Project Dissertation Report on

ACADEMIC ENTREPRENEURSHIP IN INDIA

Submitted By

Saumya Kamdar

2K20/DMBA/115

Under the Guidance of

Dr. Abhinav Chaudhary

Professor

DELHI SCHOOL OF MANAGEMENT

Delhi Technological University

Bawana Road Delhi 110042

Academic Entrepreneurship in India

Certificate

This is to certify that Ms. Saumya Kamdar (2K20/DMBA/115) has satisfactorily completed the project report titled “Academic Entrepreneurship in India” in partial fulfillment of the requirements for the award of the degree of Master of Business Administration (MBA) from Delhi School of Management, Delhi Technological University, New Delhi during the academic year 2020-22. The content of the report, in full or part, is an original work carried out by Ms. Saumya kamdar (Roll No. 2K20/DMBA/115) under the guidance of Assistant Prof. Dr. Abhinav Chaudhary and has not been submitted to any other university or institution for the award of the degree.

Saumya Kamdar

Declaration

I, Saumya Kamdar, Roll No. 2K20/DMBA/115, student of MBA Batch 2020-22 of Delhi School of Management, Delhi Technological University, declare that the Project Report/ Dissertation titled "Academic Entrepreneurship in India" is submitted in partial fulfillment of Degree of Masters of Business Administration is the original work conducted by me. The information and data given in the report is authentic to the best of my knowledge. This report has not been submitted to any other university for the award of any other degree, diploma and fellowship.

Saumya Kamdar

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Saumya Kamdar

Executive Summary

This Project is designed for assessing the level of academic entrepreneurial activity in India along with the prevailing entrepreneurial framework conditions.

Countries vary widely in terms of their level of entrepreneurial activity. With a range of the Total Entrepreneurial Activity (TEA) index from 5% (Belgium) to 18% (Brazil), India with a level of 11.2% is 9th from the top. India is the highest among 29 countries on necessity-based entrepreneurship (with a level of 7.5%), and fifth from the bottom on opportunity-based entrepreneurship (3.7%). Necessity-based entrepreneurship is highly correlated (r=0.70) with projected national economic growth, while opportunity-based entrepreneurship showed no such correlation (r=0.00).

The project assessed the nine entrepreneurial framework conditions in India through interviews and questionnaire responses of selected experts .The level of entrepreneurial activity in the country was assessed through a random sample survey of adult population in the country. The role and level of academic entrepreneurial activity was assessed through interviews and questionnaire response of academicians and administrators of the educational institutions.

Analysis of the experts' questionnaires showed that India was below the average of 29 countries on many of the framework conditions such as government policies, physical infrastructure, education system, R&D transfer, and respect for

entrepreneurship in the society. On two factors (Opportunity perception by the individual, and Ease of market entry for a new player) India's scores were more or less the same as the Global average. There were four factors that were slightly better than the global average for India. They were: Market Dynamism, Entrepreneurial Capacity, Commercial and Professional Infrastructure, and Financial Support.

During the interviews with the experts, they were asked to identify the critical issues, if any, which blocked entrepreneurship in the country. The critical problem areas identified by them are: Government policies, Cultural and social norms, Financial support, Commercial and professional infrastructure, Physical infrastructure, Education and training, R&D transfer, and Government programmes. Significantly, the government programmes seem to be adequate, but it is the government policies that constitute the major bottleneck.

The study also revealed some special characteristics of entrepreneurship in educational institutions.

1. Universities and Educational institutions are not undertaking any proactive role in bridging the gap between academia and industry. Any small level of entrepreneurial activities, if undertaken by educational institutions is developed reactively.

2. There is a clear lack of funding and support for entrepreneurial activities.

3. Entrepreneurial activities are not seen as important part of overall functioning of the educational institutions.

4. There is a distinct lack of motivation to take up entrepreneurial activities as academic recognition and reward systems are not in place.

5. There is lack of infrastructure for promotion of entrepreneurship in educational institutions.

6. The internal marketing of educational institution's expertise is grossly inadequate.

7. There is a mismatch between academic-industry culture and priorities.

8. There is lack of awareness and communication between educational institutions and industry regarding potential mutual benefits of industry-academia collaboration.

The findings of the study raise a lot of questions especially about the academic entrepreneurial framework conditions in the country, and pose challenges to all segments of the Indian society particularly the policy-makers, implementers, institutions, educationists, researchers, and entrepreneurs themselves.

Academic Entrepreneurship in India

Table of Contents

Foreword

I have great pleasure in submitting this Project Report on Academic Entrepreneurship. This report gives the reader an insight on the entrepreneurial framework conditions and the levels of entrepreneurial activity in India with special focus on Academic Entrepreneurship. The report seeks to explore the current level of academic entrepreneurship in Universities/ Institutions and factors that influence entrepreneurship in such academic institutions.

The Report has shown that there is a degree of entrepreneurial readiness in the country at the level of the individual and the economy. The roadblocks are apparently some of the general national framework conditions such as infrastructure, education, R&D transfer, government policies and regulation, financial support and social and cultural norms. In relation to the specific role of educational institutions, the roadblocks are lack of funding & financial support, low level of motivation, lack of infrastructure, inadequate internal marketing and mismatch between academic- industry culture and priorities. It is hoped that the findings of this study will stimulate some collective thinking in the Indian society in general and specifically among the educational institutions towards improving the entrepreneurial framework conditions so that the country can achieve faster economic growth through the path of accelerated entrepreneurship. It is my ardent hope that the academic institutions will play a proactive role in promoting entrepreneurship.

Saumya Kamdar

List of Figures

List of Tables

Academic Entrepreneurship in India

Chapter 1 : Introduction

India, despite being the tenth most industrialized nation in the world is still counted amongst the poorest, defying the fundamental logic of economic development. India's GDP growth is hovering around just 7-8% and its unemployment rate is as high as 9.2%. Even this unemployment rate is not a true indicator of the gravity of unemployment problem, as India is characterized by large scale underemployment which accounts for over 90% of the total employment. India's labour force is growing at a rate of 2.5% annually while the employment is growing at a rate of just 2.3%. This means that India is not only faced with the challenge of absorbing an estimated 7 million new job entrants every year, but also clearing the backlog. India has not been able to utilize its core strength – its human capital. Every year India's approx. 17000 colleges send 9.3 million graduates into the work force. Most of this workforce are "Job seekers" and are "unemployable" because of lack of required skills. This adds to the unemployed and underemployed population. On the other hand, the top 20-30% of professionals leaves India for employment abroad causing considerable loss to the nation.

In conclusion, the present education system in India has not been able to provide solution to the crisis of unemployment and economic growth. There are ample opportunities in India which can transform India into a superpower in future. For turning this dream into a reality, the academic sector has to play a proactive role. The nation, in my view, develops through "Job Creators" i.e. entrepreneurs. With a massive endowment of workforce, so assiduously built through visionaries, the country now needs to gear up to use its workforce as its prime engine for India's economic growth by inculcating the entrepreneurial zeal and spirit amongst them.

Academic Entrepreneurship in India

"Academic entrepreneurship" is a powerful tool for alleviating unemployment and putting India on a fast track growth. To achieve this, entire environment needs to reorient its support so that India runs and not just struggles for its growth.

The million-dollar question is "How India can employ this powerful tool to transform itself into an economic force to be reckoned with in the new globalized and liberalized world order?"

My project aims to provide answer to this question.

Entrepreneurship in India

Medieval Indian entrepreneurship achieved world recognition when Indian muslin was in demand for wrapping Egyptian mummies. Indian handicrafts and entrepreneurial expertise brought the English, Dutch, Portuguese and French traders to India in the eighteenth century. British India saw the decline of entrepreneurship, sidelined by British machine-made goods. Indian industry had to contend with the indifference of the colonial government. Mild protection was given only after World War I. World War II marked a boom period when a large number of skilled and semi-skilled workers started small production units using old machinery and borrowed capital from money lenders, banks, kin-groups and the like.

The Five Year Plans of Independent India encouraged small-scale industries (SSI) through a ban on the import of consumer goods. The vacuum in the market encouraged businessman, traders, and agents who operated in the large towns

and metropolitan cities. Areas with superior infrastructure and favourable market conditions were conducive to business.

India, with a labour –abundant and capital scarce environment encouraged small scale industries. The 1956 Industrial Policy Resolution mentioned four factors in favour of small scale industrial units. They were employment, equality, latent resources and decentralization. The policy sought to create maximum job opportunities, ventures with small doses of investment, production of consumer goods on a large scale, mobilization of local skill and capital, and the dispersal of units into semi-urban and rural areas. It was planned that small enterprises had to be developed with large units. In the sixties it was questioned whether growth could resolve income and regional disparities. In the late sixties, therefore, the emphasis got shifted to industrial promotion in relatively backward states and districts. Fiscal and financial incentives alone were insufficient. Technical and managerial assistance was also needed.

To identify, train and develop potential entrepreneurs and for developing research knowledge for entrepreneurship, several programmes were pioneered by several institutions like Gujarat Industrial and Investment corporation, National Institute for Small Industries Extension Training (NISIET), State Bank of India, Entrepreneurship Development Institute of India, National Science and Technology Entrepreneurship Development Board (NSTEDB), Entrepreneurship Development Cells of UGC, Various Universities and educational institutions.

The policy relating to small scale industries was revised by the Government in the Industrial Policy statement made on 23rd July 1980. The significant aspects of this revision were:

(i) Revision of investment limit in plant and machinery from Rs. 20 lakhs to 35 lakhs and up to Rs. 45 lakhs in case of ancillary units. (ii) Greater emphasis on promotion of village industries (iii) correction of regional imbalances (iv) Promotion of export oriented and import substitution industries, (v) creation of new focal points of industrial growth through the establishment of nucleus plants and ancillary industries (vi) creation of buffer stock of critical raw materials (vii) import and transfer of technology, and (viii) improved capacity utilization through modernization of industries.

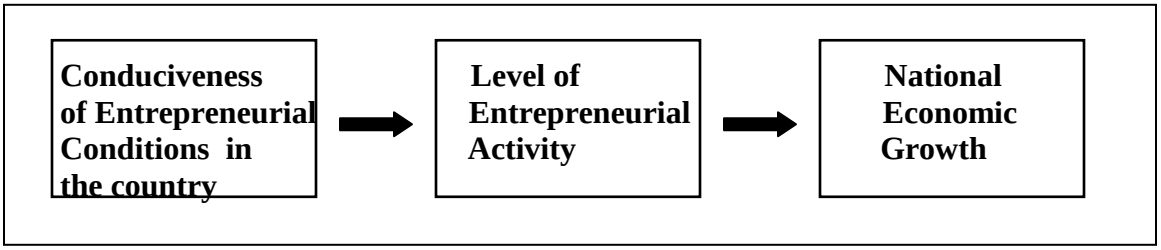
The SSI Sector: Post Liberalization Scenario

The policy initiatives of 1980 were in operation for about 10 years, apparently with limited success in stimulating entrepreneurship. The year 1991 marked the onset of economic reforms in the country, which necessitated a change in the protective policy framework being followed so far. Reflecting the change in the policy, the national government initiated several measures to help the small scale sector withstand the turbulence in the economy unleashed by economic liberalization. Some of these measures included: (i) Providing adequate credit and improving the quality of its delivery, (ii) providing infrastructural support in an integrated manner, (iii) enhanced technology support to SSI for modernization and quality upgradation, (iv) involving voluntary agencies to supplement the work of entrepreneurial development, (v) special employment generation

programmes, (vi) simplification of export procedures and incentives for higher production / export, (vii) special schemes for promoting small scale units in backward units. In 1997 an expert committee headed by Abid Hussain suggested a change of policy in the direction of promotion rather than protection. The committee made several recommendations for strengthening infrastructure and financial support to SSI units, so as to enhance their ability to compete. In spite of the several schemes of assistance proposed, the small scale sector continued to be apprehensive about the adverse impact of liberalization. The government, therefore, initiated additional schemes of assistance, which were more promotional than protective.

Conceptual Model of Entrepreneurship

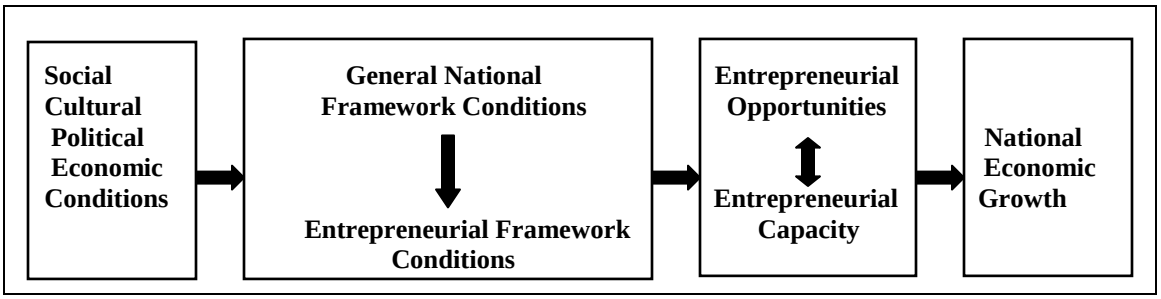
Figure 1.1: Conceptual Model of Entrepreneurship



The Conceptual Model is based on three sets of variables and their inter-relationships. The dependent variable is the economic growth of the country. The other two variables are the level of entrepreneurial activity and the conduciveness of entrepreneurial framework conditions. The hypothesized relationship among the three sets of variables is that the entrepreneurial framework conditions stimulate entrepreneurial activity, which in turn stimulates

national economic growth. The generalized relationship among the three sets of variables can be stated as shown in Figure 1.1. Each of these three sets of variables have several component variables. A more elaborate model of the interrelationships among the variables specifying some of the components of the main variables is presented in Figure 1.2.

