The Indian IT Industry and Meritocracy

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INTRODUCTION

This article explains the significance of credentials as indicators of merit for employment in prestigious firms in the Indian software industry. The main aims are as follows: firstly, to show how credentials, such as engineering degrees and jobs in high status software firms influence social and professional ties. Secondly, to look at the effects of corporate hiring procedures on meritocracy.

Sociologists have argued that ascribed status is a significant factor in determining social status and is pervasive in the professional sphere in India despite the historical advents of British colonization and Indian independence from Britain and the subsequent development of reservation policies (for the economically and socially depressed castes), Western education, urbanization, industrialization and modernization. Studies on caste and occupations do not discuss the effects of merit and competition on ascribed status and social ties because they claim that the changes are not significant.[1] However, no empirical study has considered the prevalence of meritocracy in knowledge-based professions and firms affected by global outsourcing, or its influence on social and professional alliances arising out of the new economy's demand for cheap and highly educated white collar professionals.

Caste politics and preferences have certainly not disappeared in the post-liberalized Indian economy. While macro level changes in India's caste identities and politics have a long way to go before equality is a reality to all despite their ascribed status, it is important nevertheless to document some micro level changes which have largely been ignored because they are statistically under-represented.

The software industry was chosen for this study because it has been a lynchpin in the post-liberalized Indian economy, with an enormous social influence in the way its employees have become upwardly and globally mobile. It is important to highlight that the Indian software industry, with its large influx of local and foreign investment, has introduced unprecedented credential competition based on merit due to its complex and diverse global networking and skilled labor needs, as it primarily serves a very competitive export market[2]. Hence, software firms have to rely on indicators of merit when hiring employees and software professionals need to compete with others with high worth credentials in their professional networks.

In particular, the Indian software industry is highly dependent on transnational capital and export markets. Hence, software firms in India are promoting a culture of Unitarian Indian values, continuous knowledge attainment, professionalism and standardization of work

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[1]   The following authors have written notable sociological accounts on the Indian caste system.

   Béteille, Andre (1991) *Society and Politics in India: Essays in a Comparative Perspective.* London: The Athlone Press.

   Ghurye, Govind Sadashiv (1961) *Caste, Class and Occupation.* New ed. Bombay: Popular Book Depot.

   Ghurye, Govind Sadashiv (1969) *Caste and Race in India.* (5 ed. Bombay Popular Prakashan.

   Gould, Harold A. (1988) *Caste Adaptation in Modernizing Indian Society: The Hindu Caste System.* Vol. 2 New Delhi: Chanakya Publications.

   Harriss-White, Barbara (2003) *India Working: Essays on Society and Economy.* Cambridge: Cambridge University Press.

[2]   National Association of Indian Software and Services Companies (NASSCOM 2007).

processes to promote organizational cohesion and international competitiveness.[3] This has significantly influenced the recognition of achieved status in social and professional networks and alliances.

In order to deal with the complexities of the propositions, the next section looks at the development of the software industry in Bangalore followed by a conceptual framework of the key concepts.. The concept of caste, which is undoubtedly a composite one, is dealt with in the literature review section followed by the relevant debates and empirical findings of this study.

DEVELOPMENT OF IT/SOFTWARE FIRMS: STAGES OF INDUSTRIAL GROWTH IN BANGALORE

The liberalization period in India started with the Rajiv Gandhi government in the 1980s and the IT/software industry came to Bangalore with the arrival of Texas Instruments. Other firms followed suit and the Indian software industry got noticed and so did Bangalore as a place for investments. Texas Instruments' main intention was to establish a base in the Asia/Pacific region.

India was chosen because of its education system in sciences and engineering and English speaking labor (NASSCOM 1995, pp. 384). Bangalore was also selected, because it was considered to be a location which would better suit the needs of Texas Instruments' international staff in contrast to other Indian cities due to its climate (Heeks 1996; Lateef 1997; Rolee 2003).

The initial IT/software development was also marked by the establishment of a number of companies, such as Computer Maintenance Corporation in 1978, Tata Consultancy Services in 1968 and HCL in 1976 (Evans 1995; Heeks 1996; Lateef 1997). There were very few local hardware companies (at the time the Indian Government was declining large foreign hardware manufacturers such as IBM), but eventually software firms multiplied (Evans 1995). These companies were the foremost contributors to India's software exports and promoted the country in gaining early exposure in software development, including international contracts. Complex and enormous programming tasks were undertaken such as Computer Maintenance Corporation's development of the passenger reservation system for the Indian railways. This enabled Indian software professionals to gain experience in large scale projects and learn about international standards. However, there is an argument that growth in these companies did not explode until the state moved from an import substitution role to a more economically exposed one in 1984, after which software production dramatically increased (Das 2000; Evans 1995; Lateef 1997).

Most of the currently successful larger enterprises started without much interference from the state, such as Wipro, Hindustan Computers Limited and Infosys Technologies. This stage of India's, and in particular Bangalore's, development was also noticeable by the arrival of international high-tech companies in the 1980s and 1990s (continuing even today). The rise in foreign capital came with reforms to improve the environment for foreign direct

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[3]   This information was sought from the respondents and the nine industry experts. Furthermore, the media provides many interview excerpts of corporate leaders in the software industry who promote casteless Indian values. These are too numerous to be included here.

investment specifically, the creation of special software technology park zones which tried to enable and coordinate some dedicated infrastructure. One of the first multinational corporations to locate during this period, which was discussed earlier, was Texas Instruments, which in 1985 opened a design facility in Bangalore. This company was attracted by the easy availability of staff, Software Technology Parks of India provision of a less bureaucratized channel for government approvals, and a dedicated satellite link with other amenities (uninterrupted power amongst others in the technology parks). The location of Texas Instruments in Bangalore lured other multinational corporations when they were looking for sites, since their existence helped with information networks and lowered the risks for new entrants (Greenspan 2004, pp. 77-91; Heeks 1996; Lateef 1997; Rolee 2003; Tschang 2001, pp. 6. See below for timeline of software firms entering Bangalore).

