rate	82.34	74.1	72.62	72.91

Source: Economic Survey of Maharashtra 14-15 & Survey, Labor Bureau, GOI

The per capita income of the profile districts is less than that of the state of Maharashtra. Industrial development, micro-enterprise development and use of latest technology in agriculture are the factors to be concentrated for improvement in per capita income. Unemployment rate in female category is higher in Satara and Kolhapur. It needs to create an entrepreneurial culture among them to make self reliant. This study gives insight in the same direction.

Wage and salaried persons are less in Satara district as compared to the Maharashtra where as in Kolhapur and Sangli, it seems greater. It specifies that there is a huge potential for promotion of self employment among the youths of the profile districts. Labor force participation data shows mixed proportion to that of the state.

Vocational trained persons are more in the Satara district as compared to the state whereas there is much potential for vocational promotion in Sangli and Kolhapur.

A mixed module of vocational and entrepreneurial training is the main need of profile districts for developing entrepreneurial culture. Kolhapur district has large population density per sq. km. as compared to the state. Percentage literacy rate is less in all the districts. It shows an opportunity to develop system of entrepreneurial education even from secondary level.

3.3 Rationale and relevance of microenterprises:

The rationale of starting and promoting of micro enterprises of the western Maharashtra after entrepreneurial training is covered in this study. There is a specific relevance of enterprise promotion in the development Index. Per capita Income relates with industrial development. Majority of people in developing and undeveloped countries face the problem of poverty and unemployment. Educated youths without employability skills are the major concerns of many states as same for Maharashtra for development of entrepreneurial culture. There are so many other cultural, micro environmental and social factors those prevent the people to enter in the entrepreneurial activities.

In Earlier studies on Maharashtra's rural entrepreneurship, this environment is observed. The youths who enter in the field of entrepreneurship cannot sustain because of various factors. This study specifies that increase in sustainability of venture is possible with ICT module in training needs of entrepreneurial development programs. Traditional training needs to be integrated with skills of advanced ICT tools.

Policy support for business and economic environment including finance lending, technology incubation, and post venture creation support like marketing assistance are the two important factors in venture creation. If such facilities can be provided, it is possible to develop entrepreneurs in rural as well as in urban areas. It seems good even for micro enterprise development.

Among the number approaches and solutions to the problem of low poverty and unemployment, micro enterprises creation with empowerment of vocational and technical skills gives a great promise for development of region.

Micro enterprises can be started with small capital and with minimum competency of technical knowhow. Now a day, it is supported with specific information technology skills. Literacy of below poverty line community is low and hence they do not have a specific kind of mental block for the entrepreneurship as that of educated unemployed youth. In order to address this problem and situation, Minimum competency vocational Course (MCVC) at H. S. C level has been started in Maharashtra from 1986. In general, the age factor and economic condition of the family forces youths to prefer employment instead of starting a micro-enterprise. This is the main obstacle of developing culture of entrepreneurship.

Second aspect is related to the capital requirement and its availability. Capital is required to start very type of enterprise but for micro ventures is relatively low and it is available under various government sponsored self employment schemes. PMRY was one of the schemes of enterprise development.

Third aspect relates to its existence. Most of the micro ventures are run by the women or house wives as these could be housed even in the part of their residence. Many times it is a part time and supportive to the main income generation. Hence it has limitations to grow.

One of the main features of EDP or TEDP programs is the technical and practical exposure. It must be supported with conventional entrepreneurial inputs to the participants in business opportunity search, account keeping, market survey, trading, govt. funding schemes, manufacturing, production, and registration services. These programs are useful for the participants to start micro enterprises. It is possible with financial assistance for capital and subsidies under various schemes of self employment and enterprise development. Trainees in these programs are youths who desire to start the enterprise for their better livelihoods.

3.4 Entrepreneurship development programs:

The development index of three districts of Western Maharashtra have specific positions in the per capita value of products in the micro, small and medium scale enterprises. Density of population very is low as compared to the many other districts of Maharashtra state like Thane, Pune, and Others. This analysis relates to the policies of

ED promotion. It makes possible in three districts to promote large scale industries having potential of ancillary industries. Experiments with new technology entrepreneurship development have been an almost permanent feature of industrial promotion in these three districts over a period of decade. Organizing activities of EDPs, TEDPs, Entrepreneurship awareness camp, and innovation workshops by national and local implementation agencies was the major form of entrepreneurship development activity carried out in the districts. Most of the times, these programs were sponsored by the banks, financial institutions, NGOs and Govt. agencies. District Industries Centers (DICs), Municipal corporations, and Panchayat Raj Institutions are also the major drivers of enterprise development activities at the local level.

Majority of the programs conducted are service and product based skill development programs with vocational and technical inputs. It is necessary to conduct different programs from conventional EDP programs. In general, the major objective of the all these programs is to promote ED and also poverty alleviation by imparting skills to the participants. These ventures are useful to produce goods and provide services and also to earn money for better livelihood of participants.

In order to get the successful impact of these programs in creating new ventures, those units should be made sustainable with support system. ICT integration is one of it. This aspect is taken for the study. It was therefore decided to select samples for the study of first generation entrepreneurs who started new enterprises after the training programs completed during 2013 – 2014 and 2014 – 2015. Duration of the survey is from July to Oct. 2015. The sample units were started by the participants from two categories of control and experimental group. The experimental group was exposed with ICT tools integration with traditional ED curriculum.

3.5 Socio-economic background:

In Maharashtra state, there is a moderate rate of unemployment. It is especially because of educated unemployment and also due to absence of vocational skills. As on March 2015, there are around 36 lakh unemployed educated youths registered with the employment exchanges. Recently, the employment exchange department started of doing self employment promotion through various schemes.

In general, educational status as one of the factor in getting good marital alliance for young men and or women in Maharashtra from upper and middle class families. Most of our young men prefer an educated money earned bride and vice-versa. The women participants of EDP and or TEDP are found educated, techno-savvy with vocational skills. This is the context and profile in which, researcher analyzed the socio-economic factors of the respondents selected for the study.

Table-3.2 Age and socio-economic background of the respondents

Particulars	Number of samples	Percentage to the total number of sample
1. Gender		
Experimental Group		
Male	39	78%
Female	11	22%
Control Group		
Male	33	66%
Female	17	34%
2. Age in Years		
Experimental Group		
20 – 25	13	26%
26 – 30	20	40%
31 – 35	17	34%
36 – 40	00	00%

Control Group		
20 – 25	34	68%
26 – 30	15	30%
31 – 35	01	02%
36 – 40	00	00%
3. Economic Background of family		
Experimental Group		
Self employment	07	14%
Daily wage earner	00	00%
Private sector Job	16	32%
Govt. sector service	14	28%
Other	13	26%
Control Group		
Self employment	04	08%
Daily wage earner	00	00%
Private sector Job	17	34%
Govt. sector service	15	30%
Other	14	28%

Table 3.2 shows that percentage of the male respondents is more than that of the female respondents both in experimental and control group of the study. 78 % males are in the experimental group whereas 66% males are the control group. It shows that men are more interested in entrepreneurship for their livelihoods.

Figure 3.2 shows graphical representation of gender percentage of the Experimental group.

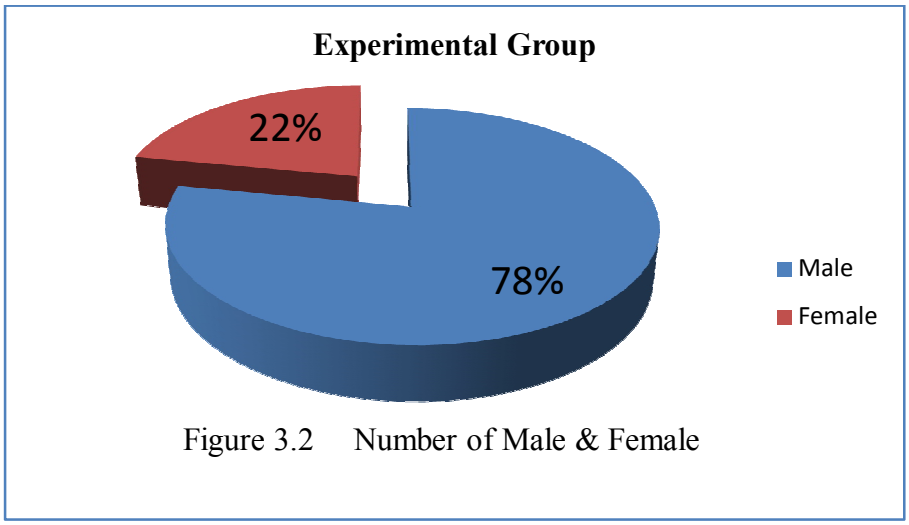

Figure 3.2 Number of Male & Female

Most of the female candidates are dependent and hence their percentage is 22 and 34 in the experimental and control group respectively. Figure 3.3 shows graphical representation of gender percentage of the control group.

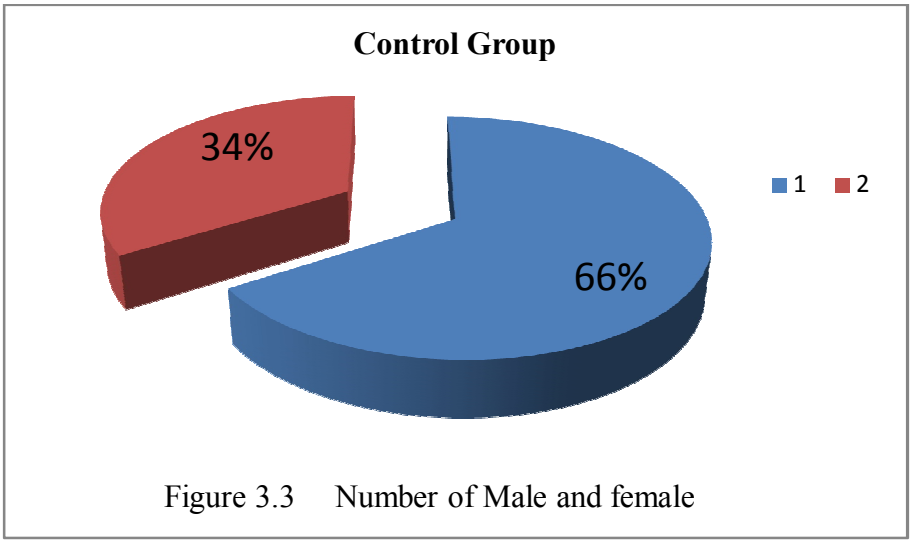

Figure 3.3 Number of Male and female

There are four age groups of the respondents for the experimental and control group. Figure 3.4 shows age group wise percentage of total respondents of the study. The youths particularly of age 26 to 30 years are more and have 40% participation. Next to this age group of 31 to 35 has 34% and 26% respondents are from age group of 20 to 25. There is no presence of respondents of age group 36 to 40.

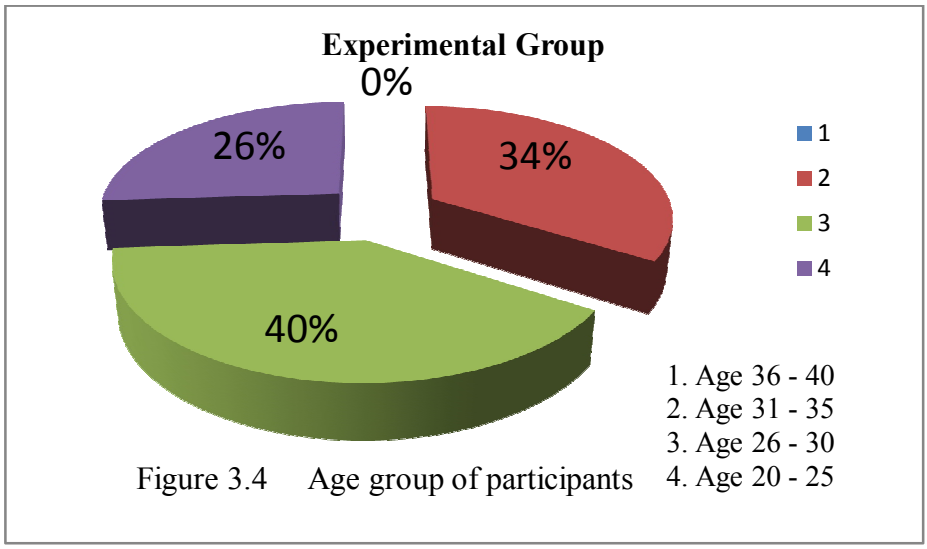

Figure 3.4 Age group of participants

Figure 3.5 shows age group wise percentage of total respondents of the study of control group. The youths particularly of age 20 to 25 years are more and have 68% participation. Next to this age group of 26 to 30 has 30% and 2% respondents are from age group of 31 to 35. There is no presence of respondents of age group 36 to 40.

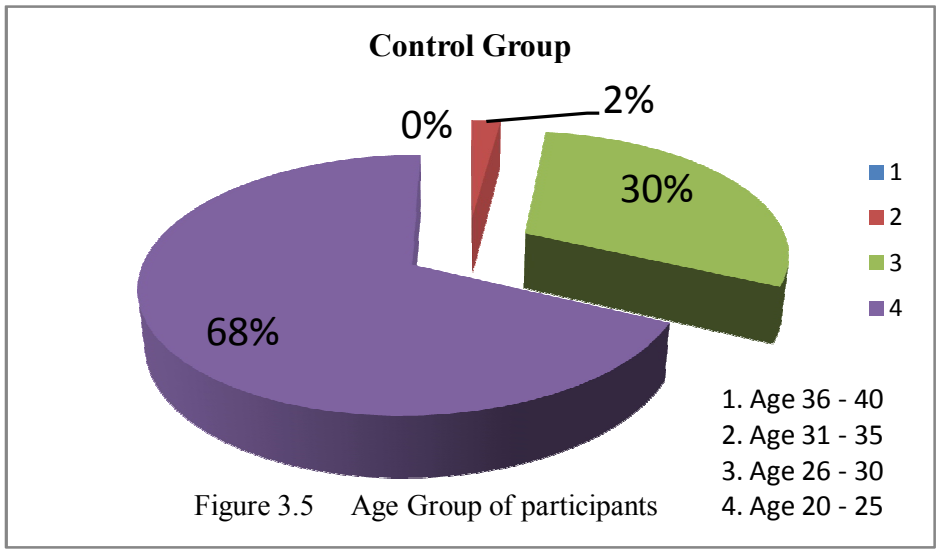

Figure 3.5 Age Group of participants

Family background of the respondents is categorized in five type i.e. self employed, daily wage earner, private sector job, Govt. sector service and other. The last other category includes farming, contract workers etc.

Figure 3.6 shows graphical representation of family background categories of respondents of experimental group. 32% respondent's families are from private sectors job, Govt. sector service background is with 28% of respondents, other category gave

26% whereas self employed background is of 14%. There are no daily wage earners as a family background of the respondents.

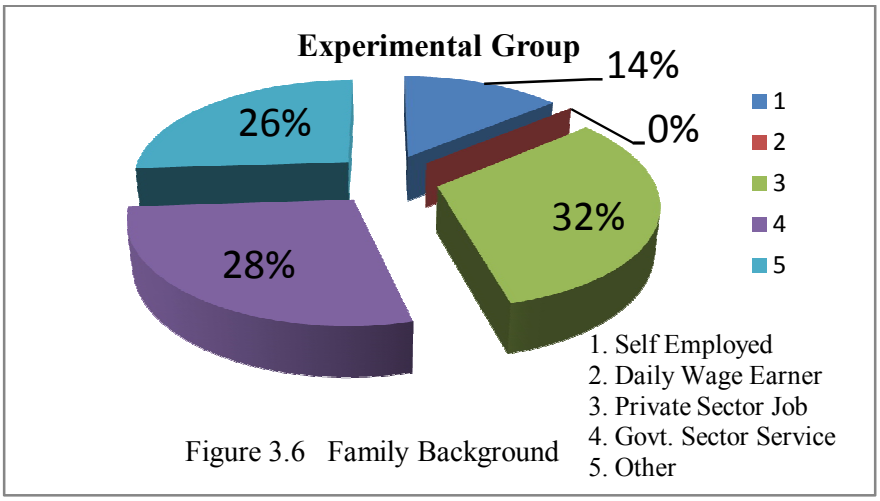

Figure 3.6 Family Background

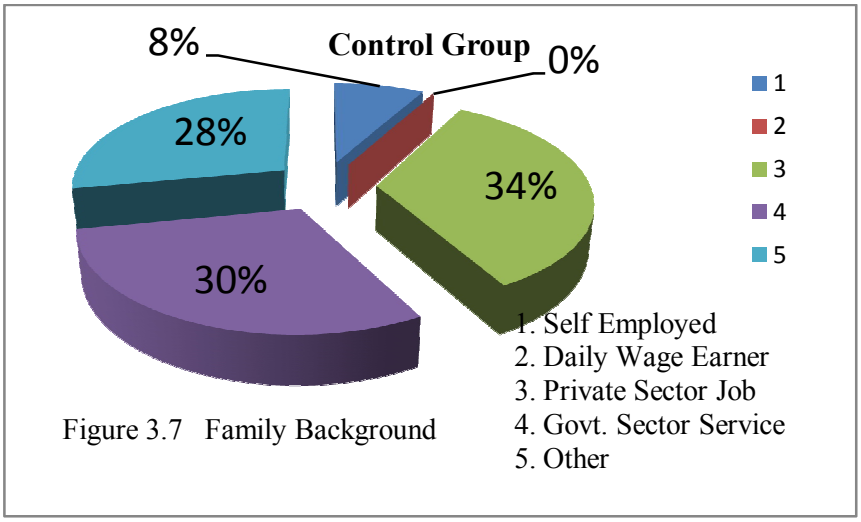

Figure 3.7 Family Background

Figure 3.7 shows graphical representation of family background categories of respondents of Control group. 34% respondent's families are from private sectors job, Govt. sector service background is with 30% of respondents, other category gave 28% whereas self employed background is of 08%. There are no daily wage earners as a family background of the respondents.

3.6 Educational background:

Vocational and technical education with development of skills plays specific role in techno-entrepreneurial career. It is found that most of the technical and management

educated youths with knowledge and with vocational skills have best conviction about entrepreneurship as a career. Such participant of ED training has different approach to look upon the commercial aspects of the enterprise with passion and commitment to the venture for its sustainability. Commercial viability of idea generation with product development is possible by management, technical and with entrepreneurial education.

A study on unemployment in Maharashtra (2007), found that, "……. Majority of highly educated youths particularly graduate and post graduate level and those who are self-employed may leave their entrepreneurship if they offered a permanent job in government or private sector……."

In the context of micro venture creation, many times there is a general approach or feeling among the youths that entrepreneurship is only for less educated and deprived people who may fail to get a job. With this cultural background one must look upon the level of education of sample trainees who responded in this study is presented in table 3.3

Table 3.3 Educational background of EDP / TEDP respondents

Educational Background of the participants with Groups	Number of Sample data	Percentage to total of sample
Experimental Group		
A. Non Technical		
SSC	06	12%
HSC	02	04%
Graduate	19	38%
Post Graduate	04	08%
B. Technical		
ITI	13	26%
Diploma Engg.	04	08%
Graduate/PG	02	04%
Control Group		
A. Non Technical		
SSC	03	06%

HSC	11	22%
Graduate	07	14%
Post Graduate	00	00%
B. Technical		
ITI	21	42%
Diploma Engg.	08	16%
Graduate/PG	00	00%

Table 3.3 shows educational background of the respondents of experimental and Control group with non-technical and technical categories. The both groups have respondents from SSC to graduate level in common. In technical category ITI, Diploma in Engineering, graduate and or PG are the main types where as Non-technical category has SSC, HSC, graduate and post graduate types to categories educational profile of respondents.

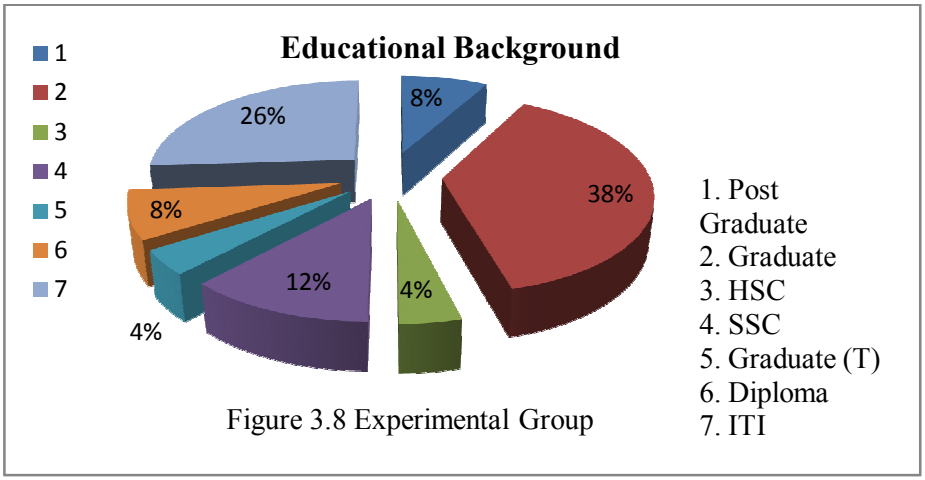

Figure 3.8 Experimental Group

Figure 3.8 shows graphical presentation of the respondents / participants of the experimental group. Non technical graduates are of high percentage (38%) as compared to ITI holders (26%). Technical degree holders and HSC respondents are in lowest percentage (4%). SSC respondents are 12% whereas Diploma holders are 8%. The total percentage of non technical respondents is 62 as of technical respondents is 38%.

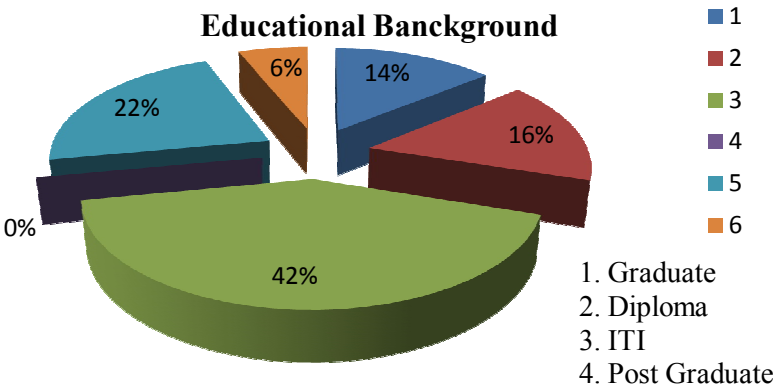

Figure 3.9 Control Group

Figure 3.9 shows graphical presentation of the respondents / participants of the control group. ITI holders are of high percentage (42%) as compared to HSC respondents (22%). SSC respondents are lowest as (6%) whereas graduates are 14%. Diploma holder's percentage is 16. The total percentage of non technical respondents is 42 as of technical respondents is 58%. Post graduate percentage is zero of both technical and non technical category.

3.7 Pre-training status:

Pre-training status of participant occupation was an important factor to analyze their success to start enterprise, after the training program**.** In general, pre-training status of participants shows his family entrepreneurial culture towards money earning attitude and thus about their livelihood. Participants with vocational skills, technical knowledge, and some kind of work experience in specified occupation can able to identify a product very easily as they have some sort of perspectives upon the venture establishments and thus to launch their enterprises.

Sometimes, education and experience gives entrepreneurial skills to the participants with additional and relevant training. The business idea generation, product selection, opportunity search, business plan, marketing and startup activity becomes a difficult process for inexperienced and also even for untrained youth. This is one sort of challenge to start and sustain the ventures of the product line in the market and may perhaps fail before. The participants those who have no option to survive and to maintain livelihoods except their enterprise are doing the best irrespective of all odds. Problem

solving tendencies and risk taking ability in such situation is most worthy in nature. The pre-training status of trainee respondents is presented in table 3.4

Table 3.4 Pre-training status of Group participants

Status of participants of Groups	Number of Sample	% to Total Sample
A. Experimental Group		
Part time Job	21	42%
Student	15	30%
Private Sector Job	07	14%
Self employed	07	14%
B. Control Group		
Part time Job	20	40%
Student	14	28%
Private Sector Job	15	30%
Self employed	01	02%

Table 3.4 shows pre-training status of respondents of the experimental and control group. Both the groups have a categorically small difference. Participants except students have some experience that gives insight for venture start-up.

Figure 3.10 shows graphical representation of pre-training status of experimental group. 30 per cent of participants did not have any work experience as their status before training is student. Majority of respondents have part time jobs (42%). Private sector job and part time job participants are 14% each.

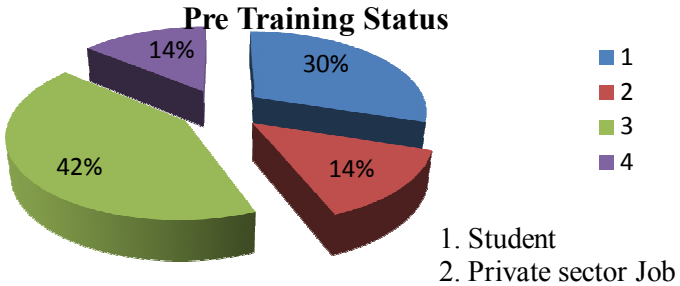

Figure 3.10 Experimental Group

In this context, it is found that self-employed, part-time or private job status of participants will surely help people with the intention to start a venture. These aspirants should require only knowledge and skills about ED procedures, formalities of registrations and managerial skills for launching venture.

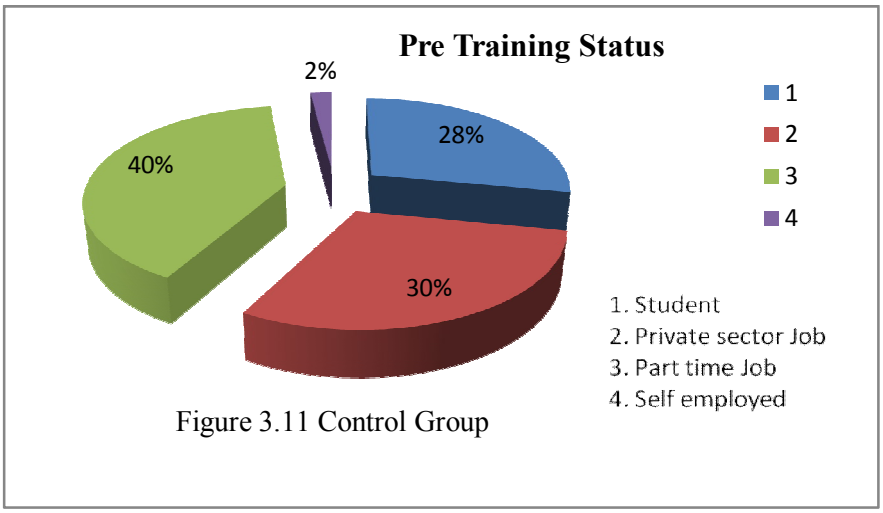

Figure 3.11 Control Group

Figure 3.11 shows graphical representation of pre-training status of control group. 28 per cent of participants did not have any work experience as their status before training is student. Majority of respondents have part time jobs (40%). Private sector job respondents are 30 % and least percentage of self employed participants is 2%.