Figure 1.2: Elaborated Model of Entrepreneurship



Entrepreneurial Framework Conditions: General and Specific

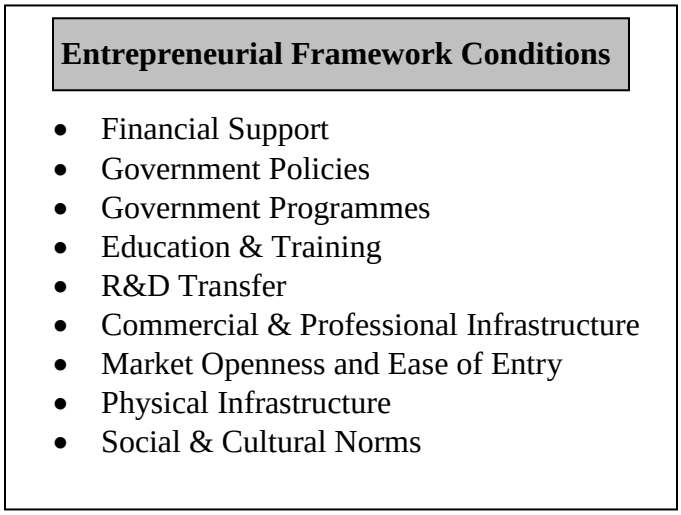
The first part of the model (see Figure 1.2) places the framework conditions in a country within its social, cultural, political and economic context. This context helps in the development of the general as well as the entrepreneurship-specific framework conditions. The general national framework conditions are determined by the macro-level factors contributed by the actions of the national government, financial institutions, technology developers, skill and attitude trainers, labour markets, international economic operators, and so on.

While the development of the entrepreneurial individuals and the perception of opportunities by them may largely be a function of the general national framework conditions, the entrepreneurial exploitation of these opportunities may

depend primarily on the entrepreneurship specific framework conditions. As societies (and their economies) evolve, opportunities are thrown up for new firms to replace older ones whose efficiency and ability to meet society's needs have declined. When capable and motivated individuals perceive these opportunities, the outcome is entrepreneurial activity i.e., creation of new firms. Creation of new firms that replace older ones is inevitable. Creative destruction or business churning can be observed in most economies.

It appears that some contexts facilitate the entrepreneurial process while some others hinder. The model (see Figure 1.3) specifies nine components of the specific framework conditions. These are: (1) Financial support, (2) Government policies, (3) Government programmes, (4) Education and training, (5) R&D transfer, (6) Commercial and professional infrastructure, (7) Market openness and ease of entry, (8) Physical infrastructure, and (9) Social and cultural norms.

Figure 1.3: Entrepreneurial Framework Conditions



The cultural, social and political context is the primary determinant of the way of economic life. More generally, the unique features of all facets of a nation's way of life arise out of this context. For instance, India is different from other nations in that it is agriculturally oriented, has a huge unorganized business sector, and a parallel economy of significant size. Such contextual factors are very influential and are difficult to change quickly since they have deep roots in the nation's psyche. Entrepreneurial opportunities in the nation and entrepreneurial capacity of individuals are more immediately influenced by the entrepreneurial framework conditions such as government policies, quality of infrastructure, education levels etc.

Socio-cultural Factors Affecting Entrepreneurship in India: Past and Present

Institutions like caste, the joint family, and the village system of living represent the traditional social organization in India. Socio-cultural rigidities persist. In addition, there are several inhibiting factors such as custom and tradition, low status given to businessmen, the high risks involved in enterprise, absence of vertical mobility on the social ladder, market imperfections and arbitrary changes in the laws of the land and their administration.

India's culture, with its social organization, is often identified as responsible for the country's low rate of economic development. Development of entrepreneurial attitude being a complex long-term phenomenon is closely associated with the culture and social norms prevailing in the country. India being a multicultural

society, its cultural diversity presents pockets of high and low entrepreneurial activity. The sub-groups that report high entrepreneurial activities are the Banias of Madhya Pradesh, the Marwaris of Rajasthan, the Jains of Rajasthan and Gujarat, the Chettiars of Tamil Nadu and the Parsis of Maharashtra. The social and cultural norms of these groups make them opt for entrepreneurship as their first choice of occupation. Barring a few pockets of entrepreneurial communities, the Indian society is generally considered to be low in entrepreneurship. Sociologists attribute this mainly to three reasons: (a) religious beliefs, (b) caste system, and (c) joint family system. It is argued that a vast majority of Indians have religious beliefs that consider the existing order of the universe as sacred. Hence entrepreneurial activities which attempt to change the economic and social order are played down. Following the theory proposed by Max Weber that the protestant Ethic, (with its values of discipline, hard work, efficiency, and thrift) provides a mental attitude conducive to the spirit of capitalism, many Western scholars argued that these were absent in the religious belief system of India. The counterargument to this proposition is that many of the communities that are found to be entrepreneurial in India follow the same religion, which has not dampened their entrepreneurial spirits. Besides, another religion of Indian origin and holding similar beliefs of asceticism and detachment, Buddhism, which has spread to China, Japan, Korea and other countries in the Far East has not had any adverse impact on entrepreneurship in these countries. The impact, if any, is apparently positive.

The Indian caste system largely determined the function, the status, the available opportunities as well as the handicaps of an individual. It shaped the cultural

pattern and the psychological predispositions of various groups. As the caste is determined by birth, there is no possibility for the individual to change his/her status by hard work. Hence it rules out one of the major incentives for entrepreneurship.

The joint family system and the family orientation of the Indians, it is alleged, has negatively influenced risk taking behaviour. As the family property is held jointly, there is limited possibility for holding any particular individual responsible for its maintenance and development. In this set-up, the relation between effort and reward is weak, since earnings of the individual are the property of the whole family. The fruits of an individual's additional efforts are shared by those who did not make such an effort. This could naturally have an adverse impact on individual initiative and enterprise.

Sociologists have found that the aspiration levels of Indians including those of the rural poor are fairly high. While they are desirous of improving their standards of living as well as their economic and political status, it is apparently the political environment, social structures and economic depravity that are depressing entrepreneurial activity in India. As mentioned above, there have been several initiatives in recent times both by public and private agencies with a view to stimulating entrepreneurship among a variety of communities and population segments of the country. Such efforts are directed mainly at changing the parameters of the entrepreneurial environment within the country, hoping that these would in turn bring about a positive change in the level of entrepreneurial activity. It is therefore important to measure the changes in the environmental conditions as well as entrepreneurial activity so that their relationship to economic growth could also be ascertained.

Women Entrepreneurs in India

Official statistics in India reveal that women constitute 60 percent of the rural unemployed and 56 percent of the total unemployed. A large number of highly educated women do not seek employment. Marriage and family have always been the first choice for most Indian women. Female role prescriptions have created mind blocks. Women may not set goals (other than marriage) for themselves. It is partly due to their socialization that Indian women lack the need for achievement and confidence that are essential for an entrepreneurial career.

It is only in the last decade or so that women have become employment oriented. Women entrepreneurship in India is still at a nascent stage. Women play dual or multiple roles giving rise to several role conflicts. The development of kindergartens, day nurseries, crèches and other support systems are essential for working women. Family size too has to be restricted.

The push and pull factors for women entrepreneurs have attracted research investigations. The opportunity entrepreneurship (due to pull factors) where women see opportunities and start small enterprises can lead to professional satisfaction. The push factors are responsible for necessity entrepreneurship, wherein women establish enterprises due to financial hardships and family responsibilities.

Education and awareness programs have encouraged women entrepreneurs to enter into the area of engineering, electronics and energy! Women have set-up establishments to manufacture solar cookers in Gujarat, small foundries in

Maharashtra, and TV capacitors in Orissa. These are non-traditional industrial units. Women also engage themselves in the traditional sectors of embroidery, lace, toys, doll making, mat weaving and the production of fancy-cum-utility articles. Some women employ technicians and managerial personnel since they do not have the requisite technical and professional know-how. Government organizations provide help in preparing project reports, and getting finance and training.

Women entrepreneurs, like other women professionals, perform dual roles and experience role conflict and other related problems. Added to the gender related difficulties, they face the common work related problems. Family indifference, lack of training, non-responsive bankers and licensing authorities, rigid financiers insisting on collateral security, prejudiced and sometimes harassing officials, the list of problems for women entrepreneurs is endless.

Attitudinal problems hinder a woman's entrepreneurial success. Of late, a few organizations have been set-up especially in the NGO sector to provide support and assistance to \women entrepreneurs, and bring about attitudinal changes in them. These include organizations such as Indian Council of Women Entrepreneurs, Association Women Entrepreneurs of Karnataka (AWAKE), and Self Employed Women's Association (SEWA). Organized efforts have provided the much-needed attitudinal and skill training, industrial sheds and marketing avenues.

One of the major areas in which the Government of India has taken the initiative of supplementing the work of the NGOs is the creation of a forum for women

entrepreneurs to interact at the national level. The First National Convention of Women Entrepreneurs was held in New Delhi in November 1981. Simplification of loan procedures, counseling services, centralized marketing agencies and special training programs were on the agenda. Around the same time, the Second International Conference of Women Entrepreneurs was also organized in Delhi under the aegis of the World Assembly of Small and Medium Enterprises. While the recommendations from these two conferences were many, very few of them got implemented?

Chapter 2 : Literature Review

The issue of commercialization of academic activities or "Academic Entrepreneurship", intended as the involvement of academic scientists and organizations into commercially relevant activities in different forms has received great attention over the past few years. Several observers have pointed to academic activities and research as an underutilized resource for a country's competitiveness, because academic activities and research was too distant from practical applications and of not easy applicability (Slaughter and Rhoades 1996). While originally confined to the United States, more recently the role of academic organizations for economic success has received increasing policy and scholarly attention all over the world. The functioning of the University – industry interface is now regarded as an important building block in the nation's economic growth. (Magnus Henrekson, Nathan Rosenberg 2000). Several authors claim that since Universities perform activities that generate basic knowledge which is becoming increasingly important in the knowledge economy, it is desirable to directly involve academic organizations into commercially oriented activities. This will strike a virtuous compromise between the production of scientifically relevant knowledge, and the translation of this knowledge into economic and social value (Gibbons et al 1994, Zucker and Darby 1995, Stokes 1997, and Ezkowitz 2004).

A vast empirical literature has provided evidence consistent with these claims. Entrepreneurship has been found as the key driver for socioeconomic growth and increases national prosperity and competitiveness (Zahra 1999). Several studies have shown that the presence of academic scientists in commercial ventures have a positive impact on innovative and financial performance of the

firms (Zucker and Darby 1995, Shane 2004,Rothaermel and Thursby 2005) and affects the profitability of even large and established firms (Cockburn and Henderson). Since 1980, entrepreneurship created 34 million new jobs in US (William 1997) and added $ 16.5 billion in value for US economy (Shane 2004). Freeman and Soete (1997) explain that entrepreneurship in science has emerged as an alternative engine of economic growth to the classic triumvirate of land, labour and Capital. Entrepreneurs play a vital role in producing growth because they accelerate the generation, dissemination and application of innovative idea (McDougal & Oviott 1997). Under the development of knowledge based economy, the academia is being asked to be more responsible actor for regional economic development and employment creation (Chrisman, Hynes and Fraser 1995). Etzkowitz (2003) suggests that the key economic actor is increasingly expected to be firms emanating from or at least closely associated with knowledge producing institutions. The department of Science and Technology (DST), Govt. of India has identified entrepreneurship as one of the principal mechanism for solving the problem of unemployment and underemployment in India. The National Science and Technology Entrepreneurship Development Board (NSTEDB), DST, Govt. of India felt that some machinery should be created in the educational institutions which could help in strengthening industry -institute interaction and promote entrepreneurial culture in Technical and Higher educational institutions. IIT Bombay has set up an independent society “Society for innovation and Entrepreneurship” to foster and promote entrepreneurship and take a leadership role. The need to transform the nature of Indian Universities from knowledge institutions to knowledge enterprise has been emphasized (Prof. S. Prasad, IIT Delhi). Industry and academics is increasingly seen as complementary forces (Dylan Jones Evans) with academic professionals taking on multiple role identities.(Gerard George, Sanjay Jain and Mark Maltarich). The biggest challenge for the 21st century is linking education to economic and community development (Winona State University)

On the other hand, a less sanguine view on academic entrepreneurship is that Universities are primarily a professional institution and the emphasis should be on teaching only (Drucker). Many scholars are skeptical about the ability of academic organizations to manage commercial activities efficiently and feel that academicians would be unable to balance the academic activities with commercial activities (Dasgupta and David 1994, Stern 1995, Heller and Eisenberg 1998, and Nelson 2004). There are examples where commercial activities performed by academicians have produced poor results (Kenney 1986). Lerner (2004) reports the difficulties that academic organizations encounter when they engage in sponsoring industrial activities. It is found that the returns to this increased interest in knowledge transfer from universities have so far been low (Wright 2003). It is also suggested that academicians lack the skills to create successful commercial ventures (Franklin, Wright and Lockett 2001).

Chapter 2 : Research Design and Methodology

Of the three sets of variables that are proposed to be investigated in the project, primary data collection is done on only one, namely, the academic entrepreneurial framework conditions. For the second and third variable, namely, the level of entrepreneurial activity and the national economic growth, secondary and standardized data is made use of. The process of primary data collection is briefly described below.

Data on Entrepreneurial Framework Conditions

Data on entrepreneurial framework conditions in the country were assessed through in-depth interviews and questionnaire responses from selected experts knowledgeable on one or more of these conditions. A set of thirty-six experts was identified and their views regarding the entrepreneurial framework conditions were obtained through face-to-face interviews as well as questionnaires. Apart from expertise in one framework condition, the experts also possessed an understanding of the workings of the entrepreneurial process in India. The main method of gathering data on specific role of educational institutions in promoting entrepreneurship during this study was face-to-face semi-structured interviews with academicians, administrators and individuals representing the industrial liaison function in each educational institutions/ university. This focused on the general role and functions of the industrial liaison and how has this changed, direct involvement of the university with industry, the main opportunities and barriers to the development of links between university and industry, the benefits to the university from industrial links and the perception of industry's assessment of the relationship with universities.

Chapter 3 : Entrepreneurial Framework Conditions

In view of the theoretical perspective that entrepreneurial framework conditions in a country may have a significant influence on the level of entrepreneurial activity in the country, the project made an attempt to assess the entrepreneurial framework conditions prevalent in India. The framework conditions chosen are: financial support to new firms, effects of government policies, existence of government programs and their impact, nature of education and training, quality of research and development and the effectiveness of their transfer, quality and cost-effectiveness of commercial and professional infrastructure, ease of market entry, access to physical infrastructure and the existence of positive cultural/social norms.