The Evolution of the IT Industry in Bangalore

1984	**Texas Instruments enters India for offshore development.**
1986	Department of Electronics (DoE) announces software policy.
1991	Software Technology Parks of India (STPI) is set up
1992	Exclusive satellite international gateway for export industry is set up.
1997	Government of Karnataka announces IT Policy and Karnataka becomes the first state in India to do so.
1998	Number of IT companies (software) under STPI grows to 253, with total projects worth US $840 Million.
1999	Indian Institute of Information Technology Bangalore (IIITB) and the KITVEN FUND are established.
2000	Number of IT companies (software) under STPI grows to 782, with total projects worth US $1.1 Billion.
2001	Number of IT companies (software) under STPI grows to 928, with total projects worth US $1.58 Billion.
2001	Number of hardware companies under Electronic Hardware Technology Park (EHTP) grows to 24, with hardware exports worth US $0.076 Billion.
2002	Number of IT (software) companies under STPI grows to 1038, with total projects worth US $2.06 Billion (as of May 2002).
2002	Number of hardware companies under EHTP grows to 27, with hardware exports worth US $0.17 Billion (as of May 2002).
2003	Number of IT (software) companies under STPI grows to 1154, with total projects worth US $2.67 Billion (as of April 2003).
2003	About 41 Business Process Outsourcing and IT enabled Services (BPO/ITES) companies were approved with the investment of Rupees. 5120 million, i.e. US $ 0.11 Billion (as of April 2003).
2003	Number of hardware companies under EHTP grows to 31, with hardware exports worth Rupees. 14,038.5 millions i.e. US $0.30 Billion (as of April 2003).

Source: Government of Karnataka, Bangalore IT 2006

In the case of Bangalore, the ILO report by Lateef (1997, chapter 4) quotes that Bangalore has been described as follows.

A gateway to new global frontiers and a harbinger of a new global labor force that works in cyberspace and that, like much of the world's financial markets, operates beyond the reach of governments (Stremlau 1996, pp. 158).

The software development centre set up by Texas Instruments had a direct satellite link with its headquarters in Dallas, Texas. Since there was surplus capacity on that satellite link, Texas Instruments was able to share the line with other businesses that needed such a link. This opened the way for a lot of smaller domestic software companies and enabled data entry and basic software programming jobs for overseas clients (Lateef 1997, chapter 4).

Bangalore has been called the Silicon Valley of India. Many of the well known IT/software firms from core economies have wholly owned subsidiaries or joint ventures with Indian companies that are located in Bangalore, including Digital Equipment, Fujitsu, Hewlett Packard, IBM, Oracle and others. Citicorp, Deutsche Bank, Motorola, Siemens, VeriFone etc all have divisions in Bangalore where software development occurs for their wide-ranging global requirements (Heeks 1996; Lateef 1997; NASCCOM 2006). As the IT/software sector has grown, so has the capabilities of the professionals. However, D'Costa (2002, 2003) and Saxenian (2000c, 2001) contend Bangalore's comparison with Silicon Valley which has multiple growth sustaining factors and caution the fascination with the software sector as it does not provide a sustainable answer to India's larger economic problems.

Arora and Asundi (1999); Arora and Athreye (2003) and Arora et al. (1999, 2000a, b) have extensive research findings and public policy analysis of the economics of exports, human capital, private equity capitalization, infrastructure, research and development, technical and business capabilities and government intervention of the Indian software industry. Unfortunately these have no analysis of professional networks. D'Costa (2002, 2003) and D'Costa and Sridharan (2004) are critical of the Indian IT/software industry's heavy dependence on the export market and low penetration into the local market. There is a serious lack of sociological analysis except by Saxenian (2000b, c, 2001) and Upadhya (2003a, b) who look at the business networks arising between firms in Bangalore and non-resident and resident Indians and their positive effects on entrepreneurship.

CONCEPTUAL FRAMEWORK

Since meritocracy is the key concept in this paper, it needs to be defined. I will specifically define meritocracy as credential capitalism in the Indian context. Credential capitalism epitomizes the importance of credentials in determining skill levels which in turn determine the career success of actors. Brown, Green and Lauder (2001) argue that skills are socially created and determine a country's competitiveness.[4] This makes education a critical resource

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[4] Brown, Phillip, Andy Green, and Hugh Lauder (2001) *Globalization, Competitiveness and Skill Formation.* Oxford: Oxford University Press.

for actors entering the employment market.[5] Education provides skills to individuals and the necessary signals to employers.[6]

The following quote from Brown and Lauder (2006) shows the importance of higher education and skills development in helping India to increase its stake in global competition through meritocracy:

> Governments in the developed economies have yet to acknowledge the full consequences of countries such as China and India expanding their educational systems to compete for high-skilled work within key sectors of the global economy or trends towards the 'offshoring' of skilled along with semi-skilled and unskilled jobs.[7]

Getting the required education has been a crucial factor for Indians wanting to work in the software industry. Scholastic performance and caste status both influence access to tertiary education. Affirmative action in India's tertiary education system means that the various castes are allotted quotas for gaining entry into degree programs in colleges and universities. This has lead to heated debates in the Mandal Commission over the years regarding classifications with several ethnic, religious and regional communities still fighting for better quotas and status.

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[5]　Hannan, Damian F. et al, (1999) "A Comparative Analysis of Transitions from Education to Work in Europe: A Conceptual Framework," Dublin: Economic and Social Research Institute Working Paper 137 (a)

[6]　See the following authors for debates on education and meritocracy.

