Structural Change and Economic Development in India:
The Impact of Culture on the Indian Software Industry

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ABSTRACT
How can the Indian success in IT be explained? Is it an eventual result from the liberalization in the 1990s? Why, then, have other sectors not produced such an impressive performance? Is it rather influenced by other factors, which might have been released—or rediscovered—through this liberalization, e.g. a culture of entrepreneurship and innovation? Or might there even be a predisposition towards the so-called knowledge economy?

This paper is concerned with the successful development of the software industry in India. It is motivated by two noteworthy phenomena. Firstly, most studies analysing the ‘Indian’ software industry cover essentially the major centres in South India. Secondly, while there has always been a tradition of entrepreneurship by a particular social group, the merchant and trader caste of the Vaishyas, the software industry witnesses a more than proportionate appearance of Brahmins, traditionally the priestly caste group.

Therefore the central questions are if and why Brahmin entrepreneurship did experience such an increase in new industrial sectors and, subsequently, why does it seem to be concentrated largely in the South of the subcontinent.

The main hypothesis is that at least some regional or cultural groups in India are more apt to socio-economic development depending upon these contingencies, the latter being important for other developing countries. One conclusion for policy makers in developing countries would be to try to make education (and technological change) better accepted among larger parts of the population. This is not a new result for development policy; especially when looking eastwards its relevance can probably not be overemphasized.

Keywords: Culture; Economic Development; Regional Agglomerations; Systems of Innovation; Social Capital; Networks; Human Capital; Entrepreneurs; India; Industry Evolution

INTRODUCTION
The Indian software industry has often been cited as an example of a ‘role model’ for other developing countries or even emerging economies trying to catch up, or leapfrog certain stages of industrial development. Having started with basic programming services India has climbed the value chain in IT industries within a time span of roughly two decades. Now she is delivering products and services on a globally competitive level that has not been reached in any other industry since independence. For development policy the question remains, whether this is a model which could be emulated that easily. Certainly, there are numerous factors contributing to such an extraordinary development many of which could be subsumed under a system-of-innovation-approach, making a constructivist approach appear less feasible. However, it is useful to understand the basic ingredients of this ‘model’.

Much has been written on the success of the Indian software industry enumerating contributing factors like first-class higher education, a large pool of English-speaking engineers, low labour costs etc., including the observation of a regional agglomerations in the Southern parts of the country. Rarely, though, you find attempts to explain this clustering. In this paper, I will try to isolate one factor that seems to have some explanatory power, i.e. South Indian (Brahmin) culture, and link it with explanations of regional clusters.

Hence, the focus shall be on two, in my view, related aspects. Firstly, the regional concentration of the software industry, that can be explained by economic geography to a certain extent, and secondly, the cultural dimensions reflected in the workforce of this industry.

Despite the ongoing process of globalisation, which seems all the more important for knowledge-based high-technology activities like software design or programming, the observation of industrial clustering and (international) networking can be made. Why and how the industry evolution has shown a concentration of successful firms primarily in a few specific regions in South (and West) India is an issue that essentially pertains to economic geography.

But since many of the features necessary for a successful economic development, namely basic physical infrastructure, is lacking in India my approach will concentrate on the impact culture plays, reflected through social and human capital. This includes the relationship between various cultures and forms of economic activities. It seems that there are different attitudes towards education
in particular, and there might be diverse cultural attitudes towards technological or economic change more generally in different parts of India. In order to investigate whether the social system allows for such changes one should study the relationship between the origin of the successful entrepreneurs and the society they live in. Basically, all channels that transmit different cultural values through social capital or ethnic networks into human or even physical capital should be assessed.

This paper employs a mixed methodology. Firstly, the notion ‘culture’ shall be tried to make workable in terms of a useful definition. This is done by synthesizing the relevant literature. In the following this definition shall be applied to the Indian context through identification of characteristic features of the Indian society and economy. Secondly, this application bridges to the empirical part in which I have analysed the societal composition of the Indian entrepreneurial ‘class’ in the so-called knowledge economy. This analysis is based on a small set of existing interview-entrepreneurial 'class' in the so-called knowledge economy. This is done by synthesizing the relevant literature. In the following this definition shall be applied to the Indian context through identification of characteristic features of the Indian society and economy. Secondly, this application bridges to the empirical part in which I have analysed the societal composition of the Indian entrepreneurial ‘class’ in the so-called knowledge economy.