Financial Support to New Firms

Availability of finance is an important factor in facilitating entrepreneurial activity. This is particularly true in the early stages of new ventures. New and growing firms do not easily obtain equity funding. Debt funding is relatively easy to obtain, but only after equity funds are in place. Private investors have always been an important source for capital especially in some communities, and in the non-organized sectors. The data (see Table 2.1, Fig. 1.4) indicate that India is close to the average with the other countries. Government policy in the past was directed at providing support to small firms and public subsidies have had an impact on new firm creation. Some of these policy initiatives have provided an

incentive for the small firms to remain small, so that they could continue to enjoy the benefits under the government schemes.

Table 2.1: Financial Support to New Firms

India 2000	India 2001	Lowest Country Score	Highest Country Score	Global Average (GEM)
3.19	3.18	Argentina 1.99	USA 4.30	3.08

- Scores out of 5 points.
- Global Average of 29 countries
- Source: GEM Report 2001

Figure 1.4: Financial Support to New Firms

Government Policy on New Firms

The primary responsibility in developing infrastructure and enforcing the legal and regulatory framework rests with the government. Good infrastructure and protection of property rights are necessary for new venture creation and

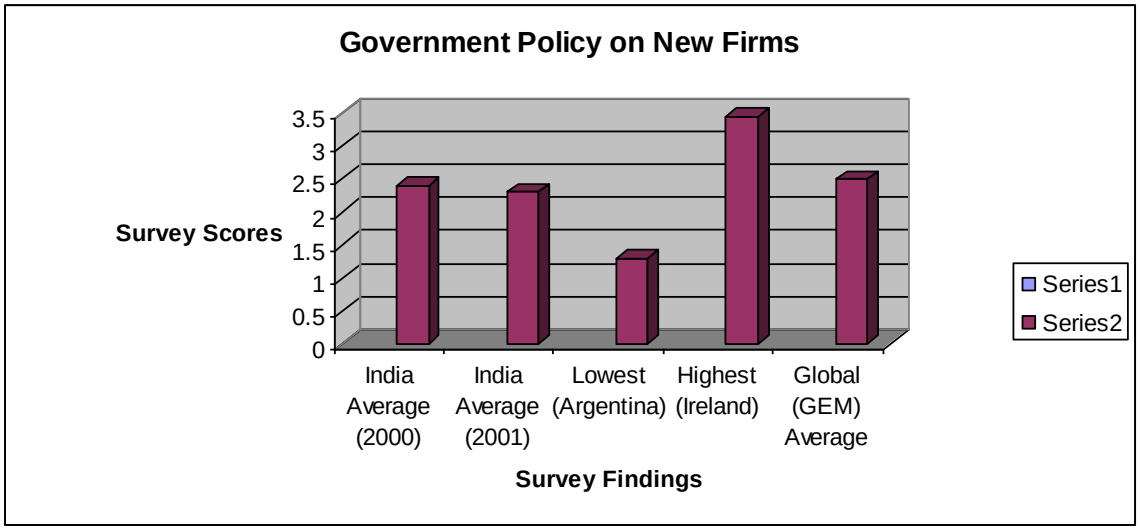
economic activity in general. Beyond these, the government can take policy initiatives to support new and growing firms such as favoured treatment with respect to taxes and procurement. The government can also support new and growing firms through special programs designed to facilitate entrepreneurial activity such as setting up incubators and technology parks, providing training programs for entrepreneurs, etc. In India, Government policy is not seen as supporting new firms (see Table 2.2, Fig 1.5). The time and effort required for startup firms to comply with regulatory obligations is a major issue.

Table 2.2: Government Policy on New Firms

India 2000	India 2001	Lowest Country Score	Highest Country Score	Global Average (GEM)
2.40	2.30	Argentina 1.30	Ireland 3.45	2.50

- Scores out of 5 points.
- Global Average of 29 countries
- Source: GEM Report 2001

Fig 1.5: Government Policy on New Firms



Government Programmes

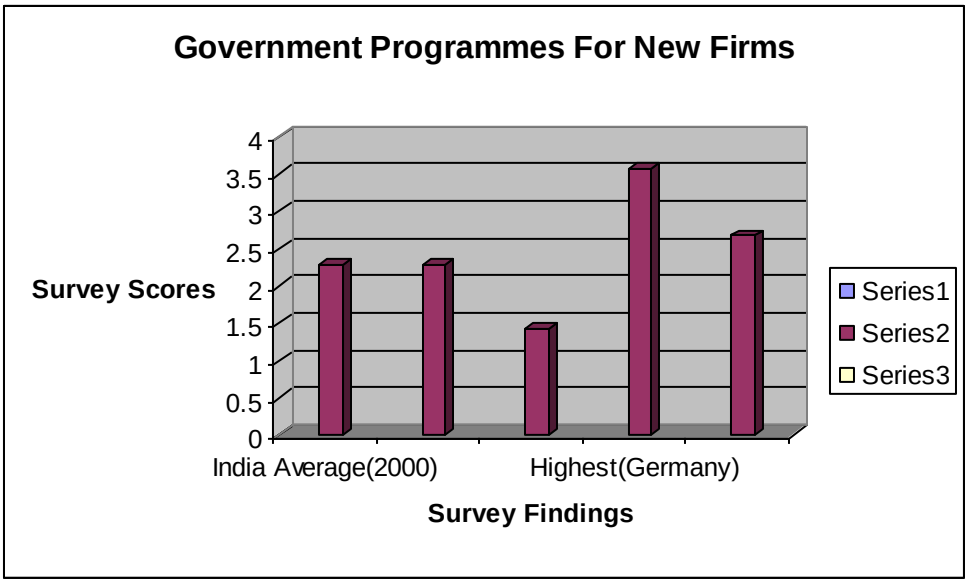
On assessment of the programmes and initiatives undertaken by State and Central Government to assist new and growing firms, it was found that the programs that exist are not effective due to the lack of coordination between the agencies delivering them (see Table 2.3, Fig 1.6). The people working for government agencies are not considered to be competent. The result is that those that need help cannot find it.

Table 2.3: Government Programmes for New Firms

India 2000	India 2001	Lowest Country Score	Highest Country Score	Global Average (GEM)
2.28	2.27	Argentina 1.43	Germany 3.57	2.67

- Scores out of 5 points.
- Global Average of 29 countries
- Source: GEM Report 2001

Fig 1.6: Government Programmes for New Firms



Entrepreneurial Capacity and the Education System

Individual's entrepreneurial capacity can be enhanced by good education systems. The global study reported a strong correlation (0.64) between entrepreneurial activity and the proportion of eligible individuals enrolled in post secondary educational programs. General education and entrepreneurship specific education could equip individuals with skills that increase their entrepreneurial capacity. In the Indian adult population sample, entrepreneurial activity is prevalent across levels of education. The prevalence rate is lowest among those that do not have any formal education and significantly higher among those with professional degrees, although the entrepreneurial inclination seems to decline with very high levels of education. It would be reasonable to infer that the inclusion of entrepreneurship curricula at all levels of education, particularly in programs that offer professional degrees may stimulate start-up activities.

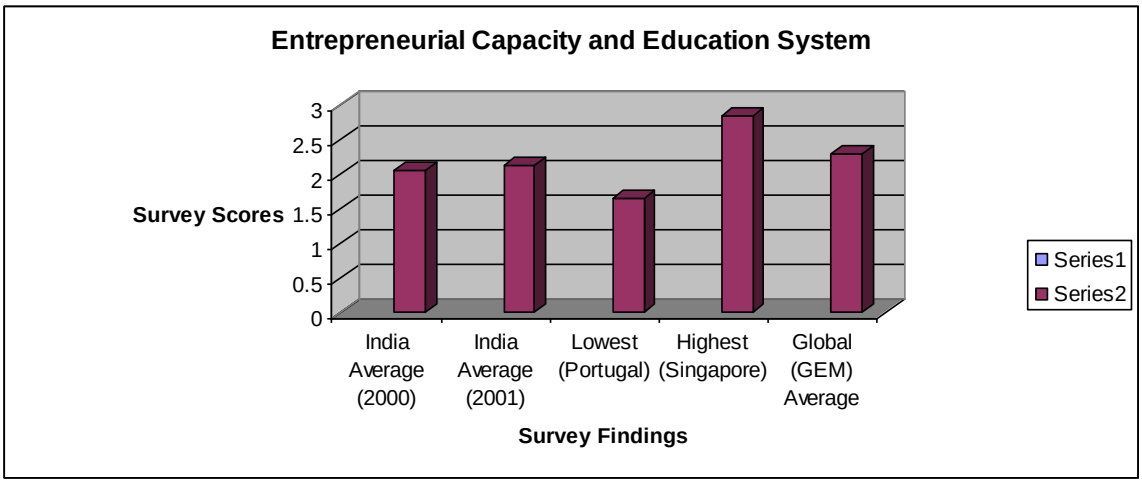
Is the education system in India geared to enable development of entrepreneurial skills? Expert assessments of this issue are presented in Table 2.4, Fig 1.7. Clearly, education in India is not perceived to be oriented towards promoting entrepreneurial skills. National experts feel that little attention is paid to entrepreneurship in primary and secondary education. The situation is not much better in colleges and universities. (Though there are institutes of excellence in various fields, they are too few for a large country like India).

Table 2.4: Entrepreneurial Capacity and Education System

India 2000	India 2001	Lowest Country Score	Highest Country Score	Global Average (GEM)
2.06	2.13	Portugal 1.65	Singapore 2.84	2.29

- Scores out of 5 points.
- Global Average of 29 countries
- Source: GEM Report 2001

Fig 1.7: Entrepreneurial Capacity and Education System



India's education system is rated below average relative to the other countries in imparting entrepreneurial skills except in providing post graduate management education. Apparently, the perception on management education is influenced by the existence of a few institutes, barring which there is nothing much to say about management education either.

The inadequacy of the education system in equipping individuals with entrepreneurial skills was repeatedly mentioned in the expert interviews in India.

The education system in India has a liberal bias. The experts stressed the need for providing vocational training programs in large numbers as well as for creating entrepreneurial attitudes in the young minds. Some Western researchers (like David McClelland) have suggested that seeds of entrepreneurship are often sown through the kind of heroes and role models being promoted through children's stories. Indian researchers have gone one step ahead (e.g.: Bapat and Harkal who analyzed 26 popular short stories for their attitude towards risk-taking) and suggested that the risk-aversive attitudes being promoted in popular stories could be a reason for the lack of entrepreneurship in the Indian population in general. While such stories may turn out to be a means of providing general education, they are also reflective of the prevailing socio-cultural norms in the Indian society.

Research and Development Transfer

Periodic improvements in technology are essential for any business to survive and grow, irrespective of the nature of the business. Improved technologies enable existing firms to compete effectively in local and global markets. For new firms, new technologies can be an effective means of getting entry into a competitive market. The paradox, however, is that it is only firms with resources that are able to invest in research to improve their knowledge base and develop new technologies. New firms have to depend else where for R&D. Hence the importance of R&D transfers for stimulating new venture start-ups.

One of the major advantages of India in this field is the availability of trained scientific manpower at a relatively low cost, which the local companies or public institutions have failed to make good use of. Multinationals, on the other hand, have located research centres in India to take advantage of the rich supply of knowledge workers. Indian industry in general is not actively involved in research though exceptions exist in the pharmaceutical and software sectors.

There are indeed a few education and research institutions in India that conduct research of good quality. However, not all of them have a feel for the commercial aspects of R&D. Interaction between the industry and research and development institutions are low. Hence, a lot of research and development work remains commercially unutilized. This problem is not unique to India, but the severity of the problem does seem to be more in India. On an average, country experts were of the opinion that research and development transfer to new firms in India was inadequate. (see Table 2.5, Fig 1.8)

New and growing firms, unlike large firms, usually do not have the resources to invest in research. Creation of new technology-based firms (NTBFs) would depend on the effectiveness of research and development transfer from universities and institutes to the industry. Experts are of the opinion that technology, science and knowledge are not effectively transferred to new firms. Acquiring the latest technology is expensive and there is not enough financial assistance from the government for this purpose. Large firms have an advantage here. There is a good science and technology base in the nation. But appropriate

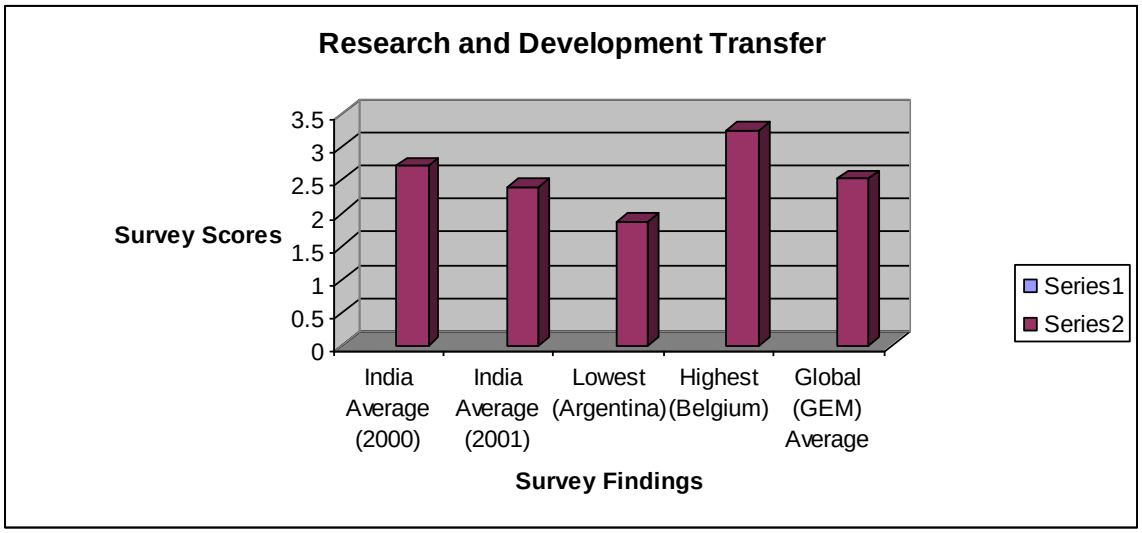
government policy and support are required to enable effective transfer of knowledge. Universities and educational institutions could take the initiative in facilitating the transfer process and fuel the entrepreneurial process. Some institutes of technology and management have set up incubators and are taking an active role in new venture creation.