Ashton, David and Johnny Sung (1992) "The Determinants of Labor Market Transitions: An Exploration of Contrasting Approaches." *Work, Employment and Society* 6: 1-21.

Becker, Garry S. (1993) *Human Capital: A Theoretical and Empirical Analysis with Special Relevance to Education* 3ed. Chicago, Illinois: Chicago University Press.

Bills, David (January 1988) "Education Credentials and Promotions: Does Schooling do More Than Get You in the Door." *Sociology of Education* 61(1): 52-60.

Breen, Richard, Damian Hannan and Richard O Leary (1995) "Returns to Education: Taking Account of Employers' Perception and Use of Educational Credits." *European Sociological Review* 11: 59-73.

Gangl, Markus (2000) "Education and Labour Market Entry Across Europe: The Impact of Institutional Arrangements in Training Systems and Labour Markets." *Working Paper* Vol. 25, Mannheim Center for European Social Research.

Hunter, Alfred A. and Jean M. Leiper (1993) "On Formal Education, Skills and Earnings: The Role of Educational Certificates in Earnings Determination." *The Canadian Journal of Sociology* 18: 21-42.

Polachek, Soloman W. and W. Stanley Siebert (1993) *The Economics of Earnings.* Cambridge: Cambridge University Press.

Spence, Michael (1974) *Market Signaling: Informational Transfer in Hiring and Related Screening Processes.* Cambridge, MA: Harvard University Press.

Spence, Michael (1981) "Signaling, Screening, and Information," in Sherwin. Rosen eds. *Studies in Labor Markets.* Chicago: Chicago University Press.

Spilerman, Seymore L. and Tormod Lunde (1991) "Features of Education Attainment and Job Promotion Prospects." *The American Journal of Sociology* 97: 689-720.

The upper castes need higher CET (Common Entrance Test) and aggregate high school marks to enter engineering colleges and universities, while those classified as "backward" and "scheduled" castes require lower marks, giving them a better chance to access higher education.[8] Once students enter university, they have to compete against each other to get to the top ranks. Graduates are employed by IT/software firms only if they meet their hiring criterion, which is determined through their aggregate performance in their tertiary education, a series of interviews, testing of logical skills and personality tests.[9] This shows that merit, in its various forms, is significant in securing employment in this industry.

Literature Review

The term caste is a European invention which means closed social groups. Max Weber (in Grusky 2001) defined this as groups that are accorded prestige on the basis of their birth. Caste can be viewed as a division of Hindu society into the categories of ascribed status that ideally have strictly defined endogamous boundaries in relation to kinship, food, rituals, marriage ties, social order, work, and so forth. One may only marry within one's caste and the children belong to the caste of their parents. Castes are hierarchical and are ranked as higher or lower according to their traditional occupations and social customs.[10]

Caste identity is highly politicized and India's answer has been affirmative action practiced as a quota system to help those who are classified as socially and economically disadvantaged. There are many contestations over the inclusions and exclusions of certain groups in the scheduled and backward castes categories in order to benefit from the quota or reservation system which affects higher professional education and government employment but not employment in the private sector. Hence, it is a very complex undertaking to define the influence of caste on social mobility in the workplace in a general way.

Some famous studies include Thimmaiah's (1983) work on caste and status attainment in Karnataka, India which empirically elaborates that class to some extent determines one's occupation and social status in India. It shows that there are rich and poor in every caste and that social status influences one's life chances.[11] Béteille's (1991) work on social networks and caste in a village in Tamil Nadu shows that people might seek favors from someone in another caste if they share similar class interests.[12] Their theories can be applied to understanding the impetus for meritocracy in the hiring practices of software industries.

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[7]   Brown, Phillip and Hugh Lauder (2006) "Globalization, Knowledge and the Myth of the Magnet Economy." *Globalization, Societies and Education* 4(1): 29.

[8]Common Entrance Test Karnataka, 2007. Accessible via http://www.cetkarnataka.in/CET-news.html

[9]   Hamm, Steven (2007) *Bangalore Tiger: How Indian Tech Upstart Wipro is Rewriting the Rules of Global Competition*. New York, New York: McGraw-Hill.

Varma, Udhay Kumar and S. K. Sasikumar (2004) "Information and Communication Technology and Decent Work: A Study of Indian Experience," V. V. Giri National Labor Institute, India.

[10]   Quigley, David (1993) *The Interpretation of Caste*. Oxford Clarendon Press Pp. 1-4.

[11]   Thimmaiah, Gujjarappa. (1983) "Caste and Class in Karnataka." *Social Scientist* II(2): 31-42.

[12]   Béteille, Andre (1991) *Society and Politics in India: Essays in a Comparative Perspective*. London: The Athlone Press.

Overall, there is very sparse literature on the effects of the knowledge economy on caste and class status in India. Asser (1998), Shrumer-Smith (2000), Upadhya (2003 a, b) elaborate on the influence of information technology, economic liberalization and the rise of the transnational educated middle class in India with little qualitative or quantitative evidence provided for their claims of a Brahmin-dominated IT/software workplace.

The literature by Béteille (2003), Ghurye (1961), Harriss-White (2003) and Pulus (1968) provide studies on caste stratification in relation to industrialization but not the software industry. Only a rudimentary analysis is made of the educated service class or the new middle class and the studies do not deal with issues of social change promoted by the global search for educated and affordable labor in a borderless economic sector where both people and corporations compete in an international market.