3.8 Reasons for joining the training program:

The intention and reasons to join the program of the trainees is affecting upon the success of the EDP or TEDP regarding criteria of start-ups. It also shows the seriousness and motive with which the trainee approaches to the training program. To achieve better results about startups after ED training, the structured interview and entry level test schedule is always useful to hit targeted audience and also to assess the level of motivation of trainees.

Most of the time casual approach to attend a training program without goal setting is found because of the sponsored program. Such type of casual and liberal approach is one of the major factors of failure of any training program. The results regarding reasons to join the program of participants of both groups are presented in table 3.5.

Table 3.5 Reasons to join the program of participants

Reasons to join the program of participants of both groups	Number of Sample	Percentage to Total Sample
A. Experimental Group		
Unemployed	13	26%
Counselors suggestion	08	16%
Need of money to survive	04	08%
Possibility of getting financial assistance	11	22%
Intend to become entrepreneur	14	28%
B. Control Group		
Unemployed	17	34%
Counselors suggestion	03	06%
Need of money to survive	04	08%
Possibility of getting financial assistance	18	36%
Intend to become entrepreneur	08	16%

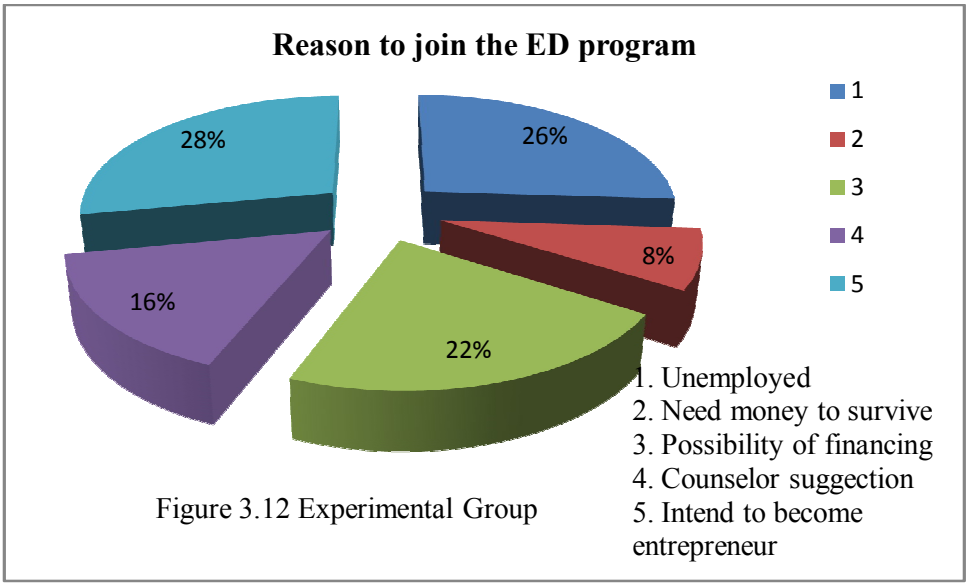

Figure 3.12 Experimental Group

Figure 3.12 shows graphical representation of various reasons to join the program of participants / respondents of experimental group. 28% participants have an intention to become an entrepreneur. It's the highest. Unemployed respondents are 26% whereas 22% participants found that there is a possibility of getting finance for the business after

training. 16% participants joined program because of counselors' suggestion whereas 8% participants needs money to survive and hence joined program to start business.

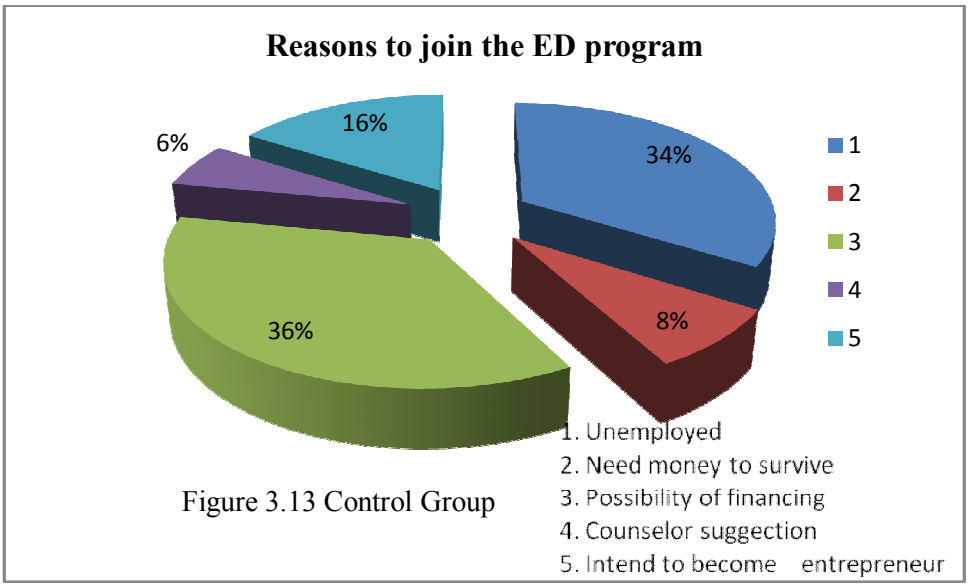

Figure 3.13 Control Group

Figure 3.13 shows graphical representation of various reasons to join the program of participants / respondents of control group. The highest 36% participants joined program due to possibility of getting finance for the business. Unemployed respondents are 34% whereas 16% participants intend to become entrepreneur after training. 8% participants joined program for their survival with doing business. 6% joined program because of counselors' suggestion.

3.9 Concluding observations:

The analysis of the socio-economic background, educational status profile and pre-training family profile of participants suggests that some of participants (36% of Experimental group and 24% of Control Group) are really prepared for an entrepreneurial career as they have strong intention to become an entrepreneur. Educated youths of technical category know more about idea generation and making it commercially viable after ED training. In Maharashtra now trends are changing in the perspective of entrepreneurship as a career option. Now it has also social acceptability on the part of achievement.

The social concern about entrepreneurship is changing because of ICT led enterprises with possibility of high end income with advanced pace of technology.

3.10 References

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CHAPTER FOUR
ANALYSIS OF AFFECTING FACTORS AND SCORES

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ANALYSIS OF AFFECTING FACTORS AND SCORES

4.1 Introduction:

Concept of Entrepreneurship has been defined by the number of ways. In general, every definition specifies various determinants of entrepreneurship development considered with different approaches and environments. These factors need to be analyzed along with entrepreneurial performance and its impact. Theory of recognizing determinants and its analysis from the various definitions is also well attempted by the many researchers. According to Kao and Stevenson, "……Entrepreneurship is the attempt to create value through recognition of business opportunity, the management of risk taking, appropriate to the opportunity and through the communicative and management skills. It mobilizes human, financial and materials resources necessary to bring a project in existence. This definition gives determinant or factors like entrepreneurial capabilities including opportunity seeking, risk taking, communication, coordination, resource utilization and project preparation those can be further analyzed…….".

There are number of research attempts made in this era. OECD has standardized determinants and also built a framework for addressing and measuring entrepreneurship development at international level. These determinants and framework is based on findings of steering group on the Entrepreneurship Indicator Project. Since 2007, it is one of the known and best resources utilized for the research in the era of EE and development. The main and important aspect of OECD framework specifies measuring entrepreneurship with addition of ICT skills. Some of the determinants are locally relevant and those are taken into consideration for the factor analysis of this research.

However, the pursuit and development of entrepreneurship education, namely the factors that affect and benefits of, entrepreneurship, are still hampered by the limited, growing, and empirical information relating to these factors and benefits. Where there are some references to entrepreneurship, most simply equate it with small and medium sized enterprises (SMEs) in general, or even numbers of self-employed. It is also applicable to the micro-enterprises. [1]

[1] Oecdorg. (2016). *Oecdorg*. Retrieved 15 June, 2015, from https://www1.oecd.org/std/business-stats/39629644.pdf

In the absence of definitions that capture the essence of entrepreneurship in changing scenario of global industrial development, the entrepreneurship indicators that are internationally comparable, policy makers are left somewhat rudderless when it comes to developing policies, particularly when they relate to learning from international best practice. [2]

In this context, it is necessary to look upon the various determinants that are globally relevant and locally specified. OECD provided such standardized framework in this context that is useful further for research.

4.2 OECD Framework Entrepreneurship Determinants / Factors:

At international level, some of the organizations started to develop ED programs. The World Bank, private global organizations, Eurostat, and the Global Entrepreneurship Monitor are few of them. Even with such strong efforts, it is fair to say that some of other efforts capture entrepreneurship, neither conceptually, nor empirically in a comprehensive manner. We all recognize that entrepreneurship is a multi-faceted activity and phenomenon of which they measure one or some indicators of performance and aspects. It is also important to note that developments and initiatives at the regional level rarely provide for international comparability inputs but some efforts of national institutes like NSTEDB, EDII, and NIMSME are remarkable in all the respect of global standards. Standardized OECD framework has a specific relevance in the context of internationally comparable and accepted indicators.

The Kauffman Foundation of the USA and OECD undertake a scoping study to determine the feasibility of developing high quality, comparable international data on entrepreneurship and its determinants in 2005-06. Danish led international consortium has also provided funding for various specific data development projects of ED. This OECD framework is the outcome of this activity.

Entrepreneurs are those persons or business owners who seek to generate value, through the creation or expansion of economic activity, by identifying and exploiting new

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[2] Oced, . (2015). *The OECD-Eurostat Entrepreneurship Indicators Programme (EIP)*. Retrieved 15 June, 2015, from www.oecd.org/statistics/entrepreneurshipindicators

products, processes or markets, Entrepreneurial activity is the enterprising human action in pursuit of the generation of value, through the creation or expansion of economic activity, by identifying and exploiting new products, processes or markets., and Entrepreneurship is the phenomenon associated with entrepreneurial activity. [3]

While framing the determinants or factors, OECD is focused deliberately to target profit earned entrepreneurship, and, so, explicitly ignored social entrepreneurship. This research also does not have any statistical data related to the social entrepreneurship.

4.2.1 Structure of Determinants of entrepreneurship:

Determinant, Entrepreneurial performance, and Impact are three separate but inter connected flows of OECD framework. All of these are important in the formulation, assessment and appraisal of policy measures. Determinants reflect the key factors that affect entrepreneurial performance.

According to the OECD, "…….Entrepreneurial performance reflects the target indictors that policy makers believe have an impact on some or many ultimate objectives. Impacts reflect the value created by entrepreneurs and entrepreneurship. Entrepreneurial performance measures the entrepreneurial actions that are instrumental in delivering the impacts…….".

Multitude of possible impacts those are locally important to replicate. It follows that there is also a multitude of entrepreneurial indicators to be focused during the measure of impact. Different countries or locals will therefore choose to focus on different indicators of performance depending on their interests and priorities. Number of environmental and sociological factors coupled with the personal attributes of entrepreneurs are always affecting on the outcomes of the entrepreneurial process. All of these factors and attributes are expressed in the determinants for entrepreneurship. This is the basic reason due to which, some of the determinants are different but with the same components of impact.

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[3] Nadim ahmad and richard g seymour. (2008). *Oecdorg*. Retrieved 20 May, 2015, from http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?doclanguage=en

The major social and economic objectives related to entrepreneurship impact in the context of this framework have been specified as job creation, economic growth and poverty alleviation. These impact indicators of EE naturally remain same in most of the contexts of the entrepreneurship. OECD specified as, ".…….Firm, Employment and wealth are the main entrepreneurial performance indicators. Regulatory framework, with technology, entrepreneurial capabilities, culture, access to finance, and market conditions are the six main indicators for performance and impact of entrepreneurship. All these six determinants are for making more accurate analysis in the different business environments. There are total 37 such indicators categories under these six determinants……".

4.3 Affecting Factors on starting and running Business:

Some of the entrepreneurial determinants with performance and impact indicators of OECD with additional ICT tools were considered for analysis of affecting factors to start the business. Number of determinants merged together to know about the parameters of specific performance further to compare experimental and control group. This merger of determinants is based on entrepreneurial culture and business environment of the sample. Affecting factors have been analyzed with ICT competencies of the Experimental and Control group participants. Belonging of Electronic gadgets and its use for enterprise development is the major concern taken into consideration.

Type of electronic device, it's operating system, internet connection, type of the connectivity, use of device for professional calling, Messaging & Instant messaging, Use of email and social media platforms, Online booking and billing systems for enterprise, gaming, video watching and listening audios, and score of the effective twenty five parameters are analyzed in this study.

According to UNCTAD (2010), the entrepreneurship policy framework addresses six areas that have a direct impact on entrepreneurial activity: the general entrepreneurship policy; awareness and network building; entrepreneurship education and skills, research and development (R and D), technology transfer, and the regulatory framework. To complement the framework, the paper identifies indicators that monitor

three main entrepreneurship policy objectives: firm foundation; employment; and wealth creation. [4]

4.4 Analysis of ICT Infrastructural facilities for the enterprise:

ICT infrastructural facilities are very important for ICT led enterprise service and its management. Use and selection of the device for ICT is very important for the development of enterprise during startup and even after establishment.

4.4.1 Mobile Devices owned and its use

ExpDevice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	10	20.0	20.0	20.0
	2.00	39	78.0	78.0	98.0
	3.00	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

Table 4.1 Analysis of "Use of Mobile Devices for enterprise" of Experimental Group

Mobile phone, Smart phone, and Laptop are the three devices used for enterprise development. 78% of the respondents have mobile phone whereas 20% respondents have smart phones and rest 2 % has a laptop for enterprise activities. There is a much difference of having own mobile devices and use of such devices for the enterprise.

ConDevice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	41	82.0	82.0	82.0
	2.00	7	14.0	14.0	96.0
	3.00	1	2.0	2.0	98.0
	8.00	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

Table 4.2 Analysis of "Use of Mobile Devices for enterprise" of Control Group

[4] Unctadorg. (2010). *Unctadorg*. Retrieved 24 May, 2015, from http://unctad.org/en/Docs/ciimem1d6_en.pdf

Mobile phone, Smart phone, and Laptop are the three devices used for enterprise development in control group respondents. 82% of the respondents have mobile phone whereas 14% respondents have smart phones and rest 2 % has a laptop and other devices for enterprise activities.

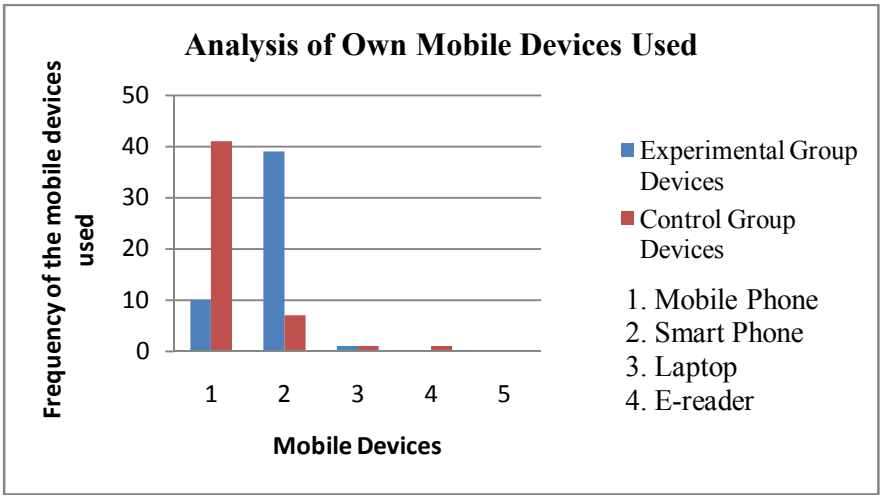

Figure 4.1 Analysis of own Mobile devices used

The major interpretation of this factor is: Thirty nine (39) experimental group respondents have smart phones whereas only 07 control group respondents have their own smart phones for its use for enterprise activities. This remarkable difference is because of ICT skills acquired by the experimental respondents to make enterprise more sustainable with ICT.

4.4.2 Operating System used for ICT Services of the enterprise:

ExpOS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	46	92.0	92.0	92.0
	2.00	2	4.0	4.0	96.0
	4.00	2	4.0	4.0	100.0
	Total	50	100.0	100.0	

Table 4.3 Analysis of "Operating system used in Devices" of experimental group

The percentage of android operating system users of experimental group respondents is 92. Only 4% respondent used Apple and 4% used IOS.

ConOS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	48	96.0	96.0	96.0
	2.00	1	2.0	2.0	98.0
	8.00	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

Table 4.4 Analysis of "Operating system used in Devices" of control group

The percentage of android operating system users of control group respondents is 96. Only 2% respondent used Apple and IOS respectively.

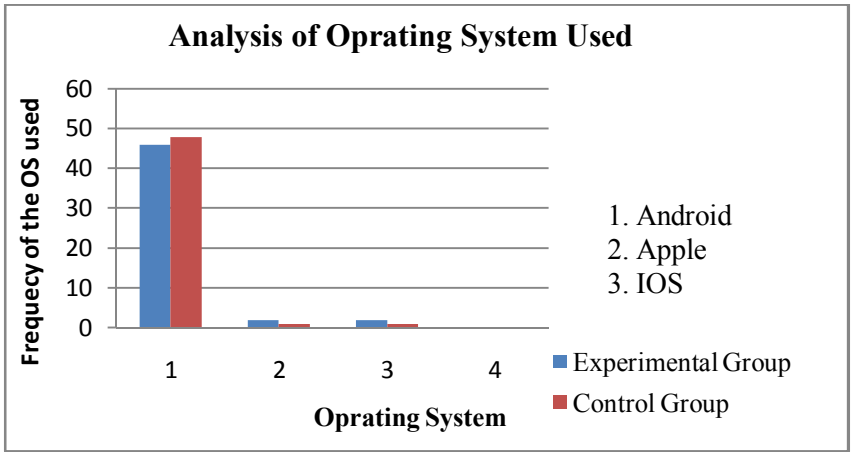

Figure 4.2 Analysis of OS used by Experimental & Control Group respondents

The Android operating system (OS) is dominantly used by the both groups for enterprise development. 46 and 48 respondents from experimental and control group used this OS.

4.4.3 Mobile Internet Connectivity Use:

ExpMIU

		Frequency	Percent	Valid Percent	Cumulative %
Valid	1.00	49	98.0	98.0	98.0
	2.00	1	2.0	2.0	100.0
	Total	50	100.0	100.0	

Table 4.5 Analysis of "Mobile internet connectivity use" of experimental group

Percentage of respondents of experimental group using mobile internet is 98. Only 2% are not using mobile internet.

ConMIU

		Frequency	Percent	Valid Percent	Cumulative %
Valid	1.00	48	96.0	96.0	96.0
	2.00	2	4.0	4.0	100.0
	Total	50	100.0	100.0	

Table 4.6 Analysis of "Mobile internet connectivity use" of control group

Percentage of respondents of control group using mobile internet is 96. Only 4% are not using mobile internet.

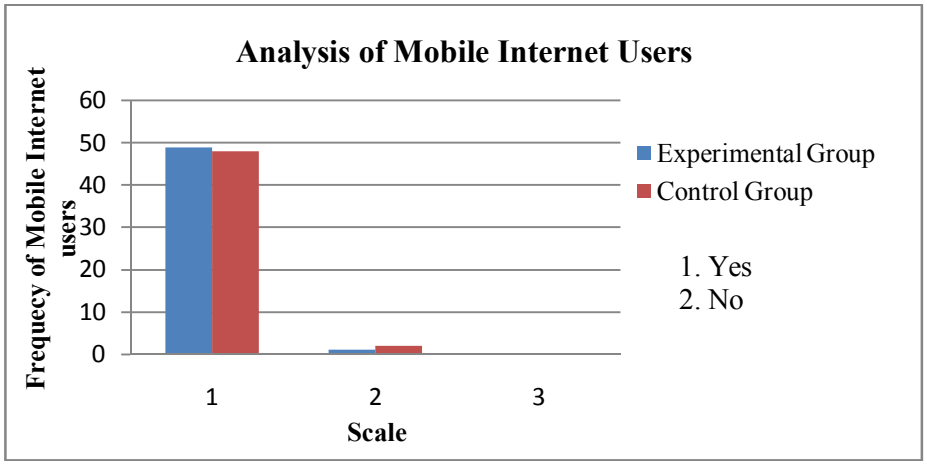

Figure 4.3 Analysis of Mobile Internet users of Experimental & Control Group

Mobile internet use among the respondents for enterprise activities is popular as 49 users are from experimental group and 48 are from control group.

4.4.4 Use of 2G Internet Connectivity for enterprise:

ExpTIC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	18	36.0	36.0	36.0
	2.00	20	40.0	40.0	76.0
	3.00	12	24.0	24.0	100.0
	Total	50	100.0	100.0	

Table 4.7 Analysis of "2G internet connectivity use" of Experimental group

36% respondents never used 2G connectivity whereas 40% respondents use it for sometimes. 24% respondents used 2G connectivity. It shows that experimental group respondents are well known about use internet connectivity.

ConTIC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	29	58.0	58.0	58.0
	2.00	13	26.0	26.0	84.0
	3.00	8	16.0	16.0	100.0
	Total	50	100.0	100.0	

Table 4.8 Analysis of "2G internet connectivity use" of Control group

Everyone of control group is not using 2G internet connectivity. 16% respondents of this group always used 2G internet connection whereas 29% respondents never used it. The comparative analysis of both groups is as shown in figure 4.4

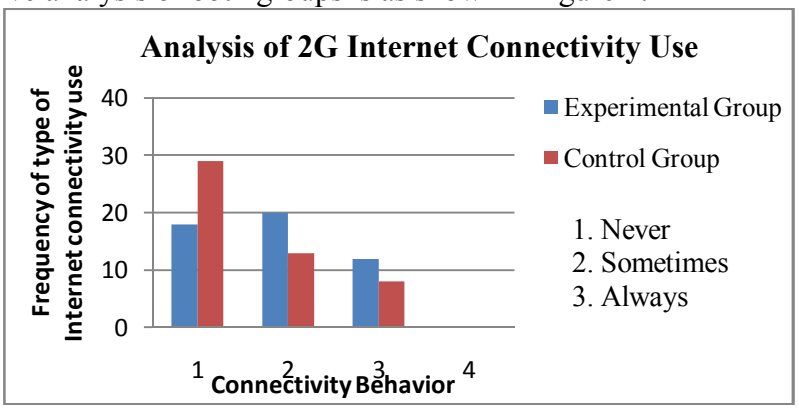

Figure 4.4 Analysis of 2G Internet users of Experimental & Control Group

Frequency of always using 2G internet users is more in the experimental group (12) than the control group (08). Sometime users are more in experimental group (20) than the control group (13). This analysis relates with the use of 3G connections and use of Wi-Fi as both are fast than the 2G connectivity.

4.4.5 Use of 3G Internet Connectivity for enterprise:

ExpTIC3G

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	4	8.0	8.0	8.0
	2.00	12	24.0	24.0	32.0
	3.00	34	68.0	68.0	100.0
	Total	50	100.0	100.0	

Table 4.9 Analysis of "3G internet connectivity use" of Experimental group

More respondents 68% used 3G connectivity always where as only 8% respondents never used it. Sometime 3G users are 24% in experimental group.

ConTIC3G

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	4	8.0	8.0	8.0
	2.00	12	24.0	24.0	32.0
	3.00	34	68.0	68.0	100.0
	Total	50	100.0	100.0	

Table 4.10 Analysis of "3G internet connectivity use" of control group

More respondents 68% used 3G connectivity always where as only 8% respondents never used it. Sometime 3G users are 24% in control group.

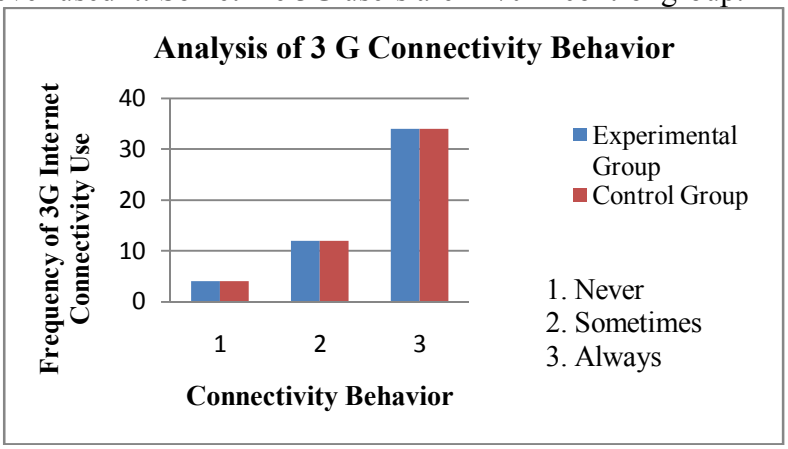

Figure 4.5 Analysis of 3G Internet users of Experimental & Control Group

The 3G connectivity behavior in both groups is same as reflected in figure 4.5

4.4.6 Use of Wi-Fi Internet Connectivity for enterprise:

ExpTIVWF

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	11	22.0	22.0	22.0
	2.00	37	74.0	74.0	96.0
	3.00	2	4.0	4.0	100.0
	Total	50	100.0	100.0	

Table 4.11 Analysis of "Wi-Fi internet connectivity use" of experimental group

Sometime users of Wi-Fi connectivity are more as 74% in the experimental group whereas 22% respondents never used it.

ConTIVWF

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	37	74.0	74.0	74.0
	2.00	11	22.0	22.0	96.0
	3.00	2	4.0	4.0	100.0
	Total	50	100.0	100.0	

Table 4.12 Analysis of "Wi-Fi internet connectivity use" of control group

74% respondents of control group never used Wi-Fi connectivity. Sometime users are 22% and only 4% respondents were used it.