The literature dealing with the culture of economic development demonstrates predominantly one line of argument. Most of the authors working on economic culture try to single out those cultural factors that can be positively correlated with development in the sense of modernization and growth [33]. Usually mentioned are for example trust, rationality, the value of work and religion. This reasoning can be traced back at least to Max Weber’s
ideal types and has its latest revival in the ‘Asian values’
debate which has been dubbed a ‘neat reversal of Max
Weber’s famous thesis’ [32]. These values characterizing the
highly hierarchical societies of East Asia, however, do not
really match the South Asian context. As Amartya Sen points
out, there are ancient Indian traditions and values contrasting
those of the sinic societies to the east [57]. An analysis of the
principles of the ancient Indian thinker Kautiya show that
they are more egalitarian and condemn such authoritarian
approaches as of East Asia [57], [52].

However interesting the value debate, culture is manifested
and observable only though action or social practices. In
synthesis, culture can be defined as ‘socially transmitted
heritage’ which opens the door for analysis of actual
behaviour. The problem with interpreting cultural influences
through literature study, or the ‘book view’ is that people
often act differently from what they prefer to behave like. An
instance of such a ‘preference falsification’, it is argued,
might be at work in the caste system [29]. This leads me to
the Indian situation.

INDIAN CULTURE(S)

Broadly speaking, for the Indian society the cultural
framework can be interpreted as ‘Hinduism’, which provides
rather an all-encompassing philosophy than ‘merely’ a
religion. [12]

But what is commonly known as belonging to ‘Hinduism’ is
only part of the more complex Hindu civilisation – it is
embedded in an all-encompassing worldview [47], [61].
Albeit the differences within that composite of religious
beliefs are too subtle to be explored here, the broader cultural
view allows for the observation of several regularities.

Is there anything that makes the Indian economy a peculiar
object of analysis, something that precludes a conventional
economic study? Presumably yes, some would argue, given
the unique phenomenon of caste as the characteristic feature
of the Indian society. On the other hand there are those who
downplay the influence of caste and, moreover, the
institution as such as an invention of ‘orientalist’ scholars.
The most compelling argument is that a social structure
similar to the caste system existed long before the arrival of
the Britons; only their desire for rationally understanding the
Indian society and the support from Indian elites
hierarchically institutionalised the formerly rather informal
norms [7]. While the issue whether there is a caste system is
heavily disputed in the anthropological literature, it is safe to
assume a certain influence of caste.

The term caste is used in two different contexts. Firstly, it is
used to describe the jati, hierarchically ranked endogamous
kinship groups with a regional base centering on the
performance of traditional occupations (such as
leatherworkers, priests, merchants, or tailors) in an
interdependent relationship with other jatis. Secondly, it
depicts the more aggregate societal structure of a class-like
division, the varnas [7].

Describing the caste system as consisting of a fourfold
hierarchy of varnas plus the so-called untouchables,
mistakenly referred to as outcastes,3 is a gross
oversimplification that does not do justice to the
complexity of this sophisticated institution.

But it is useful in the sense that the categories so derived
allow for a pan-Indian examination of issues related to
caste. It can be seen as the conceptual framework for the
actual practice of the society stratified by jati [53]. Except
for the highest varna of the Brahmins the remaining ones
consist of numerous jatis.

With regard to South India there are two noteworthy
deviations. First and foremost, caste has been imported by
the Aryan invaders from the North. Therefore the position
of the Brahmins as representatives of this order is much
more exposed in the Southern states, particularly in Tamil
Nadu. Secondly, the indigenous population of the South is
said to be much more homogenous and not displaying the
two middle caste groups of Ksatriyas and Vaishyas to the
same extent as in the North [19].