Béteille's (1991) enormous work on social stratification provides crucial insights into the Indian caste system while showing the contradictions inherent in it. On one hand, and rightly so, he recognizes the changes in the caste system and modern occupational practices prompted by industrialization and India's post-independence constitution. On the other hand, he also states that it is the family that perpetuates values rather than the caste system itself. He posits that caste still has a significant influence on occupational status because opportunities are influenced by family decisions. This, however, does not take into account external factors of social change, namely economic liberalization and the influx of foreign direct investment. He tends to treat India as a country which still exists in isolation from foreign influences and liberalism.

The much older but classic study by Ghurye (1961) looks at influences of caste on the shift from traditional occupations linked to ascribed status, concluding that industrialization has not driven away the ascribed social barriers for achieved status. He gives a detailed description of the various castes and sub-castes in India to show that close community networks dominate their occupational status. Harriss-White (2003) has an updated study on the effects of caste on occupations and implies a similar conclusion as Ghurye (1961), but lacks a detailed study of the effects of a new industry such as IT/software on issues of meritocracy.

Paulus (1968: 54-55) did a detailed study of social stratification in Bangalore and states that the new social structure in Bangalore as a result of technological change is not without a social hierarchy. However, he states that caste has been replaced by class in urban areas and that Brahmins no longer have the hegemony in high status work in urban areas because of social resistance and equal opportunities in employment and education for other castes supported by reservation policies in India. Nevertheless, he claims that the traditional Brahmin occupations in priesthood and education have given them the advantage in entry into professional white collar occupations. However, this advantage does not account for non-hereditary shifts in the education patterns of other castes because of issues of economic, social and political reforms. His study indicates an overall shift in Bangalore from hereditary caste occupations to those determined by urban industrial vocations with a different recruitment criterion.

Max Weber (in Grusky 2001) talked about the efficacy of status groups and the various types and modes of status recognition in society. In this context, status negotiation factors of one group may not be relevant or functional in another. Max Weber's distinction between class and status honor is useful in understanding the distinctions between achieved and ascribed

social rank (in Grusky 2001). He defines class as a social and economic group where members share similar life chances determined by their social position, wealth, education, connections and power, which is often conditioned by the labor market. This makes class fluid in nature.

A synopsis of the study of Indian middle classes divides them into four categories, namely the commercial middle class, industrial middle class, landed middle class and educated middle class. Of these categories, the commercial and industrial middle classes comprise the petit bourgeois, traders and industrialists. The landed middle class are property owners, and lastly the educated middle class, which expanded with education, urbanization and the inclusion of Indians into administrative positions by the then British authority. Class-based occupations took over caste-based ones for those who had access to mobility resources and infrastructure through industrial modernization and social reform by the British and later independent India after 1947.[13] However, none of the above premises look at the issue of corporate status and hiring strategies as having a significant impact on reshaping social identity, which makes this study very relevant.

METHODOLOGY

The research for this article was conducted in Bangalore, India between the years 2002-2006. Bangalore was chosen as the field site because it has the highest concentration of software investments in India.[14] The sampling method that was chosen was network sampling through contacts made in the industry. While the sampling method was non- random in nature, the bias proved beneficial to understanding professional networks and the incidence of caste homogeneity within these networks. The purpose and the goal of the method was to gather qualitative narratives from software professionals regarding their professional networks. Hence, it was appropriate to administer open-ended questions via (see Appendix for sample questions).The sample size included qualitative interviews with 45 male and 31 female software professionals.

Besides the above methods of sourcing data, ethnography was conducted in three workplaces. These included observations of workstations, recreation and dining areas. The data that was collected through all the above methods was analyzed and coded. A grounded theory and inductive reasoning approach was used to determine patterns, theories and themes in the data. The findings are presented in terms of quotes, attributed statements and case studies.

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[13] Misra, Bankey Bihari (1961) *The Indian Middle Class: Their Growth in Modern Times.* London: Oxford University Press.

   Greenspan, Anna (2004) *India and the IT Revolution: Networks of Global Culture.* Houndmills: Palgrave Macmillan.

   Martinussen, John D. (2001) *Policies, Institutions and Industrial Development: Coping with Liberalization and International Competition in India.* New Delhi: Sage 2001.

   Paulus, Caleb R. (1968) "A Study of the Social Stratification in Bangalore City." *The Pacific Sociological Review* Spring: 49-56.

[14] NASSCOM (2002).

Profiles of Respondents

The age and gender profiles of the principle respondents working for IT/software firms are thirty-three females and forty-five males between twenty-six to thirty-three years of age. The presence of female employees and entrepreneurs is rising due to the merit oriented hiring practices of firms, but they still constitute a minority in high level software consulting, customization and programming due to the emphasis on business, engineering, science and technology degrees (NASSCOM 2006). Consequently, the access to female only networks was lower than male networks in this study.

Twenty-nine female engineers and two diploma holders in software programming between twenty-six to thirty-three years of age were interviewed. Two female respondents are not in the software profession but were interviewed, because they are married to respondents who are software professionals. The engineers are employed in prestigious firms (sales of over U.S. $ twenty million a year) in Bangalore as middle level team leaders of junior programmers. The two diploma holders are middle level programmers in small local startup firms (sales of less than U.S. $500,000 a year). Thirty-two female respondents are Hindus and one is a Muslim. All are married to software professionals. The male and female Hindu engineers knew each other through their professional networks (they had come in contact with each other through previous work experience in one organization but in different teams). These engineers did not know the Hindu diploma holders or the Muslim engineer. They are from different networks (different organizations in their resumes). All had found their first job through campus recruitment.