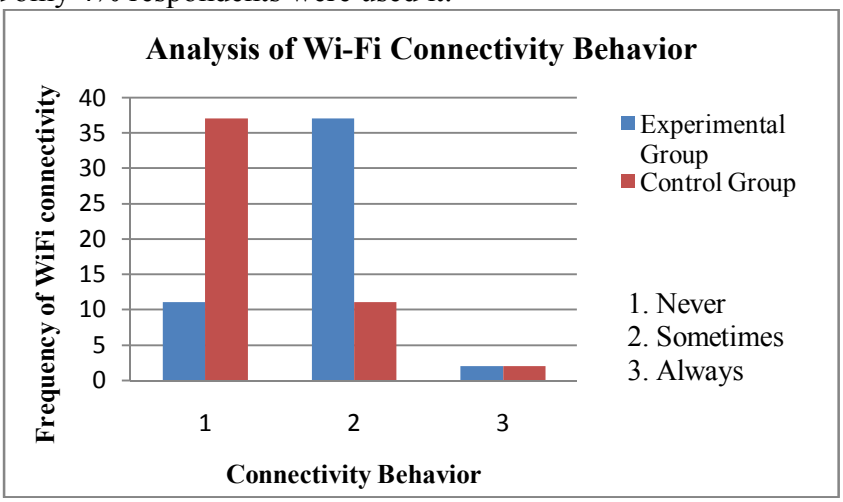

Figure 4.6 Analysis of Wi-Fi Internet users of Experimental & Control Group

Sometime Wi-Fi users are more in the experimental group (37) than the control group (11) whereas never Wi-Fi users are more in the control group (37) than the experimental group (11). Always users category is same in both groups.

4.5 Use of ICT competencies for enterprise:

Various ICT competencies for the effective utilization of resources in enterprise development are considered and headed under ten categories. Mobile calling, messaging through available electronic devices, instant messaging through apps, emails conversations, use of social media sites for promotion and activities of the enterprise, internet surfing, online booking and billing procedures, gamming, use of videos, and audio listening through various available platforms are the specified ICT competencies for study of effectiveness in entrepreneurship development.

4.5.1 Comparative Analysis of ICT competencies:

Mobile Calling and Messaging:

Two competencies like mobile calling and messaging through electronic gadgets for development of enterprise of experimental and control group respondents have been compared with as shown in the table 4.13 Three point scale was used to compare the both ICT competencies of the experimental and control group of the respondents.

ICT Competencies	Scale	Experimental Group	Control Group
Calling	1	3	1
	2	6	1
	3	41	48
Messaging	1	2	1
	2	8	1
	3	40	48

Table 4.13 ICT competencies: Calling and Messaging

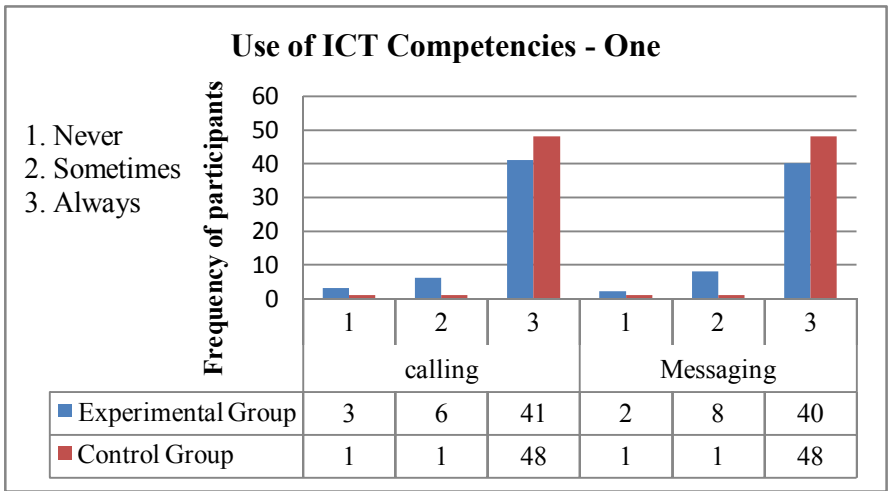

Figure 4.7 ICT Competencies: Calling and Messaging

The frequency of calling always of control group respondents (48) is more than the experimental group respondents (41). The same behavior is observed in messaging as 40 in experimental group and 48 in control group. This is first stage ICT competency and hence experimental group respondents are not using these two competencies as always.

Instant messaging and E-mailing:

These two are higher level of ICT competencies than the previous group-one. Table 4.14 shows behavior of using these two skills for the enterprise.

ICT Competencies	Scale	Experimental Group	Control Group
Instant Msg	1	7	12
	2	18	17
	3	25	21
E-mailing	1	2	17
	2	13	24
	3	35	9

Table 4.14 ICT competencies: Instant Messaging and Emailing

This data specifies that experimental group respondents used instant messaging always for enterprise (25) more than that of control group (21). Sometimes users are also higher in experimental group. Never users are less in experimental group (07) than the control group (12)

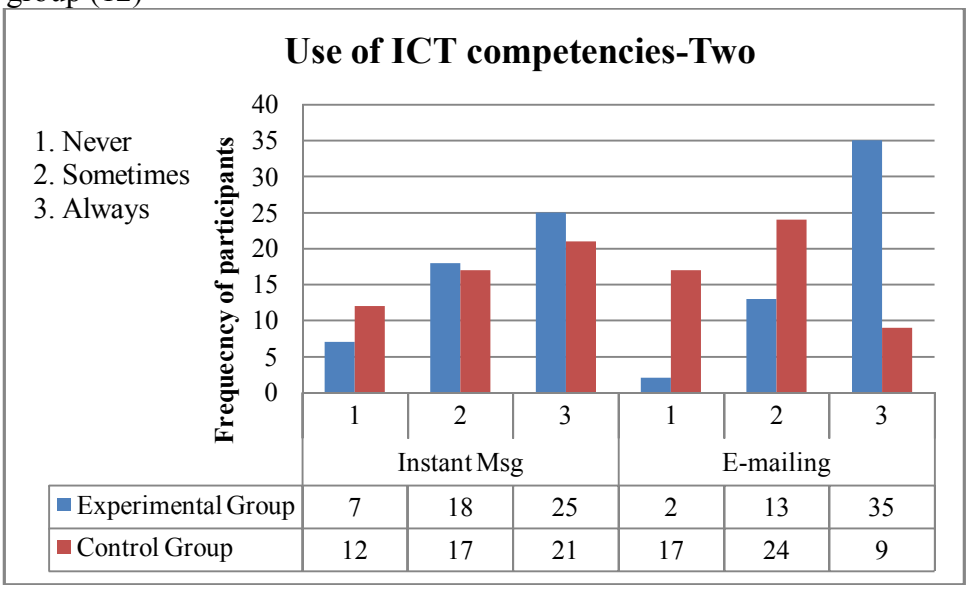

Figure 4.8 ICT Competencies: Calling and Messaging

Always using of E-mail and thus this skill was also on the top priority of the experimental group respondents (35) and very few (09) of control group respondents used emails always for enterprise but used it sometimes (24). Control group respondents never used emails were 17 and only 2 are from experimental group. This shows that, these ICT tools were effective as far as the business communication is considered.

Social networking sites and Internet surfing:

Networking for business promotion, and targeted hits for sale are the two important aspects of the any business. We need to analyze two ICT tools in this era. Table 4.15

ICT Competencies	Scale	Experimental Group	Control Group
Social Media	1	2	22
	2	18	21
	3	30	7
Internet Surfing	1	5	28
	2	16	15
	3	29	7

Table 4.15 ICT Competencies: Social Media and Internet Surfing

Social media platforms found effective as 30 users of experimental group used it always whereas only 7 from control group used it. This number of control group respondent is so small because of unknown skill. These respondents have awareness about this ICT tool and they tried it for sometime (21).

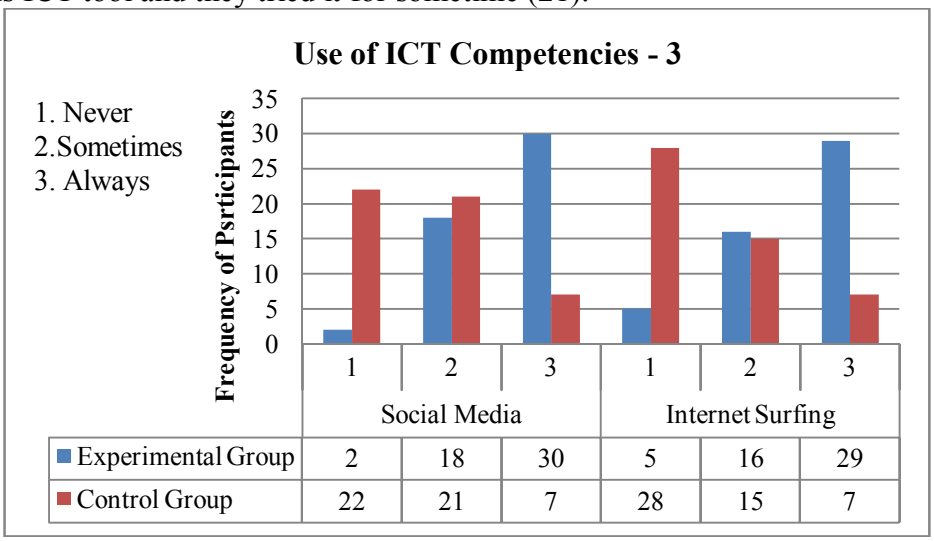

Figure 4.9 ICT Competencies: Social Media and Internet Surfing

Always users of internet surfing in experimental group are 29. It is much higher than the control group (07). Sometime users in experimental group (16) are also higher than the control group (15). Respondents those who never used internet for professional and enterprise development with surfing of control group 28. This number is substantial. It shows absence of understanding about the power of internet for business development.

Online booking / Billing and Gaming:

Reseller platforms, on line presence of enterprise, gaming and simulations for skills development are the present scenario of online enterprise.

ICT Competencies		Experimental Group	Control Group
Online Booking & Billing	1	7	39
	2	22	8
	3	21	3
Gaming	1	27	31
	2	21	6
	3	2	13

Table 4.16 ICT competencies Online Booking / Billing and Gaming

Always making "Online booking and billing" for enterprise by the respondents of experimental group were 21. This show advanced ICT skills required to do these things have been acquired. This number (21) with sometimes users (22) is also specifying trending of using ICT tools for the business. 39 respondents of control group never used online booking and billing. It shows absence of these advance skills amongst them.

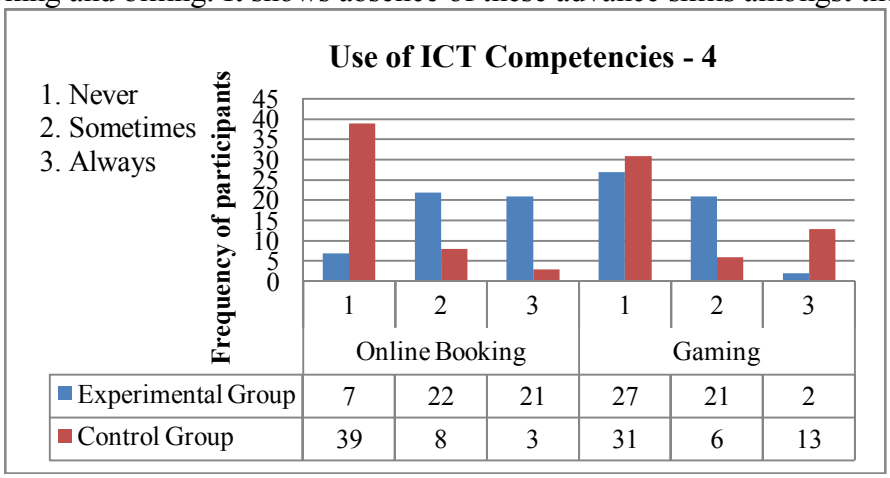

Figure 4.10 ICT Competencies: Online Booking and Gaming

Gaming users are more in the control group (31) than the experimental group (27). Never users' number in both groups is substantial. It is because of conceptual unknown the scenario of using games for business development with simulations.

Use of Video and Audio Listening:

Creation of video of the product, promotional enterprise video watching, audio contents listening, product song creation and listening, putting product videos on YouTube and its e-market are the new ICT skills for the enterprise. Table 4.17 shows data for comparison.

ICT Competencies	Scale	Experimental Group	Control Group
Watching Videos	1	15	32
	2	31	6
	3	4	12
Audio Listening	1	14	27
	2	32	5
	3	4	18

Table 4.17 ICT Competencies: Video watching and audio listening

The frequency of experimental group respondents watching product videos sometimes for the enterprise is 31 whereas always watching video respondents of control group were 32. This data shows that experimental group respondents are more professional that they are watching videos only it is essential.

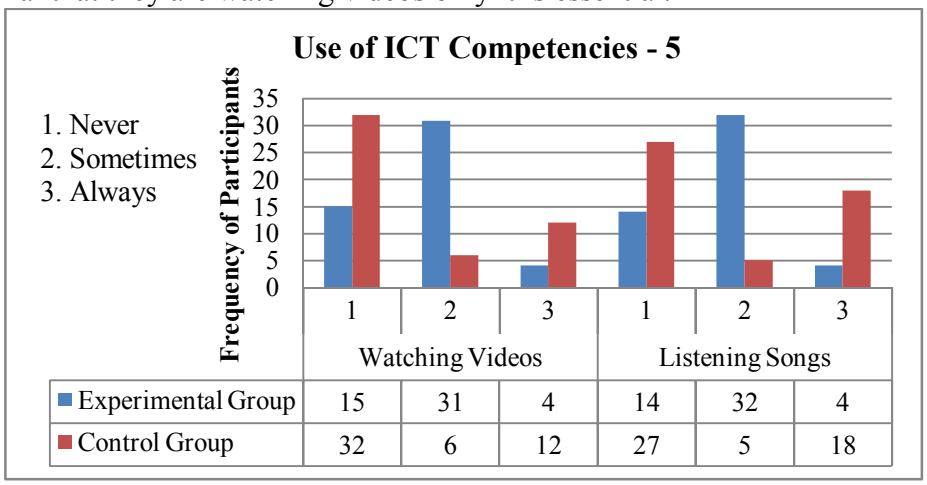

Figure 4.11 ICT Competencies: Watching Videos and listening songs

The frequency of experimental group respondents listening audio and songs sometimes for the enterprise is 32 whereas always listening respondents of control group were 27. This data shows that experimental group respondents are more professional that they are listening audio-songs of the product only it is essential and if it is related.

4.6 Analysis of Data of Groups:

Data collected from the experimental and control groups are further analyzed to draw logical inferences from them. Nominal, ordinal, and interval level methods of measurement are done to draw inferences. In order to analyze the data mean, std. deviation, frequency and normal curve of distribution are taken into consideration for case processing of each case.

4.6.1 Experimental Group:

This group was exposed to the EDP training with curricula of ICT competencies. The score data of each respondent from random sample of 50 has been taken for analysis. With five point scale, the maximum score value is 125 and minimum is 25.

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Experimental	50	100.0%	0	0.0%	50	100.0%

Table 4.18 Case processing of Experimental group

Case processing summary of experimental group shows 100% included of 50 respondents of samples and excluded percentage is zero.

Report

Experimental

Mean	N	Std. Deviation
104.7000	50	11.44329

Table 4.19 Report of Experimental group

The mean of the experimental group is 104.7000. It is arithmetic average and it gives measurement of central tendency. It is the representative figure of the entire mass of data of 50 respondents. Standard deviation is 11.44329. It shows measure of dispersion of the series.

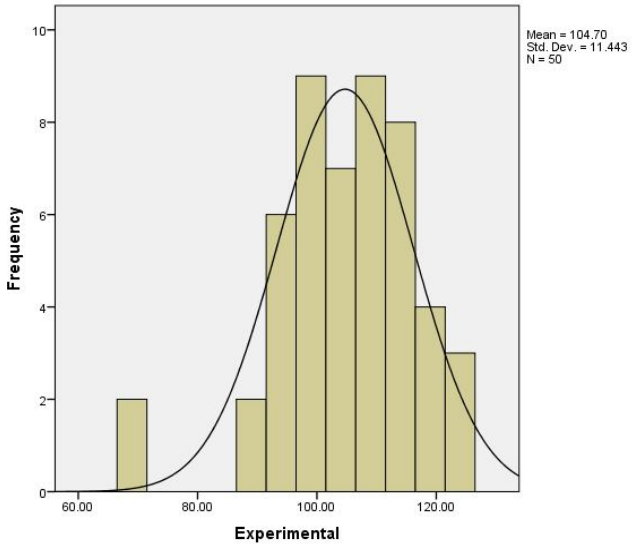

Figure 4.12 Histogram of normal frequency distribution of scores

4.6.2 Control Group:

This group was exposed to only EDP training without curricula of ICT competencies. The score data of each respondent from random sample of 50 has been taken for analysis. With five point scale, the maximum score value is 125 and minimum is 25.

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Control	50	100.0%	0	0.0%	50	100.0%

Table 4.20 Case processing summary of control group

Case processing summary of experimental group shows 100% included of 50 respondents of samples and excluded percentage is zero.

Report

Control

Mean	N	Std. Deviation
60.4600	50	22.41921

Table 4.21 Report of Control Group

The mean of the control group is 60.4600. It is arithmetic average and it gives measurement of central tendency. It is the representative figure of the entire mass of data of 50 respondents. Standard deviation is 22.41921. It shows measure of dispersion of the series.

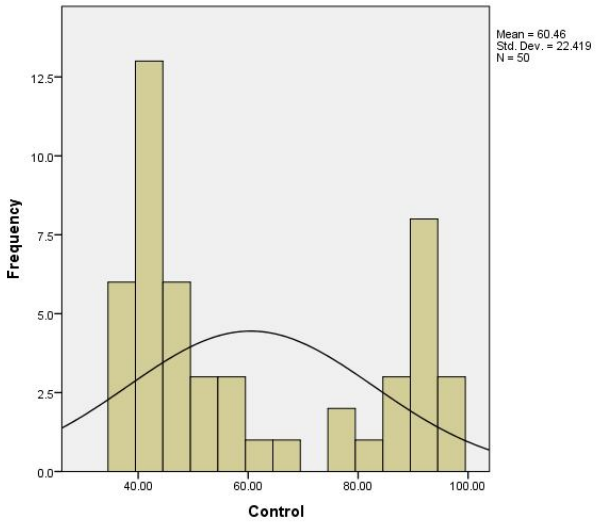

Figure 4.13 Histogram of normal frequency distribution of scores

4.6.3 Experimental and Control Group:

Comparative analysis of data from respondents of experimental and control group is done to draw inferences. Table 4.22 shows case processing summary of both groups.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Experimental	50	100.0%	0	0.0%	50	100.0%
Control	50	100.0%	0	0.0%	50	100.0%

Table 4.22 Case processing summary of experimental and control group

Data collected from respondents of the both groups is 100% valid and missing data in both groups is 0%.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Experimental	50	69.00	124.00	104.7000	11.44329
Control	50	37.00	97.00	60.4600	22.41921
Valid N (listwise)	50				

Table 4.23 Comparative descriptive Statistics of experimental and control group

This table shows measure of dispersion to locate centre of distribution of the both groups for comparison. In case of experimental group range is 55 = (124 – 69). In control group range is 60 = (97 – 37). The mean and standard deviation of two groups shows significant difference. The list wise data from respondents is valid. This comparative analysis is also shown in the figure 4.14.

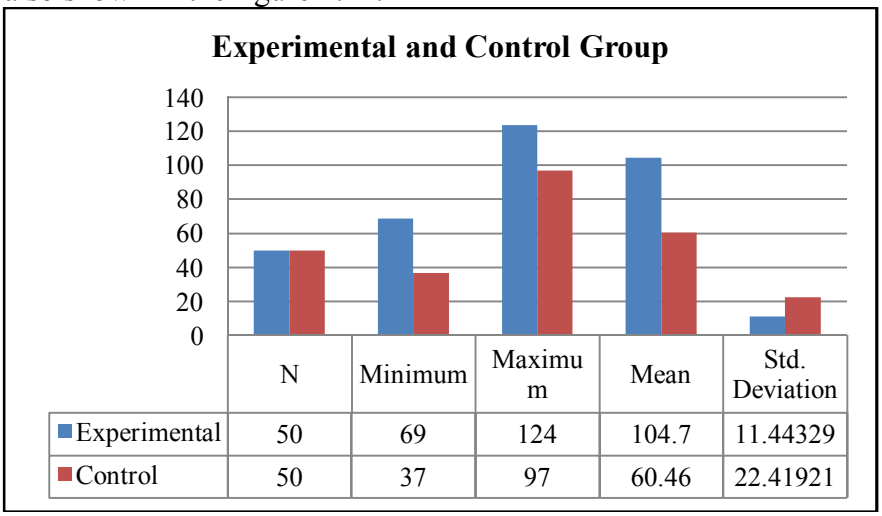

Figure 4.14 Analysis two groups

Various statistical measures of experimental group from the analysis on the respondent's data are shown in the table 4.24. Mean, median, variance, standard deviation, range, skewness, kurtosis, and standard error are the main indices.

			Statistic	Std. Error
Experimental	Mean		104.7000	1.61833
	95% Confidence Interval for Mean	Lower Bound	101.4479	
		Upper Bound	107.9521	
	5% Trimmed Mean		105.3778	
	Median		106.0000	
	Variance		130.949	
	Std. Deviation		11.44329	
	Minimum		69.00	
	Maximum		124.00	
	Range		55.00	
	Interquartile Range		15.25	
	Skewness		-.902	.337
	Kurtosis		1.719	.662

Table 4.24 Descriptive analysis measures of experimental group.

Various statistical measures of control group from the analysis on the respondent's data are shown in the table 4.25. Mean, median, variance, standard deviation, range, skewness, kurtosis, and standard error are the main indices.

			Statistics	Std. Error
Control	Mean		60.4600	3.17055
	95% Confidence Interval for Mean	Lower Bound	54.0885	
		Upper Bound	66.8315	
	5% Trimmed Mean		59.7667	
	Median		49.5000	
	Variance		502.621	
	Std. Deviation		22.41921	
	Minimum		37.00	
	Maximum		97.00	
	Range		60.00	
	Interquartile Range		44.75	
	Skewness		.558	.337
	Kurtosis		-1.463	.662

Table 4.25 Descriptive analysis measures of control group

Descriptive analysis measures of the experimental and control groups listed in table 4.24 and 4.25 shows significant difference of the scores. These indices are compared for analysis of scores of the both groups. It shows significant difference.

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CHAPTER FIVE

AFFECTING FACTORS ON THE RESPONDENT ENTREPRENEURS AND ANALYSIS

CHAPTER FIVE

AFFECTING FACTORS ON THE RESPONDENT ENTREPRENEURS AND ANALYSIS

5.1 Introduction

5.2 General Affecting Factors

5.2.1 Economic

5.2.2 Social

5.2.3 Psychological

5.2.4 Factor of trending technological gadget and its use

5.3 Specific affecting factors

5.3.1 Techno-entrepreneurship and Technology Training

5.3.1.1 Techno-entrepreneurship

5.3.1.2 Technology Training

5.3.2 Affected Factor of Content Delivery system

5.3.3 Affected Factors of Methodology of Training

5.3.4 Affected Factors related to curriculum

5.4 Testing of hypothesis

5.4.1 Setting up of a hypothesis

5.4.2 Setting up of significance level

5.4.3 Determination of Test

5.4.4 Procedure for Testing

5.5 References

5.1 Introduction:

Experimental and Control group respondent entrepreneurs were exposed to different environments of entrepreneurial training and contents. Traditional entrepreneurial training has been given to the control group respondents whereas ICT integrated training have been given to the experimental respondents with the use of recent information technology tools. The competencies developed among the respondents after training were different in nature to develop their enterprise and make it sustainable. The process adopted for respondents from selection till the post startup was reflected upon the affected factors.

In general without social, economical, political and technological requirement, an entrepreneur cannot frame, finalize and implement business plan after the process of ideation. Actually this is the environment that controls and further regulates all the entrepreneurial activities. All these environments which are directly and specifically affect on the ED. These are the affecting factors on entrepreneurship and its sustainability. These factors can be categorized into four groups as Individual factors, Psychological factors, Environmental factors, and Socio-cultural factors.[1]

Services support for entrepreneurial training and post training mentoring and incubation for establishing enterprise are the also the important affecting factors in general whereas content delivery process, methodology of training, curriculum, and techno-entrepreneurship and technology training are the specific affected factors upon the respondent to study effectiveness. It means affecting factors upon the respondents needs to be categorized in general and specific. The common affected factors on both the respondents were economical, psychological, social, pedagogical, and trend of technology use culture.

Worldwide Noted researchers identified number of the affecting factors that on entrepreneurial development. Few of these as summarized in Table 5.1. Most of these factors are common with the affected factors upon the respondents.

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[1] Scribdcom. (2015). *Scribd*. Retrieved 8 May, 2015, from https://www.scribd.com/doc/44851045/Factors-Affecting-Entrepreneurship

Table 5.1 Affected factors on ED

Researcher	Affecting factors
Ross Levine	Status mobility system Outstanding performance Achievement motivation Self reliance.
Joseph Schumpeter	Suitable Entrepreneurial environment Grasping and supporting Institutions
Christopher Bingham	High market demand for product Industrial or business Experience
John Kunkel	Values and attitudes Personality factors Variables to understand theory and actions
Sujosh Nandy	Supportive community Self-image Values to an entrepreneurial career.
Max Weber	Protestant Ethics Religious belief system
Cochran	Attitude towards occupation Role expectations Operational requirements of the job
McClelland	Desire for taking responsibility Need to achieve Interest in moderate risk taking Concentrate in task performance Goal setting
Slavica Singer	Occupational culture Process of modernization Interest in Special opportunities Traditional belief conditions

Guy Hagen	Creative personality. High need achievement Problem solving ability Positive attitudes
Staley & Morse	Quality of services Managerial ability Industrial research

Table 5.1 Affected factors on ED

5.2 General Affecting Factors:

Economical, psychological, cultural, social, and trending of technological gadgets use are the main affected factors upon the respondent entrepreneurs. These factors gave considerable impact upon the startup of the enterprise and also upon its sustainability in the market.