Although very prominent, and studied both intensively and
extensively by anthropologists, predominantly in field
studies, but also on a theoretical level, its meaning for
development has not been scrutinized thoroughly by
economists. It is predominantly both the alleged stability of
this unique institution and in connection with that fatalism,
the presumed tendency of the poor to ascribe everything to
their karma, which led many economists to the conclusion
that the caste system impedes modernization of the Indian
economy.3 They blurred both concepts with the resulting
lack of an adequate picture of Indian reality as known
through anthropological fieldwork. In order to establish
through economic theory the rigidity and drawback of the
caste system, they overlook the fact that it has been much
more open, flexible and adaptable ever since. The actual
meaning of karma is action or deed, and that it also
influences current and future lives, but is often (mis-)
interpreted simply as fate, which defies the ability of the
individual to influence his present life, which is
inconsistent with the actual Hindu philosophy as understood,
for instance, by Thapar [62].

Parry, firmly rejecting Weber’s thesis of the spirit of
capitalism 4 being absent in India, states that the ethical
preconditions for the emergence of capitalism have been
much more hospitable in India than they actually were in
Europe [43]. This is implicitly subscribed to by Lal [30]
who argued that the caste system initially was a highly
efficient institution and very much in favour of economic
development, embodied quite early in a high level
equilibrium which then was maintained at stable conditions
over millennia by still encrusted hierarchies or
distributional coalitions in the terms of Olson [41]. The
recognition of commerce, trade and other sources of
accumulating wealth being in conformity with the religious
doctrines, which are definitely culturally determining, on
whichever element the emphasis is placed, allows to
identify a climate in traditional India, be it in ancient times or in remote areas today, which was unmistakably favourable to generate a capitalist spirit.

There is a prolific misconception of the Indian or better ‘Hindu’ attitude towards secular affairs, at least if one tries to locate the source of fatalism and ‘accommodation’, to use Galbraith’s notion, in the roots of the cultural and religious traits as manifested in the ancient scripts. This inference has been initially proposed by Weber and is known also as the karmic view on the Indian society. This picture erroneously propagates the pursuit of religious duties and the outright rejection of material wealth as the basic components of the ‘Hindu’ belief. There from, according to this perspective, supposedly originates the ignorance of the, indeed, very religious Indian population of (technical) change and innovations that could otherwise bring progress to and enhance the welfare or well being of the deprived population. The presumption underlying this image is a traditional society with a well-balanced power structure in which innovations of whatever nature are deemed as a threat to the existing equilibrium. These scholars ascribed the stagnation in what Lal calls a “high level equilibrium trap” mono-causally to the extant ideologies of ‘Hinduisn’. To quote Max Weber: "If the stability of the caste order could not hinder property differentiation, it could at least block technological change and occupational mobility, [E]ven today, the very fact that new skills and techniques actually lead to the formation of new castes or subcastes strongly handicaps innovation. It sustains tradition no matter how often the all-powerful development of imported capitalism overrides it." [66]

Upper-caste groups, such as Brahmans and merchant and ruling groups, have traditionally discriminated against lower-caste groups, but the ranking of upper- and lower-caste groups has varied by region and through time. And although there has always been upward (and downward) mobility, one could say that the principal varna providing economic services like merchants or entrepreneurs was that of the Vaishyas [51], complemented, of course by the minority communities of Parsis, Jains and Sikhs [21], [26].

Especially with regard to traditional professions like artisans this division of labour seems to be still perfectly in place [45]. There is evidence from various field studies, both economic as well as sociological or anthropological that this holds true. Moreover, such a network of interdependent producers and traders adhering to their customary occupation can be described as a cluster. In the traditional footwear cluster of Agra a major factor for the successful mastering of crises is the extent of vertical relationships [28].

However, with regard to the urban, and more so in the metropolitan, areas of India, this traditional aspect of the culture derived from religion and is being undermined by various factors, most notably industrialisation and occupational diversification in general [60]. In particular caste is being superseded by issues of class (and ethnicity), more among the upper castes than among the lower ones [8].

Whatever might be the importance of these moral values today, it is noteworthy how they are supposed to have spread during the past millennia in a process described as ‘Sanskritization’ of the lower castes, i.e. the imitation of customs and rites as followed by the Brahmans [60].