The forty-five males have university/college/diploma education in technical/management fields, and work experience in software development. Two respondents are in the positions of chief technology officers, two are vice-presidents and two are technical directors of their companies and amongst the founding partner members of their organizations. Four are entry-level programmers, thirty-three middle level software programmers/analysts (team leaders) and two middle level software consultants who also have previous work experience in chemical firms. The turnovers of the companies they either own or work for range from U.S. $500,000 to $ 20,000,000 annually. While thirty-nine male respondents are qualified with engineering degrees (five of these respondents have additional Master's degrees in Business Administration, Computer Science Applications, Engineering, Science and Technology and Accounting), the other six are diploma holders in programming.

The respondents with professional degrees either work for first and second tier firms or are founding partners/owners of smaller firms with overseas joint ventures. The eight diploma holders in software programming are in middle level positions in companies with less than U.S. $ 700,000 annual sales. All of them are Hindu. Thirty-three male respondents are married (thirty-one are married to software professionals) and twelve male respondents were in the process of finding a spouse. Only one male respondent was divorced (his ex-wife was an IT/software professional in the same company and they did not have an arranged marriage. For those respondents who are married, appropriate questions from the interview guide were also directed at their spouses.[15]

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[15]   This comprised of thirty-three female respondents.

Table 1 shows the representation of the different castes among the respondents. There is no information about their sub-castes, as they are numerous. The Brahmins, Kshatriyas, Vaishyas and Shudras are more or less equally represented. Since this data has been sourced from a network sample, it shows that members of the same caste do not necessarily network with each other in the professional realm. However, not all the respondents knew each other.

Table 1: Caste Background of the Respondents

Caste (Hindus)	No of Respondents	University Degrees	Diploma Holders and Others
Brahmins	23 (29%)	19	4
Kshatriyas	19 (24%)	17	2
Vaishyas	18 (23%)	14	4
Shudras	17 (22%)	17	0
Other Religions (Muslim)	1 (1%)	1	
Total	78	68	10

Please note that one of the respondents belonged to another religion (Muslim).

The following Tables 2, 3 and 4 show information about respondents' education, marital status, and where they work.

Table 2: Respondents' Education
Age of respondents: 26 years to 33 years

Education	Males	Females	Total
University Degrees (Professional)	39 (50%)	29 (37%)	68 (87%)
Diploma Holders	6 (8%)	2 (2.5%)	8 (10%)
Non-Professional Degrees	0	2 (2.5%)	2 (2.5%)
Total	45 (58%)	33 (42%)	78 (100%)

Table 3: Respondents' Marital Status

Marital Status	Males	Females	Total
Married	33 (42%)	33 (42 %)	66 (85%)
Single	12 (15%)	0	12 (15%)
Total	45 (58%)	33 (42%)	78 (100%)

* The percentages have been rounded off to whole numbers.

Table 4: Types of Firms where the Respondents Work

Types of Firms	Males	Females
Multinational Firms	29 (37%)	27 (35%)
Second Tier (Small Firms)	10 (13%)	4 (5%)
Entrepreneurs (Startup Firms)	6 (8%)	0
Other Professions	0	2 (2%)
Total	45 (58%)	33 (42%)

• The percentages have been rounded off to whole numbers.

Table 5: Number of Consultants to the Software Industry

Gender	Human Resource Consultants	Business Consultants	Professors	Independent Sociologist
Male	2	2	2	0
Female	1	0	1	1
Total	3	2	3	1

*Sample Size=9

LIMITATIONS OF THE RESEARCH DESIGN

Some reasons why the sampling could not be representative of macro level influences of the IT/software industry's hiring practices on changes in social stratification are as follows: the Indian census does not release specific quantitative data about caste in the IT/software industry. Census India, which is the official government of India census website, states that there is no survey on upper castes and occupational status since 1931 due to the sensitivity of the issue. However, studies on the under privileged and illiterate exist (Census India 2006). There are no detailed sociological studies about the cultural factors of the software labor force either. None of the IT/software firms that were contacted were willing to discuss the castes of their employees and claim not to look for ascribed status when hiring. The interviewees verified this claim.

Furthermore, the IT/software companies that were visited and the entrepreneurs did not want to participate in a large scale survey research exercise, hence, limiting my sample size and the type of sampling to purposive snowball sampling. Entry into firms/workplaces, in-depth interviews and observations were made possible only through networking with initial contacts who were IT/software professionals. However, this proved useful, as the study was about networks and credentials amongst professionals to see if there were ascribed influences present in their career networks and marriage chances, choices and strategies. The limitations of using non-probability samples were overcome through the research design.

A certain amount of antipathy and misunderstanding was sensed towards social science research which some Indian IT/software firms and professionals believed to be left wing and in nature. This required initial ground work in explaining the academic scope of this research exercise while assuring utmost confidentiality to the respondents.

ACHIEVED STATUS AND REPUTATION IN NETWORKS

Blau's (1975) exchange theory looks at the various approaches to social structure, which according to Cook and Whitmeyer (1992: 110) explains the configuration of social exchanges amongst players (both individual and corporate), where the associations involve the barter of valued things, which can be material, informational, or symbolic. Social exchange theory is based on a central premise: that the exchange of social and material resources is a fundamental form of human interaction. Social exchange theory is useful in explaining professional networking based on merit and achieved status. The sample shows that respondents avoid doing favors for caste members who are friends and relatives if they lack the required credentials. Furthermore, they feel that helping people who cannot find jobs on

their own merit weakens or depletes their social capital. Even the six respondents who have made investments in startup enterprises had not chosen their business partners on the basis of homophily in caste relationships.

In my sample, class and social mobility is linked to access to professional education and subsequent employment by large well recognized firms and the 'symbolic capital' (a concept from Pierre Bourdieu (1984) to indicate rank and status) accrued from such a reputation.[16]

The following examples show this:

One entrepreneur's ideas:

> I do not care about the social origins or family background of my employees, it is their quality of work that matters and where they have worked before. If they are on good terms with their ex bosses, clients and colleagues all the better, because this means they can bring in contacts to the new company where they work.