5.2.1 Economic factors:

The major factors that affecting on the economic environment of the respondents are as follows:

a. Economic Conditions:

The economical conditions and thus financial situations of a geographical area of respondents directly gives effect to the number of factors that is of great impact upon startup enterprises and their activities. Such factors are: Gross domestic product (GDP), markets potential for products and services, use of e-commerce for a sale and service of a product, availability of capital, growth of foreign trade, sale in foreign exchange, per capita income, customer's purchase power, and strength of capital market etc. Such factors are influencing upon the pace of economic growth. Loan availability from the banks, credit lending procedures, availability of cash credit from bank, trade credit are also found major factors of affecting.

b. Economic Policies:

The economic policies of the state Government of Maharashtra gives directly effect and influence on the activities of enterprise and its operations and thus sustainability aspect of it. Few of these policies are:

1. Industrial Policy: This policy of the Maharashtra Govt. covered definitions of types of business along with rules, procedures, regulations and also principles. This policy gives control over the activities of industrial enterprises of the specified regulatory area and also shapes the industrial development and its pattern.
2. Monetary Policy: This policy covers all those rules, regulations, and activities with interventions that aim smooth supply of credit from banks, financial institutions and from others to the enterprise to boost trade, sector and industry.
3. Foreign Investment Policy: This policy includes rules, regulations and activities for lending of credit in foreign exchange to the enterprise. This factor does not give effect directly upon the respondents as no one has started public limited company with foreign direct investment (FDI).
4. Fiscal Policy: This policy specifies all the aspect of public expenditure, taxation and public debits and other related terms.
5. Export Import Policy (EXIM Policy): This policy aims to increase export and also to bridge the gap between export and import. Some of the respondent entrepreneurs joined reseller program of Amazon and Facebook shopping. Hence this policy is found important. Government also imposes various duties and or levies through this policy.

5.2.2 Social factors:

According to social scientists other than economic factors, social factor also affect upon the entrepreneurial culture. All those are so confident about social factors effect on the development of entrepreneurship. Social factors are either drivers or obstacles in enterprise development. Some major non-economic factors have an impact to the startup and sustainability of entrepreneurship.

a. Social Conditions:

Western Maharashtra has rich social traditions and conditions relevant to ethical entrepreneurship and fair business practices. Generally, the social values and norms within various socio-cultural aspects have a great importance for the startup and growth of entrepreneurship in the society. Entrepreneurial attitude and behavior of individuals shows the degree of approval or disapproval in social concern for the enterprise. Generally it goes with social influencing factors.

In our country, if you fail to do the business, it creates a kind of social stigma and of course a loss of capital. It was the situation in past. Now a day, the stigma is related specifically to the failure of the enterprise. In Western Maharashtra, it is not taken as the failure or unsuccessful of the individual. Entrepreneurship in the state will be more likely to emerge in setting. District Industries Center, Technology parks, and non Govt. organizations of the western Maharashtra action's are towards the development of the entrepreneurial culture. It can turn around the positive approach entrepreneurship.

b. Social Mobility:

Social mobility is the noting but degree of mobility along with technological trending. It relates both in social, geographical and also in the nature of mobility channels within a system entrepreneurship. Social mobility is most crucial aspect for entrepreneurial emergence and its sustainability. One of the views about social mobility specifies that a high degree of mobility is conducive in nature to enterprise activities. Social mobility along with non economic factors gives direct influence on entrepreneurship. Online presence of enterprises, joining with reseller program of online portals of the experimental group respondents gave positive social mobility.

c. Marginality:

Social marginality of the western Maharashtra also found useful to promote entrepreneurship. The business groups or individual entrepreneurs of the social system or between different social systems provided much support to the respondents for carrying out their entrepreneurial roles and their activities. It is from various religious, cultural, ethnic or migrant minority groups, and marginal social position. It is also believed that

personal, psychological trending effects which made entrepreneurial activity particularly attractive in this scenario. Some adversity like draught prone area of east part of western Maharashtra leads limit to the development of the entrepreneurial capacities.

d. Security:

Entrepreneurial security in the context of economic and other related affairs is an important aspect of entrepreneurial attitude, behavior and success. Security environment is a significant factor for entrepreneurial success and development. If an individual entrepreneur is under stress or fearful of losing their economic assets or enterprise sustainability or of being subjected to various negative sanctions about the security, it is very much harmful to the entrepreneurial development. In the respondent area of operation, there is a safe entrepreneurial environment for its activities.

5.2.3 Psychological Factors:

Most of the respondents selected for the entrepreneurial training after taking "entrepreneurial ability test" and grooming for startup activity. Hence personality factors, psychological and individual factors found supportive. Many of the researchers, social scientists and theorists developed their theories of entrepreneurship development that concentrate specifically on personality factors, psychological and individual factors.

a. Withdrawal of Status Respect:

In the development pace and technological entrepreneurship, social environment is changing so fast. Withdrawal of status with failure in enterprise in general relates with economic problems and threats. Social media presence with technology platforms also changed many aspects of the social status. If there is a desire to do something new, it creates high level of self respect and esteem which leads potential entrepreneur to start a new business and also provide and do something new, even though he failed in previous venture activity. Two failed respondent entrepreneurs never experienced withdrawal of status respect till this moment. Entrepreneurial abilities and characteristics always supportive to the inner urge of the entrepreneur to remain in the venture.

b. Educational Background and Experience of an Individual:

Education, training and experience of an individual entrepreneur give direct influence and impact on the choice of setting up of venture or taking up entrepreneurship. Most of the technically qualified persons are from the experimental group. They set up their venture in the field of their expertise, skills and specialization. It is because of working in one's own area of specialization provides confidence to make venture successful. It tries to reduce the uncertainty associated with the new venture. These respondents have a vision to adopt use of ICT for their new startup.

5.2.4 Factor of trending technological gadget and its use:

Technological environment include the use of technology gadgets, software platforms, methods, techniques and approaches adopted for various activities of enterprise as production of products, services and their distribution. The different technological environments of various regions and even in countries affect the designing of products. Use of smart mobile, tablets, laptops, personal computers is trending for day to day operations and communication but its use for professional development and for enterprise development needs special training. Trending use of electronic gadgets does not mean acquiring ICT competencies or skills for development of entrepreneurial activity.

5.3 Specific affecting factors:

Techno-entrepreneurship and Technology training, content delivery process, methodology of training, and curriculum are the specific affected factors upon the respondents for start-ups and also to make enterprise more sustainable. Experimental group respondents were exposed with these specific affecting factors to develop related skills and competencies for its use in enterprise. Control group is exposed with only traditional curriculum of EDP.

5.3.1 Techno-entrepreneurship and Technology Training:

In the modern age, the technology changes are very fast. In order to grow and also to remain in the market, a business has to adopt the advanced technology changes from

time to time. To become compatible with these changes, techno-entrepreneurship and technology training is necessary. It is found that scientific research and development for improvement, design and innovation in product development and services is a regular and continuous activity in most of the industries.

Nowadays in fact, no firm can afford to remain persist with the outdated technologies because of rapid changes. Demographic environment deals with distribution, size, density, and growth rate of customer base. All these factors gave direct impact upon the demand for various products and services. Use of ICT has changed concept of demographic limitations for the business. Increasing trend of online shopping has shown changed scenario of demographic sale. Reseller partner program with online shops created new avenues in the era of entrepreneurship.

In traditional business, there is demand for baby products for demographic sale, if country has high population specific to children in its large section. The demand of products of any category by the people of cities and towns are different than the people from rural areas. The high rise of population indicates cheap availability of labor because of heavy competition. These concepts are now changing.

The business units from various countries like USA, UK, Australia, Canada, and Germany are coming to India due to easy, cheap and affordable availability of skilled, semi-skilled manpower specifically in the area of information technology and very few of other sectors. Thus, a new and first generation entrepreneur that keeps always watch on the changes and challenges on the demographic front and reads them more accurately to find opportunities knocking at its doorsteps of their desire.

5.3.1.1 Techno-entrepreneurship:

In traditional technology entrepreneurship development programs (TEDPs), components of technology and entrepreneurship training are different. Separate entrepreneurship module and technology module is used. A combined module of "techno-entrepreneurship" is missing. Few entrepreneur educators may do it as a part of mentoring and service support. No attempt was made on the conceptual front for addition in the scientific curriculum as a part of training pedagogy. This attempt is done by the researcher with developing "Technopreneurship Learning Materials" and its use in the

training. The structure of the "technopreneurhship learning Material" is designed with interactive print material, supported by offline digital contents and with web integration. Laboratory Manual, Trainer / Teacher manual are also the integrated parts of the learning / training material.

This is the most affected factor to the respondents of experimental group that shows development of competency in the era of techno-economy feasibility of the relative entrepreneurial profession. Concept of technopreneurial Inputs shall be elaborated with the example of entrepreneurial education content and its related techno-entrepreneurial input with few examples as shown in the table 5.2

Sr. No.	Entrepreneurial Content	Technology Content	Techno-entrepreneurial Content
1.	Costing and its methods	Electrical Wiring	Costing of Wiring (Including cost estimates of wires, accessories, labor charges) etc
2.	Marketing	Digital Marketing	Available Platforms, Methods of bidding, console handling, cost over the period etc.
3.	Business Management	ERP (Enterprise Resource Planning) software	PLM (Product Lifecycle Management), Suppler Relationship Management (SRM), Supply Chain Management (SCM) etc. Selection of ERP system and its cost
4.	Business Promotion	Website Development	Search Engine Optimization, Google Analytics, Cost of promotion etc.

Table 5.2 Relative Contents

Analysis of using techno-entrepreneurship learning material by the respondents of experimental group is as shown in the table 5.3. It is important because only this group was exposed with techno-entrepreneurship learning material.

ExpLM

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	3	6.0	6.0	6.0
	4.00	33	66.0	66.0	72.0
	5.00	14	28.0	28.0	100.0
	Total	50	100.0	100.0	

Table 5.3 Frequency Analysis

28% respondents were strongly agreed that use of techno-entrepreneurial learning material was extremely useful whereas 66% respondents agreed with it. Neutral respondents are only 6%. No respondent shown disagree and strongly disagree. It shows that this is considerable impact upon the development of skills and competencies of experimental group respondents.

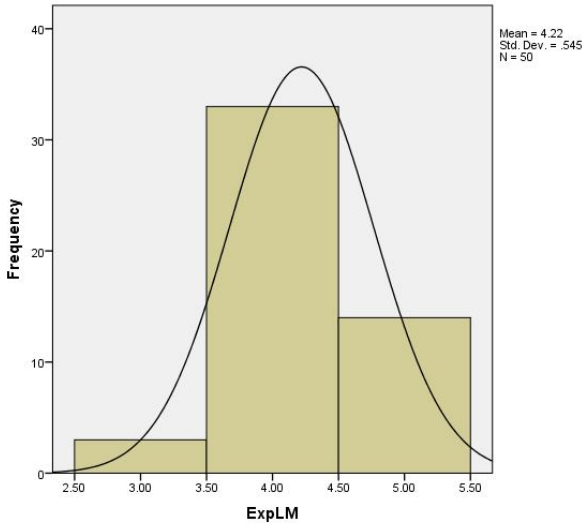

Figure 5.1 Histogram with Normal curve of experimental group

Descriptive statistics of experimental and control groups is shown in the table 5.3. Mean of experimental group is 4.2200 and control group is 2.3000 and standard deviation is 0.54548 and 0.67763. It shows significant difference.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ExpLM	50	3.00	5.00	4.2200	.54548
ConLM	50	1.00	4.00	2.3000	.67763
Valid N (listwise)	50				

Table 5.4 Descriptive statistics of experimental and control group on use of LM

5.3.1.2 Technology Training:

Information and Communication technology (ICT) training has been given commonly to all the respondents of various entrepreneurial professions of experimental group. These training contents are related to the entrepreneurship curricula as per the conceptual development examples shown in the table 5.5.

Another component of technical training was related to the type of enterprise. i.e. respondents who intend to start "mobile repairing & servicing center" have been exposed with technology training of mobile repairing. Respondents who intend to sale Android Apps on Google play have been trained with technology of "Android App development".

This factor shows effect on the competency / skill development of the respondent to generate revenue for its sustainability. The experimental group respondents have been additionally exposed to the online presence of their enterprise with web page design, use of Google sites and other related tools for development of ICT competencies. Table 5.5 shows frequency analysis.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	2	4.0	4.0	4.0
	3.00	1	2.0	2.0	6.0
	4.00	22	44.0	44.0	50.0
	5.00	25	50.0	50.0	100.0
	Total	50	100.0	100.0	

Table 5.5 Frequency Analysis of experimental group (Technology Training)

Experimental Group respondents were exposed to the specific ICT skills training for online presence of their enterprise and its use for enterprise development. Table 5.4 shows that total 94% (50 + 44) strongly agreed and agreed to use such skills and they are using it for their enterprise. Only 2% respondents were neutral to use it whereas 4%

disagreed with it. There is no single respondent who strongly disagreed with it. Figure 5.2 shows histogram of experimental group with normal curve.

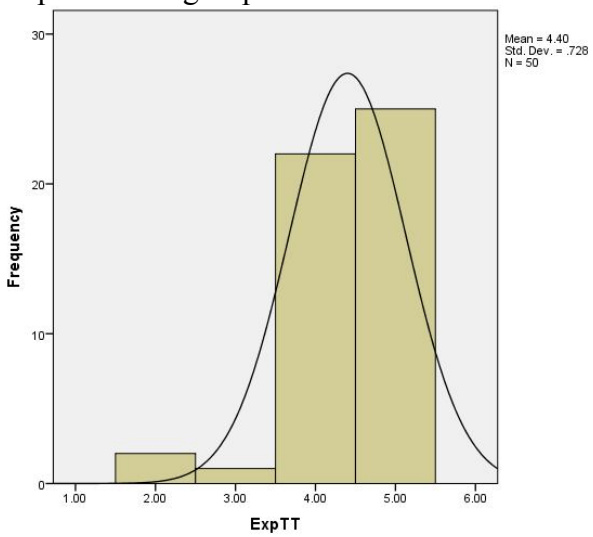

Figure 5.2 Histogram of factor of ICT online tools

Table 5.6 shows descriptive analysis of the two groups based on the factor of ICT online tools training for web presence.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ExpTT	50	2.00	5.00	4.4000	.72843
ConTT	50	1.00	4.00	2.2400	.98063
Valid N (listwise)	50				

Table 5.6 Descriptive Statistics on variable of ICT training for web presence

Means of experimental and control group are 4.4000 and 2.2400 respectively. Also standard deviations are 0.72843 and 0.98063 of experimental and control groups shows significant difference of descriptive statistics because of considerable effect on the development of competencies of experimental group respondents.

5.3.2 Affected Factor of Content Delivery system:

Entrepreneurship development contents, e-books of technology, Android play books on technopreneurial contents have been delivered in the digital classroom. Use of "Social Media in Training / Education" was done to enhance ICT competencies / skills. Google private community, Facebook closed group were used for content delivery. Use of Various tools like Google forms, Gmail, YouTube, Google Chrome have been used as

a part of interactive content delivery system. Tweeter deck platform was also the part of interactive training.

ExpCD

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	4	8.0	8.0	8.0
	4.00	26	52.0	52.0	60.0
	5.00	20	40.0	40.0	100.0
	Total	50	100.0	100.0	

Table 5.7 Frequency Analysis on content delivery factor on experimental group

Total 92% (40 + 52) respondents of experimental group strongly agreed and agreed upon the content delivery modes using ICT platforms and its use for enterprise development. Only 8% respondent remains neutral. No respondent is strongly disagree and disagree. It shows that ICT technology platforms gives considerable impact upon its utility for enterprise development. Google platforms and tools found extremely useful.

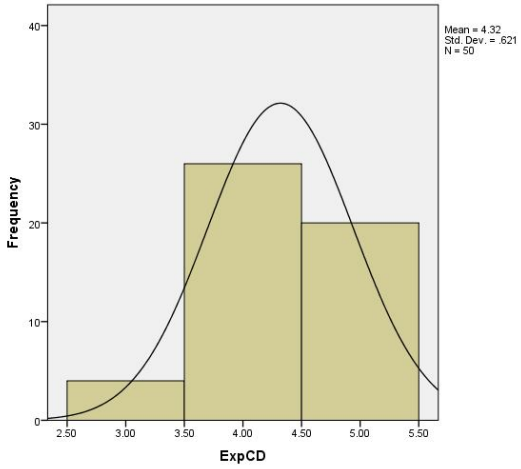

Figure 5.3 Histogram of the factor of Content delivery

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ExpCD	50	3.00	5.00	4.3200	.62073
ConCD	50	1.00	4.00	2.3800	1.00793
Valid N (listwise)	50				

Table 5.8 Descriptive statistics on content delivery factor

Table 5.8 shows means of experimental and control group 4.3200 and 2.3800 respectively. Standard deviations are 0.62073 and 1.00793. It shows significant

difference and thus effectiveness of the content delivery factor upon the experimental group respondents.

5.2.3 Affected Factors of Methodology of Training:

Project Based Learning (PBL) with digital pedagogy was used as a methodology of training for both the groups. Use of ICT tools for enterprise development for respondents of experimental group has been found useful to create ICT service product as a project for the business promotion. Project on online marketing using Google Adword has been given to the respondents of only experimental group. Table 5.8 shows frequency analysis of this factor of experimental group.

ExpMTP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2.00	1	2.0	2.0	2.0
	3.00	2	4.0	4.0	6.0
	4.00	30	60.0	60.0	66.0
	5.00	17	34.0	34.0	100.0
	Total	50	100.0	100.0	

Table 5.9 Frequency Analysis of Training Methodology and its use

Table 5.9 shows that 94% (34 + 60) respondents were strongly agreed and agreed benefit of Project based training methodology for online marketing project using Google Adwords. They applied for e-marketing accounts of Google for business promotion. Only 4% respondents were neutral and 2% respondents were disagreed with it. No respondent was strongly disagreed. This data shows significant impact of this competency upon the experimental group respondents.

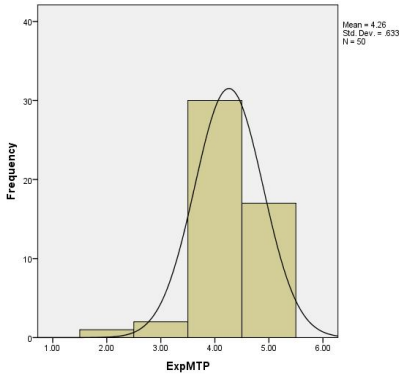

Figure 5.4 Histogram of factor of "Methodology of Training"

The descriptive statistics of both groups also gave impact of the factor with the significant difference between the means and standard deviations of both the groups. Table 5.10 shows this analysis.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ExpMTP	50	2.00	5.00	4.2600	.63278
ConMTP	50	1.00	4.00	2.1600	.95533
Valid N (listwise)	50				

Table 5.10 Descriptive Statistics of both groups

Means of experimental and control group are 4.2600 and 2.1600 respectively. Standard deviations 0.63278 and 0.9553 also have significant difference like means. It shows that methodology of training with project based learning gave considerable factor of affecting upon the respondents for enterprise development.

5.2.4 Affected Factors related to curriculum:

Entrepreneurship development curriculum of Experimental and Control group was common. Curriculum of ICT was additionally designed for respondents of the experimental group. Training of Business Simulations, and various tools of information technology (IT) has been given to the respondents of experimental group. Business opportunity search using IT, Search engine optimization, online web presence, digital marketing are the few remarkable curriculum contents delivered to the experimental group for its effective use as described in this topic.

5.3 Testing of hypothesis:

Experimental and control groups are taken for research. Control group was exposed to usual conditions of traditional method of entrepreneurship training. Experimental group was exposed to special condition of using ICT integrated learning material tool. These two groups have been given different treatment of independent variable and hence both groups are independent. The size of population of Western Maharashtra with Satara, Sangli and Kolhapur is 400. Sample size was 100 EDP participants as 50 each for experimental and control group.

5.4.1 Setting up of a hypothesis:

Ho: ICT integrated technopreneurial management learning material tools are not effective to develop specific entrepreneurial skills among first generation entrepreneurs.

Ha: ICT integrated technopreneurial management learning material tools are effective to develop specific entrepreneurial skills among the first generation entrepreneurs.

5.4.2 Setting up of significance level:

The 95% confidence interval was taken for statistical analysis and hence 5% is a significance level for the rejection of the null hypothesis. It means sampling result has less than 0.05 probabilities. A 5% level of significance means that there are 5 chances out of hundred that a null hypothesis will get rejected. When null hypothesis is rejected at any level of significance, the test result is said to be significant.

5.4.3 Determination of Test:

As there are two independent samples of experimental group and control group, researcher decided to use independent samples t test to develop statistical evidence that the two population means are significantly different. The scenario involved an investigation meant to determine as two differently exposed groups obtain significantly different effect on development of entrepreneurial skills with and without ICT.

The assumptions made for independent sample test are:

a. Dependent variable is measured in ratio or interval scale.
b. Sample mean is normally distributed.
c. Respondents are selected randomly.
d. Respondents of both groups are not related as exposed to different trainings as with ICT and without ICT.
e. Variances of both the groups are equal.

5.4.4 Procedure for Testing:

Researcher used SPSS software for independent samples t test based on the scores data of the experimental and control group. Two sections appeared in the output as Group Statistics and Independent Samples test. Table 5.26 shows Group Statistics.

Group Statistics

	gr	N	Mean	Std. Deviation	Std. Error Mean
score	Exp	50	104.7000	11.44329	1.61833
	Con	50	60.4600	22.41921	3.17055

Table 5.11 Groups Statistics of Independent Samples test

In the first section of group statistics basic information about group comparisons, including sample, mean, standard deviation, and standard error score of experimental and control group is provided. In this data sample, there are 50 and 50 respondents of each group. The mean for experimental group is 104.7000, and the mean for control group is 60.4600.

Standard deviation mean and standard error score of the experimental group are 11.44329 and 1.61833. Standard deviation mean and standard error score of the control group are 22.41921 and 3.17055.

In the second section, Independent Samples Test, table 5.27 displays the results most relevant to the Independent Samples t test. There are two main parts that provides different information related to;

a. Levene's Test for Equality of Variances
b. t-test for Equality of Means.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
score	Equal variances assumed	50.161	.000	12.428	98	.000	44.24000	3.55969	37.17591	51.30409
	Equal variances not assumed			12.428	72.909	.000	44.24000	3.55969	37.14540	51.33460

Table 5.12 Independent Samples t test

1. Levene's Test for equality of variances: This section gives the test results for Levene's test with two aspects as;

a. *F* is the test statistic of Levene's test

b. *Sig.* is the p-value corresponding to this test statistic.

The *p*-value of Levene's test is printed as ".000" (It is 2.1694E-10 As $p < 0.001$ i.e., *p* very small), so it reject the null of Levene's test and conclude that the variance in scores of experimental group is significantly different than that of control group. It means further to look at the "equal variances not assumed" row for the t-test results.

2. t-test for equality of means provides the results for the actual Independent Samples *t* test with:

a. *t* is the computed test statistic.

b. *df* is the degrees of freedom

c. *Sig (2-tailed)* is the p-value corresponding to the given test statistic and degrees of freedom.

d. *Mean Difference* is the difference between the sample means; it also corresponds to the numerator of the test statistic.

e. *Std. Error Difference* is the standard error; it also corresponds to the denominator of the test statistic

The mean difference is calculated by subtracting the mean of the second group from the mean of the first group. In this example, the mean of control group is subtracted from the mean of experimental group (104.700 minus 60.4600 = 44.2400). The sign of the mean difference is correspond to the sign of the *t* value. The positive *t* value in this example indicates that the mean of first group, experimental, is significantly greater than the mean for the second group, control.

The associated *p* value is printed as ".000". P-values are never actually equal to 0; SPSS prints ".000" when the p-value is so small that it is hidden by rounding error. (In this particular example, the p-value is 2.1694E-10.)

3. Confidence Interval (CI) of the Difference:

This part of the *t*-test output complements the significance test results. Typically, if the CI for the mean difference contains 0, the results are not significant at the chosen significance level. In this example, the CI is (37.17591, 51.30409), which does not contain zero, this agrees with the small *p*-value of the significance test.

Conclusions from independent sample t test:

As $p < .0001$ is less than our chosen significance level $\alpha = 0.05$. It rejected the null hypothesis, and conclude that the mean for experimental and control group is significantly different. Based on these results, conclusions are:

1. There was a significant difference in mean between experimental and control group ($t_{72.909} = 12.428$, $p < .001$).
2. The average mean difference score for experimental group respondents was 44.2400 greater than the average score for control group respondents.

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CHAPTER SIX
FINDINGS, RECOMMENDATIONS, AND CONCLUSIONS

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FINDINGS, RECOMMENDATIONS, AND CONCLUSIONS

6.1 Introduction:

This chapter contains the details regarding summery, findings, recommendations, and conclusions of the research. There is a significant difference between the development of skills among the respondents of the experimental and control group. ICT integration with entrepreneurial education inputs empowers the youths to make their ventures more sustainable and also compete with the changing scenario of the market conditions.

6.2 Summary:

Important contribution of entrepreneurship development programs is in the development of country for empowerment of the youths and thus to improve the livelihoods. The present study is an enquiry into one of the major training interventions taking place in western Maharashtra particularly in three districts of Satara, Sangli and Kolhapur for enterprise development with the use of training pedagogy and use of ICT tools. The study is based on selected random sample of trainees from the districts of Satara, Sangli and Kolhapur. Random Sample is from two independent groups. A group with traditional entrepreneurship training inputs is a Control group and a group with ICT integrated inputs with entrepreneurial education is an experimental group. Sample size is 50 for each group.

Information and Communication Technology (ICT) has changed overall scenario of the industrial development and process of entrepreneurial education / training methodologies for enterprise startups.[1] ICT product start-ups, On-line presence of non-ICT enterprises and its integration for enterprise development are the areas studied by the researcher. Digital pedagogy with various platforms and ICT tools and its effectiveness upon the development of the competencies / skills has been compared analyzed with traditional methodology. Researcher found significant difference and hence ICT integrated module is recommended.