As already said, the most widespread inference made is that which does not take into account the internal dynamics of caste and its adaptability and tolerant attitude towards external institutional changes, be they political or legislative or anything else [42]. Nevertheless, this stance is usually taken by economists who ignore the insights from history and anthropology evidently showing the opposite. They do neither account for the upward mobility of previously lower castes through economic success or the process of Sanskritization as inherent to caste. Instead it is seen as inseparably interrelated with the Hindu religion, despite the fact that it is hosting other religions and sects, too, albeit as subdivisions, jatis, being ranked according to the prevailing circumstances like, for instance, economic success.

Closely related to the flexibility of the system with regard to the mobility of castes in the sense of jatis, almost as a precondition, is the emergence of new occupational activities. The jati-dharma (‘sacred duty’) has been almost fix for ancient castes and jatis through scriptural tradition. But there cannot be prescriptions for all the newly evolving sub-castes like there cannot be explicit contracts specifying every contingency. Thus, in the modern Indian society there is some indeterminacy concerning the future adherence and obedience to dharma, because there is no (religious) authority legitimated to declare such a social code of conduct.

More recently, there is some anecdotal evidence that the structure of new Indian enterprises is determined by Brahmans rather than Vaishyas, the traditional merchant caste; this evidence is analysed in the next section. This might result from the fact that Brahmans have been involved not only with the profession of priesthood but more generally with activities relating to knowledge and wisdom. In earlier times Brahmans had a much more negative attitude towards business, trade and commercial castes in general. Deepak Lal [31] calls this attitude atavistic and describes the Brahmans as primarily protecting their status.

An interesting comparison between values and practices is the GLOBE project which identifies cultural clusters world-wide. India as part of the South Asia cluster is distinguished as highly group oriented, humane and male dominated. As an adaptation of business strategies the study finds that South Asian managers focus on the combination of knowledge, action and devotion [11], [22].

THE INDIAN IT INDUSTRY

This section first provides an overview of the situation within India and then shows the influence of Silicon Valley. Lastly, the findings of previous studies are summarised.
Overview
The Indian IT industry mainly consists of a broad spectrum of software development enterprises. It contains the most successful branches of the services industry in the Indian economy. The growth rates, particularly of software exports are at an astonishingly high compounded annual growth rate of 46% for the last decade (1990-91 to 1999-00) [44]. However, Bangalore as the major contributor to the software exports experiences a declining growth rate in the number of firms, which is typical for an industry evolution (fig. 1):

Figure 1: Growth of Bangalore Cluster 1991-2002

It is quite respectable with respect to the same industry in other (developing) countries. It is for this reason that the ‘Indian model’ is tried to be replicated by other emerging economies similar to the orientation towards Silicon Valley by industrialized countries [4]. There is a high demand for Indian support in establishing Software Technology Parks (STP) in the way India did, most of the demand coming from the Asia-pacific region like Hong Kong, Singapore, Korea, Indonesia or China [67]. This stems from the fact that although some scholars describe the involvement of the Government of India (GOI) as ‘benign neglect’ [4] rather than actively stimulating business it did in fact recognise the importance of supporting the software sector in general, and for exports in particular, as early as 1972 [44] with the initiation of an export processing zone near Bombay [6]. Other supportive policies like establishing the prestigious Indian Institutes of Technology have been of critical value to the evolution of the software industry. Subsequently, the first STPs were established in 1990 [44]. But there could be more policy initiatives, for example to encourage investment by non-resident Indians (NRI).

There are some authors who are rather critical about the innovative capabilities of the Indian software industry [44]. The argument is that the major activity consists of data-entry, on-site project work (i.e. mostly in the US), or others placed rather early in the value chain [4]. India could excel with these activities as long as existed a cost advantage. These activities are becoming increasingly substituted by automatic processes. The relatively unimportant domestic market is usually identified as the major shortcoming [6].

On the other hand the quality of the software-exporting firms is certified at high levels. Indian firms provided the largest number of ISO 9000 certified companies worldwide in 1998 [6], and more than half of the today [3]. Moreover, they have the largest number worldwide of enterprises being certified by Level 5 of Carnegie Mellon University’s Software Engineering Institute (SEI) Capability Maturity Model (CMM) [6] and recently Wipro Technologies has become the first company to obtain both Level 5 of the People Capability Maturity Model (PCMM) and CMM-SEI [68].