Another respondent's account:

> I worked for a medium-sized IT/software house for 10 years. My boss left his job and joined a startup firm as one of the directors. He knew my working capacity and I got fished to the new firm too. I left the old job, because the new firm pays better and I got promoted to vice president in charge of finding new clients for software customizations overseas. I will work in this job until I build some more contacts and then quit to form my own startup. I need to build a reputation with the key employees and bosses in the new firm and with clients so that I get noticed. It is my work and not my caste that is important for this strategy to work. This means socializing and networking with the scions in the industry regardless of caste or creed and diversifying who one knows.

A third respondent's description:

> I am a traditional Brahmin at home. I wake up early and do my poojas [prayers] according to the customs of my community [Iyer]. My caste is important to me. At work things are different. I am not interested in the castes of my subordinates or colleagues. I forget about caste at work and am more interested in performance. I love working in the software industry, because it really does not matter whose son or daughter you are or what your caste is in this industry, as being from a high caste does not pay.

A fourth respondent's thoughts:

> I choose to work in the software industry, because it is merit oriented. Here nobody cares about caste. Caste alliances get you nowhere here.

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[16]   Bourdieu, Pierre (1984) *Distinction: A Social Critique of the Judgment of Taste.* Cambridge, MA: Harvard University Press.

A fifth respondent's idea:

> Software firms in India take pride in their work practices. This is because they are the icons of India's success in the service sector globally. Of course, there is no caste issue in my workplace. But the types of companies I have worked for before and my occupational status gives me clout.

The networking opportunities of the respondents are determined by ranking and the filtering of credentials in the employment market. The software firm cannot afford to recognize non-technical caste status in hiring, because it has to depend on extensive networks to source clients and subcontract parts of its service customizations or products to other firms, which is also known as flexible specialization.[17] Firms acquire status and reputation both from their performance and the networks and credentials of the employees they hire. Software firms depend on international quality certifications to source global clients (Arora 1999). They cannot afford to hire an incompetent labor force, which to some extent reinforces meritocracy.[18]

All the respondents felt that their class status was useful in promoting the exchange of information about opportunities with similarly ranked professionals in terms of firm status and occupational status regardless of their caste origins.

The sample also shows that networking without credentials or the required educational attainment leads to little or no success in the job market even if the respondents and their families have high connections or ascribed status. The following cases show this:

Respondent S is from an upper middle class family. Both his parents are professionals from a high caste. The respondent did not pass the entrance criteria for engineering. He completed a degree in commerce and a diploma in Java and C++ programming. He did not find a job in a top software firm, despite his parents having many friends and relatives of the same caste working in top software firms.

Respondent A has friends who are well networked and have good jobs as programmers in a small-sized company. He has acquired several certifications in programming different software languages and has seven years of experience developing code for clinical trials in the pharmaceutical industry. He often goes to parties to network through his high status friends (of the same and different castes) so that he can find a job in a better company or join a successful entrepreneurial team. His friends have many diverse contacts in high occupational positions in large software firms. They have been unable to help him improve his career prospects. But they do not recommend him for jobs or other software ventures that are higher in status compared to the present firm where he is working. He feels that he is not regarded as a software professional of high status. He is from a high caste, but does not

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[17]   Holmstrom, Mark (1994) "Bangalore as an Industrial District: flexible specialization in a labor surplus economy." Paper presented at a workshop on Flexible Specialization at the French Institute of Pondicherry, 25-26 March, Pondicherry, India.

[18]   Arora, Asish (1999) "Quality Certification and the Economics of Contract Software Development: A Study of the Indian Software Industry'," Working paper, H. John Heinz III School of Public Policy & Management, Pittsburg, PA: Carnegie Mellon University. Accessible via http://www.heinz.cmu.edu/wpapers/topic.jsp?topic=IS

benefit from his contacts for status attainment. The respondent attributed this to his lack of an engineering degree.

While the rigidity of caste barriers has not fully dissipated in the spirit of industrial capitalism, the human resource needs of India's software economy is an influential factor promoting meritocracy where people with similar education, employment and mobility interests form social networks despite their caste status.

The respondents are linked by professional attitudes and interests driven by assimilation into shared corporate and occupational identity.

As stated by Kunda (1992):

> The ideal employees are those who have internalized the organization's goals and values—its culture—…The company in this view harnesses the efforts and initiative of its employees in the service of high-quality collective performance and at the same time provides them with the 'good life'… (p. 10)

Indian university education while being well reputed and comprehensive is inadequate in imparting skills specific to the IT/software industry, research and development or promoting entrepreneurial networks requiring more investments and better collaboration (Arora and Athreye 2002). Therefore, Indian IT/software corporations impart training for new entrants in management, soft and technical skills (Hamm 2007; Varma and Sasikumar 2004).[19] They also try to neutralize the entrants' different cultural orientations as part of a motivational agenda to ensure productivity within a multicultural sphere. The IT/software training environment within the corporation takes on the role of the modern *Gurukul* a term which implies the archetypal learning center of ancient India. This is where new recruits are indoctrinated into the firm's vision of success and make it one's personal goal. Firms like Infosys and Wipro have huge campuses where the recruits are inducted and nurtured as 'Infocians' or 'Wiproites' in a culture of commitment, precision and innovation (Hamm 2007; Singhal et al. 2001).[20] Large Indian IT/software firms have become gated communities of the so-called information class.

The difference between the *Gurukul* in the traditional sense of ancient India and its contextual sense in IT/software corporate training is that the former trained entrants for the sake of knowledge alone while the latter trains for production and profit maximization. This amongst other things results in the IT/software corporation influencing its recruits' networks, thereby creating an information class based on a new social identity re-classified as casteless to serve the corporation.