Table 2.5: Research and Development Transfer

India 2000	India 2001	Lowest Country Score	Highest Country Score	Global Average (GEM)
2.72	2.40	Argentina 1.87	Belgium 3.26	2.52

- Scores out of 5 points.
- Global Average of 29 countries
- Source: GEM Report 2001

Fig 1.8: Research and Development Transfer



Commercial, Legal and Professional Infrastructure

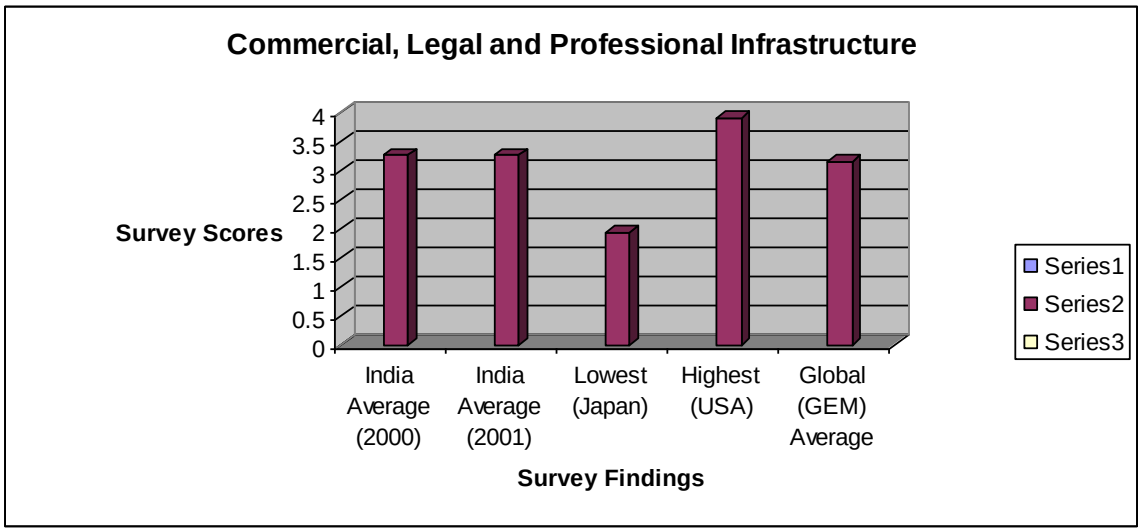
The availability of commercial and professional services does not seem to be a major issue in India. Legal, accounting and banking services are available for new and growing firms. However, providers of these services need to raise their quality levels. During the interviews, some experts pointed out that technology and marketing services were not easily available to entrepreneurs. This is a cause for concern since many entrepreneurs need support in these areas. In terms of the availability of commercial and professional infrastructure, India is rated slightly higher than the global average. (see Table 2.6, Fig 1.9)

Table 2.6: Commercial, Legal and Professional Infrastructure

India 2000	India 2001	Lowest Country Score	Highest Country Score	Global Average (GEM)
3.26	3.27	Japan 1.94	USA 3.91	3.16

- Scores out of 5 points.
- Global Average of 29 countries
- Source: GEM Report 2001

Fig 1.9: Commercial, Legal and Professional Infrastructure



Market Openness and Ease of Entry

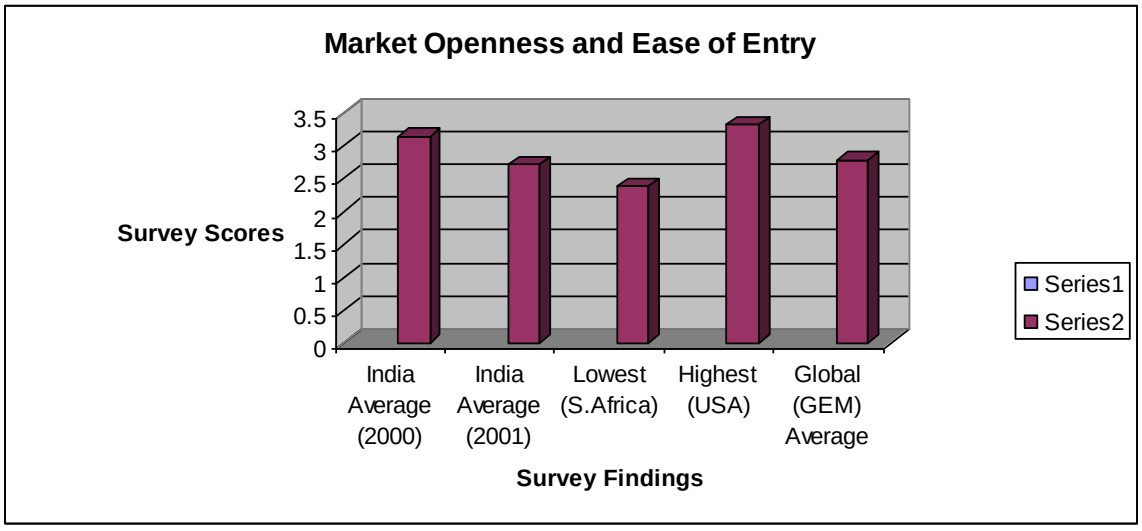
In market driven economies, changes in preferences and shifts in technology create opportunities. In India, the experts are of the opinion that markets do change, but not very dramatically. Growth in demand for goods and services arising out of population growth also throws up opportunities. The perception is that in spite of liberalization, there still are several impediments, for a new entrant to the country's economy. On an average, India has ended up with a score slightly below the global average. (see Table 2.7, Fig 2.0)

Table 2.7: Market Openness and Ease of Entry

India 2000	India 2001	Lowest Country Score	Highest Country Score	Global Average (GEM)
3.14	2.72	S.Africa 2.38	USA 3.33	2.78

- Scores out of 5 points.
- Global Average of 29 countries
- Source: GEM Report 2001

Fig 2.0: Market Openness and Ease of Entry



Adequacy of Physical Infrastructure

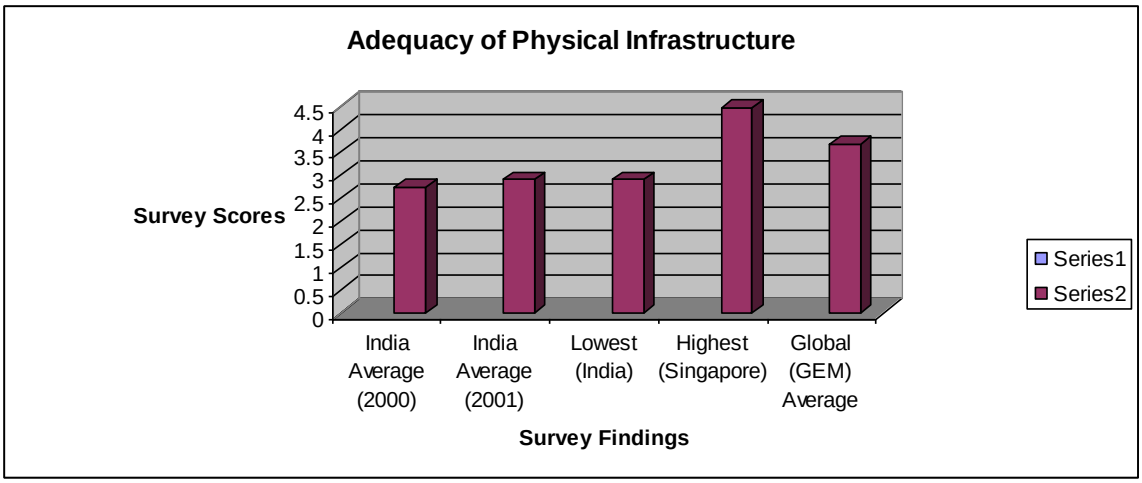
Reliable physical infrastructure facilitates business activities. Infrastructure in India is far from perfect and is inadequate even to cater to the basic needs of the country. There are regions in the country where basic utilities are unavailable and progress towards complete coverage is slow. However, most urban areas do have access to utilities. The government also makes extra efforts to provide necessary utilities in areas designated as industrial parks. Despite this the country's infrastructure remains inadequate. Physical infrastructure is a bottleneck for new and growing firms. Further, obtaining access to utilities and communication is a long drawn process. The positive side here is the cost of electricity, water and communications, which is relatively low and affordable by new firms. It is pointed out that utilities are available but unreliable. Hence, firms have to invest in backup systems and alternatives to minimize downtime. This increases costs and reduces competitiveness. There is a strong need for accelerated development of infrastructure. Improved delivery of infrastructure services by the agencies responsible will lead to better utilization of the available resources. Access to quality infrastructure is lowest in India compared to other countries. (see Table 2.8, Fig 2.1)

Table 2.8: Adequacy of Physical Infrastructure

India 2000	India 2001	Lowest Country Score	Highest Country Score	Global Average (GEM)
2.73	2.90	India 2.90	Singapore 4.46	3.66

- Scores out of 5 points.
- Global Average of 29 countries
- Source: GEM Report 2001

Fig 2.1: Adequacy of Physical Infrastructure



Adequacy of Social and Cultural Norms

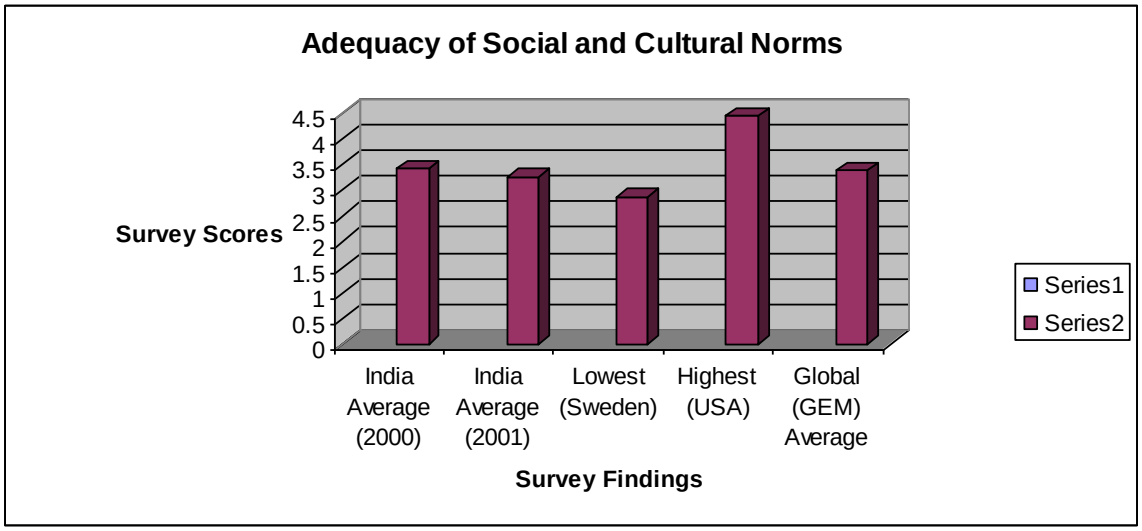
Social and cultural norms play a fundamental role in driving entrepreneurial activity. High motivation levels are required to deal with the uncertainties associated with an entrepreneurial career. Thus, social legitimacy (or the lack of it) is an important factor in determining a nation's entrepreneurial capacity. Social attitudes influence perception levels of opportunities that arise due to change. Experts believe that successful entrepreneurs are respected in India and media often carries stories about successful entrepreneurs. However, entrepreneurship is not a desirable career choice for everyone. Security and stability are valued in India and it is surprising that the overall assessment of social norms with respect to entrepreneurship in India is favourable. (see Table 2.9, Fig 2.2)

Table 2.9: Adequacy of Social and Cultural Norms

India 2000	India 2001	Lowest Country Score	Highest Country Score	Global Average (GEM)
3.43	3.26	Sweden 2.87	USA 4.45	3.38

- Scores out of 5 points.
- Global Average of 29 countries
- Source: GEM Report 2001

Fig 2.2: Adequacy of Social and Cultural Norms



Conditions for Entrepreneurship in India: Overall Assessment

Society does not encourage and support risk-taking. Security and stability are valued in India. Thus, the inherent entrepreneurial capacity of the nation is low despite richness of human capital. Physical infrastructure is a major bottleneck. Government policies and programmes are inconsistent and not administered efficiently. The legal framework is not effectively enforced. Regulatory requirements are not streamlined and cause a lot of stress to entrepreneurs.

The overall assessment of the experts seems to be that entrepreneurial opportunities exist in India, and that the Indian people have the entrepreneurial capacity needed to realize the potential of these opportunities. In other words, the individual and the economy are showing entrepreneurial readiness. Apparently it is society and government, which are lagging behind. Social attitudes, lack of finance, inadequate physical infrastructure, and lack of effective government support emerge as the causes for concern. This is evident from Table 3.0, which gives a categorized perspective of the framework conditions on which India compares favourably and unfavourably with other countries.