Even if the export performance is overstated, as some argue [44], this is in sharp contrast with the rest of the economy. Since independence more than 50 years ago the Indian economy was growing at merely 3.5% the so-called ‘Hindu Rate of Growth’ that implies ‘deep cultural factors’ [9].

The impact of Silicon Valley
Probably even more astounding are the successful contributions highly skilled Indians made to the rise of Silicon Valley be it as entrepreneurs or managers of high-technology firms. According to Saxenian [54], one fourth of CEOs in silicon Valley is of Indian or Chinese origin. And whereas the Chinese are more present in engineering professions the Indian immigrants are venturing more into management and entrepreneurship. For example, 60% of Indian-born immigrants have been involved in founding a company in Silicon Valley, most of them full-time [55]. For the most successful entrepreneurs of both communities she finds strong ethnic networking. In the case of Indians this activity is highly concentrated in one association, The Indus Entrepreneur (TiE) [55]. To the extent that this networking transcends the boundaries of Silicon Valley and goes back to Asia, it is particularly important for India. In their recent survey Saxenian et al. [55] find that 74% of Indians plan to start their own business, and 76% even think of locating it in India. This is in sharp contrast to foreign direct investment as a source of international technology transfer to India which is only about one fourth for the years from 1991 to 1998 of what China received in 1998 alone [27]. A large proportion of Indians in Silicon Valley has been instrumental in starting a business through counselling or lobbying, or even investing their own money in India [55]. Interestingly, most of them are looking towards Bangalore, hence reinforcing the agglomerative tendencies (fig. 2):
Of particular interest for the present paper is the finding that 45% of Indians say that it is likely they will return home in the near future. Thus, presumably the highest impact is yet to come, for these immigrant entrepreneurs have quickly adapted to Silicon Valley business culture which they hopefully would carry with them. They mention the ‘culture and lifestyle in the country of birth’ as the most important factor followed by the desire to contribute to economic development [55]. Unfortunately, it is not specified what they mean by ‘culture’.

It is highly fascinating to discern the composition of these ethnic Indian networks, i.e. that immigrants cluster not within their ethnic group but rather share an ‘Indian’ identity: ‘Bengalis, Punjabis, Tamil, and Gujaratis tend to stick together. But in Silicon Valley it seems that the Indian identity has become more powerful than these regional distinctions. […]This feeling of community could override religion and caste.’ [54] This distinction of an immigrant community’s behaviour is insofar important as there are differences at least in non-high-technology settings like London [17]. This might stem from the fact that Silicon Valley is considered to be of a very flexible structure possessing a very open culture. These are cited among the organisational advantages of Silicon Valley in its evolution as the dominant high-tech cluster. It can be hypothesised that with the ‘brain circulation’ of returning Silicon Valley Indians these aspects of culture will be transferred to the Indian clusters in the knowledge economy. This might further dissolve customary patterns of occupation and division of labour.

Results of interview data

Certainly, there is no doubt about the genuinely economic factors that have contributed to the successful evolution of the Indian software industry. It seems quite obvious, for example, that the liberalisation initiated in the 1980s and accelerated to a certain extent in the first half of the 1990s has made its contribution. However, regarding the software industry, which reached a critical size only in the 1990s, one finds a relatively uneven distribution of its locations. Basically it is clustered in three south Indian regions, i.e. Bangalore, Hyderabad and Chennai (formerly Madras), as well as the west Indian cities of Mumbai (formerly Bombay), Pune and Ahmedabad, and around the capital New-Delhi.

Thus the question that is addressed here is why some regions, largely in the southern (and western) parts of India, are more successful than their counterparts in the rest of the country.

The hypothesis is that beyond economic and geographical aspects cultural influences come into play and have a not negligible impact upon the economy.

The approach is a very simple, qualitative one looking at the interview data of previous studies of the Indian software industry. There are no econometric techniques employed, but this should be done in future research. Not even correlations were tested for the clarity of the data was not entirely satisfactory. What follows are very provisional results.

All the interview partners are key entrepreneurs, managers or administrative staff. The information provided in the appendices is not uniform, thus the total number of the sample is not the same for all distributions. However, altogether there are more than 200 entries with nearly 200 mentioning also the name of the interview partner, which is crucial to my findings. The significance of the numbers differ enormously between the Indian data and those from Silicon Valley indicating an interesting possible development for the future.