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[1] Bhatnagar subhash. (2014). *Ernetin*. Retrieved 8 May, 2015, from http://iimahd.ernet.in/~subhash/pdfs/Indian software industry.pdf

Divided into six chapters, the major objectives of the study are:

1. To study traditional and ICT integrated ED training methods and changes in the ICT integrated Platforms used in Western Maharashtra.
2. To analyze evolution in ED training methodologies.
3. To assess impact of tele-collaboration in ED training adopted in Western Maharashtra.
4. To analyze the role of ICT integration platforms in ED training and factors affecting on skills and start-ups using ICT integrated ED materials to be used in Western Maharashtra.
5. To assess effectiveness of ICT integrated materials in ED training based upon skills and start-ups of the participants of Western Maharashtra.
6. To develop new model of ICT integrated technopreneurial training.

Keeping the objectives in view, the study was conducted using a methodology that involves survey of the relevant literature, field study using interview schedule, interactions with the trainers, trainees, and chief executives of the organizations involved in training. Secondary data from official sources like National Science and Technology Entrepreneurship Development Board, Directorate of economics and Statistics and Directorate of Industries and Commerce, Ministry of entrepreneurship and skill development were utilized. The main source material for the study is the sample survey conducted among the trainees of micro enterprise development programs. Random sampling methodology was adopted for drawing the sample for the study. A specially designed questionnaire was used to collect data and information from the trainees. The data thus collected have been collected personally and also through online forms. Google forms tool was used for this purpose. Data collected further codified and then analyzed with reference to the objectives of the study using statistical tools and techniques using SPSS 23.0.

After a detailed survey of literature on entrepreneurship development, training methodologies, training contents, presented in chapter two, the study tries to explore the factors contributing and trends of Entrepreneurship Education (EE) to Asian countries, Model of Finland and then further relevant to western Maharashtra in entrepreneurship and industrial development.

Chapter two also covered literature and experiment-tryouts of the entrepreneurship development programs by the various organizations within the country. In the traditional systems of education B-schools, universities, National level organization have their academic contribution in the field EE. It is covered in the second chapter.

It is observed that the western Maharashtra in entrepreneurship is under development. It could be found in the culture of Maharashtra's. Various aspects of Maharashtra's culture like joint family system, caste system and matriarchal system were not congenial to the growth of entrepreneurial traits in the individual. They are away from the growth of independence, risk taking ability and achievement motive. By and large, they promoted a kind of dependency culture. Now this is somehow changing. Left ideology with its emphasis on redistribution rather than wealth creation also appears to have had a retarding effect on the growth of entrepreneurship.

Several local non-governmental and training organizations and state sponsored organizations are involved in these entrepreneurship programs. The basic training approach of these programs is to impart the necessary skills to trainees in selected project profile with a view to help the trainees to set up an individual enterprise.

Evolution in entrepreneurship development programs, entrepreneurship education theories, economic indicators of the Asian countries and entrepreneurship efforts, models of entrepreneurship education (EE), and experiments on EE in our country are presented in this chapter. Indian history of entrepreneurship and economy before and after British raj, process of Indian transition, nature of trade policies, entrepreneurship promotional efforts stating with national policy drafts are the specific contents through literature survey covered in the same chapter.

6.3 Findings:

Profile of the selected area and respondents is presented in the third chapter. Per capita income, unemployment rate, salaried persons, density population and literacy rate of three districts presented in the same topic with comparison. An analysis of the personal and socio-economic profile of the sample trainees of two groups shows that 78% trainees

are men and 22 per cent of trainees are women in the experimental group whereas 66% men and 34% are women in control group.

The highest number of respondents from experimental group has age group 26-30 (40%) and 20-25 (68%) in case of control group. Highest 32% respondents have family background of private sector jobs in experimental group. In case of control group highest 34% respondents have the same family background as private sector jobs.

Analysis of the educational background of trainees' shows that majority of trainees (38%) of experimental group have non-technical educational background as graduate and 26% technical background as ITI. Analysis of the educational background of trainees' shows that majority of trainees (22%) of control group have non-technical educational background as HSC and 42% technical background as ITI.

Pre training background of experimental and control group shows that highest 42% and 40% cent of trainees have part time work experience. Experimental group has 30% students and 28% trainees are students in case of control group. When the society views entrepreneurship not as a preferable career option, it seems to affect the quality of those who opt for it and in turn the kind of entrepreneurship created. Now a day ICT entrepreneurship is widely accepted options as a bright career.

36% respondents of experimental group and 34% of control group have a reason of unemployment to join the program. 22% and 36% respondents from experimental and control group have a reason to join the program is of getting financial assistance to the potential entrepreneurship. Those who intend to become an entrepreneur as a career option have percentage of 28 in case of experimental group and 16% in case of control group.

Fourth Chapter presents OECD framework of measuring entrepreneurship with ICT skills. Entrepreneurship and determinant factors have been explored on the basis of which further analysis is done. In OECD three components like determinant, entrepreneurial performance and impact are elaborated. All of these are important in the process of formulation, assessment and further appraisal of policy measures. Determinants are the key factors that directly affect on the entrepreneurial performance (EP).

EP reflects the target indictors. The policy makers believe that EP has an impact on some of the ultimate objectives. Value created by entrepreneurs and entrepreneurship is the reflected impact. EP measures the entrepreneurial activities and actions that are key factors in delivering the impacts. Some of the entrepreneurial determinants with performance & impact indicators of OECD with additional ICT tools were considered for analysis of affecting factors to start the business have been explored in details in this chapter.

Further the factors considered for the analysis in the chapter five are: type of electronic device, it's operating system, internet connection, type of the connectivity, use of device for professional calling, Messaging & Instant messaging, Use of email and social media platforms, Online booking and billing systems for enterprise, gaming, video watching and listening audios, and score of the effective twenty five parameters.

The major interpretation of factor of using smart mobile phones for the enterprise is that 78% experimental group respondents have smart phones whereas only 14% control group respondents have their own smart phones for its use for enterprise activities. This remarkable difference concludes that it is because of ICT skills acquired by the experimental respondents to make enterprise more sustainable with the tools of ICT.

Both the groups are using Android operating system for the smart phone as is 46 % and 48% but difference is that experimental group respondent's use it for enterprise with having own sets of smart phone.

Internet use behavior of respondents is analyzed further in this chapter as it is fundamental platform for the use of ICT tools. Mobile internet use among the respondents for enterprise activities is popular as 98% users are from experimental group and 96% are from control group. Frequency of always using 2G internet users is more in the experimental group (24%) than the control group (16%). Sometime users are more in experimental group (40%) than the control group (26%). This analysis is described in chapter five with the use of 3G connections and use of Wi-Fi as both are fast than the 2G connectivity as 68% experimental and control group respondents always use 3G connectivity and regarding sometime Wi-Fi users are 74% in the experimental group and 22% in the control group.

Mobile calling, messaging through available electronic devices, instant messaging through apps, emails conversations, use of social media sites for promotion and activities of the enterprise, internet surfing, online booking and billing procedures, gamming, use of videos, and audio listening competencies of ICT have been analyzed further to draw inferences.

It is found that experimental respondents are not using first stage communicating methods as they are more comfortable with advanced ICT tools for business communication. The analysis shows that, the frequency of calling always of control group respondents (96%) is more than the experimental group respondents (82%). The same behavior is observed in messaging as 80% in experimental group and 96% in control group. Data further specifies that experimental group respondents used instant messaging always for enterprise (50%) that is more than that of control group (42%).

Always using of E-mail and thus this skill is also on the top priority of the experimental group respondents (70%) and very few (18%) of control group respondents used emails always for enterprise but used it sometimes are (48%).

Researcher further found that power of internet for enterprise development is well understood by the experimental group respondents as data shows that always users of internet surfing in experimental group are 58%. It is much higher than the control group as 14%. Sometime users in experimental group (32%) are also higher than the control group (30%). Respondents those who never used internet for professional and enterprise development with surfing of control group is 46%. This percentage is substantial.

Researcher's main finding about online booking and billing competencies is remarkable. 78% respondents of control group never used online booking and billing whereas always making "Online booking and billing" for enterprise by the respondents of experimental group is 42% with sometime users are 44%. This show advanced ICT skills required to do these things have been acquired as total 86% experimental group respondents have advanced ICT skills.

It is found that experimental group respondents are more professional than the control group regarding watching of the product and other videos. The frequency of experimental group respondents watching product videos sometimes for the enterprise is

62% whereas always watching video respondents of control group is 64%. This data shows that experimental group respondents are watching videos only if it is essential.

Comparative analysis of experimental and control group about the score of respondents is found significant in difference as experimental group range is 55 = (124 – 69) and control group range is 60 = (97 – 37). The mean and standard deviation of two groups showed significant difference that shows effectiveness of ICT tools upon the respondents of experimental group than the control group. This finding is further supported by the significant differences between the statistical indices like mean, median, variance, standard deviation, range, skewness, and kurtosis as shown in the table 6.1

Sr. No.	Statistical Indices	Control Group	Experimental Group
1.	Mean	60.4600	104.7000
2.	Median	49.5000	106.000
3.	Variance	502.621	130.949
4.	Std. Deviation	22.41921	11.44329
5.	Range	60	55
6.	Kurtosis	-1.463	1.719
7.	Skewness	0.558	-0.902

Table 6.1 Comparative of statistical indices of both groups

The fifth chapter attempts a look upon the affecting factors on the respondents and analysis using independent group t test for testing of hypothesis. From the secondary data and during the literature survey researcher found that economical, social, psychological, cultural, and trending of technological gadgets use are the main general affected factors. These factors gave considerable impact upon the startup of the enterprise and also upon its sustainability in the market.

Specific affected factors found during the research are the Techno-entrepreneurship and Technology training, content delivery process, methodology of training, and curriculum.

Descriptive statistics of experimental and control groups upon the factor of using technopreneurial learning material and its use in the enterprise development shows significant difference the development of skills as mean of experimental group is 4.2200 and control group is 2.3000 and standard deviation is 0.54548 and 0.67763.

Researcher found that means of experimental and control group are 4.4000 and 2.2400 respectively and standard deviations are 0.72843 and 0.98063 of experimental and control groups also shows significant difference on the competency of developing online presence of enterprise and its online operations done by experimental group respondents as compared with control group.

The main finding about content delivery through ICT platforms for development of competencies is significant for its use to promote and sustain the enterprise. Use of "Social Media in Training / Education" is found extremely useful to enhance such ICT competencies / skills. The statistical data analysis further supports it as means of experimental and control group are 4.3200 and 2.3800 and Standard deviations are 0.62073 and 1.00793. It shows significant difference. Total 92% respondents of experimental group strongly agreed and agreed upon the content delivery modes using ICT platforms and its use for enterprise development.

Finding upon the use of project based learning methodology is encouraging it found extremely useful for increase in sale through online campaign with Google adword platform. 94% respondents are strongly agreed and agreed on the benefit of Project based training methodology. They further applied for e-marketing accounts of Google for business promotion.

As there are two independent samples of experimental group and control group, researcher used "Independent samples t test" for testing of hypothesis. Researcher used SPSS software for this test based on the scores data of the experimental and control group. This test gives inferential statistic results to test the hypothesis.

The finding from the this "Independent samples t test" covers standard deviation mean and standard error score of the experimental group are as 11.44329 and 1.61833 and Standard deviation mean and standard error score of the control group are as 22.41921 and 3.17055.

"Levene's Test for Equality of Variances" and "t-test for Equality of Means" are the two main parts of the "Independent samples t test".

1. Levene's Test for equality of variances: For equality of variances, *F* and *Sig* are the test statistic and p-value of the test. The test results for Levene's test with:
    i. *F* is the test for comparison of two variances in Levene's test: It is 50.161

ii. *Sig.* is the significance (p-value) corresponding to this test statistic: It is printed as ".000" (It is 2.1694E-10) as $p < 0.001$ In general, p very small, it rejects the null of Levene's test and further concludes that the variance in scores of experimental group is significantly different than that of control group.

2. t-test for equality of means provides the results in *t, df, Sig (2-tailed), Mean difference and Std. Error Difference* with *Confidence Interval* for the two independent samples of experimental and control group:
   i. *t* : It is the observed or computed value: It is 12.428
   ii. *df* : It is the degrees of freedom associated with t test: It is 98 (Equal variance assumed)
   iii. *Sig (2-tailed)* : It is the p-value corresponding to the given test statistic and degrees of freedom: It is 0.000
   iv. *Mean Difference*: It is the mean difference between the sample means. It corresponds to the numerator of the test statistic: It is found as 44.24000
   v. *Std. Error Difference*: It is the standard error. It corresponds to the denominator of the test statistic: It is 3.55969
3. 95 % Confidence Interval (CI) of the Difference:

This part of the *t*-test output in lower and upper part has complemented the significance test results. If the CI for the mean difference contains 0, the results are not significant at the chosen significance level. In this example, the CI is (37.17591, 51.30409). It does not contain zero, this agrees with the small *p*-value of the significance test.

6.4 Recommendations

The findings of the study have important implications. The central issue in these training programs is that entrepreneurship development programs will be oriented with along with ICT integration. The trainees will be benefited only if skills are put into use for development of enterprise and also it should sustain for better livelihood.

With these findings listed in this chapter, researcher recommends here a model of entrepreneurship education with integrated tools of ICT.

6.4.1 TAILOR-C Model of EE:

Introduction:

"TAILOR-C Model of EE" means "**T**echnology **A**ction **I**n **L**earning **O**f ente**R**prise **C**reation Model of **E**ntrepreneurship **E**ducation". Researcher developed this model is built on the three main components of Education, Training, and support system mechanism with ICT. Vocational education, Entrepreneurship education, and ICT integration are further the three pedagogical components. Support system flow and other components for entrepreneurial growth of youths are also the integrated parts of it as shown in figure 6.1

Information and communication Technology (ICT) integration with entrepreneurship education has been considered with two perspectives. Most of the traditional entrepreneurship development programs has deliver some relevant ICT contents but this attempt gives more specific detailing on relevance, digital pedagogical methods and project based learning methodology for development of timely paced competencies.

a. ICT integration with enterprise of any sector
b. ICT integration with online products (ICT products like android app sale, e-book)

Use if digital learning pedagogy with training though digital classroom, use of social media, use of Massive Online Open Course (MOOC), and training through simulations are the mediums that suits specifically with relevance to the subject treatment. This parameter is taken into consideration while designing this model as shown in figure 6.1.

ICT integrated entrepreneurial training is considered with offline digital contents with CDs, pen drives, etc., online digital contents, mobile apps, and other relevant platforms. Evolution in the ICT integrated training, needs to be considered with the following important factors for selection of media platform that suits to the contents of the EE.

1. Gamification
2. Cloud based learning and M-learning
3. BYOD (Bring Your Own Device)

4. Use of online interactive tools like Google Hangouts, Skype, WhatsApp
5. Social Media for Education etc.

Course and LMS (Learning Management System) for the content digital contents are also important. LMS is the entire framework that manages training, records, and handles learning process with consideration of digital pedagogy. Sharable Content Object Reference Model (SCORM) is a collection of standards and specifications for web-based contents needs to be considered during the development of virtual EE contents. Figure 6.1 shows TAILOR-C Model of EE in which ICT parameters are considered with top priority.

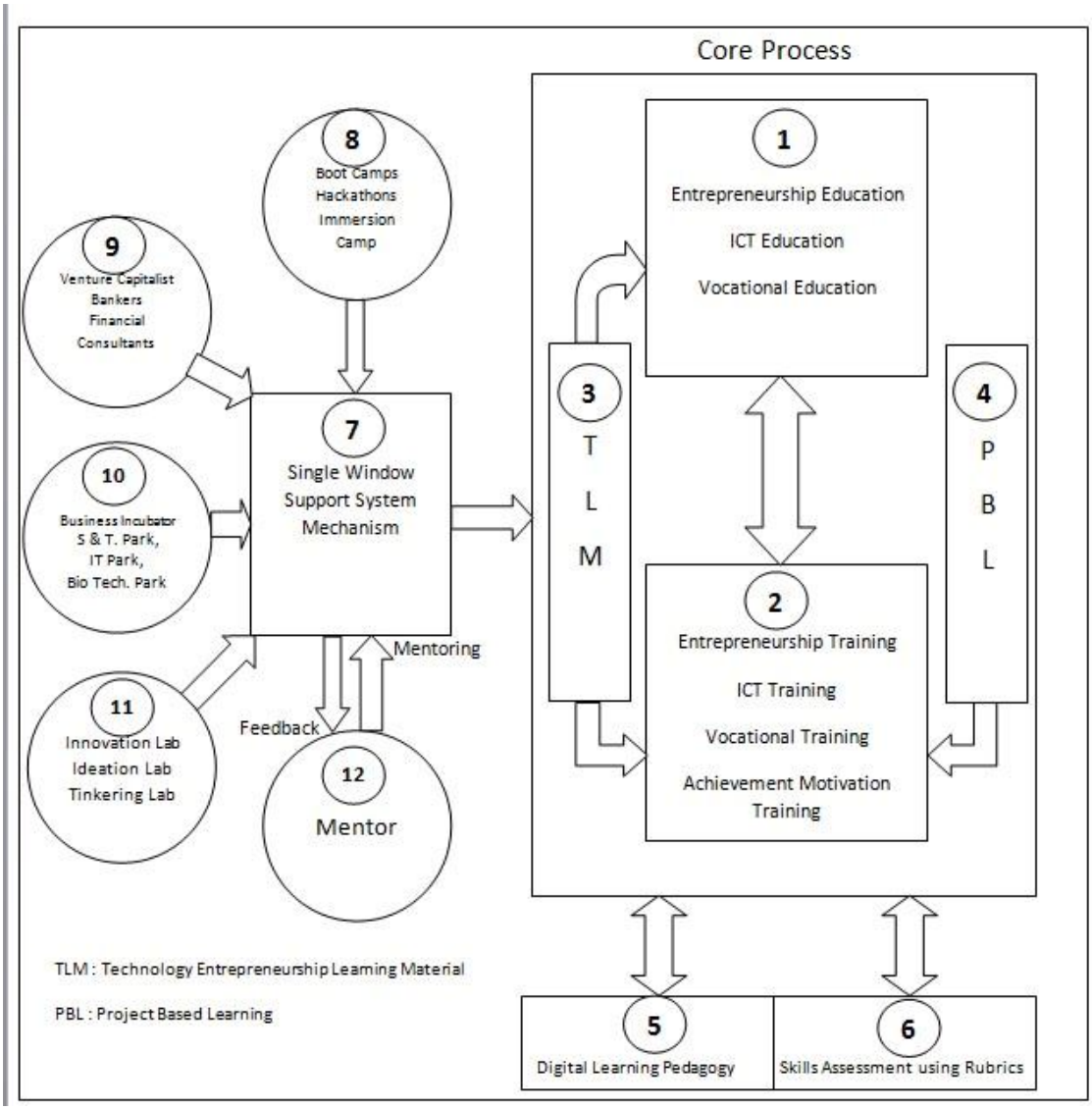

Fig. 6.1 TAILOR-C Model of EE

This model gives core process that includes 1 to 4 components. This process is interlinked with digital learning pedagogy (5), Skills assessment using rubrics (6), and single window support system mechanism (7). The four major core process system components are:

1. Entrepreneurship education, vocational education, & ICT education
2. Entrepreneurship training, vocational training, ICT training, & Achievement Motivation (AMT)Training
3. Technology Entrepreneurial Learning Materials
4. Project Based Learning.

A single window support system mechanism is further interlinked with other major five players with their expertise. This mechanism decides the integrated support solutions from all or specific and related components in consultation with mentor. These five components are:

1. Boot camp, Hackathons, and Immersion camps (8)
2. Venture capitalists, Bankers, and Financial consultants (9)
3. Business incubator, S and T (Science and Technology) parks, IT (Information Technology) park, Bio-tech park (10)
4. Innovation lab, Ideation lab, and Tinkering lab (11)
5. Mentor (12)

This model will found useful that supports all related services with development of related competencies among the micro-entrepreneurs.

ICT contents for enterprise development for 1 and 2 components of the model

a. Types of electronic gadgets and its selection
b. Contents regarding hardware and software requirement and its use.
c. Concepts like BYOD (Bring Your Own Device), COPE, SaaS (Software as a Service), and Iass
d. Selection of OS (Operating System)
e. Cyber Safety and Security
f. Introduction of e-commerce, m-commerce
g. Reseller online shopping methodologies
h. Software ideation (Idea Generation) labs

Entrepreneurship and specific ICT contents of the model:

1. EE contents: Business Opportunity Search, Market Survey, Preparation of prefeasibility report

   ICT contents: Types of search engines, e-Market survey through SEO (Search Engine Optimization), Document creating softwares.
2. EE contents: Enterprise registration, Legal establishment, requirement of licensing, permissions from regulatory bodies etc.

   ICT contents: Development of enterprise web site and its online presence, domain registration & hosting, selection of plug-ins to the web, etc.
3. EE contents: Soft skill development, Business communication

   ICT contents: Introduction to technology communication methods, selection of appropriate ICT tools for the purpose of communication, communication gadgets and software's, and communication record keeping (Software like MS power point, email client software, messengers like WhatsApp, video communicating platforms like Google hangout, Skype etc., Software's for online scheduling of meetings, webinar software platforms etc.) online and audio conferencing tools.
4. EE contents: Achievement motivation training, Capital requirement and resources, Cost accounting & BEP

   ICT contents: Simulations and its use i.e. Marketplace simulation, ERP systems (Enterprise Resource Planning)
5. EE contents: Accounting methods, Cash flow, Profitability, Statement of accounts etc.

   ICT contents: Accounting software like tally and others
6. EE contents: Marketing Management including Product promotion, Sales and Advertisement

   ICT contents: e-Marketing techniques, Digital marketing trends and various platforms i.e. Google Adwords, Adword Express, AdSence etc., Product video documentation using YouTube and promotional features, e-commerce enabled web development, payment gateways
7. EE contents: Financial management

ICT contents: Concepts like crowd funding, financial management software like MS Excel

8. EE contents: Human resource management, Legal formalities with various acts, laws related to enterprise, Taxation

   ICT contents: Online recruitment process, online tax registrations and tax management, MS excel and its add-ons, online interview techniques.
9. EE contents: Negotiation, Networking, leadership modes and structure, efficiency orientation, Time management

   ICT contents: Available social media (SM) platforms, selection of SM according to specific requirement (LinkedIn for recruitment & professional network)
10. EE contents: Preparation of project report, Appraisal of business plan, research and development, Patents and IPR management

    ICT contents:
11. EE contents: Sales and service support management, sales and service networking

    ICT contents: Sales through e-commerce, m-commerce presence of enterprise, tie-up with reseller platforms and procedures like Amazon, Snapdeal, etc.
12. Advanced EE contents: Business Analysis, strategic decision making, statistical analysis, and management consulting.

    ICT Contents: Online enterprise analysis solutions like Google analytics, SPSS, PSPP

6.4.2 Other recommendations:

With the use of "ICT integrated entrepreneurship education" in EDPs, researcher also recommends various associated solutions for sustainable enterprise started by the youths after training. Capacity development with environmental support will be the proper solution for entrepreneurial growth.

6.4.2.1 Strengthening Hackathon events for startups:

The term hackathon is known as a hack fest, code fest or hack day. It is collaborative event / workshop/boot camp of ICT enthusiastic entrepreneurs and stake holders working on different software projects to address the common problems. These

events give supporting system to the ideation, innovation and its validation for development of business plan. This facility is available now specifically in metro cities. The rural ICT talent is unknown for the methodology of such hackathons. This supporting system needs to be strengthened for its benefit to the rural young entrepreneurs those who are innovative to address the problem of the rural community by using ICT.

6.4.2.2 Use of Modern Technology in Training:

The use of ICT with Traditional EDP contents is one the perspective and action plan for entrepreneurial growth. In addition to these activities, modern technology needs to be adopted during and after training program. It is related to the occupation or sector for which program is designed. In case of machine shop enterprise modern technology of CNC machine and its training needs to be taken as a part of it. In case of product design consulting, advance technology platforms like PRO-E, and CAD need to be incorporated in the training. After training, trainees should be exposed to the boot-camps for understanding techno-economy feasibility aspects of the product and thus to know about its commercial viability.

6.4.2.3 Revamping the Training Methodology:

1. Revamping the training: Equal importance to entrepreneurship development

There is need to develop trainees by pitching sessions with the present format development of entrepreneurial competencies. Mentoring with development of entrepreneurial attitude and other necessary components of EDP should be incorporated as one of the essentials in the revamped program. In order to raise and maintain the level of motivation of trainees, achievement motivation training (AMT) should also be mandatory part of the program. AMT Trainers should be accredited by the national resource organization like Entrepreneurship Development Institute of India and similar organizations.

2. Revamping Training: Changes needed in the Content of the Program:

The content of the program also need changes. Online interactions, audio-visual presentations, use of social media in training, would make the training program more

interesting. Experience sharing sessions like “My Story”, “My Entrepreneurial Journey” with active entrepreneurs and field visits would help the trainees a long way to develop entrepreneurial confidence in them. International expertises are now accessible with Google hangouts or Skype or other platforms. YouTube entrepreneurial inspiring video-audio content also needs to be used.

3. Extending Short term capital Services:

One major problem faced by micro enterprises is to maintain cash flow. One of the reasons of it is the sales on credit with associated problems. This is in certain cases result in sickness and thus closure of units. In most of the cases, credit sales cannot be avoided. Short term capital with bank credit, overdraft has its own limitations. Present funding supporting services followed in small and medium enterprises should be considered even with some modifications.

4. Providing a system services of enterprise Counselors

Unlike the small and medium industries, the micro-entrepreneurs do not have proper education, knowledge, and expertise. Therefore, they require support and counseling on business issues. Considering their financial position, it is very difficult for them to approach experts on these matters. Micro enterprises training program along with mentors, therefore should have an in built counseling services on a continuous basis. Some of the efforts like 24 * 7 Udyami helpline need to be strengthened.

5. Performance Improvement programs

There is a concept of performance improvement programs for the micro entrepreneurs. It would be advisable to organize such programs for two or three days similar to that of the entrepreneurship awareness camps but with different curricula and for existing micro-entrepreneurs. This would go a long way in improving the performance of the trained entrepreneurs of micro enterprises. In such programs, an ICT support services and training should be provided i.e. online marketing, eCRM (e Customer Relationship Management), e-mail campaign, Short Message Service integration etc.

6. Projecting Micro Entrepreneurs:

It is important to boost the confidence and morale of micro entrepreneurs so as to give a feeling of self-esteem by projecting them in the community. Efforts made by the

few print and electronic media to project such success stories of micro entrepreneurs needs to be replicated with social media and many other platforms.