Table 3.0: Entrepreneurial Framework Conditions in India compared to other countries

Worse than the average	**About the same as average**	**Better than the average**
Positive attitude towards entrepreneurship	Opportunity perception	Changes in markets
Fear of failure	Ease of entry	Entrepreneurial capacity
Education system		Commercial & professional infrastructure
R & D transfer		Financial support
Physical infrastructure		
Government policies		
Government programmes		
Respect for entrepreneurship		

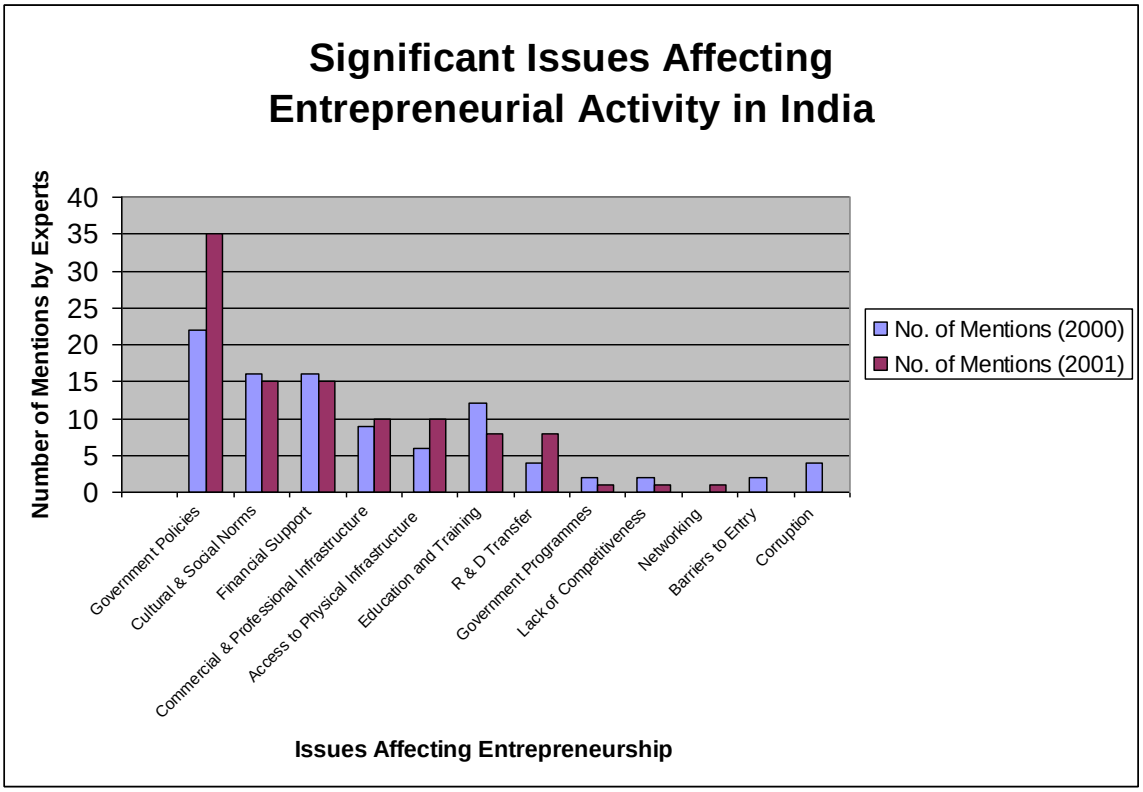
During the interviews, the experts were asked to identify the three most significant issues affecting entrepreneurial activity in India. The issues enumerated have been classified and arranged according to the number of times each item is mentioned (see Table 3.1, Fig 2.3). Government policy, cultural and social norms, financial support, and education and training were most often mentioned as the major causes of concern for the entrepreneurial environment in India. Initiatives for changing the current status of these dimensions can

substantially improve the entrepreneurial environment and thereby the levels of entrepreneurial activity in India.

Table 3.1: Issues Affecting Entrepreneurial Activity

S.No	Issues	No. of Mentions (2000)	No. of Mentions (2001)
1	Government Policies	22	35
2	Cultural and Social Norms	16	15
3	Financial Support	16	15
4	Commercial & professional Infrastructure	9	10
5	Access to Physical Infrastructure	6	10
6	Education and Training	12	8
7	R & D Transfer	4	8
8	Government Programmes	2	1
9	Lack of Competitiveness	2	1
10	Networking	-	1
11	Barriers to Entry	2	-
12	Corruption	4	-

Fig 2.3 : Significant Issues Affecting Entrepreneurial Activity



Entrepreneurial Activity

The central theme of the Adult Population Survey was to identify the level of entrepreneurial activity in the country. This was assessed through questions on four types of activity, namely: (1) Respondent's involvement in autonomous startup, (2) Respondent's involvement in start-up as part of his/her job, (3) Respondent owning and managing a business (which may have come to him/her through inheritance, purchase of the unit, purchase of some shares, etc), and (4) Respondent investing in other's business. The global TEA Index for all the 29 countries ranges from 5% (Belgium) to 18% (Mexico). India, with a level of 11.2% is the 9th from the top. When the TEA Index for India is partitioned between opportunity based and necessity-based entrepreneurship, India emerges as the highest on necessity-based entrepreneurship with a level of 7.5%. On opportunity-based entrepreneurship however, India's position is 5th from the bottom with a level of 3.7%. Entrepreneurship in India therefore is predominantly because people have hardly any other option for making a living. While this is not a very happy situation to be in, there is a silver liming in this cloudy firmament. This is the finding of the GEM global research that necessity-based entrepreneurship is highly correlated (r = 0.70) with projected national economic growth.

Entrepreneurial Capacity

We discussed the role of the national framework conditions in stimulating entrepreneurship. While a conducive set of framework conditions can create more opportunities, their perception and exploitation would largely depend on the entrepreneurial capacity among the people. The questionnaire seeks to ascertain

entrepreneurial capacity in the country through questions related to the respondent's ability to perceive opportunities, knowledge and skills for start-up and management of a venture, the extent of influence of fear of failure on the individual, the person's optimism about one's own and the country's future, and his/her general acquaintance and interaction with other entrepreneurs.

Table 3.2: Entrepreneurial Capacity Among Indians

S.No	Entrepreneurship Capacity	Number (N=2011)	Percentage
1	Perceived good start up opportunities	616	30.6
2	Having knowledge or skill for start up	845	42.0
3	Fear of failure preventing start up	518	25.8
4	Optimism about one's future	1071	53.3
5	Optimism about country's future	853	42.4
6	Acquaintance with other entrepreneurs	415	20.6

The figures in Table 3.2 show that entrepreneurial capacity is fairly high among Indians with 30% able to perceive good start-up opportunities. 42% feeling confident that they have the knowledge and skills required for startup, only 26% being deterred from start up by fear of failure (that is, 74% unaffected by fear of failure), 53% being optimistic about their own future, 42% feeling optimistic about the country's future, and 20.6% interacting with other Percentage entrepreneurs. It is therefore reasonable to assume that the capacity for entrepreneurship among Indians could be more than the 11.2% identified as the actual.

Demographics of Entrepreneurs

The demographics of people engaged in entrepreneurial activity were defined in terms of their gender, age, region of residence, income levels and educational accomplishments.

The data provides interesting insights into the profile of entrepreneurial people in India.

- The distribution of entrepreneurial people into different age categories reveals something interesting about entrepreneurs and managers. The kinds of energies and innovative and flexible ideas required for entrepreneurship is available primarily with younger people. In the category of owner-managers, on the other hand, it is the middle and old age group that dominates, even though the younger people also have a substantial presence. One of the implications of this could be that entrepreneurship promotion agencies may have to focus on the younger people and devise catch-them-young strategies. It may be useful for them to target the hitherto neglected sector of schools and other educational institutions not only with periodic training inputs but also with the redesigning of curricula as well as pedagogy.

- The urban and rural divide is apparently vanishing, at least in the field of entrepreneurship. In all the three categories of autonomous start-up, intrapreneurship and owner-managed business, the activity rates in urban as well as rural areas are more or less the same. It is possible that the

type of business activity undertaken in the two areas are different, but there is hardly any difference in the entrepreneurial spirit being exhibited. In fact, if the government could provide high quality infrastructure in the rural areas, it should be possible to shift enterprises more and more to the rural areas, away from the thickly populated urban centres. This would not only remove the pressures on the physical and ecological resources of the urban areas, but also help in achieving a more equitable income distribution and quality of life.

- The proportion of entrepreneurs is substantially higher in the higher income groups. It can be argued that entrepreneurship enhances the income levels or that people with higher incomes can better afford to be entrepreneurs. In either case, there are implications for policy-makers. Going by the first inference it is advocated that promoting entrepreneurship is one of the most effective ways of enhancing the income levels of people. Alternatively, if the second inference is being followed, one could highlight the importance of financial support for facilitating entrepreneurship. The two factors could also be conceived as reinforcing one another in virtuous cycle.

- The relationship between levels of education and entrepreneurship appears to be curvilinear. While there is an initial increase in the rate of entrepreneurship along with the levels of education, it declines sharply among graduates, except for the category of owner-managers. This may be because a large majority of Indian entrepreneurship is based on necessity. As graduates are qualified for securing employment, they may

not opt for entrepreneurship. In the category of owner-managers, however, the trend is different. The highest proportion (20.5%) of owner-managers is among the graduates. It might also be an indication of the different types of skill-sets required by entrepreneurs and managers. The nature of association between entrepreneurship and education might change towards what it is in the developed countries (where it is a linear relationship) when more and more Indian's can afford to be opportunity-based entrepreneurs, or when the education system is changed to incorporate entrepreneurial values and role-models.

Reasons for Start-up, and the Type, Size of Enterprise

Indian entrepreneurship is largely based on necessity. Apparently the concept of necessity has gone deep into the Indian psyche, which is probably giving a conditioned response. Thus, in the context of a developing nation like India, one should modify the old adage to: "Necessity is the mother of entrepreneurship." It may be interesting to hypothesize about what could be the impact of necessity-entrepreneurship on the types of businesses chosen and their potential for growth. A reasonable assumption would be that such businesses will be low on investment and manpower and will be carried out by the entrepreneur using the knowledge and skills available with him/her. The purpose of the venture is primarily to provide an occupation and a decent income to the owner and so is neither intended nor opportunistically positioned for growth.

Chapter 4: Academic Entrepreneurship

Entrepreneurs play an important role in developing and contributing to the economy of a nation. It is all the more in a developing world where there are ample opportunities for innovations to exploit the available resources and initiate entrepreneurial ventures. However, as discussed earlier, the emergence of entrepreneurship in all countries and in all parts of any country is not usually even. Commonly we see more entrepreneurs in comparatively more developed areas. Another paradox exists in terms of increasing number of unemployed population, seeking wage earners career and unaware of the wide opportunities for entrepreneurial career. This is, by and large, because of lack of education about entrepreneurship.

The business entrepreneur has become the focus of interest in many nations as an instigator of social and economic change. The search is on for more and better ways of creating enterprising people and specially for developing entrepreneurs. For this, the role of education and training is typically very important. Education is a strong influencing media that sets values, develops attitudes and motivation and induce people to acquire skills and competencies to achieve goals. The word ‘education’ can be linked to the word ‘enterprise’ in three ways.(see Figure 2.4)

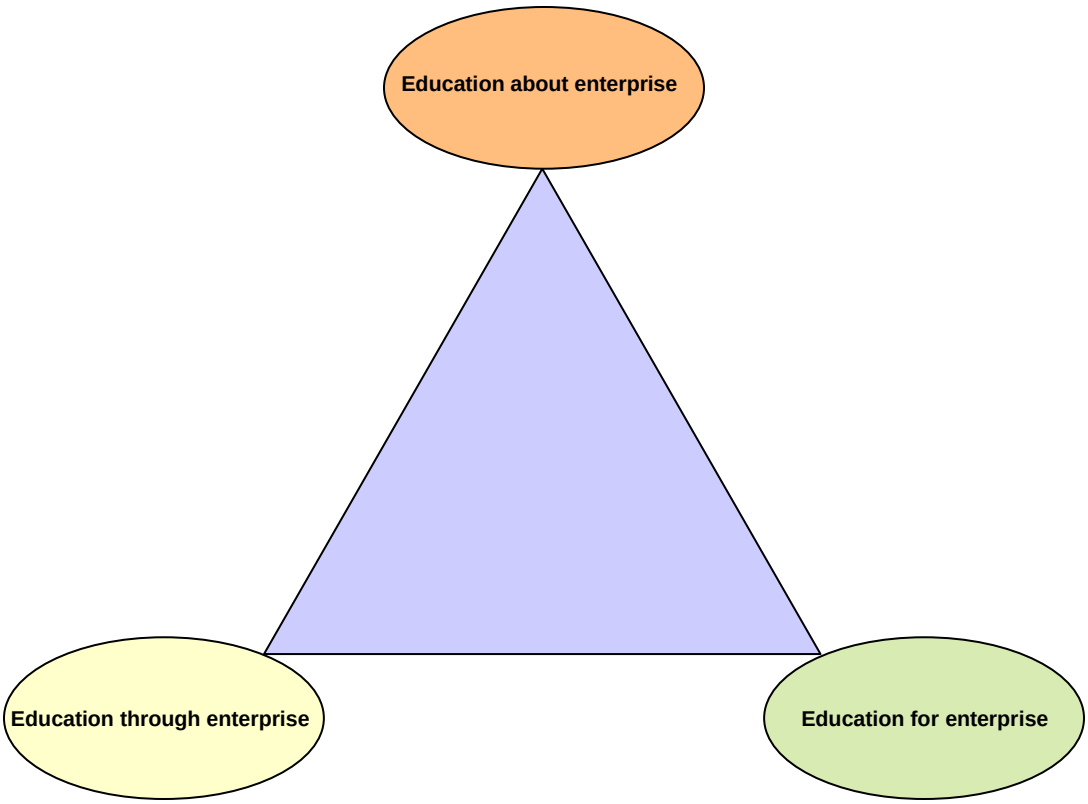


Figure 2.4: Education and Enterprise

Education about enterprise in which the role of education is in raising awareness of enterprise and entrepreneurship as a key change agent in economic process.

Education through enterprise in which the education process itself can be enhanced by using pedagogic styles which work in and makes use of enterprising situations including the student concerned and real world project driven approaches.

Education for enterprise which is aimed at entrepreneurship development and includes training existing entrepreneurs as well as entrepreneurs for new business start- up.

The present education system in India has not been able to promote independent thinking, creativity, a spirit of innovation and motivation for setting a challenging and achievable goal. The environment and policy however offers diverse opportunities for sustainable self employment to ensure contribution of workforce to industrial economy. There is thus a need to inculcate the spirit of enterprise into the psyche of the present generation. Entrepreneurship, self employment and enterprise development can provide a solution to the crisis of both unemployment and poor economic growth.