Almost all studies claim to cover the entire software industry and do not specify a certain regional focus. However, analysing the interview data of these studies one finds a bias towards south Indian (and, to a lesser extent, west Indian) locations as the major centres of this industry. More than 90% of the interview partners came from firms or authorities in south or west India. Of those more than 50% was from Bangalore and its surrounding state Karnataka. This finds support by a study from Richard Heeks [24], but is in contrast with some of the studies asserting that Bangalore is not the center of the software industry, but rather losing its former status as ‘the Silicon Valley of India’ [3]. Presumably, the industry is still in an early stage at which the distributional number of companies varies highly. Therefore the merit of being the number one location might change between Bangalore, Bombay and probably Hyderabad. Of course, there are the usual explanations of university-industry linkages with the Indian Institutes of Technology (IIT), the establishment of STPs close to the IITs, as well as historical circumstances that led to the initial localisations.
But, if one takes a closer look at the names of the interview partner there is another remarkable finding. As shown in the previous section there is an adherence to customary values and traditions in India, especially in the South. This phenomenon finds expression in the fact that one can ascribe the ethnic and social, but not the economic, background of many Indians to their name. This is done by the use of anthropological literature and an Oxford dictionary with a supplement of Indian terms. Although the results seem to be very clear I must state that one has to be very careful with interpretation of these results.

The findings for the Indian section of the interviews show that almost 70% of the interview partners are Brahmins, irrespective of the location within India (fig. 3):

![Figure 3: Social background of interview partners in India](image)

The ethnic background is somewhat less clear with roughly 50% of the people interviewed being from south India and one additional quarter from the otherwise underrepresented Hindi speaking heartland in the Centre North (fig. 4):

![Figure 4: Ethnicity of interview partners in India](image)

However, in the context of Silicon Valley the result is totally different. Only a minor fraction of the people interviewed could be ascribed to a particular varna. On the one hand this is not very significant a result but on the other hand it supports the findings of Saxenian [54], [55] that Indians in Silicon Valley share a common Indian identity that transcends the boundaries of caste or ethnicity. The ethnic background of Silicon Valley Indians is somewhat more clear, with one third coming from Hindi speaking states. Again, this subset does not exhibit many entries, thus is to be handled with even more care.

To summarise, the findings are that the majority of the key people of the Indian software industry are located in South India, are Brahmins and come from a South Indian background in terms of ethnicity or family affiliation. These findings are enforced by the recent study of Saxenian et al. [55] which highlights the importance of South India as a destination for determinedly planned investments and returns to their home country by Silicon Valley Indians.

**Discussion**

Before I would venture into a discussion of the result I should repeat that they need to be interpreted very carefully. The reason is that the data is not complete and sometimes not entirely consistent. However the strength of the result allows for some provisional interpretations that call for further research into this direction.

The regional distribution seems to be influenced by historical and geographical factors, at least to a certain extent. To the same extent what follows for the ethnic background might simply be an eventual consequence. The historical factors reside in the early localisation of science and technology related research and teaching institutions in Bangalore as an ideal place in terms of climate and infrastructure to conduct scientific research in sensitive areas like defense and electronics. To qualify what has been said earlier, the southern centres are not the only, they seem to be the dominant ones, i.e. there are STPs in North India, too, together with successful local firms and regional offices of south Indian companies.

What is more surprising, however, is the distribution of socio-cultural and ethnic descent. There have never in Indian history been so many entrepreneurial and managerial Brahmins as are seen in the software industry now. Generally speaking, Brahmins were rather associated with priestly tasks, government jobs, administration and landholding. On the other hand, Brahmins as members of the priestly caste were always connected to all sorts of activities that are related to knowledge, learning and teaching. That might explain that they could be better suited to knowledge intensive industries like that of software. Then what is unexpected, too, is the relative under representation of Vaishyas. As stated above, they have always been the entrepreneurial castes of the Hindu population. Not even in combination with the few Parsis and Jains they make up for their usual share. One explanation resides in the attitude of the traditional merchants and trader class towards risk and quick profits. They often prefer the latter and avoid taking risks, thus foregoing higher profits in the longer term [17]. It also leaves unexplained why so little north Indians act as entrepreneurs in the software industry. A possibility is that they could have been lured into the southern regions. But
probably there are those who tried in the North and were just missed by the interviews.