The entrepreneurial success stories can also be made as part of university curriculum. Sponsoring agencies, industry federations, organizations like FICCI, CII have constituted awards and medals for industrial excellence. Such models replications at district level along with present efforts of DIC (District Industries Center) for better projection of micro enterprises will give positive impact.

6.4.2.4 Need of more TBI & STP:

At present very few Technology Business Incubators (TBI) and Science and Technology Parks (STP) are functioning well. Some of the incubators have their own landmark in this field even at international level. The number of TBI and STP at state level are not more than 3 or 4. This needs to be improved for availability of its services to the rural entrepreneurs. Rural Technology Parks, Women Technology parks are now also established with technology institutions. Strengthening of this initiative over a period of five year will change the entrepreneurial scenario with commercially viable innovations.

6.4.2.5 Single Window platform:

A single window combined platform of venture capitalists, product support companies, money lenders, and bank credit officials within the Govt. system or industry organizations needs to be developed with present system of entrepreneurship development. A new developed system of central Govt. in form of Technology Development Board, tinkering labs, innovation labs, venture centers and ideation labs would be integrated in such single window platform to promote high tech entrepreneurial growth of international competence within the country.

6.4.2.6 Scope for future study:

This study explored significant difference between the variables defined for the Experimental and Control group. Based upon the statistical results with descriptive analysis, and t test of independent samples of both groups, hypothesis testing is done.

The effect of ICT tools on the development of first generation of entrepreneurs can be further studied for mathematically and statistically development of model.

6.5 Conclusions:

The conclusions of this study has been drawn from independent sample t test and secondly from descriptive statistics by making factor analysis with the variables defined.

6.5.1 Independent sample t test conclusions:

P-value $p < .0001$ is less than our chosen significance level $\alpha = 0.05$. It rejected the null hypothesis. It further concludes that the mean for experimental and control group is significantly different. Based upon these results, conclusions are:

1. There is a significant difference in mean between experimental and control group ($t_{72.909} = 12.428$, $p < .001$).
2. The average mean difference score for experimental group respondents was 44.2400 greater than the average score for control group respondents.

6.5.2 Descriptive Statistic conclusions:

Use of technopreneurship Learning Materials, technology training with ICT, scores of the participants and methodology of content delivery are the major factors analyzed descriptively. Analysis shows significant difference with the details of mean and std. deviation as stated below.

Mean of experimental group is 4.2200 and control group is 2.3000 and standard deviation is 0.54548 and 0.67763. It shows significant difference for the use of tehnopreneurship learning material.

Means of experimental and control group are 4.4000 and 2.2400 respectively. Also standard deviations are 0.72843 and 0.98063 of experimental and control groups of the technology training with ICT shows significant difference of descriptive statistics because of considerable effect on the development of competencies of experimental group respondents.

Standard deviations are 0.62073 and 1.00793. It shows significant difference and thus effectiveness of the content delivery factor upon the experimental group respondents. Means of experimental and control group are 4.2600 and 2.1600 respectively. Standard deviations 0.63278 and 0.9553 also have significant difference like means. It shows that methodology of training with project based learning gave considerable factor of affecting upon the respondents for enterprise development.

The mean for score of experimental group is 104.7000. The mean for control group is 60.4600. Standard deviation mean and standard error score of the experimental group are 11.44329 and 1.61833. Standard deviation mean and standard error score of the control group are 22.41921 and 3.17055. It shows significant difference.

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Annexure – I

History of ED in India

The history of colonial entrepreneurship development in our country is considered with entrepreneurship scenario during Pre Independence and Post Independence.

Kanishka Empire	Foundry Technology
1600 A. D.	Trade with Roman Empire
Metal Craftsmanship	Trade with west
Bara Balutedar System	Occupations with Caste
Tata: Parsi Entrepreneur	1911: Steel Industry
Swadeshi Movement	Swadeshi Textile mill
Arrival of East India Company	Manufacturing and trading
British rule of the East India Company from 1757 to 1859	Advancement in the techniques of production and thus technology adoption that revolutionized manufacturing process in UK affected on Indian entrepreneurial process of development
British rule of the British Government in India from 1859 to 1947	Limited ventures and selected sectors were controlled by the British rulers. Raw material production for export
After 1947	Development of organized Sector
1991 Post liberalization policy	Conductive Framework conditions for entrepreneurship

The history of ED in India has been explored by the number of Indian researchers in their recent earlier studies. Musmade, Manjusha Arjun (2011), Pahurkar, Rajesh Narayanrao (2011), Satheesan, *A (2013),* Sujatha T M (2013), Emmanuel, Mathew (2013), Vargheese Antony Jesurajan S (2013), Kamdar, Manish (2013), Santha, S (2013), Chakraborty, Sujata (2014), and Ghosh, Pralay Kumar (2016) covered evolutionary aspects and developments in the various sectors of entrepreneurship.

This evolution of the Indian entrepreneurship can be reviewed from Kanishka Empire when Indians were experts in smelting of metals particularly brass and tin. Foundry technology was its own standing as golden days in the processing during the Kanishka Empire. Following with the period, in around 1600 A.D., India established its trade relationship with Roman Empire. Gold was pouring from all sides. Specifically Portuguese captured the Indian sea waters and dominantly entered in to the Indian business. They forced the existing entrepreneurs to become traders and they themselves took the role of entrepreneurs.

There were few occupations having glorious days to the craftsmanship. Metal handicrafts entrepreneurship is one of them. In India, it was as old as the human civilization itself, and was nurtured by the craftsmen as a part of their duty towards the society. Before India came into trade contact with the west people, they were organized in a particular type of economic and social system. It was based on the village community and further on the caste. This system is popularly known as "Bara Balutedar System". Various parts of the India gave unique products. Like Bengal have enjoyed worldwide celebrity for corah, Ahmedabad for dupttas and dhoties, Kashmir for shals, Banaras for metal wares, Lucknow for chintzes, Nagpur for silk-bordered cloths, and many others.

Tata was the first parsi entrepreneur who established the steel industry in Jamshedpur in 1911. The Swadeshi movement and campaign gave emphasis more on indigenous goods provided, indeed, a proper seedbed for development of nationalism in the country. It was the influence of Swadeshi movement that Jamshedjee Tata even named his first mill as 'Swadeshi Mill'.

Till the earlier years of the eighteenth century, India enjoyed and maintained the prestigious status of the queen of the international trade with the help of its craftsmanship and skills of handicrafts for the production of unique objects. There was impact of British East India Company in the early eighteenth century to the mid-nineteenth century upon the entrepreneurial scenario till the independence in 1947 after a struggle for independence as nonviolent resistance headed by Mahatma Gandhi. Manufacturing entrepreneurship, trading structures and other sectors in India haven been emerged as the latent and manifest consequence of East India Company's advent in our country.

Organized industrial sector activity was remarkable among the Indian artisans in a few recognizable products in the many cities of our county. Banaras, Allahabad, Gaya, Puri, and Mirzapur were few of them which were established on their river basins. Since long back, Bombay (Mumbai) has been found economic capital of India. The actual emergence of manufacturing-production entrepreneurship can be further noticed in the second half of the nineteenth century. Prior to 1860, some stray failure attempts were, made by the foreigners especially Europeans to set up factories in different sectors in India. Around 1960, India has the world's twelfth largest economy at market exchange rates and the fourth largest in purchasing power.

Economic reforms with policy of liberalization, since 1991 have transformed it into one of the fastest growing economies. The entrepreneurship is found the result of three main dimensions working together. These are: conductive framework conditions, well designed government programs and supportive cultural attitude. Open market policy has given impact upon economic, psychological and sociological academic fields that further accepts entrepreneurship as a process.

Economy of India before British-Rule:

The Indian economy in the pre-British period has a structure of isolated and self-sustaining villages with limited and specific number of commodity services. Transport and communication were totally underdeveloped and so the size of the market was very small. In 1936, Varr, Tagore and Co. assumed the management of Calcutta Steam Tug Association gave the emergence of Managing Agency System which made its own contribution to the Indian entrepreneurship. The credit for this movement goes to an Indian entrepreneur, Mr. Drawrkanath Tagore, who encouraged others to from joint-stock companies. He invented a distinct method of management in which management remained in the hands of the venture rather than of an individual. To understand pre-British India, it is most essential to study the structure of the village community, the characters and cultures of towns, characteristics of internal and foreign trade, and also the state of the transport and communications methods used in those days.

The structure and organization of villages:

The village community in India was on a simple division of labor based on the caste. The farmers cultivated the soil for agro-products and tended cattle. Similarly, there are other existed occupations and classes of people called washer men, weavers, goldsmiths, cobblers, carpenters, potters, oil pressers, and barbers etc. All these occupations were hereditary and passed by tradition from father to son or simply to followers. Occupations by birth were the system to nurture economy of the village in the India system of economics.

Most of the agri-products cultivated in the village was marketed and consumed by the village population itself. The raw agri-materials produced from this system were the feed for the handicrafts. The interdependence of agriculture and hand held skill industry provided the basis of the small village republics to function independently than the outside world. The main reason behind it was the panchayat control system controlled by the landlords over the eco-social system of the village.

This union of such village communities, each one forming a separate small state by itself is in a high degree conduciveness to their happiness, and also to the enjoyment of freedom and independence in respect of economy and social structure of the villages. The villages did acknowledge some outside authority, who in turn may be under a Hindu king or Muslim Nawab by paying a portion of the agricultural production varying between one sixth to one third or sometimes even in one half as land revenue. The land revenue sustained the government run by Nawab or king.

There were three distinct classes in villages of India as the agriculturists, the village officials (Panchayat), and the village artisans. The agriculturists could be land-owners or the tenants to cultivate. Capital needed was either supplied by the producers themselves or by the village moneylender, popularly called “Savkars” or by the village landlords. Many times labor force was also supplied by these agencies. These credit agencies supplied finance at exorbitant rates of interest to the agro-cultivators.

The village artisans were service providers of the village. In some cases they might me the servants having skills. Most of the villages had their panchayat bodies of elders or members of landlord families to settle local disputes about the all related

matters. The panchayats were the courts of justice for disputes. The villages of India were isolated and self-sufficient units.

Industries and handicrafts in pre-British rule in India:

Agriculture was the main and dominant occupation or profession of the people of India but the products of Indian industries has a worldwide existence and its reputation. Textile handicrafts are one of the dominant occupations of the particular caste based community. The, the calicos of Bengal, the sarees of Banaras and muslin of Dacca, and other cotton fabrics were well known to the foreigners. Egyptian mummies back to 2000 B.C. were wrapped in Indian muslin. Also the muslin of Dacca was known to the Greeks under the name Gangetika. These few examples show the entrepreneurial zeal of Indian caste based community that needs to be considered as a part of evolution.

The chief industrial sector spread over the whole country was textile and textile handicrafts. The high artistic skill of the Indian artisans gave fame for their products throughout the world. Besides the muslins, dhotis and dopattas of Ahmedabad, chintzes of Lucknow, silk bordered cloth of Nagpur and Murshidabad are popular. Koshti's (Caste based Community of Maharashtra) cotton fabrics, the shawls of Kashmir and Amritsar were very famous. Many other artistic Industries with traditional products are quite well known. Few of them are stone-carving, jewelers, and wood carving, marble-work, brass, copper and bell metal wares. The cast iron pillar (Kutb minar) near Delhi is a testament to the high level of metallurgy that existed in India. It also shows foundry as one of the industrial sector existed.

The Indian unorganized, tiny, and micro-industries industries not only supplied all local commodities or wants but also enabled India to export its finished products to foreign countries. Indian exports consisted mainly of manufactures like cotton and silk fabrics, artistic wares, calicos, silk and woolen cloth, and export of commerce like pepper, cinnamon, and opium. Europe and other countries were the customers of Indian manufacturers during the 17th and 18th centuries. Unorganized entrepreneurship sector of India was mainly related to the products of traditional products of local specific skills distributed throughout the country.

Economic consequences:

The British Empire in India gave the emergence of a new political and economic system in India. British rulers were intended to root a foreign soil and policies solely of their interests. The early few invaders Indianised themselves but the British always tried to keep a distance in many respects between them and the Indian people and thus maintained leadership as rulers of India.

The British rule can be divided into two parts i.e. first the rule of the East India Company from 1757 to 1859, and second, the rule of the British Government in India from 1859 to 1947. These rules gave a long impact upon the Indian ecosystem, industrial culture and thus on the present system of entrepreneurship.

The establishment of the British rule itself was a very slow and long terms process, extending more than a hundred years. During the 1757 – 1859, England was passing through the period of changes, advancement in the techniques of production and thus technology adoption that revolutionized manufacturing process. The Industrial Revolution with technology which synchronized with the period of British conquest helped so much that British sell of the new land revenue system and partly by the process of commercialization of present system of agriculture for the support of their Industry.

The new land system and the commercialized agriculture system gave exploitation of the Indian farmers. The British were not at all interested in developing India as agro based remarkable country of the world. The growth of railways, the expansion of education, the spread of irrigation, and the creation of revenue settlements were all initiated and developed with one priority goal to accelerate the process of economic drain from India and making a second or support level system of labor in India for United Kingdom.

Before the beginning of Industrial Revolution in UK, the East India Company concentrated and took efforts on the export of Indian manufactured goods, spices, textiles, etc. to Europe where these finished goods were in great demand. The Industrial Revolution in UK reversed the export situation of India's foreign trade of finished goods. Expansion of productive capacity of UK manufactures using technology resulted in increased demand of only raw material and its supply for British industry.

As a result, attempts and specific policies were drawn to restrict and crush Indian manufactures from their entrepreneurial roots. On the other side, efforts were made to commercialize agriculture so as to increase the export of only raw materials. This situation started to make India people of entrepreneurial zeal more and more helpless and unemployed from their occupations. The Indian textile handicrafts were the first to be hit by the British rulers. The decline of this industry started a chain fall down reaction leading to the speedy decline of other handicrafts and thus dependent local eco-system.

Industrial-transition in India:

The process of industrial transition in the British period is specifically divided into industrial growth of the 19th century and industrial progress during the 20th century. During the 19th century there were a decline of indigenous industries and a rise of large scale modern industries. This change was brought about by private enterprises come from UK's industrial revolution. The increase in large scale industries was slow at the beginning but by the close of the 19th century, the movement became more rapid. During the period 1849 - 56, the establishment of the first jute mill, the first coal mine and first cotton mill took place. During this period, the first railway line was laid in India that gave boost for the trading with facility of transport of raw material.

During the late 19th century, there were around 50 cotton mills, 20 jute mills, and few but significant coal mines. During this period, India produced more than one and half million tons of coal per annum. Indian railways had a mileage cover of 8,000 km. At the end of 19th century there were around 200 cotton mills and 35 jute mills, and coal production had risen to over 6.5 million tons per annum. It shows rapid growth in specific sectors with adoption of technology.

In India, there was rapid increase in industrialization with technology. It resulted for the development of modern industries with the utilization of coal and iron resources laid at the end of the 19th century. India was being gradually converted into an agricultural colony of the British rule. By 1900, India had become a great exporter of agricultural products of rice, oilseeds, wheat, cotton, jute, tea, etc. under the importers of British manufactures. Even though industrialization was started by the British in the early

19th century in few and specific sectors, the British were more interested in their profit and not for accelerating the economic growth. The Jews and the Americans, British and the Parsis, were also prominent first as merchants and later as industrialists. They were highly progressive communities with supporting within each others.

Within the Indian community, conditions were not favorable for the economic development and emergence of industrial leaders, partly because of the peculiar way in not supplementing to each other. Industry came to India only to reserve raw material, as compared to development in England.

In the European countries, two groups were set up by the industries and industry leaders i.e. merchants and the master craftsmen. The merchants or traders had capital to mobilize raw material, marketing ability and capacity to manage labor. The master craftsmen did not have capital but had skills and understanding the materials and their proper handlings. Because of these and other certain peculiar reasons, neither Indian merchants nor Indian craftsmen took interest in the system of Industrialization.

Industrial system was introduced in India by the British, the merchant and also trader class found greater opportunities for British origin. The development of technology for shipping and the building of railways resulted in larger trade and thus profit to the British entrepreneurs in India. Besides, there were more opportunities o them for lending money. Thus, the British merchants found greater scope for profits in traditional occupations of India.

At the same time, Indian craftsmen too did not play the part played by their western counter parts in the field of industrialization because they did not possess large capital and even new skills of the technology without proper training and education.

Few Indian entrepreneurs joined the ranks of industrialists early in the middle of the 19th century. They grew through this period continuously and steadily by using the same managing agency system as like to that of the British. They were becoming increasingly important members of companies established by the British entrepreneurs and rulers. The indigenous business groups who gave up traditional occupations and who took to industrial ventures were the Parsis, the Marwari's, the Guajarati's, and the Jains communities of our country.

The growth of private, trading, and service enterprises took place during this period of time but the occupations, ventures were limited to only few sectors underlined and controlled by the British rulers. “Swadesh abhiyan” and other social factors related to the independence were found equally important to affect upon the industrial process and generation of the eco system of India. After 1915, more cotton mills and jute mills were set up in the country. Coal production gets more than doubled. Extension of railways tracks continued at the rate of about 900 miles per annum. The start of iron, brass and steel industry was finally laid during this period.

Imports from England and other European countries fell substantially after the war of 1914-18. The demand for war increased considerably which gave a great acceleration to the production of cotton, jute, iron and steel, leather goods, and woolen textiles. Indian mills and factories increased their production and were worked to full capacity. Indian Fiscal Commission was established around 1918 and it recommended tariff protection for certain Indian Industries.

As the recommendations to this commission, a tariff board was established in 1923 and further the Steel Industry of India was given protection in certain factors related to its growth. During 1924 – 193, several major industries were given protection by the Government to promote the sectors like iron and steel industry, sugar, cotton textiles, jute, paper and pulp industry etc.

Indian industrialists took advantage of the policy of protection and developed these sectors so rapidly. They were tried to capture the entire Indian market and eliminate foreign competition altogether in other important fields. The post effect of the war and in around 1939 created very urgent demand of manufactured goods. The imports from foreign countries declined in India during this period. Naturally the existing industries expanded their operations rapidly. The increase in industrial output during 1939 - 1946 was about 23 per cent. But the conditions created by the war led to the maximum utilization of existing capacity of production. The conditions of shortage created by the Second World War continued in the post war period, but the overall index of output went up by only 5.6 per cent during the period of 1945 - 1952.

Exploitation and consequences:

The major exploitation of India was done in trade after Second World War. The British started making investments in Indian industries and the process of economic drain started through return on investment and thus income in the form of dividends and profits to the England. In addition to this, India had to pay the costs of British administration, in the form of home and other charges. They included salaries of British officers, payment of pensions, and other benefits. They also include interest payments on sterling debt. Trade policies developed have been aimed to define a colonial pattern of trade in which India would become an exporter of foodstuffs and raw materials to the British importers and manufacturers.

There was an encouragement for British entrepreneurs to make direct investment in capital of Indian consumer goods industries and also to contribute through the managing agency system. It was also forced to India entrepreneurs for paying the costs of British administration as well as to finance to the wars, contribute in the taxes and expeditions undertaken by the British. These are the few examples of the exploitations that affects directly upon the Industrial growth in India.

Exploitation through Trade Policies:

Trade policies were used by the East India Company was against India counterparts and later by the British Government to take away wealth from India for feeding the expansion of British industry thorough out the world with raw materials from India. The policy was to encourage for setting up the trend towards commercialization of agriculture so that the Indian economy could be transformed as supportive of the British colonial system.

East India Company always encouraged indigo export. Some European planters, agricultural entrepreneurs were settled in Bengal and also in some other part of the country. They were given land at a very nominal and minimum price. They forced the cultivators and farmers on their land to cultivate and sell the indigo plant at a very low price to British entrepreneurs. Even some landlords were compelled to allocate a portion of their land for indigo cultivation and thus to support British entrepreneurs. Once an agreement was signed with landlords by the British entrepreneurs accepted the advance for cultivation, he had to suffer the ruthless exploitation that made fabulous profits from

its export. This is one the example of exploitation which reflects upon the culture of entrepreneurship over a long period of time even after independence.

Exploitation of artisans through company agents to deliver cotton and silk fabrics much below the market price had also took place on the massive level. East India Company has predominant for taking such benefit from the export of Indian cotton and silk fabrics which also enjoyed a worldwide reputation. The company made a cadre of agents. These agents, who were Indians in the employment of the company, would go to the village and force the rural artisans to sign an agreement to deliver a certain quantity of goods at a price to be fixed by them. Fixed price at least 10 per cent and in extreme cases, even 45 per cent lower than the market price gave exploitation of the rural artisans. If an artisan refused to accept the advance offered by the company's agent, he was punished by many ways including flogging and in certain cases, by imprisonment. The company's agent, the East India Company was able to procure cotton and silk fabrics at very low prices. The poor rural artisan was squeezed so that the East India Company made huge profits through the export of these fabrics. The ruthless approach of the company was against humanity which affected so badly upon the generations to generations of skilled artisans.

Exploitation through British direct investment in capital to Indian companies has been also done on massive scale. British encouraged it in India for the effective control and administration of the country. It has been carried out with efficient system of transport and communication. Second reason for investment is also to exploit the natural resources of India through developing public utilities of electricity, water works, and other essential commodities. Third reason of investment is to promote foreign trade so that food and raw materials collected in various local markets should quickly exported and the import of manufactured objects in India for quick distribution in various markets.

Nature of Unemployment in India

India has a developing economy and hence the nature of unemployment sharply differs from the industrially advanced and developed countries. Problem of unemployment in India is in diverse scenario because of timely changing employable skills with adoption of information technology. The one type of unemployment caused by

economic fluctuations did arise in India during the depression in the 1930's which caused untold misery. The main types of unemployment in our country include structural unemployment which focuses on structural problems in the economy and employable skill inefficiencies inherent in labor markets, including a mismatch between the supply and demand of laborers with necessary vocational skill sets. It is one of the major types of unemployment badly affecting on the culture of the entrepreneurship.

Similarly, after the Second World War, industries were being closed. There was a good deal of fractional unemployment caused by retrenchment in the army, navy, ordnance factories, and other defense organizations. These workers were to be absorbed in sector specific industries. Displacement and restructuring of labor caused the process of rationalization which started in India from 1951. The flexibility of an economy can be judged from the speed with which it heals fractional unemployment.

More serious than cyclical unemployment or fractional unemployment in a developing economy like India is chronic under disguised unemployment in the rural sector and the existence of urban unemployment among the educated classes.

According to Karl Marx, "…….Unemployment is inherent within the unstable capitalist system and periodic crises of mass unemployment are to be expected. The function of the proletariat within the capitalist system is to provide a reserve army of labor that creates downward pressure on wages……..". It would be more specific to emphasize that unemployment in developing economies like India is not the result of deficiency of demand, but a consequence of shortage of capital, equipments, and other complementary resources for the development of industrial scenario. Seasonal unemployment occurred in rural India especially at agriculture based ventures.

Annexure – II

Theories of Entrepreneurship

Richard Cantillon's theory (1755):

The term entrepreneur was first introduced in the early 18th century by Irish-French economist Richard Cantillon. Earlier to R. Cantillon, Jean-Baptiste credited only coining of this word. Cantillon formally defined "….The entrepreneur as the agent who buys means of production at certain prices in order to combine them…….". This theory does not view the entrepreneur as a producer as such, but an agent that takes risk and thereby tries to equilibrate supply and demand in the economy. In a neo-classical framework, this resembles that of the optimizing residual claimant i.e. the business owner who rents labor, land owners in a world of uncertain demand or production and capital from workers. Cantillon further divided society into two types i.e. fixed income wage-earners and non-fixed income earners. According to Cantillon, "…….Entrepreneurs is non-fixed income earners who pay known costs of production but earn uncertain incomes……".

Frank Knight's Risk Bearing Theory (1885-1972):

According to Frank Knight, "…..Dimension of risk-taking is a central characteristic of entrepreneurship…..". He adopts the theory of early economists such as Richard Cantillon and J B Say, and adds the dimension of risk-taking in his theory. Further Knight elaborated that "……This theory considers uncertainty as a factor of production, and holds the main function of the entrepreneur as acting in anticipation of future events…….". The entrepreneur earns profit as a reward for taking such risks in the entrepreneurial activities. As a risk taker, entrepreneur can also suffer with the loss.

Frank Knight's theory of the entrepreneurial function in modern enterprise is considered in two different contexts. The first context is the dismissal of the neoclassical theory of business enterprise with their subsequent call for measures that would ensure corporations acted in the social interest. It is similar to that of the corporate social responsibility (CSR). The second context is regarding the problem of intelligent control in a democratic society. Based upon these contexts, Social entrepreneurship is now

emerging as a new era in the field of entrepreneurship education. Many other dimensions have been added in it for its relevance in post scenario of globalization.

Alfred Marshall's approach to entrepreneurship (1890):

Marshall is an equilibrium creating entrepreneur. According to Marshall, "……The principles of economics go with land, labor, capital, and organization. These are the four factors of production, and considered entrepreneurship as the driving factor that brings these four factors together……..". In the Neo-classical theory, his analysis tries to elaborate equilibrium conditions in the markets under the assumptions of perfect knowledge and information, existence of homogenous goods, perfect competition, and free entry with exit.

Marshall also described and analyzed supply and demand relational graph for the enterprise. He gave number of main concerns. Goal is to show the market clear under the perfect competition assumptions and there are no excess profit opportunities. There is no exploitation of labor in production and process even that everyone earns his marginal contribution to production. Marshall's scissors analysis is famous and also popular in the field of economics. He explained two blades as a pair of scissors. It effectively removes the theory of value from the center of analysis and replaced it with the theory of price. He tried to create equilibrium by explaining many players in the market to create competition and thus not to have a monopolist market. His analysis gives contributions from a very large number of modest entrepreneurs that lead economic progress.

Max Weber's Sociological Theory (1895):

Max Weber, a German sociologist explains as "……. Religion is the major driver of entrepreneurship, and it is stressed on the spirit of capitalism, which highlights economic freedom and private enterprise……". He combined economic sociology and the sociology of religion in his theory. The sociological theory entrepreneurship holds social aspect and cultures as the driving force of entrepreneurship.