Academic Entrepreneurship refers to a variety of ways in which academics go beyond the production of potentially useful knowledge. They also undertake a variety of initiatives to facilitate the commercialization of that knowledge, that is to say, they become active participants in designing new marketable products and take some sort of leadership role in ensuring successful commercialization. The issue of commercialization of academic activities or "Academic Entrepreneurship", intended as the involvement of academic scientists and organizations into commercially relevant activities in different forms has received great attention over the past few years. Several observers have pointed to academic activities and research as an underutilized resource for a country's competitiveness, because academic activities and research was too distant from practical applications and of not easy applicability (Slaughter and Rhoades 1996). While originally confined to the United States, more recently the role of academic organizations for economic success has received increasing policy and

scholarly attention all over the world. The functioning of the University – industry interface is now regarded as an important building block in the nation's economic growth. (Magnus Henrekson, Nathan Rosenberg 2000). Several authors claim that since Universities perform activities that generate basic knowledge which is becoming increasingly important in the knowledge economy, it is desirable to directly involve academic organizations into commercially oriented activities. This will strike a virtuous compromise between the production of scientifically relevant knowledge, and the translation of this knowledge into economic and social value (Gibbons et al 1994, Zucker and Darby 1995, Stokes 1997, and Ezkowitz 2004).

Academic Entrepreneurship: Background

- In the medium to long term, sustained competitiveness in the global economy will depend on technological or innovation based strengths. These include the ability to develop new product to successfully new markets, to apply new technology, to incorporate best practice in the management of enterprise and to develop skill levels across the full spectrum of the labour force.

- Universities/ educational institutions, in particular, have an important contribution to make in this process. The perception of educational institutions as merely institutions of higher learning may be gradually giving way to the view that they could be important engines of economic growth and development. The Universities/ educational institutions can play a variety of roles in developing the economy. These include the creation and enhancement of employment opportunities, initiating new technology based firms, technology transfer via consultancy, patenting /

licensing, providing technical facilities to local firms and development of entrepreneurial graduates.

- Despite of all these facts, there is a little evidence to suggest that there is substantial interaction between educational institutions and industry. As a result, there is little cooperation in the exchange and absorption of knowledge between industry and institutions.

- If the situation does not improve, the capacity to convert scientific breakthroughs and technological achievements into industrial and commercial success will be very limited.

- The present project focuses on developing an understanding of the role educational institutions in developing and promoting entrepreneurship. In particular, it examines whether educational institutions are undertaking a proactive role in encouraging the growth of academic entrepreneurship. It also discusses the different factors which lead to the success or failure of entrepreneurship in general and academic entrepreneurship in particular.

Chapter 5: Findings, Analysis and Interpretations

- There is very little information to suggest that universities are undertaking a proactive role in bridging the gap between academia and industry. Only a small number of the universities were working actively to develop links with local small firms.

- Most of the entrepreneurial activities undertaken have been developed reactively rather than proactively by the university.

- Given the lack of funding and support for such activities, it is evident that within many institutions, the industrial liaison function is not seen as an important part of the overall administration of many universities. Within many universities, the linkages with industrial firms are driven at the departmental level, often because of an absence of any substantial administrative support by the core. In most instances, this is due to a lack of resources being made available to support the industrial liaison function.

- Internal marketing procedures were also considered to be grossly inadequate in the majority of universities examined. The minimum degree of internal effort towards this process should ensure that the university should be geared towards further integration between the

industrial liaison function and academic departments so as to encourage a two-way process of communication. While the liaison officers need to be informed of academics' specific expertise and requirements, academics must also be aware of the full range of facilities and services offered at their institution to help them in their industry-related activities. The study shows that in terms of initiating contacts with industry, universities tended to be slightly more reactive (than proactive) to the needs of industry. While this may suggests a demand-led technology transfer system, it is also probable that there is a distinct lack of marketing, by universities, of the services they can offer, as academic institutions, to industry.

- The major benefit, perceived by the university, of working with industry was that an increase in collaboration activities would result in greater funding. This, in turn, would lead to better teaching and research facilities, as well as access to new ideas, techniques and the development of specific research initiatives within industrial firms.

- It was also felt that closer collaboration with firms gave researchers the opportunity to focus on real-world problems and to broaden the researchers' experience. In particular, close partnership with industry can also add to the quality of research, especially through feedback on the applicability of research results. This is because firms, as customers, play the role of "efficient testing instruments", and can be used to reveal the relevant research areas that are of interest to the

industry. These experiences can then be exploited for learning opportunities for students and researchers.

- One of the main barriers in developing increased collaborative links with industry was a lack of internal resources at both an individual and institutional level. On an individual level, academic staff has increasingly less time to both establish and undertake collaborative projects with industry in addition to their teaching and administrative duties for the University. In addition, the continued emphasis on traditional outputs for academic work, such as publications, has meant that collaborative industrial R&D is not valued, except as a source of income.

- There is a distinct lack of motivation to undertake applied research or technology development activities related to firms. Indeed, the general lack of academic recognition for commercialization and rewards for publications, as opposed to patents, is a major barrier. As a result, many academics have been faced with the dilemma of either publishing their results for short-term revenue and academic recognition or withholding them until they are patented, with the risk of the technology becoming obsolete.

- On an institutional level, it was considered that there was not enough emphasis, especially in terms of internal funding within the university, to sufficiently develop linkages with industry.

- As stated earlier, it was considered that there was a lack of a proper infrastructure for developing academic-industry collaborative activities, especially in the marketing of research expertise. It was felt that Universities were not proactive enough, with not enough promotional activities to ensure businesses' awareness of the expertise available.

- Another finding in the area of university-industry links is the gap of knowledge, by researchers and industrialists, about each other's organizational cultures. These cultural differences are mainly down to a lack of communication by both researchers and industrialists about the advantages (and disadvantages) of collaborative activities.

- Universities are not always the problem in developing a collaborative culture with industry. There is an underlying theme that the clash of different cultures is also due, in part, to the attitude of business (especially smaller firms) towards academic institutions. While the universities had an open door policy to co-operate and work with all types of industry, industry’s perception was rather dependent on the type of industry and the nature of the link with the university.

- There can also be a gap in the priorities of each partner relative to the research results produced from collaborative projects. While firms require research results either to be patented or, in some cases, to be kept confidential, the career structure of academia, based on published works, requires that the collaborative R&D is placed within a scientific journal. Therefore, links with industry can, in some cases, restrict the free flow of information between academics and institutions.

- Finally, universities, by their nature as large public-sector organizations, are bureaucratic. As a result, many smaller firms can have problems in dealing with the labyrinthine procedures of the academic institution.

- Much of the early research examining entrepreneurial behaviour has indicated that owner-managers tended to have fathers who were themselves entrepreneurs, and that this was a major factor in influencing the decision to establish a new venture. Despite this, it is still surprising to find that overall, 56% of the respondents have had some kind of previous small business or entrepreneurial experience.

- The study also demonstrates that previous employment outside the university sector or previous small business experience has a positive effect on the likelihood of academics engaging in contact with industry. This is not surprising, as it would be expected that academics with

previous industrial experience would be utilizing industry contacts made during their employment or, in some cases, be given contract work directly by their previous organization. Previous small business experience would also encourage academics to become entrepreneurial, especially outside of normal duties such as teaching and research. This finding suggests that experience of industry is highly important in developing linkages with firms.

- The main types of activities undertaken by academics were (in order of popularity) contract research, consulting, large-scale science projects and external teaching. The less popular activities were those of testing, patenting/licensing, spin-offs and sales. The fact that consultancy and contract research are the most popular form of activities is not surprising, as both have been recognized as effective means of linking universities with industry. However, it is surprising, given the importance that policy-makers place on patenting and spin-off developing, that the incidence of these activities is relatively low.

- The majority of academic entrepreneurship activities tend to be undertaken by professorial or senior lecturing staff with a Ph.D. This is not surprising as senior academics with a higher degree should be individuals with more experience, influence and position where it is easier to attract resources for undertaking external activities. It is also worth noting that building up a personal network (which is important for all kinds of contacts and collaboration) can take a number of years. However, institutions should consider whether younger staff members

or even students could become increasingly involved in entrepreneurial activities as part of their training process.

- The role of the liaison department is restricted to mainly undertaking administrative functions, with many institutions lacking an infrastructure that is relevant to the needs of the academic entrepreneurs and, more importantly, the industrial clients. As a result, the management of technology transfer work is dealt with largely on an ad hoc basis.

- This report shows that there are significant barriers and difficulties experienced by individual academics when they become involved with industry. Principal among these difficulties is the considerable difference between a traditional university culture and an entrepreneurial culture, with the former having an emphasis on a system that tends to favour caution in decision- making. There are therefore considerable differences in organizations, cultures and missions, not only in the reality of the institutional framework, but also in the perception of the academics as to what their goal is and what are the resultant behaviours and decision-making processes.

- Industrial partners saw different problems compared to those seen by the academics, and as recent research indicates, the challenge is to match these. While academics frequently believed their technological ideas had commercial potential on a global scale, industrial partners often complained that these ideas had not been fully researched for commercial viability. This caused conflict as the industry players' focus

on marketing and balance sheets, while academics tend to place more emphasis on researching new ideas.

- The adoption, by the university, of a purely 'market-oriented' approach may lead to a focus on short-term market performance, in order to 'prove' the success of the new venture. Therefore, the university must be prepared to establish a long time horizon for evaluating the success of individual ventures as well as the overall entrepreneurship programme. An entrepreneurial climate should not be established within an organisation unless it is willing to invest money with no expectation of return over a number of years. It is also important that ideas are allowed to develop fully, and that the resources allocated to such entrepreneurial project are not withdrawn before that idea has progressed to commercialization.

- Most academics emphasized the importance of identifying industrial linkages that provide a benefit to both partners. Consequently the choice of industry partner is critical to ensuring that the academic achieves the expected benefit from the project. The benefits identified by most of the academics in this study include the focusing of the research activities of the university on the needs of industry, funding for research activity, facilities and research staff, improved teaching within the university and increased job opportunities for graduates, and the development of new knowledge within the university.

- The benefits described by industry partners relate to the solving of specific industrial and commercial problems. In the majority of cases, the industrial partner measured the success of the university-industry linkage in terms of the delivery by the academic of a solution to a specific short-term industrial problem. Few identified the development of an ongoing linkage with the academic as a critical benefit of the project.

- Overall the industrial partners did not identify problems in working with universities and academics such as a lack of professionalism or poor project management. The industrial partners of those entrepreneurs were, obviously, aware that these particular academics are in possession of skills than can be commercially utilized and have thus placed a high degree of value on nurturing these relationships. However, a number of industrial partners did state that they initially had a 'culture-shock' when first dealing with universities, particularly in respect of time-scales and project scheduling.

Chapter 6: Results and Recommendations

- There is a need to set up guidelines as part of a policy for working with the industry, with a particular need to increase awareness, and to market the university in a more professional light. Great potential does exist for increased university-industry collaboration. The reasons why this potential has not been fully realized include a lack of information about these activities, coupled with the fact that such arrangements have never been previously considered by university authorities. This is clearly one area where policy makers can influence further developments by providing more information on the potential benefits of such relationships. For example, one clear benefit for industry from universities is the provision of highly trained and technologically literate graduates who will become the labour force of scientists, engineers and technicians, and provide the key ingredient for the growth of technologically advanced industrial centres.

- Different 'good practice' initiatives (developed by the university to strengthen academic-industry relationships) have been identified. These included innovation networks, campus companies, enterprise training, research contract management, patenting / licensing support, career and training services, and service provision.

- One of the key factors contributing to the success of the different initiatives examined appears to be the acknowledgement and incorporation of

mutually beneficial activities for all partners involved and an awareness of the economy in which they participate.

- The keyword for success seems to be 'mutual benefit'. The various university initiatives all illustrate this in practice as they addressed the problem in a different way in relation to their specific needs, specialization and resources. It is therefore imperative that there is both an awareness of the structure of the local and national economy and of mutually beneficial activities for all partners within any initiative aimed at further developing universities' collaboration with industry. As stated earlier, there can be considerable cultural problems in developing such relationships. However, as some of the cases demonstrate, while industry's confidentiality and ownership requirements need to be respected, compromises should be sought wherever possible.

- It can be argued that many successful initiatives require originality if they are to be interesting and attractive to potential participants.

- The detailed analysis suggests that three main 'customer groups' can identified in relation to develop closer academic-industry links, namely students/ graduates, academics and firms .Two of these markets - students/graduates and academics - are essentially internal. As a result, these are probably the types of initiative that many universities would be most comfortable in establishing, assuming that some of the barriers, as discussed earlier, are overcome. The third market - industrial firms - is

probably where the university can have the most problems in developing different initiatives, mainly due to the clash in institutional and organizational cultures. This could indicate that the industrial liaison function within the university sector should concentrate on the two 'markets' with which it has direct contact. Liaison activities with firms should be left to an external organization that acts as a true bridge between the two institutions.

- Any academics may be satisfied with undertaking 'low-level' activities such as consultancy to gain extra income without the trials and tribulations of starting a new business. Obviously, it is in the interest of both the academic institutions and industrial partners to determine which activities can be further developed within their own institutional and regional setting. More importantly, they need to determine whether the support mechanisms in place will encourage or hold back certain types of entrepreneurial activities.

- Analysis of the cases has found that one of the most important factors in the success of any academic entrepreneurial activity in any of the universities studied is the presence of motivated and driven academics. The presence of successful academic entrepreneurs can often overcome many of the internal obstacles in developing links with industry. The development of the initiative can also be helped enormously by supportive colleagues and a supportive department, which can allow individual academics to overcome any resistance from within the university.

- The attitude of the academic towards external organizations can also be an important factor in building linkages with industry. Many firms are often reluctant to approach the university sector for solutions to technical problems. However, the correct approach by the individual academic can convince the firm to work with the university department. More importantly, the success of such individuals' endeavour could be utilized in increasing the links with industry within the university. The presence of such successful 'role-models' of entrepreneurial success can be used by the institution to encourage other academics to develop academic entrepreneurship activities.