According to 76 respondents, knowledge work has rendered them casteless in its traditional ascribed sense in their profession. The 56 respondents who work for multinational firms have a strong sense of corporate identity in the workplace. The IT firm and its corporate status has become an important source of professional identity and status. Some examples of the statements they gave are:

I am proud to be an Infocian.

As a Wiporite my resume is highly marketable to other firms.

Working for IBM has put me on the global map of software firms.

About 70% of the respondents felt that if they work for non-multinational manufacturing or trading firms, they may not be recognized or rewarded as knowledge workers on the basis of their merit. The corporate culture of large multinational IT/software firms in India has been greatly influential in creating high quality labor through extensive socialization of knowledge workers by tapping educated middle class values popularly termed as 'simple living and high thinking', a term also used by Upadhya (2003a, b). She also refers to the iconization of nonresident Indians and famous Indian software entrepreneurs and their firms, whose image as clean, honest, intelligent and hardworking people are popularized through global Indians. However, there are many issues in this type of packaging of the educated and upwardly mobile as global Indians. The research suggests that 30 respondents are conservative and local, both in terms of investments and networks, even though they work for firms that are international and serve core economies with possible migration opportunities. However, even these respondents did not rely on caste ties to get ahead in their professions.

Caste networks in entrepreneurship are not very popular amongst the respondents for the following reason: Caste ties are seen as network inhibitors, because members are likely to know each other's contacts (closed networks have redundant information, see Burt 1992, 2001; Granovetter [1974] 1995, 1982). Furthermore, in closed caste networks actors have limited access outside of certain ethnic, caste, regional and familial ties, which are closed to outsiders. It does not allow the ease of mobility to bring in new partners, and finally it does not convey the same prestige as working for a large multinational firm with diverse networks based on merit.

Respondent T is an entrepreneur and owns a small software firm. He said that he has developed diverse networks through his work experience in large firms with colleagues from different castes and communities. He and his colleagues meet during corporate training programs and team projects and have formed similar interests in their career choices. Although they have quit their jobs and joined other firms, they continue to keep in touch and pass each other contacts for clients and entrepreneurial opportunities.

Six respondents claimed that they have become entrepreneurs despite cultural constraints or views about traditional occupational roles within their particular castes' social structures. According to the six entrepreneurs, the most popular entrepreneurial team arrangement is to combine with former work colleagues and friends who have resumes and resources reflective of networks in high status firms. This is also shown by Updhaya (2003) who talks about ex-Wipro employees being well networked for entrepreneurial ventures because of their high reputation (2003b). These respondents said that they like to network with other professionals who are equally or more successful in their careers regardless of their caste positions. In this sense, networks which bring access to opening up global business and work opportunities in large and well recognized corporations are increasingly popular in comparison to closer cultural and ascribed ties that are local. In other localized and protected industries, trust and profit sharing is insular to certain caste groups for social and economic protectionism within the caste or the community (Ghurye 1961; Sinha and Sinha 1990).

When and where do negotiations begin to promote career interests through class ties rather than caste ties amongst the respondents? The interviews and observations affirm that college networks are very important, because they form the basis for homophily (see McPherson et al. 2001) that is not caste based. Not all the friends of the respondents are from similar castes or sub-castes. The respondents said that most of their close friends were interested in a similar profession, choice of major, university, campus recruitment opportunities, companies, and so forth. However, it is the issue of how and why they keep in touch over the years and how this communication affects their career growth in the IT/software sector that is interesting. Friends who are known to be bright gain a lot of social capital regardless of their caste. According to the majority of the respondents (90%), the middle class with professional degrees are stereotyped as the ones interested in career mobility in multinational firms because they come from families who cannot take wealth, status or caste connections for granted. Therefore, they need to work really hard and achieve high scores so that the best paying multinational firms will recruit them. The following case shows three respondents who are friends and share information and contacts with each other.

Respondents K, T and P are three close friends who are not related to each other and do not share a similar caste or regional identity. They had met at their engineering college. All three are middle class and their parents do not have any connections in the software industry. One of them passed the entrance test in a first tier software firm and became a high ranking manager in eight years. The other two friends decided to become entrepreneurs after their work experience in multinationals. Although working in the same industry, their career paths diverged. But they kept in touch to share market information. The respondent working for the high status firm said that he preferred to work there because of the status and stability associated with this firm. His friends, on the other hand, wanted to take more risks for higher rewards and became entrepreneurs. They feel that their friendship is crucial, because it keeps them abreast of potential clients, jobs and other career opportunities.

CONCLUSION

The advent of foreign direct investment in form of multinational software firms into India has induced unprecedented competition for skilled English speaking knowledge workers. This has to some extent induced meritocracy in hiring practices and thereby professional networking. IT/software firms do not work in isolation; they constantly need to look for new markets to cut costs and save on time (Saxenian 2000a, b). Thus, it requires people to be networked across borders and cultures to source global clients as Indian firms are mainly export oriented (NASSCOM 2006). Knowledge professionals need to fit well into this model to succeed either as employees or in their own start-ups. Crossing the boundaries of caste homogeneity in networking was useful in helping the respondents become more competitive in the labor market. Firms benefit from promoting Unitarian values of hard work, lifelong learning and simplicity rather than caste values. This is possible because the IT/software industry has a huge demand for knowledge workers regardless of their ascribed status. IT/software firms and professionals do not benefit from closed community networks of caste.