The entrepreneur is a role performer in conformity with the expectations of the society, and such role expectations are based upon religious beliefs, cultural trends, and trading demands. Generally, capitalism thrives under the protestant work ethic that

perhaps on these values. The right combination of discipline and an adventurous free spirit with sense of market defines the successful entrepreneur. According to Weber, "……..The development of the concept of the calling quickly gave to the modern entrepreneur a fabulously clear conscience and also industrial workers. Modern entrepreneur gave to his employees as the wages of their devotion to the calling and of cooperation in his ruthless exploitation of them specifically through capitalism the prospect of eternal salvation…..".

The Sociology of Hinduism and Buddhism was Weber's third major work on the sociology of religion. According to Weber, "…….Hinduism in India was a major barrier for capitalism. The Indian caste system made it difficult for individuals entrepreneurs to advance in the society beyond their caste and profession……".

Activity, including economics, was seen as unimportant in the context of the advancement of the soul. Now this scenario in India has been changed and also changing with the consideration of caste and a profession.

Theodore Schultz Approach for entrepreneurship theory (1975):

One of the American economists and Nobel Laureates argue, "…….. Entrepreneurship is closely connected to situations of disequilibria and that entrepreneurship is the ability to deal with the situations……". In disequilibrium, agents may be called change-agents are acting sub optimally and can reallocate their resources to achieve a higher level of satisfaction. Entrepreneurial ability does its coordination to reallocate it efficiently, and it further follows that agents have different degrees of entrepreneurial ability.

According to Schultz, "…….. The speed of economic recovery is due to a healthy and highly educated population. Education makes people more productive and good healthcare keeps the education investment in around and able to produce……". One of main contributions of Schultz was further called human capital theory. He puts this theory after the Second World War.

A better allocation of resources for the successful enterprise can be achieved either by experimenting (trial and error) or by investing in human capital. Schultz says, "……Entrepreneurship exists in all aspects of human life. Housewives and students are

entrepreneurs when reallocating their time for housework or student activities……" Entrepreneurial ability can be augmented by investment. According to Schultz, "…It is possible to analyze effect of entrepreneurship within the conventional supply and demand framework……".

Israel M. Kirzner's "alert" entrepreneur (1997):

Kirzner gave the Neo-Austrian approach towards the entrepreneurship. This approach is focused on working of market economy works. If market economy works, one has to think process that leads the economy towards equilibrium or not. Kirzner further says, "……Initially the economy is in disequilibrium and the competition among alert entrepreneurs leads to equilibrium. He further claims entrepreneur is an equilibrator……".

Unlike Neo-classical economists, Kirzner specify, "…….Markets are not always clear, there is no perfectly informed or updated representative agent and for change to occur the entrepreneurs need incentives. This incentive comes from the difference among agents in terms of information and knowledge……".

According to Israel M. Kirzner, "…….Economy is in a constant state of disequilibrium due to affected shocks constantly hitting on it. Economic agents suffer from ignorance, they simply do not know about the availability of the additional information. An alert entrepreneur discovers and exploits new business opportunities after idea generation and eliminates ignorance and thus moves the economy toward equilibrium, which is the state where no more information can be discovered……..".

Kirzner further says, "……In order to identify the manner in which the market consequences of any entrepreneur differ from those emphasized in Schumpeter's work, I emphasized that entrepreneurs can be seen as responsible for equilibrating market movements. In the absence of dramatic changes in product specifications in production methods, entrepreneurs were engaged in arbitrage, acting entrepreneurially even when they might not be seen as Schumpeterian creators……".

Kirzner's analysis of entrepreneurship specifies a disequilibrium that can only be corrected by alert entrepreneurs who produce and exchange. More on the exchange of opportunities and progress that is came mainly with this approach. He further says

“…….Entrepreneurial progress does not depend on a great man but it does depend on many great men, many players in the business scenario……..”. Kirzner’s main contributions to the economics of entrepreneurship were evaluated by Douhan, Eliasson and Henrekson (2007).

Frank Knight’s Approach (1971):

According to Knight, “…….The main function of the entrepreneur is to assume the uncertainty related to entrepreneurial scenario, thereby shielding all other stakeholders against the entrepreneur. Knightian uncertainty exists where there is no basis for objective probabilities, so that it is un measureable and decisions have to be made using subjective judgment……”. Knight further says that the entrepreneur as someone who undertakes business decisions under many conditions of uncertainty.

Knight gave his views on entrepreneur in terms of risk, uncertainty and profit. Knight recognized and also analyzed the distinction between risk and uncertainty. The later is uninsurable since it relates to number of unique events. According to Knight (1942), “…..The main function of the entrepreneur is to assume the uncertainty related to events, thereby shielding all other stakeholders against it……”. Knight elaborated his theory his research.

According to Knight, "……..Uncertainty must be taken in a sense of radically distinct from the familiar notion of risk, from which it has never been properly separated. The essential fact is that risk means in some cases a quantity susceptible of measurement, while at another hand it is something distinctly not of this character. There are far reaching and crucial differences in this phenomena depending on which of the two is really present and operating. It will appear that a measurable uncertainty, as we shall use the term, is so far different from an un measurable one that it is not in effect an uncertainty at all……."

Knight further claims, “…….Entrepreneurs are the owners of companies as residual claimants, and thus receive profits or suffers with loss. In order to earn a profit, the entrepreneur carries out three tasks i.e. he initiates useful innovations, he adopts to changes in the financial environment, and he assumes the consequences of uncertainty related to his company. It can be further state that the Knightian theory of

entrepreneurship is a refinement of the theory by Cantillon. He said that entrepreneurship is closely connected to risk and or uncertainty without recognizing the important distinction between these two.

Neoclassical Constraints theory of entrepreneurship:

The core of the neoclassical research paradigm is characterized and elaborated by the study of rationality, methodological individualism, the allocation of scarce resources, optimization, focus on marginal tradeoffs and relative prices, the use of calculus and a general equilibrium conception of the economy or more colloquially, greed, rationality and equilibrium.

Economy cannot be static and thus the state of static equilibrium is unrealistic. Large profits in the entrepreneurial situation are also not easy to take by. The application of the neoclassical theories is also unrealistic. Despite the growing role that business has played in the development of capitalism, the neoclassical paradigm scenario has largely ignored the concept of organization. Neoclassical economics (NE) has the self organized markets and its mechanism of allocation with the system of prices.

Biological Theory of Entrepreneurship:

Based upon the gender difference, few biological theories of role based entrepreneurships have been set by the economists. Alice Eagly (1995) developed the social role theory which attributes sex differences to the labor division between men and women. She further narrated several of the academic theories of gender differences offer explanations. These are based on deeply seated cultural or even biological differences between men and women. The literature also emphasizes gender differences, as core aspects of the mean to be a man or a woman in the entrepreneurial process. However, other number of especially role based theories in entrepreneurial activities emphasizes that gender differences in behavior should be expected to change along with other social and cultural changes.

According to Christopher Udry Theories (2001), "…..More stable gender differences generally admit the coexistence of more malleable gender differences to perform activities of enterprise……". Rober H. Brockhaus (1980) and Howard E.

Aldrich and Wiedenmeyer (1993) stated that, "…… Research has failed to consistently find risk-taking propensity to be a trait distinguishing entrepreneurs from others. ….".

According to Baron (1998), Leslie Palich and Ray Bagby (1995), "…….A more promising recent research has suggested that entrepreneurs differ in cognitive style from others learners and that they may be more likely to make particular cognitive errors, especially errors of overconfidence……..".

Many psychologists have documented and also explained moderate and consistent levels of differences between men and women in risk taking behaviors for the venture. Many psychologists' view explains that women are risk averse and are skeptical into venturing in unfamiliar territories as regards business operations. Risk taking is one the entrepreneurial competencies that can vertically grow the business to particular mark and innovation. It ultimately may make a business enterprise into successful venture. Risk averseness may contribute immensely to business decline, failure and collapse. This characteristic explains about women enterprises failure within few years of their establishment and or start up.

Powell M. and Ansic D. (1997) studied business decision making process and their research shows that women prefer lower risks than men, especially in financial and professional contexts. Experimental study about business students of Powell and Ansic showed that women preferred very less financial risk than men across a variety of framing scenarios of the business. These views are consistent in nature and also repeated with many other experiments as like in innovation and social entrepreneurship as those of studies by Sexton and Bowman Upton (1990).

According to Bowman Upton (1990), "…….. It is also consistent with another perspective that views financial leverage as risky, women are also less likely to apply for a loan and are more likely to use personal assets to finance the enterprise or as collateral activity……..".

Diarmuid Scollard (1989) explained as, "……Practitioner oriented entrepreneurship mentors, trainers, writers and business incubators have frequently commented that women entrepreneurs perceive risk differently than men. It is further suggesting that women may be less likely to voluntarily undertake very high-risk business activities……".

According to Willium J. Stolze (1989), "……It has been suggested that women may be less willing to undertake activities such as raising external financing that put them at risk of losing control of their business to outside stakeholders…..". D. Scollard suggests that, "…….Small elite groups of women entrepreneurs approach risk taking in a manner similar to men, but that on average, women entrepreneurs are much less willing to undertake substantial business risks……..".

In India, the movements of "Saving Groups" alias "Bachat Gats" have shown remarkable development in micro enterprises and thus change in their livelihoods. In general men build businesses of all sizes, but most women build only very small businesses, with a few building large firms.

Joseph Schumpeter: Equilibrium Destruction Theory:

Australian born American economist J. Schumpeter specified entrepreneurship as innovation and not imitation. Schumpeter's opinions with the ideas of other economists were quite complex in his contributions to economic analysis along with the theory of business cycles and development. According to Schumpeter (1999), "……. Theory of economic development with a treatise of circular flow which, excluding any innovation and innovative activities, leads to a stationary state. The stationary state is, according to Schumpeter, described by Walrasian equilibrium as the hero of his story is the entrepreneur……".

Schumpeter's innovation describes, "…… As an economic and social leader does not care so much about economic profits and only joy he gets from being as an innovator and being the best server to his society. The entrepreneur disturbs this equilibrium and it is the main cause of economic development, which proceeds in cyclic action along several time scales. Entrepreneur is an innovator in the entrepreneurship arena…….".

Further in the Schumpeterian theory, the entrepreneur moves the economy in all respect out of the static equilibrium. Marz (1991), states that "……Schumpeter denied that the process of accumulation is the ladder to social power and prestige, but he thought the main spring of the exercise of the entrepreneurial function is the powerful will to assert economic leadership……".

For entrepreneur, the joy of carrying through innovations is the primary motive, the acquisition of social power a subsidiary to it. The entrepreneur is not the one who invents new contributions and combinations but the one who identifies how these new combinations can be applied in production to make commercial viability. This line of reasoning further implies that a business owner is an entrepreneur only if he is carrying out new combinations. The entrepreneur always moves the economic system out of the static equilibrium by creating new products or production methods thereby rendering others obsolete. This is the process of "creative destruction" which Schumpeter saw as the driving force behind economic development carried out by the entrepreneurs. Schumpeter's contribution is one of the important aspects for the researchers.

Sociological Theories of Entrepreneurship:

Social entrepreneurships are clearly social entities from the beginning of actions, because even two ventures implicitly involve a choice not to share ownership with others in the founding process of it. Enterprise begins and others are recruited to join the effort can have lasting consequences for its performance, growth and survival. In this type of theory, enterprises can be formed as an impactful result of teams. Three principles underlying team formation may be distinguished. According to Ruef M. (2001), "…..Choice on the basis purposive choice, homophile, and choice constrained by context are the three principles. Opportunity purposive choice reflects people's tendencies to choose others who possess variable valuable skills, such as employability, experience and education. Homophile specifies the tendency of people to associate with others and similar to themselves, such as choosing others on the basis of gender. Opportunity sets a context within which the first two principles operate……..". In general, founders of the social enterprise cannot choose someone whom they have not known, not met or have no way to reach, such as a person who works in another organization or lives in another city.

Social entrepreneurship has a psychological contract involving a give and take transaction relationship in form of teamwork involving two or number of more individuals who jointly establish a business in which they have an equal interest of finance.

People involved from the beginning and also have an equity stake in the venture to be considered a member of the team. Much of the literature is based on the assumption that teams are a deliberate choice of a lead entrepreneur or set of founders. According to Kamm et al. (1990), "……There are many psychological benefits derived from relationships between team members. Unlike an individual entrepreneur, who must bear the burden of making decisions and facing their consequences with no one else to blame, social entrepreneurial teams spread the responsibility across individuals. To defend decisions to other individuals also have an equity stake in the venture. They can make team members more confident in their decisions……..".

Francis and Sandberg (2000) further noted, "……. Many times friendship may hold teams together and stimulate directed efforts during difficult times. The biological perspective of entrepreneurship involves a psychological satisfaction and differences in behaviors in their exhibited by different gender in their endeavors as entrepreneurs with various acts of ventures……..".

Annexure – III

Policy Drafts on Entrepreneurship

12th Plan details on Entrepreneurship:

12th plan of Govt. of India specified, "……. At the end of the colonial era in 1950, the shares in world output of India, China and the rest of Asia (excluding Japan) were 5.1 per cent, 4.8 per cent and 3.6 per cent respectively. Between 1950 and 1980, there was not much that changed in output shares except of course for the post-war boom in Japan, and later rapid export led growth in Korea, Hong Kong, Taiwan and Singapore……..".

In the two decades between 1980 and 2000, economies of East and South East Asia expanded at a rapid growth and pace. It successfully improved their respective shares of world economic activity. East and South East Asia also gained ground in the developed world, with the share of world-output originating in the advanced economies that increased from 71 per cent to 82 per cent. A sharp pick up in the growth rate in the advanced economies of the West gives flowing for the most part to the changes in economic policies adopted by such economies in the 1980s. This data indicates impact of Asian countries on the global economy.

According to Prof. Tendulkar committee report, "……..The poverty has declined much faster during period 2004 to 2010 is valid irrespective of where we choose to draw the poverty line. If we use the Tendulkar Poverty Line (TPL), the decline in this period is found to be 7.3 percentage points. If we use a poverty line 30 per cent higher, the decline would be 7.8 percentage points. Likewise at 50 per cent higher the decline is 6.5 percentage points. This percentage point gives direction to promote self employment and entrepreneurial culture to decrease population of Below Poverty Line (BPL)……". This finding is adopted by the planning commission now by NITI Aayog.

According to the 12th Plan of India "….The poverty as head count ratio of consumption poverty to be reduced by 10 percentage points over the preceding estimates

by the end of this Plan and also to generate 50 million new work opportunities in the non-farm sector and provide skill certification to equivalent numbers during the Twelfth plan (2012 – 2017)…….".

The Skill Development Mission is launched to scale out skill sets in at least 50 million individuals by the end of the Twelfth Plan. Skill development programs in the past have been run mainly by the government, without connection with market demand. To ensure that skills match demand, special policies and efforts are needed to ensure that employers and ventures play an integral role in the conception and implementation of vocational training programs, including managing Industrial Training Institutes (ITIs) and in the development of technical training faculty.

An enabling framework is needed that would attract private investment in vocational skills training through Public Private Partnership (PPP) mode. Ventures and Industrial corporate should enter in the training as private partners as they know more about employable skills. We should try to optimize on the respective strengths of the public and private sector entities engaged in skill development. Mobilizing the required investments, setting up first rate ITIs and vocational institutes ensuring efficiency in operations and management and enabling post training employment will be the primary responsibilities of private sector entities. The government will provide the enabling framework and the requisite financial support especially in respect of SC, ST, Minorities and differently able persons and other deprived sections of society to enter in the skills.

Information Technology Integration with 12th Plan:

Five year 12th plan was concentrating use of ICT with facility development aspects of required technology. According to 12th Plan, "……..The ability to access information is an important institutional capability we need to develop. Lack of ready access information is often a major impediment in efforts to improve the well being of the people. With improvement in literacy, education, and developments in information technology, we are in a position to provide our people with access to information, including birth records, land records, payment records for utilities and so on……".

The rapid spread and use of mobile telephony, including in rural areas has facilitated innumerable technology innovations which directly benefit the common man. Farmers in some parts of the country are able to subscribe to agri-commercial services which deliver relevant information for a particular crop and weather report to the farmer through Short Message Service (SMS). The parents of babies born in municipal hospitals in Bengaluru get an SMS alert, when the next vaccination is due. Real time progressive apps and its use in day to day life is increasing. Such type of Apps innovations needs to be encouraged. Human capability to use technology is important for effectiveness of establishing identity in cyber world. This content of the 12th five year plan specifies the direction of application capability of ICT for sustainable development.

National policy draft of entrepreneurship of EDII:

This draft paper is prepared by Entrepreneurship Development Institute of India, Ahmedabad with policy mission as, "…….To create an eco-system in India wherein opportunity based and innovative entrepreneurship germinates, sustains and grows leading to creation of a more dynamic and entrepreneurial economy…….".

The overall main objective of the National Entrepreneurship draft Policy of EDII is to create conducive conditions of enterprise promotion that augment continuous flow and emergence of opportunity driven entrepreneurs. To achieve this main objective, various strategic points suggested in the policy are:

1. Igniting, sensitizing, and promoting entrepreneurship
2. Fostering and creating entrepreneurship
3. Nurturing and incubating entrepreneurship
4. Recognizing opportunity and celebrating entrepreneurship and its culture.
5. Institutionalizing the entrepreneurial movement with academia's and experts

Fostering, nurturing, and incubating social and inclusive entrepreneurship are the remarkable sectors specified in this policy. Academic Institutions, Entrepreneurship accelerators, Business Incubators, Technology parks, Non Govt. Organizations (NGOs), National book trust, storytelling writers, TV channels, social media, and radio would be the suggestive platforms to get the due status in the society for entrepreneurship.

Fostering entrepreneurship through EE is suggested with the implementation of the curricula even from primary schools till the post graduation. Secondary or vocational education or higher secondary level would be taken with quiz, competitions, workshops, activity based learning camps, and also with lecture series, debate events and business plan competitions.

Entrepreneurship would be promoted in higher education by strengthening ED cells, incubation centers, and venture accelerators with 25 to 95 hour curricula, Open learning program, and e-clubs (entrepreneurship clubs). Suggested activities like debates, quiz or essay, innovation camps, case or idea competitions, and lectures by successful entrepreneurs, ideation simulation camps, organizing entrepreneurship week, and networking with local entrepreneurs, business associations, and financial institutions are the important aspects of the policy.

Fostering innovation driven entrepreneurship through incubation with ideation was the major concern of this policy. Present Technology Business Incubators (TBIs), Science and Technology Parks, R&D entrepreneur labs, venture center should encourage the development of incubator variants such as cross cultural venture incubators (Collaborations with worldwide Incubators), NRI (Non Resident Indian) Technology convergence incubators, accelerators, and world scale venture Incubators over a period of time for global competency.

One of the new concepts introduced in this policy for the inclusive entrepreneurship is “Exopreneurship”. In it, employees take an exit route to become entrepreneurs with the support of companies they had been working with. Emulating corporate as Ingersoll Rand that supports such employee by enrolling them as their vendors or suppliers of goods and services is one of the example of Exopreneurship.

Promoting group entrepreneurship is another concept highlighted in inclusive entrepreneurship. Promoting ‘Group Entrepreneurship’ means micro entrepreneurs, as producer groups, in rural, tribal and under-represented or backward areas are able to reap economies of scale. Generally, micro entrepreneurs in these areas are too weak to face the market forces individually. Group entrepreneurship will be helpful to them in this context. EDP and ESDPs of the MSME and TEDP, WEDP of DST and of other agencies would play a specific role to develop micro-enterprises.

Introduction of specialization subject of "Social entrepreneurship" in BSW, MSW and other relevant courses has been taken into consideration in this draft policy. SEDP (Social Entrepreneurship Development Programs) is one of the new era introduced in it for NGOs (Non Govt. Organizations) to be converted into social enterprise.

Single Unique Enterprise Identity Number (SUEIN), 'Single Composite Application Form' (SCAF), and conversion of present District Industries Centres (DICs) into Business Development Centres (BDCs) are the new concept introduced for up-liftment of entrepreneurial activities.

National policy draft of skill development and entrepreneurship:

This draft policy was prepared by Ministry of Skill Development and Entrepreneurship, Govt. of India. This draft of the policy is prepared in the context specified in it as:

"……..Average age of the population in India by 2020 as 29 years as against 40 years in USA, 46 years in Europe and 47 years in Japan. In fact, in next 20 years the labor force in the industrialized world will decline by 4%, while in India it will increase by 32%. This poses both a challenge and an opportunity. To reap this demographic dividend which is expected to last for next 25 years, India needs to equip its workforce with employable skills and knowledge so that the youth can participate productively to make India a developed economy……..".

It is targeted to hit Global Knowledge Economy with timely paced skills of new age. It is because of paradigm shift in the skilling ecosystem in our country. At present, India has a very specific and well defined landscape of skills development with establishments of National Skills Development Agency (NSDA), National Skills Development Corporation (NSDC), and National Skills Qualification Framework (NSQF) institutions for new skill development programs. Currently, skill development efforts by the Central Government are spread across more than 20 Ministries or departments with coordination and monitoring mechanism to operate them.

State Level Skill Development Missions (SSDMs) are launched by the most of the states with the consideration of local skill and requirement of manpower parameters for industrial growth. Social enterprise development in India is not being fully capitalized to its potential, and inadequate access to finance continues to remain the block of the entire entrepreneurial efforts in the country. These points are taken into consideration for development.

Vision statement of this draft policy of Ministry of Skill Development and Entrepreneurship, Govt. of India, states:

"…….To creates an ecosystem of empowerment by skilling youths on a large scale at speed with high standards and also to ensure sustainable livelihoods for all citizens and to place India, in the comity of front ranking entrepreneurial and innovative nations. It is possible with core objective of empowering the individual by enabling them to realize their full potential through a process of lifelong learning (enabling them to accumulate competencies throughout their lifetime as time and circumstances permit) through instruments such as valid certifications, accumulation of credits, etc they will be allowed and facilitated to grow into more important and rewarding roles. As they grow, the organization she happens to be working for, and the society and the nation of which she is a part, will also benefit from her productivity and growth…….".

According to the draft policy, an ecosystem for entrepreneurship development will be created that include:

i. Encourage for both self employment and entrepreneurship as a career option through advocacy and training.
ii. Enhance support system for entrepreneurs through mentorship, incubation, networks, provision of information, and ease of doing business.
iii. Integrating EE in the formal education system.
iv. Foster innovation driven entrepreneurship and also social entrepreneurship to address the needs of the population from the bottom of the pyramid.

iv. Facilitate access to finance through credit and market linkages from financial institutions.

v. Broaden the base of entrepreneurial culture and system by meeting specific needs of both socially and geographically disadvantaged sections of the society.

Aspiration, synergy, capacity, quality, global partnerships, mobilization and engagement, outreach and advocacy, ICT Enablement, inclusivity, and development of trainers are the ten policy framework directions with which enablers and beneficiaries will achieve the objectives of skilling India.

This draft also proposes to create national portal for skilling and ICT intervention at various levels. National and regional specific campaigns of this mission are suggested with advanced media options of digital revolution. Use of certified skilled manpower, national skill and entrepreneurship awards, Counseling and guidance through Citizen Service Centers (CSCs) are also the important activities in the proposed in the draft.

Training providers, existing institutions, ITI's, science and technology institutions would be the part of skills and entrepreneurship mission. With revolution as ITI's would be multi skilling Institutes, skilling hubs for apprentices. National universities for skill development and entrepreneurship will be promoted as an institute of excellence for skill development and training of trainers, as institutions of excellence or as a part of existing university landscape.

According to draft policy, "……The National Skills Qualification Framework (NSQF) as a means must integrate and provide multiple pathways between general and vocational education. It will help the school drop outs to make choices about vocational courses. Kaushal Vardhan Kendras (KVKs) at panchayat level should be established for mobilizing and imparting skills pertaining to local employment and livelihood opportunities to school drop outs, adolescent girls, housewives and even for rural youths……".

Another Quality aspect specified in the policy is One Nation One Standard. It would become the success mantra to ensure that national standards and quality for skilling. These standards are globally aligned and the Indian youth can aspire to secure local, national and international job opportunities with acquiring number of parameters.

One of its parameter is Quality assurance framework embedded in the National Skills Qualifications Framework (NSQF). This will enable to build trust and confidence in the system by putting in place mechanisms that ensure the qualifications after training to produce consistent quality outcomes, and are more relevant to the labor market.

Draft policy further suggests, "……Sector Skills Councils (SSCs), as industry led bodies must be strengthened in terms of making them more representative, expanding their outreach and also increasing their efficiency. The development of National Occupational Standards (NOS) and Qualification Packs for various job roles in a sector is the responsibility of the SSCs……".

Global partnership is also the main part of this draft to leverage best practices from and across the world. Skill centers and universities must participate in content creation, design of curricula and delivery of training. Exchange and capacity building and empowerment programs for teachers, administrators and students will be facilitated with global partnership.

Set up of Labor Market Information System would act to interlaid and serve as a mediator of both demand and supply of skills, and also remove the information asymmetry in the market and help to connect supply with demand. Policy regarding unorganized sector is also covered in the draft with making efforts for skill training, mentoring and then provision of system that makes survey to know the real situation. Draft further suggests the Government to promote grant of scholarships, rewards and skill vouchers for funding of training costs for skills of venture creation and thus promoting entrepreneurship.

This policy draft also gave specific inputs of ICT enablement by making ICT assisted skill training. Stakeholders will be encouraged to develop Massive Open Online Courses (MOOCs), virtual labs and classrooms for easy access of standard contents and also of convenience. Creation of blended learning environments to deliver high quality vocational training in underserved regions of India will be promoted for enablement and empowerment. Technology enabled learning system, digital pedagogy, collaborative learning, and assessment by rubrics of the project based learning are the main aspects needs to be covered with ICT enablement. Mobile learning, flipped classroom, and use of social media in education are the recent trends to know more about ICT assisted learning.

Framework of this draft policy is for infusion of entrepreneurship by:

i. Mass campaign for making awareness among school children and youth with promoting positive aspects of entrepreneurship as a career option. It is done by using technology gadgets, folk, traditional and digital media.

ii. Setting up of consortium of young entrepreneurs specifically below 30 years of age at all levels i.e. district, state and national levels to promote entrepreneurship in their areas by organizing various events like hackathons, startup grinds around the theme of entrepreneurship by involving youth.

iii. Providing system for awards for young entrepreneurial achievers at all levels i.e. district, state and national levels to recognize the achievements of turning ideas into entrepreneurship.