- The benefits of industrial research to the academic can be additional funding for new equipment and other research resources. However, the cases also clearly demonstrate that entrepreneurial activities can result in a significant degree of personal gain for those individuals involved. However, it is clear that this is not universal across all cases. While the attainment of commercialization of ideas is often sufficient, the energy and effort expended by the academic entrepreneur in the creation of the new venture needs to be appropriately rewarded. As entrepreneurship is a relatively new phenomenon within the academic sector, many universities have yet to develop a reward system that is adequate in terms of pay and promotion. In many cases, the traditional reward within a university structure - promotion - is often not sufficient, as the motivation behind the development of the idea is often not career advancement. More importantly, entrepreneurs seldom make good academic managers, as they rarely have the temperament for coping with the university structure.

One option for universities, therefore, may be to reward entrepreneurial academics through giving them a position of freedom within the organization to develop new ideas, or even setting up the academic in a separate venture.

- Entrepreneurship can only be developed within an organization by creating the right climate for such individuals to flourish. However, the evidence from this study indicates that, in general, the majority of the academics do not utilize the industrial liaison function within the university. Instead, they form a direct relationship with industry, with the university having little or no influence in setting-up contracts or in finding new potential clients. As a result, the gradual build up of trust between academics and industrial partners, based on the achievement of tangible mutual benefits seems to be the key of success. In some cases, the maintenance and development of co-operation activities is deeply rooted in the informality of relationships and in personal contacts. However, albeit on a personal and ad-hoc basis, some academics are becoming more commercially aware, although universities (and other policy-makers) may need to develop specific programmes to encourage this further. While it is clear that universities must not abandon teaching and basic research, it must, nevertheless apply the same professional standards to the transfer of technology to industry as it does to the other two functions.

- This report shows that university-industry linkages could be very successful for both the industrial and academic partners. There are

considerable benefits for both partners, especially through a greater understanding of each others priorities, values and cultures which, as has been repeatedly emphasized, is fundamental to success in academic-industry partnership. The development of such partnerships does take time and patience and as a result, there needs to be a longer term philosophy towards the success of academic-industry collaborative ventures.

- Universities must develop their own individual strategies that reflect their strengths and the needs of local (as well as international) industrial firms. This would overcome many other problems relating to academic-industry relations that have been encountered in this study, especially with regard to the structure for industrial liaison and barriers to closer collaboration.

- Another complementary measure for this programme, would be the establishment of a databank of good university practice, which the above initiative could draw on in developing relevant policy initiatives. The cases of good practice highlighted in the research of successful university-industry relationship could, obviously, be adopted and adapted by other institutions. However, this diffusion of 'good-practice' may be dependent on whether these organizations are flexible and innovative enough to be able to absorb such policy changes. Indeed, while new forms of organization are needed to interact with external actors, the analysis of the data from universities suggest that the skills related to co-operation and building relationships may be lacking in a number of universities.

Chapter 7: Conclusion: The Road Ahead for Indian Entrepreneurs

The project has set out with an ambitions objective of finding the answers to a few but important questions. The quest was for finding out what kind of environmental conditions are conducive for stimulating entrepreneurship in general and academic entrepreneurship in particular, and what role does educational institutions play in promoting entrepreneurship. While the findings of the study have provided partial explanations to these questions, they have also thrown up more questions for researchers and policy-makers to answer. In this concluding chapter of Project Report, I shall present a brief summary of the findings and look beyond them to generate some ideas for practice as well as future research.

Surveys were conducted on the nine entrepreneurial framework conditions and the level of entrepreneurial activity in educational institutions. A few important findings of the project are outlined below:

The level of entrepreneurial activity varied from country to country, ranging from 5% (Belgium) to 18% (Brazil). India with a Total Entrepreneurial Activity (TEA) index of 11.2% was 9th from the top among 29 countries. A distinction was made between opportunity-based and necessity-based entrepreneurship. India ranked highest on necessity-based entrepreneurship (7.5%), and fifth from the bottom on opportunity-based entrepreneurship (3.7%). Necessity-based entrepreneurship was found to be highly correlated (0.70) with the projected national economic growth, while there was no such correlation for opportunity-

based entrepreneurship; in fact, it was 0.00! .The report focused on nine entrepreneurial framework conditions. These were: (1) Financial support, (2) Government policies, (3) Government programmes, (4) Education system, (5) R&D transfer, (6) Commercial and professional infrastructure, (7) Ease of market entry, (8) Physical infrastructure, and (9) Social and cultural norms.

Comparing India's scores with the global average, it becomes clear that on many of the framework conditions India is rated below the global average, while on a few of these India is either on par with the average or slightly above the average. The data suggest the following inferences about the economy, the entrepreneurial individual and the framework conditions in India: (a) The economy is positively changing as suggested by the average or above-average scores on market dynamism, ease of entry, availability of financial support (b) The level of readiness of the entrepreneurial individual is also getting better as indicated by the scores on opportunity perception and entrepreneurial capacity. (c) The major problem areas, therefore, seem (i) Lack of respect for entrepreneurship in the society. (ii) Inadequacies of knowledge dissemination in the society as indicated by the low scores on education system and R&D transfer. (iii) Inadequacies in the government policies, programmes and their implementation.

The Tasks Ahead

The findings of the project on framework conditions and the level of academic entrepreneurial activity may point to a few tasks ahead for all those who would be interested in promoting entrepreneurship, which include government agencies,

banks and financial institutions, venture capitalists, consultants, trainers, academic researchers, educational institutions, and so on. The issues emerging out of the study are presented below in the form of a few questions.

- While the government polices are helping in opening up the markets and creating entrepreneurial opportunities, the perception about other government policies and programmes are less favourable. The question is what actions can be taken by government and other agencies to improve the conditions, especially the following: (1) Entrepreneurship support systems, (2) Government programmes for stimulating entrepreneurship, (3) R&D and its transfer to entrepreneurs, (4) Education system, (5) Social and cultural values for promoting respect for entrepreneurship.

- There are various schemes in the country for stimulating and supporting entrepreneurship among the less privileged groups such as women, rural population, the less educated, and the lower income groups. How can these programmes be made more effective? What additional schemes and programmes can be created for them?

- A large proportion (45%) of the adult sample was found to be unemployed. Even if we assume that about one-third of these people would be interested and capable of taking up self-employment activities, the numbers will be very large. These points to the large scope for self-

employment programmes. What kind of innovative schemes can we design for promoting self-employment?

- Interaction with other entrepreneurs is found to have a salutary effect on potential entrepreneurs. How can we bring about such interaction more frequently? In what way can we promote existing entrepreneurs as role-models and mentors for our younger generation? .

- Fear of failure is found to be one of the deterrents against entrepreneurial start-up in India. What can we do in order to reduce such fear and help our people to take initiative?

- Younger people are found to be more successful in entrepreneurial pursuits. What kind of 'catch-them-young' strategies could be devised for stimulating entrepreneurship among the youth? A moderate level of education is found to be associated with entrepreneurship, and the percentage of entrepreneurs was found to be more among those with professional qualifications. The first priority in education is to provide the opportunity for basic education to all. Along with increasing the quantity, we have also to focus on improving the quality. What changes are needed in the education system, in its curricula and methodology so that the younger generation would develop entrepreneurial attitudes and skill?

- Great potential exists for increased entrepreneurial activities in educational institutions. What policy measures should be taken to increase awareness of academic entrepreneurship?

- How can the educational institutions be marketed in a more professional light to the industry?

- How can the motivation level of academicians be boosted to take up entrepreneurial activities and how can academic entrepreneurship be developed in a more professional manner?

- The positive relationship observed between income-levels and entrepreneurship may point to two directions: One, that there are various ways in which new entrepreneurship may have caused improvement in income - if this is so, the legitimacy for entrepreneurship development cannot be over emphasized; two, people with a higher incomes are in better position to become entrepreneurs - if this is so, the need for providing financial support for new ventures cannot be over - emphasized.

- What can we do to provide effective and timely financial support to potential entrepreneurs?

- Institutions in the country (banks, financial institutions, government agencies) play a major part in funding start-ups, but success rates seem

to be low. Is it because money is provided without any other kinds of support (technical, managerial, research and promotion? etc)? If so, what can be done in order to provide integrated support to entrepreneurs?

- Lastly, perhaps most importantly, what can we do in this country to improve the quality and accessibility of infrastructural facilities (transportation, communication, water, power, etc.)? Such improvements would not only facilitate entrepreneurship but also help in dispersing entrepreneurial activities especially to rural areas.

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Appendix

- Academic Questionnaire
- Student Questionnaire
- Industry Questionnaire

Academic Entrepreneurship, Knowledge and Technology Transfer in Educational Institutions

Dear Sir/Madam,

I am conducting research on the level of Academic Entrepreneurship activities in Educational Institutions. Upon successful completion of this research project, I aim to develop programmes and resources that will help in improving the provision of entrepreneurship in Educational Institutions. You are an eminent academic professional with a rich experience and I request you to favour me with your kind help and guidance.

I would be very grateful if you could complete the enclosed questionnaire and return it, if convenient, before the 30th March 2022. A self addressed stamped envelope is enclosed. Information provided through the questionnaire will be kept confidential.

This would be a great encouragement to me. I thank you in advance for your help, guidance and precious time.

Warm regards,

Saumya Kamdar

Some Useful Definitions

What do I mean by Academic Entrepreneurship?

Academic Entrepreneurship refers to a variety of ways in which academicians go beyond the production of potentially useful knowledge by undertaking a variety of initiatives to facilitate the commercialization of that knowledge. This is achieved by building a strong industry-institute interface and providing a platform for collaborative work assignments like industry-institute joint ventures, joint new marketable product development, joint R&D projects, joint manpower training and development programmes etc. This results in mutual benefits through bridging the gap between industry and academia.

What do I mean by Knowledge Transfer?

Knowledge Transfer is the action and flow by which knowledge is packaged and transmitted in usable form among people.

What do I mean by Technology Transfer?

Technology Transfer is the process of developing practical applications to problems using scientific R&D. The overall goal is to improve the competitiveness and innovation level between industry and academics. In educational institutions, these activities involve academicians and industry representatives applying and sharing their collective expertise to important business problems.

What do I mean by Innovation and Creativity?

Innovation is about successful exploitation of new ideas. In Educational Institutions, innovation can be exhibited in course development, course delivery etc.

Creativity is the interplay between ability and process by which individual or group produces an outcome that is both novel and useful.

Questionnaire

Name:	
Position:	
Institution Name:	
Address:	
Telephone:	
E-Mail:	
Website:	
Department:	
Number of students in dept:	
Number of teaching staff in dept:	

---

1. Does your institution engage in any Entrepreneurship, Knowledge or Technology transfer activities?

☐ Yes – Please proceed to Question 2
☐ No – Please proceed to Question 17

2. How are the Entrepreneurship, Knowledge or Technology transfer activities funded in your institution?

☐ Funded by AICTE/University/UGC/Government

☐ Funded by Institution

☐ Industry Funding

☐ Other, please specify _____

3. How many Entrepreneurship, Knowledge or Technology transfer activities / projects has your institution engaged in over the past year?

☐ 1-3 ☐ 3-5

☐ 5-8 ☐ 8-10

☐ 0ther, Please specify _____

4. How many professors/lecturers in your institution engaged in Entrepreneurship, Knowledge or Technology transfer activities/projects in the past year?

☐ 1-3 ☐ 3-5

☐ 5-8 ☐ 8-10

☐ 0ther, Please specify _____

5. What type of Entrepreneurship, Knowledge or Technology transfer activities / projects were undertaken by your institution?

☐ Industrial - educational collaboration leading to a new business unit set-up.

☐ Industrial – educational collaboration leading to new product /service development or Product/service enhancement.

☐ Industrial – educational collaboration leading to Government/Foreign/Industry Projects/funding/sponsorship.

☐ Industrial – educational collaboration leading to joint publication.

☐ Industrial – educational staff exchanges

☐ Others, Please specify _____

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6. Were these activities (in question 5) reported?

☐ Yes
☐ No

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7. If yes, what medium was used to promulgate these reports?

☐ Departmental Reports
☐ Journals/periodicals
☐ Internet News
☐ Government Reports
☐ E-Mail/e-Newsletter
☐ Industry Publications
☐ College Magazine/Newsletter
☐ Newspapers/Magazines
☐ 0ther, Please specify _____

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8. How did these Entrepreneurship, Knowledge or Technology transfer activities / projects help your institution/staff?

☐ Source of revenue
☐ Provided staff development
☐ Better curriculum design
☐ Revenue share for faculty
☐ Better delivery of course
☐ Compliance with norms
☐ Recognition for Institution
☐ Recognition for staff
☐ 0ther, Please specify _____

---

9. How did these Entrepreneurship, Knowledge or Technology transfer activities /

projects help your students?

- ☐ Gained up-to-date knowledge
- ☐ Obtained real-world industrial experience
- ☐ Developed better understanding of business
- ☐ Improved project work
- ☐ 0ther, Please specify

- ☐ Prepared for self-employment
- ☐ Improved placements
- ☐ Financial incentives
- ☐ Recognition for students

---

10. Does your institution have a methodology for introducing students to Entrepreneurship, Knowledge or Technology transfer activities / projects?

- ☐ Yes
- ☐ No

---

11. If yes, what type of methodologies are employed?

- ☐ Use of guest lecturers from business/industry
- ☐ Inclusion of Entrepreneurship sessions in educational programme.
- ☐ Engaging students in industrial/business competitions/sponsorship activities.
- ☐ Industry visits
- ☐ Individual/group projects
- ☐ Case studies/presentations/role-plays.
- ☐ Other, please specify

12. Do you include in your educational programme, the topic‘Entrepreneurship’?

- ☐ Yes
- ☐ No

---

13. If yes, how is ‘Entrepreneurship’ incorporated into the educational programme?

☐ Getting students to develop a prototype for new product/service.

☐ Getting students to create a new business concept that will enhance a product

☐ New business start up planning sessions from business advisors

☐ Interaction with real entrepreneurs

☐ Occasional seminars in Entrepreneurship

☐ Entrepreneurship taught as module/elective subject

☐ Other, please specify ☐

---

14. If no, do you feel you would be able to incorporate 'Entrepreneurship' in your teaching programme if additional support is available?