Status attainment and networking is related to firm status and credential rating by these firms. Homogenous caste alliances are being challenged for the following reasons: (a) economic liberalization, (b) high demand for educated and professional labor, (c) inhibition of network formation by caste homogeny. One of the obvious reasons for the breakdown of caste barriers in the IT workplace is the tough entrance criterion in the IT/software profession and

professional education in universities. In order to find networks and build a reputation, respondents are not caste conscious but rather merit conscious. Second, the networking demands of IT/software professionals encourage team formations on the grounds of professional reputation and resource diversification. This has made some people within this sector entrepreneurial despite social constraints or views about traditional roles within existing social structures. The respondents' resumes show that they are moving up in the labor queue (per the concept of queues by Reskin (1991)) regardless of their castes. The sample provides clear instances of caste heterogeneity and diversity in professional networks, which was the objective of this paper.

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APPENDIX I

Questionnaire for Respondents

Respondent's Professional Background	
1.	Please show me a copy of your business card, company brochure and professional resume.
2.	What is the name of the company where you are currently working?
3.	Where is your office located?
4.	What is your salary range?
5.	What is your position in your company?
6.	How would you describe the software output by your firm? Does it involve high-end or low-end software customization, production and services?
7.	Describe the organizational chart of the firm you work for and identify your position
8.	In what type of company would you like to work for in the future? Is it a multinational corporation, or a small local firm? What size?
9.	Do you think that the ranking of your present employer or the ones in your resume have any influence on your future job opportunities or networks?
10.	Why did you choose to work in the IT/software industry?
11.	Describe the recruitment process in the IT/software industry for new recruits and for middle and top level job openings.
12.	What is the most common method of recruitment?
13.	How would you describe the career choices and job opportunities available to holders of engineering/professional degrees versus holders of non-engineering/non-professional degrees/diplomas in the IT/software industry?
14.	How is the quality of work process measured in the IT/software industry?
15.	Why do you like to work in Bangalore?
16.	Do you wish to stay in India or migrate overseas?
17.	Have you worked overseas before? If so, where and for how long?
18.	Describe the IT/software industry in Bangalore?
19.	Are there various types of IT/software professionals? If so, what are they?
20.	What do you understand by the term modernization?
21.	How do you think the IT/software industry has changed Bangalore?

	Respondents who are Current or Prospective Entrepreneurs
22.	Would you like to become an entrepreneur?
23.	If you are an entrepreneur, what made you become one?
24.	Describe the startup process of your IT/software firm.
25.	What credentials did you look for (did your business partners look for) when forming a partnership?
26.	How did you meet your partners and investors?
27.	In your opinion why do some professionals choose to become entrepreneurs and others work for someone?
28.	How do you source investors/funding for your business?

	Respondent's Education Background
29.	Please give me details about your education background.
30.	What is your highest level of education?
31.	What are the degrees/diplomas that you have earned?
32.	How many years did you spend in tertiary education?
33.	Where did you study?
34.	Why did you choose this field of study or college major?
35.	What process did you have to go through to get admission in the major/program of your choice?
36.	What social influences were present (other than yourself) in your selection of college program/major?
37.	Did the ranking of your university have any influence in your ability to get a job?
38.	How has your education qualifications/credentials influenced your chance of getting a job in a higher ranking firm or what you consider a better job/employer?

<u>Respondent's Networking Practices</u>

39.	What efforts do you make to improve your networks or contacts in the IT/software industry?
40.	What do you consider to be your most valuable credentials and networks for finding jobs, business partners and investors?
41.	Did you get your first job through campus recruitment? Please describe the process.
42.	How were you recruited for all the jobs listed in your resume?
43.	What part do networks play in your career moves?
44.	Do you benefit from your high status contacts in the industry?
45.	Describe your most influential professional networks. How many people are there in each network? What is their relationship to you? What are their credentials?
46.	How can one optimize networks in the IT/software industry?
47.	Are your colleagues and bosses from the same caste group as yours?
48.	What influences do you think caste and gender have in the IT/software industry in India?
49.	Do you think that caste and gender matter when you are sourcing clients for your firm?
50.	What is the most effective way to look for a new job in the IT/software industry in India and overseas?
51.	Do you prefer to source information and resources about other jobs from members of your caste or community?
52.	How do you diversify your professional and social networks?
53.	Describe the links between your professional and social networks.
54.	Do the influential people you know socially help in anyway in providing information, contacts or influence for your career/job/clients?
55.	Do you belong to or benefit from any professional or social organization?

Respondent's Social Profile

56.	What is your age?
57.	What social/economic class do you belong to?
58.	What is you caste?
59.	What is your community?
60.	From which city/town/village/state is your family/ancestry?
61.	What languages do you speak?
62.	How many members do you have in your family/living in the same household?
63.	Describe your family values and upbringing.
64.	What are your parents' highest level of education and professions?
65.	What is their caste?
66.	Where do your parents live?
67.	Are you married?
68.	What is the caste of your spouse?
69.	How did you meet your spouse?
70.	Is your spouse an IT/software professional?
71.	What is his or her education background? (Ask to see spouse's resume)
72.	Which company does he or she work for?

Thank you. Your confidentiality is my utmost priority.

Questionnaire for Industry Consultants

1. Kindly show me copy of your business card, company brochure and resume.

2. Describe the nature of your links to the IT/software industry.

3. How did you join your present firm or business?

4. What is the nature of your professional or social relationship with your business partners?

5. How do you promote your business links with the IT/software industry?

6. Describe some of your networking efforts.

7. Are you a member of any professional organization?

8. What are some of the key links between recruitment firms, universities and IT/software firms?

9. What are the types of credentials and labor that various tiers of IT/software firms look for and recruit?

10. What role does the prestige of the university play in getting a job in the IT/software industry?

11. Is your spouse or kin an IT/professional? How do you benefit from that?

12. Do your caste networks have any influence on you getting contracts with IT firms?

Thank you. Your confidentiality is my utmost priority.