According to the draft, "……..Entrepreneurship streaming is done by creating integrated entrepreneurship education system, mentoring, promoting inclusion entrepreneurship, and fostering social and women entrepreneurship. National Commission on entrepreneurship is also a part with structure of governance, and financing. National Mission for Skills Development and Entrepreneurship, Governing Council at the Apex, Mission Directorate, Agencies like NSDC, NSDA, NSQF, NSDF would be the part of governance and financing……".

Startup Action Plan of Govt. of India:

On 16th Jan. 2016, Prime Minister of India declared Startup Action Plan to build a strong eco-system for nurturing innovation and specifically ICT startups in the country. It will drive sustainable economic growth and generate large scale employment opportunities. This plan addressed all the aspects regarding ICT startups. It has covered from digital technology sector to a wide array of sectors including agriculture, manufacturing, social sector, healthcare, and education. This is the unique initiative of Govt. of India for ICT integrated entrepreneurship promotion. This would be reflected upon the EDP curricula and the subsequent ICT contents.

The Action Plan is divided across the three main areas i.e. simplification and handholding, funding Support and incentives, and industry academia Partnership and Incubation.

Compliance regime based on self compliance, relaxed norms of public procurement, startup India hub, legal support and fast tracking patent examination at lower costs, rolling out mobile app and portal, and faster exit are the main aspects of the simplification and handholding areas covered in this plan.

Providing funding support though funds with corpus of 10,000 Crore, tax exemption on capital gains, credit guarantee fund, tax exemptions on investment above fair market value, and tax exemptions for three years are the main points covered in funding support and incentives to the startups.

Organizing startup fests for showcasing innovations and providing collaboration platforms, launch of Atal innovation mission (AIM) with self employment and talent utilization (SETU) program was done. Harnessing private sector expertise for incubator setup, building innovation and ideation centers at national institutes, setting up of seven new research parks modeled on research park setup at Indian Institute of Technology (IIT), Madras, promoting biotech startups, annual incubator grand challenge, and launching of innovation focused programs for students are the few basic initiatives and themes of the action plan are covered under the area of industry academia partnership and incubation.

A definition of startup for Government schemes given in the action plan is:

"…….Startup means an entity, incorporated or registered in India not prior to five years, with annual turnover not exceeding INR 25 crore in any preceding financial year, working towards innovation, development, deployment or commercialization of new products, processes or services driven by technology or intellectual property……".

Department of industrial policy and promotion also gave details of all such aspects for "Startup India – Standup India".

Annexure – IV

Models of EE:

There are various models of EE. Some of them have been tried out in ED programs. NITI Ayog contributed a basis with AIM pyramid and other aspects to the models of new age EE. NITI Ayog expert committee gave a report on this theme in August 2015 to the Govt. of India for the 21st century challenges of self employment and entrepreneurship. Committee gave recommendations at three levels as top layer, intermediate layer and base layer.

According to NITI Ayog, "……..Top layer recommendations include Introducing Incentives to Encourage Entrepreneurship, Roping in the Corporate Sector to Fund R&D, Enhancing the Efficiency and Scope of Incubators, and Fostering a Culture of Innovation at the National Level. Intermediate layer recommendations are: Embracing Digital Platforms to Encourage Entrepreneurship, Reforming the Archaic Education System and Skilling Workers, Strengthening the Intellectual Property Rights Regime, and Improving the Ease of Doing Business. Base layer recommendations include the aspects like: Linking Entrepreneurship with Nation-wide Programs, Promoting High-Potential Sectors through the Make in India Campaign, Fostering a Culture of Coordination and Collaboration, Redefining Success, and Making Entrepreneurship part of the Social-Inclusion Agenda……".

Models of Entrepreneurial Education:

Since entrepreneurship education has a long history, there were number of attempts done so far with EE models. The experiments, designing and model formulations, field tryouts, and case studies were used at regional, national and international levels. Entrepreneurial theories have been used sometimes for recommendations and also for replication of models on the massive scale to address the problem of unemployment. Few of these have been studied and enlisted here.

1. The Entrepreneur in Economic Modeling:

According to Kanbur (1979), "……The economic models focused on the Knightian ideas of risks bearing, individuals are modeled as being heterogeneous with

respect to risk aversion. It is based on specific qualities of the entrepreneur……". Further Meza and Southey (1996) says, "……Other discourse assumes that individuals have identical abilities, but differ in their perception of the risks involved in owning a business, the overly optimistic individuals to become entrepreneurs…….".

Entrepreneurial skills are a sort of human tendencies and capital that can be acquired through practices and work experience. While many of the general theories of entrepreneurship focus on a role of the entrepreneur that goes beyond that of business. An input in the static production function, most mathematical models of entrepreneurship treat it exactly as this. Operation research finds useful in such environments. According to Aghion and Howitt (1997), "……..The endogenous Growth theory models supports Schumpeterian models that the reward and inducement to innovations and risk taking in entrepreneurial activities is profit making…….".

2. Kakinada Experiment / Kakinada Model of Entrepreneurship Education:

As name indicates this experiment has been done by McCelland in Kakinada (Andhra Pradesh) According to David McClelland, "……The role of 'n Ach' is the critical factor for entrepreneurial development, which in turn leads to accelerate the tempo of economic development. If the inner spirit which is the need for motivation is higher it would produce more energetic entrepreneurs who can speed economic development……". After this experiment Achievement Motivation Training (AMT) became integral part of the entrepreneurship development programs conducted in India.

McCelland feels, "……..The achievement motivation is nourished by ambition….". In order to prove this, he conducted several experiments with different groups of businessmen in America, Mexico, Bombay (At present Mumbai) and Kakinada in Andhra Pradesh. He tried to induce achievement motivation in adults during the training.

McCelland has introduced some AMT games in the EDP training. His aim was to provide an urge among the participants of EDP to improve their condition. The experiments he tried is to induce the entrepreneurial spirit of achievement and thus to motivate adults and urge them to take up challenges entrepreneurial ventures. Such an

inducement was, in fact, essential to increase their level of aspirations and also to give rise of confidence building in character of them.

In January, 1864, full-fledged training was organized by David McClelland at Kakinada (Andhra Pradesh) in an industrial town with high literacy and entrepreneurial culture and awareness with a total intake of around 52 persons taken from business and industrial community. There were objectives of such program as to induce achievement motivation, and thus to break the barrier of limited aspirations.

They were given orientation through the institution named Small Industries Extension and Training Institutes, Hyderabad. Now this Institution is renamed as National Institute for Micro, Small and Medium Enterprises (NIMSME). The Achievement Motivation Training (AMT) included the following points which were supposed to be accomplished by the participants or trainees. The entrepreneurs attending the program were encouraged to introspect. Their imagination was stimulated so that they could develop community goals and achieve personal motivation and also to define the tasks of the enterprise.

Four main activities constituted by the McClelland for the achievement motivation training. According to McClelland, "……The trainee entrepreneurs were asked to control day dreaming and develop a positive attitude among themselves, the participants imagined themselves in need and the challenge set before themselves was to have realistic and carefully planned goals, they tried to attain concrete and frequent feedback, and they watched models as heroes who performed well and tried to imitate them……".

McClelland also introduced TAT (thematic appreciation test) during the AMT where vague pictures were shown for few seconds. The trainees were asked to interpret what they saw and try to explain what was happening in the picture. Achievement related themes were then counted and the final score showed the individuals desire for high achievement. Picture card resources were used to perform this activity.

This training tries to encourage those who have great desire to achieve something in lifer faster and also within the limited period of time. The trainees exhibited a more active business behavior and to achieve they asked for longer hours too. Venture related games were used in it. Tower building, ring throw are few of them. This Kakinada

experiment is used to set up new enterprises. This is part of EDP which trains the entrepreneurs and also further developed as AMT Game theory and practices.

3. AIM pyramid Framework for Entrepreneurship:

This model has been illustrated in the report of expert committee on "Innovation and Entrepreneurship" of NITI Ayog in august 2015. It is of Atal Innovation Mission (AIM) of Govt. of India.

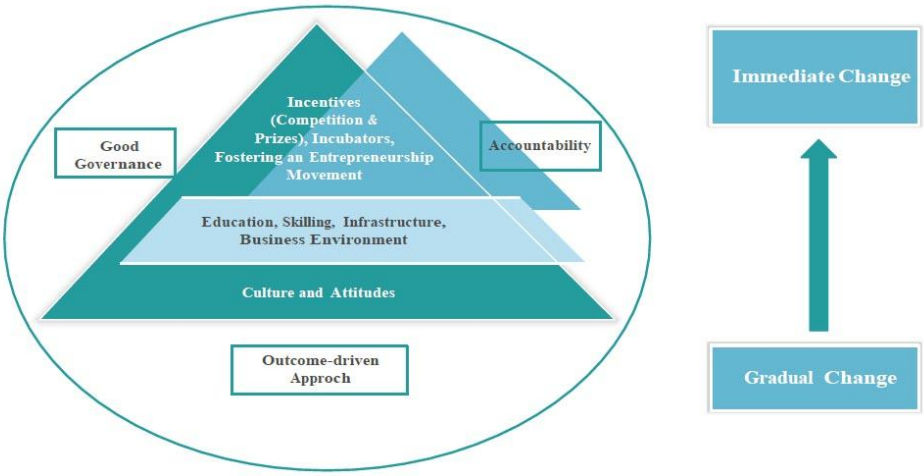

Figure 1 AIM Pyramid framework

Source: NITI Ayog, August 2015

According to the committee report of NITI Ayog:

".....The AIM pyramid framework examines entrepreneurship within the context of short, medium, and long-term obstacles and opportunities. The fundamental premise here is that all layers of challenges to entrepreneurship need to be systematically addressed to effect systemic change. The pinnacle of the pyramid represents issues for which there are relatively quick fixes, wherein measures taken today should deliver almost immediate payoffs. The middle of the pyramid highlights medium term issues those that are not simplistic or superficial enough to be tackled immediately, but that can be addressed within a 5-7 year time frame if remedial steps are taken now. The base of the pyramid presents measures to tackle fundamental impediments to innovation.....".

The top layer, intermediate layer, and base layer with the number of aspects have been discussed previously in this research. It would be assessed to boost entrepreneurship in India. This examines procedure for created the best model of entrepreneurship promotion.

4. An emerging model perspective of EE:

Creative industries professional of UK has developed perspective on the emerging model of entrepreneurship education (2006) for art, design and media courses. According to Creative industries professional of UK, "…….There is a muddle between teaching those who want to go out and start a business and those who want to learn a trade… starting a business may not mean you are an entrepreneur……..".

This model for entrepreneurship education has evolved over the last 10 years. It is available on uniform resource locator (URL) of higher education academy, UK. It is widely utilized across UK in art, design and media courses. It has developed out of traditions for collaborative activity between departments and the creative industry and also builds on existing pedagogies.

According to creative industries professional of UK, "……Although many creative industry professionals believe that entrepreneurial skills are innate and personality driven, that an entrepreneur is a kind of maverick inventor, there is substantial evidence showing that entrepreneurship can be learned. It is also believed, by academics, students and graduates, and other creative industry professionals that collaborations between art, design and media departments and creative industry will be at the core of effective entrepreneurship education……". In his study, Gibb (2006) quoted as, "……Entrepreneurial learning is acquired on a how to and need to know basis dominated by processes of doing, solving problems, grasping opportunities, copying from others, mistake making and experiment……..".

Creative industries professional of UK are also believed to deliver considerable benefits to their industry and higher education institutions for entrepreneurship. It included knowledge transfer; enhanced work based learning opportunities, and curriculum development. Collaborations between design, art and media departments and creative enterprises will also promote higher degrees of differentiation in EE and addresses major concerns of design, art and media courses that increasingly lack

specialization. Differentiation will be around disciplinary difference in local, regional and national variations in practice and opportunities to develop commercial and social ventures.

Another important aspect that covered by the creative industries professional is work based learning. It is conceptually and practically broader than placement learning and offers considerable advantages to students. According to this study, "……It can support learning for employability skills, including occupational competencies and will also support entrepreneurship learning including team working, developing business competencies, knowledge of real-world practice and building self efficacy……".

Findings of the study as work based learning as at the centre of EE and its development supported by collaborations between creative enterprises and art, design and media departments. These findings are elaborated as, "…….Two main points that have emerged from consultations with academics, students, graduates and creative industries professionals as part of this research. Firstly, that EE will be most effective when delivered in the context of collaborations between higher education institutions and the creative industries. Secondly, that there is a need to develop greater clarity in the aims, outcomes and effective assessment for EE for art, design and media…….".

Many creative industry professionals have consistently stated their commitment to engage with EE, and their belief that greater links would benefit the creative industries at a micro and macro scale. The current lack of consensus on EE inhibits such engagement. There is a need to focus on entrepreneurship as an aspect of creative practice and ensure that neither entrepreneurship nor cultural creativity are marginalized in the curriculum.
The emerging model of EE from his research has the following key elements:

1. A free standing subject focused module or components for EE aimed at delivering knowledge and skills for and about creation of venture.
2. The learning within curriculum is part of the core subject. Learning outcomes are developed on practice based modules.
3. Entrepreneurial behaviors, skills, and attributes are developed through direct engagement with industry and industry professionals. The engagement must be wide ranging and may include work placement, contributions to curriculum

delivery and assessment. Industry based assignments must be of creative industries professionals and other specialists.

4. Pedagogies that support deep learning approaches by assessment rubrics that focuses on situated and project based learning and have high currency for design, art and media students.

This model has distinct strengths for developing a robust EE for the creative industries. It offered multiple activities based learning experiences, builds on an effective pre existing pedagogy that is student centered, supports stakeholder engagement with assessment, and it is adaptive. The strengths of this model are:

1. Learning outcomes and skill gaining should equip graduates with a range of technical and instrumental aspects for entrepreneurship that includes an understanding of how ventures are planned, implemented, sustained and developed. It gives them competency to use commonly accepted tools to do this.
2. This model is most readily developed in situated learning contexts. For design, art and media, it is embedding, integrating or aligning in the most commonly through projects set in the studio, workshop or lab, in academic and workplace contexts.
3. This situated learning is core of learning and teaching of EE for design, art and media students. These situations simulate real world practice.
4. The capacity for entrepreneurial practice is ideally developed through this model and its process. Learning through doing is a core aspect of entrepreneurial learning.
5. This model is student centered rather than the teacher centered in which build dependency is on the teacher as the holder and transmitter of knowledge and thus limits innovation and self efficacy. Student centered learning is characterized by multiple activities based learning experiences aligned with learning outcomes.
6. Student centered EE can build a sense of applicability for students, demonstrating how entrepreneurship directly relate in practice and motivate students to adopt entrepreneurial thinking. It also allows students to stimulate it at the core of their subject.
7. It is a model for stakeholder engagement, which of course helps to develop focused and effective EE. Although there are core skills and knowledge for

entrepreneurship that are common across both creative industries and social venture.

8. This model has the capacity to deliver stakeholder engagement. This model is adaptive in nature and offer relevance to all design, art and media students.
9. Building and refining the provisions and conditions for EE through local and regional partners will ensure that knowledge development and transfer that is tuned to local conditions. At the same time, a framework for EE is vital and also to ensure that it equips graduates with abilities, vocational skills that are applicable to and transferable across regional and international contexts.

This model of EE has developed out of traditions for collaborative activity between departments and the creative industries and builds on existing EE theories, pedagogies of the subject.

This model has shown two key strengths one is the core pedagogy for design, art and media education. It is well suited to deliver and develop entrepreneurial capacity in students and graduates. Second one is to demonstrate a willingness to develop collaborations with the creative industries for curriculum delivery and development.

5. Twenty first Century Model of EE

This model has been presented by H. Ramakrishna H Hulugappa from Department of PG Studies in Commerce of SSSA College, Bellary, Karnataka, India in his research paper. It is based on the UNCTAD working paper on EE (2010).

According to the UNCTAD paper (2010), "…….The ultimate objective of EE policies should facilitate for the creation of entrepreneurial culture which in turn help potential entrepreneurs to identify and pursue opportunities for sustainable development. The EE policy should include the particular segment of people for women, youth, minorities in which entrepreneur training should have a significant impact. Development of a proper atmosphere for the EE is also needed…….".

The state, central as well as the NGOs, and industry should play a prominent role in bringing EE into practice. A regular and continuous interaction between institution and industry and stakeholders will achieve such necessities of effective implementation.

Hulugappa gave integrated EE with involvement of industry tie-ups, consideration of present ecosystem, role of Non Govt. Organizations (NGOs), Govt. for funding and support with external support for the stakeholder. Figure 2 shows his twenty first century model.

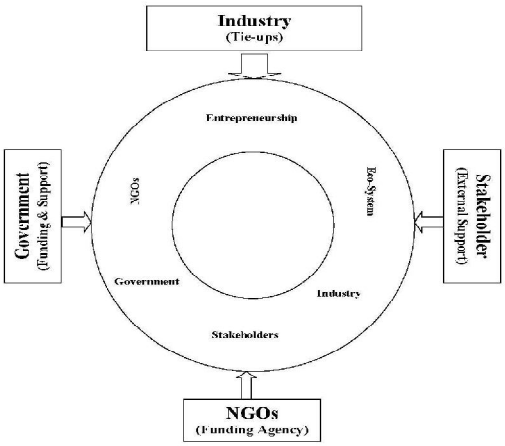

Figure 2 Twenty first Century Model of EE

Source: Research paper by Hulugappa

According to UNCTAD working paper:

"……Self sustaining relationships with institutions, stakeholders that work together can achieve the entrepreneurial ventures. The atmosphere entrepreneurial and business education should emerge from elementary to the university level of education. At the same time, the role of private sector cannot be ignored. Thus the stakeholders, institution, industry, society in general and the knowledge mentors have to put their effort in creation of an entrepreneurial education from the gross root level……".

6. Model of Entrepreneurial Learning:

The two indicative types of entrepreneurial learning models have been listed here to know more about entrepreneurial learning (EL).

Narrative based conceptual models are the two models of the David Rae of Centre for Entrepreneurial Management, The Derbyshire Business School, University of Derby,

Derby, UK. These conceptual models demonstrate connections between the emergence of entrepreneurial identity, opportunity recognition, learning as a social process, and venture formation as a negotiated activity. These are developed with original and distinctive conceptual understanding of EL through analysis of entrepreneur's experiences, based on a social EL and also on constructionist perspective.

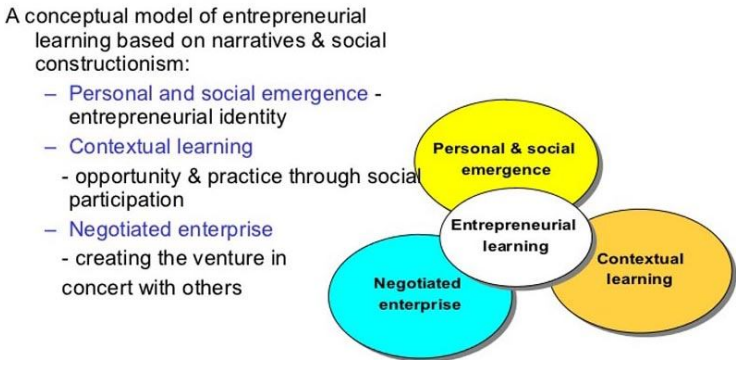

Figure 3 Model of EL

Source: Research paper of David Rae (UK)

Model of David Rae is EL: Practical model from creative industries. It spots the processes of entrepreneurial learning and identity formation. It features a triadic model with three major themes. It proposes a conceptual framework of EL in the creative and media sector, based on a personal and social emergence.

7. COBLAS Model:

It is one of the models on **consulting based Learning for ASEAN SMEs** (COBLAS) training method developed for entrepreneurship education by the Japan ASEAN Integration fund. It was developed by Dr. Takeru Ohe, an advisor and former professor of Waseda University, Tokyo. It was originally formulated to provide MBA and graduate students for an opportunity to integrate their knowledge and practice, as well as to promote regional development.

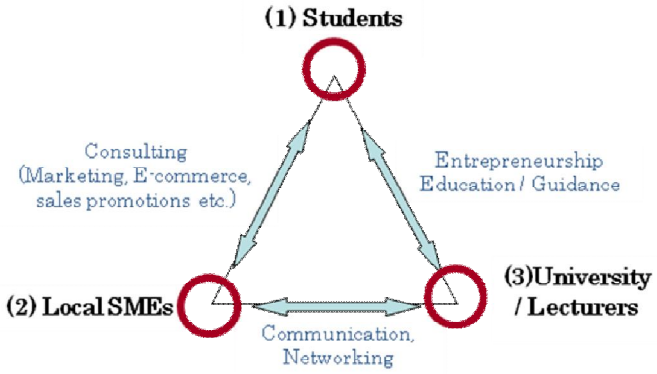

Figure 4 COBLAS Model Source: Japan-ASEAN Integration Fund

As a triangular system of this model, the program benefits students, local Small and Medium Enterprises (SMEs), and universities. A key component of the program is to provide the skills and tools of practical EE to universities in ASEAN member countries. This program also provides opportunities for students to work as consultants for SMEs. This model gives the teaching method as action learning and the philosophy as learning from helping.

1. Student's activities and benefits:

Students learn from real business under the guidance of university lecturers, industrial professionals and apply the practical knowledge and know-how which they acquired from the system of this model to help local SMEs by consulting them on their business challenges. Students benefit from the program through acquiring an increased understanding of basic business situations, theories and tools, developing the ability to integrate knowledge and practice by helping SMEs, and gaining confidence and skills to grow independently as they encounter real business problems.

2. SMEs benefit:

Professional SMEs also get benefit from the program through gaining support for business management from trained students and university lecturers. Expertise in business and receiving consultation service without expenses is the major benefit of the SMEs.

3. University Lecturers:

University and lecturers support students to help local SMEs for real solutions to the business problems. They communicate and build close network with local SMEs and

industries. University and lecturers also contributes in regional development through consulting to local SMEs, and thus improve networking and collaboration with local industries, and provide practical program to students. It is also useful for Industry academia partnership in the development era of innovations turning into commercially viable products.

COBLAS model is in practice by many Asian universities and business schools for the development of skills among the students for venture creation with adoption of the technology.

ANNEX – I

QUESTIONNAIRE

Questionnaire – Basic

Name	
Gender	☐ Male ☐ Female

Q. 1) Which of the following mobile devices do you have?

☐ Mobile Phone ☐ Smart Phone ☐ Laptop ☐ e-reader

☐ Tablet ☐ MP3 player ☐ PDA ☐ other

Q. 2) Which mobile operating system is installed on your Smart-Phone / Tablet?

◯ Android ◯ Apple ◯ IOS ◯ Windows

◯ Symbian ◯ Blackberry ◯ Other, Specify _____

Q. 3) Do you have internet connection to your mobile?

◯ Yes ◯ No

Q. 4) Which internet connectivity do you use mostly?

	Always	Sometimes	Never
2G	◯	◯	◯
3G	◯	◯	◯
Wi-Fi	◯	◯	◯

Q. 5) Which internet connectivity do you use mostly for entrepreneurship development?

	Always	Sometimes	Never
Calling	◯	◯	◯
Messaging	◯	◯	◯
Instant Messaging	◯	◯	◯
e-mails	◯	◯	◯
Social networking sites	◯	◯	◯
Internet surfing	◯	◯	◯
Online booking / Shopping Billing	◯	◯	◯
Gamming	◯	◯	◯
Watching videos	◯	◯	◯
Listening songs	◯	◯	◯

Questionnaires – Test

No.	Test	Score
1	I am constantly seeing business opportunities or ideas that have potential commercial value through web. ○ ○ ○ ○ ○ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
2	I am creative and I am regularly coming up with new ideas on how to do things better or more efficiently in my entrepreneurship. ○ ○ ○ ○ ○ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
3	I am innovative and I am able to find solutions to challenges and problems. ○ ○ ○ ○ ○ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
4	I am resourceful with internet and I am able to find solutions to challenges and problems for entrepreneurship development. ○ ○ ○ ○ ○ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
5	I am a dynamic person providing vision, hope and energy to those are highly useful for my entrepreneurship development. ○ ○ ○ ○ ○ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
6	I am flexible and I am able to adapt to changes and surprises quickly and successfully with the help of Google Resources and web resources. ○ ○ ○ ○ ○ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
7	I am risk tolerant and I am able to successfully manage risk associated with creating and growing an entrepreneurship development. ○ ○ ○ ○ ○ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
8	I thrive on learning and I am constantly seeking out new information that can help me with my entrepreneurship development. ○ ○ ○ ○ ○ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	

No.	Test	Score
9	I believe in working with other who can help me make my dream a reality. ◯ ◯ ◯ ◯ ◯ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
10	I am comfortable seeking out information from others. ◯ ◯ ◯ ◯ ◯ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
11	I regularly network with others to gain information for my entrepreneurship development. ◯ ◯ ◯ ◯ ◯ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
12	I have an extensive resource network that I am constantly building entrepreneurship development. ◯ ◯ ◯ ◯ ◯ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
13	I am comfortable with partnerships because of my skills for entrepreneurship development. ◯ ◯ ◯ ◯ ◯ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
14	I have two or more partnerships associated with my entrepreneurship development. ◯ ◯ ◯ ◯ ◯ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
15	I apply e-marketing platforms for sustain my enterprise. ◯ ◯ ◯ ◯ ◯ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
16	I use mobile, electronic Gadgets for networking to increase customer base of my enterprise. ◯ ◯ ◯ ◯ ◯ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
17	I use online tools for the presence of enterprise. ◯ ◯ ◯ ◯ ◯ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
18	I have gone through ICT led entrepreneurship training for business. ◯ ◯ ◯ ◯ ◯ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
19	I use mobile and Internet banking for business. ◯ ◯ ◯ ◯ ◯ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	

20	I promoted business through Mobile App and Online presence. ○ ○ ○ ○ ○ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
21	I gave employment for techno-savvy person in my enterprise. ○ ○ ○ ○ ○ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
22	I am regularly using electronic gadgets for daily operations of my enterprise. ○ ○ ○ ○ ○ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
23	I create community of customers of my business for networking using social media. ○ ○ ○ ○ ○ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
24	I have listed website of my business for search engine optimization. ○ ○ ○ ○ ○ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
25	I use analytical tools for online data to decide strategy of the business. ○ ○ ○ ○ ○ **Strongly disagree** **Disagree** **Neutral** **Agree** **Strongly Agree**	
	Total Score	

Name: Place:

Name of the enterprise:

Address of the enterprise:

Annexure – VI

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