☐ Yes
☐ No

---

15. Does your institution teach innovation and creativity to students?

☐ Yes
☐ No

---

16. Would your institution be interested in taking part in programmes to improve Entrepreneurship, Knowledge or Technology transfer activities / projects?

☐ Yes
☐ No

---

17. You answered 'No' to question 1. Please could you specify the reason as to why your institution does not engage in Entrepreneurship, Knowledge or Technology transfer activities / projects?

- ☐ Educational Institutions should concentrate only on academics and not on commercial projects.
- ☐ Academic professionals lack commercial skills and business expertise
- ☐ No incentive/ rewards/recognition for such initiative
- ☐ Infrastructure (space/equipment) not available
- ☐ Staff not available
- ☐ Time constraint
- ☐ Non availability / shortage of funds
- ☐ University/Institution policy does not allow for such activities
- ☐ No support from industry
- ☐ Other, please specify ☐

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18. If the constraints mentioned above by you were removed, would you be interested in engaging your institution in Entrepreneurship, Knowledge or Technology transfer activities / projects?

- ☐ Yes
- ☐ No

Introduction

Dear Entrepreneur,

I am conducting a research on entrepreneurship (self employment) as a career option among youth.

This questionnaire is designed to obtain more information about your perceptions, opinions, and experiences regarding the challenges and successes you have faced in starting and maintaining your business. Your business story and your particular experiences while setting up your own enterprise are highly valuable. They will help me to better understand the specific constraints and needs of young people who are engaging in business and to make recommendations that will effectively improve the entrepreneurial framework for youth. I, therefore, request you to please tell me how you succeeded and what held you back. As entrepreneurship is seen as one crucial factor in driving economic development and employment creation for young people, your assistance is an important contribution to the global fight against youth unemployment and underemployment.

I would appreciate if you could answer the following questions as comprehensively as possible. Information provided by you will be kept strictly confidential.

Please use the space provided to write your answer. If you need more space, feel free to add more lines or enclose an additional sheet.

I also would appreciate if you could send back your filled out questionnaire before the 30th March 2022. A self addressed stamped envelope is enclosed.

I thank you in advance for your kind help, guidance and your precious time.

Warm regards,

Saumya Kamdar

Definition

Entrepreneurship is defined as assuming the risk of starting and running a business.

Questionnaire

A. ENTREPRENEUR & COMPANY INFORMATION

1. Name (Of Entrepreneur) :……..

2. Age group (in years): ☐ 15-25 ☐ 26-35 ☐ 36-45 ☐ 46-55 ☐ 56-65

3. Gender: ☐ Male ☐ Female

4. Education:

☐ Below high school (10th) ☐ High School (10th)

☐ Intermediate (12th) ☐ Graduate

☐ Post Graduate ☐ Professional

5. Name of the company:……

6. Address:…….

……

7. Email:……..Website:……..

8. Phone:……

9. Sector of activity:

☐ Extraction /Mining ☐ Transport

☐ Manufacturing ☐ Communication

☐ Construction ☐ Services

☐ Wholesale trade ☐ Hotel/Restaurant

☐ Retail distribution ☐ Health

☐ Agriculture ☐ Other, please specify:

10. Enterprise based in town or village:

☐ Rural (Less than 10, 000 population)

☐ Urban (Between 10, 000 and 100, 000)

☐ Large city (More than 100, 000)

11. Legal status:

☐ Sole proprietor

☐ Partnership

☐ Private / Private limited enterprise

☐ Public limited enterprise

☐ Other, please specify

12. Year of starting of company:……..

13. Approx. number of employees by end of 2005:…….

14. Approx. annual turnover in 2004-05 (in Rs):……

15. Current situation of enterprise:

☐ Critical: Struggling to survive

☐ Consolidation

☐ Growth

B. Short story of your enterprise:

1. Please tell me a little more on the start-up phase of your business.

- What is your business?……..
- Is this your first business?…….
- What was your age when you started your first business?……..
- What were you doing before starting your business?……...

  ……

  ……
- How did you come up with an idea of your business?……..

  ……

……

- What have been your major successes and failures so far?……...

……

……

C. ENTREPRENEURIAL ENVIRONMENT/ CONDITIONS

1. Young people face difficulties, obstacles and barriers to start a business in many fields. In which areas (a to f) did you face the most difficult barriers?

Please rank the following areas by importance. Please rank them first (1), second (2), third (3) etc.

Rank:
a) Social/ Cultural attitude towards Entrepreneurship.
e.g. Entrepreneurship is not appreciated and promoted enough by society.

Rank:
b) Access to finance
e.g. There is a clear lack of access to start-up financing.

Rank:
c) Government regulations
e.g. Excessive administrative and bureaucratic burdens impede entrepreneurship

Rank:
d) Education, Skills & Training
e.g. Education and training do not promote/encourage young people to engage in business and to develop good business ideas. Education & training does not match market opportunities appropriately.

Rank:
e) Business support & physical infrastructure
e.g. There is clear lack of business support in terms of mentoring, business counselling and access to working space as well as to business networks.

Rank:
f) Other: Please specify:……
……

D. Attitude towards entrepreneurship

1. Why did you engage in business? What has been your main incentive and motivation to start your own business?

• *e.g. you wanted to earn more money/become rich – to be your own boss - to seek the challenge – to be respected – to do something new – to realize your ideas/vision – to connect your job/business with your passion/hobby etc.*

……

……

2. Was starting a business your only option or did you have other options? If you had other options, what were they and why did you not choose them?

……

……

……

3. Has your social, cultural environment encouraged or discouraged you to start a business?

• *What is your perception regarding the attitude of young people towards entrepreneurship? Is it seen as a too risky or rather respectable career?*

……

……

• *How have you, as an entrepreneur, been perceived by your social environment?*

……

……

4. Who encouraged, discouraged, influenced you to start-up a business? Please tick.

S.No	Influencer	Encouraged	Discouraged	No Influence	Don't Know
1	Parents & family				
2	Teachers				
3	Career advisers				
4	Friends				
5	Entrepreneurs				
6	Media (TV/Radio/ Internet/Newspaper				
7	Other, please specify:				

5. In your opinion, what measures could improve the acceptance / appreciation / promotion of entrepreneurship among young people of our country?

(*e.g. better media coverage, entrepreneurial education in schools/colleges etc.)*

……

……

6.What have been important de-motivators (fears) for you to engage in business?
……

……

E. Government regulations and policies

1. What were your positive and negative experiences with regulations, administrative procedures, bureaucracy while starting your business?
• *What regulations have been administrative hurdles in registering/licensing your business? (e.g. registration costs/ duration/ complex procedures)*

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……

……

• *What regulations did you find most onerous/helpful in setting up your business? Please give some details and explain why?*

……

……

……

F. Fears or de-motivators (*Please tick)*

1. Financial risks:
I was worried by the possibility of loosing my invested money!
I was afraid of not being able to pay back my loan, credit or borrowed money!

Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree

2. Access to finance - Capital to invest
I was afraid of not being able to get enough money to start my own business!

Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree

3. Lack of skills (confidence in my skills & experience):
I was afraid of not having the right skills and experience!

Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree

4. Administrative hurdles:
I was worried by the possibility of not meeting licensing and regulatory requirements like tax laws etc!

Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree

5. Gender:
I was worried by the possibility of being disadvantaged because of being a woman/ man!

Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree

6. Stigma associated with failing:
I was worried about what my family or other people would think of me if I failed!

Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree

7. Workload:
I was afraid of not being able to handle all the workload!

Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree

8. Corruption:
I was de-motivated from the level of corruption in business (or society in general)!

Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree

9. Competition
I was afraid of the strong competition in my line of business!

Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree

10. Market Demand
I was worried by the possibility that people would not have a need for my product or service!

Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree

11. Other: (please explain)…….

……

……

G. Help on entrepreneurship

I Government policies

1. Have you benefited from any government promotional program/policy supporting entrepreneurship/business ventures? What have been the advantages and the drawbacks of the program?

……

……

……

2. How should the regulatory framework in our country be improved in favour of young entrepreneurs? Which kind of government support would have been (or would be) valuable for you?

……

……

……

II. Start-up financing

1. What kind of start-up financing, if any, did you obtain?
a) Money borrowed from family or friends or personal contacts.

……

……

b) Credit, loan or subsidies from the government, banks, financial institutions, cooperatives, NGOs or other financiers?)

……

……

2. What are your negative and positive experiences regarding the access to start-up financing?

• *Was it rather easy or difficult to obtain financing?*

……

……

……

• W*hat have been the major impediments to obtaining start-up funding? (e.g.: no collateral security/assets/guarantees - strict credit-scoring methodologies /regulations - high interest rates and fees - complex documentation & procedures – corruption – no margin money etc.*

……

……

……

3. In your opinion, what measures could improve the access to finance of young entrepreneurs in your country?

……

……

III. Education, skills and training

1. How has education influenced your entrepreneurial career?

The educational institutions I attended strongly supported my entrepreneurial career and influenced my entrepreneurial career positively.

Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree

The educational institutions I attended had a negative influence on my entrepreneurial career.

Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree

The educational institutions I attended had no influence on my entrepreneurial career.

Strongly disagree, disagree, neither agree nor disagree, agree, strongly agree

2. Looking back to your education, which experiences have been particular

Useful /valuable or worthless for your business career?

……

……

……

3. What kind of educational support would have been valuable for you? How can the educational system be made more supportive for young entrepreneurs (e.g. courses, internships, company visit programmes, entrepreneurial training?

……

……

4. Do you have any liaison/tie-up with any educational institution in relation to your business? Please give details. If no liaison, please specify reasons.
Eg. Staff exchange, joint training programme, joint R&D activities etc.

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……

IV. Business Support (Workshops, Trainings, Advise, Business Counselling, etc.)

1. Did you receive any business support *(Workshops, Trainings, Advise, Business Counselling, Mentoring etc.)* before or during the start-up phase of your business?

……
……

2. On which particular subjects have you been trained, mentored or counselled? (e.g. management and business skills, marketing, accountancy, export etc)

……
……

3. Which institution provided these services?
(e.g. chamber of commerce & industry - employers` organization – bank - private training company - NGO – government, State industrial development corporations - universities etc)

……

……

4. Have these support services been helpful and particular valuable or rather worthless for you and your business? Please tell us why!

……

……

5. What kind of business support services/ skills/training would have been highly valuable for you?

a) During the start-up phase of your business.

……

……

……

b) As your business is/was growing.

……

……

……

Final Question

1. Looking back, regarding what you have achieved and experienced, what are your conclusions on your business engagement?

• *Was it worth while to start a business?*

……

……

……

……

• *What would you do differently?*

……

……

……

……

• *Would you recommend entrepreneurship to young people? What would you advise them?*

……

……

……

……

THANK YOU FOR YOUR ASSISTANCE AND YOUR PRECIOUS TIME!

Dear Student,

I am conducting a research on entrepreneurship potential of students. I define entrepreneurship as assuming risk of starting and running a business.
I would be very thankful if you could kindly complete and return the questionnaire below.

About you

1. Are you currently a full-time student?

   Yes ☐ No ☐

2. If 'yes', what is your course subject?

   _____

. 3. What would you like to do at the end of your studies?

   ☐ Go into regular employment i.e take up a job
   ☐ Portfolio Working (Freelance work)
   ☐ Self-employment i.e own business
   ☐ Other please specify:

4. If 'no' to Q1, have you completed your studies?

   Yes ☐ No ☐

   If 'yes'

   What is your qualification? _____ Year of passing _____

   Institution _____

5. Are you:

   Employed ☐ Unemployed ☐ Self-Employed ☐

   If you are not self-employed, why did you not take up self-employment?
   (i.e Started your own business)

……
……
……

If you are employed, Please give details of present employment.

Company:……...

Designation:……...Department:……
Year of joining:…… Place of posting:…….
Monthly salary: (Please tick)

☐ Less than 10,000 ☐ 10,000 – 15,000 ☐ 16,000 - 20,000
☐ 21,000 – 25,000 ☐ 26,000 – 30,000 ☐ Above 30,000

Entrepreneurial Skills

6. How would you rate your skill level in the following entrepreneurship areas? (1 = Poor, 7 = Excellent)

Skill areas	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Networking Skills (Developing Contacts)							
Creativity & Innovativeness							
Knowledge of finance							
Assertiveness							
Leadership							
Business/commercial skills							
Time management skills							
Project management skills							
Negotiation skills							
Risk taking behaviour							
Any other:							

7. Were you taught any of the entrepreneurial skills at your institution?

Yes ☐ No ☐

If 'yes', how did this training in entrepreneurship help you?

☐ Prepared me for self-employment
☐ Helped me in placements
☐ Taught me business skills
☐ Helped in better understanding of course
☐ Gained up-to-date knowledge
☐
☐
☐

Obtained real world industrial experience

Got financial incentives (Stipend etc)

Any other:

If 'no', are you interested in improving your entrepreneurship skills?

Yes ☐	No ☐

8. Where can you find help on entrepreneurship?

Ideas about self-employment

9. Have you ever thought about self-employment as a career option? (Doing your own business or consultancy work etc)

Yes ☐	No ☐

If 'yes', why?

☐ Independence/Own boss	☐ Greater rewards (Lot of money)
☐ Greater job satisfaction	☐ Family/relatives in business
☐ Security of earning	☐ I have good idea of market
☐ Flexibility	☐ Any other:

If 'no', why?

☐ No contacts	☐ Financially very risky
☐ No family/social life	☐ No money to invest
☐ Too demanding & stressful	☐ No background in business
☐ Lack of knowledge/skills	☐ Any other:

10. Would you consider self-employment if there was additional help available to overcome barriers?

Yes ☐	No ☐

11. Which personal or professional qualities do you think are most essential for self-employment?

Your Contact Information

Name:……. Gender: ☐ Male ☐ Female
Phone/Mobile:……
E-mail:……
Age Group (in years): (Please Tick whichever is applicable)

15-20, 21-25, 26-30, 31-35, 36-40, 41-45, 46-50, above 50