Apart from the association with knowledge and learning there is another, socio-cultural factor explaining the dominance of Brahmins in the South. Not being an indigenously Aryan-speaking population, South Indians were fiercely opposed to the Brahmin domination of the North. It has been argued that the non-Brahmin society was relatively homogenous which might partly explain that in South India there have been an absence of the two middle varnas. This absence could have led to an even more dominant position of the Brahmins in the southern parts of India, which was then compounded by land ownership and political power [14]. Such a dominant position in administration could have been used in order to assure a more than proportionate share of Brahmins in high-schools and universities.

What remains is the fact that in Silicon Valley socio-economic factors among Indians do not seem to play a role for the pan-Indian identity overrides differences according to the slogan ‘unity in diversity’ which, however, was branded for India herself.

CONCLUSION
This paper has looked at the success of Indians in the global IT industry from a new perspective. The view taken here suggests that beyond economic and geographic factors there is an important role played by cultural aspects. Culture has been tried to operationalise through a pair of variables. These variables are caste in the sense of varna as an aggregation of occupationally inherited jatis, and ethnicity. In spite of the shortcomings such an aggregation inherently possesses, there is some evidence that within India the traditionally assigned occupations are losing their importance. Nevertheless, caste continues to play its part in the society, primarily in politics. To a certain extent the second variable, ethnicity is correlated with the first, although through aggregation much of this connection is lost. This stems from the fact that the regional variations within the system of jatis are not reflected through varna. However, interpreting the two varnas most featured in the interview data, the Brahmins broadly as priestly and teaching and the Vaishyas as those occupied with commerce and business displays a socially powerful result. The once dominant group of entrepreneurs has not retained its customary share in business in the evolving software industry.

This statement needs to be qualified for the small size of the sample and some incompleteness of data in a few cases. Also, there might be an ex-post selection bias stemming from the concentration on the most successfulfirms in the industry in the South, overlooking the social and cultural changes taking place in other regions. However, the results indicate a worthwhile direction of further research.

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NOTES
1. See, Fukuyama [18] for a review.
3. Dumont [16] regards as the most outstanding feature of the caste system that nobody is excluded from the societal structure, contrary to (medieval) Western class conceptions.
4. M.N. Srinivas [60] quotes a ‘calculation’ by Ghurye ‘that there are 2000 sub-castes (jatis) in every linguistic area’. Chapham [10] speaks of even 3000 sub-castes for the major groups, and of 90,000 endogamous marriage groups.
5. see e.g. Myrdal [36], Weber [65]; Marx [34], Akerlof [2], Olson [41], Kurian [29], Lal [30], Scoville [56].
6. ‘Ever since Max Weber’s analysis of Indian society, many Western (and Indian) social scientists have interpreted social institutions such as caste and the extended family as oppressive, in the sense of hindering the growth of such personality traits as ‘independence’, ‘initiative’, ‘persistence’ and ‘achievement motivation’ in the individual’ [25].
7. For this conventional view see among the many rather pessimistic contributions the influential ones of Weber and Myrdal [36] and, of course, of Marx [34].
8. Warner [64] defends Weber’s ideas against critics like Morris [35] who argue in favour of a secularly oriented mentality that is responsive to many forms of incentives as offered, for instance, by the market mechanism. The latter is based partly on studies of industrial entrepreneurs in Western India. Singh [59] concludes that, in spite of many interpretations that have mistaken Indian reality, in terms of sociological methodology, Weber’s approach can still be regarded as extremely useful.
9. See Nafziger [37], [38], [39] for economic studies conducted in the southern state of Andhra Pradesh; Rutten [49], [50] for a sociological perspective on the western state of Gujarat; and Reiniche [46] for an anthropological field study of a merchant caste in south Indian Tamil Nadu.
10. The studies analysed are Tschang [63], Saxenian [54], Bajpai & Shastri [6] and Arora et al. [4].
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