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The Journal of Media and Social Development is an initiative to create scholarship in the area of media and social development by encouraging scholarly work by the academicians in interdisciplinary areas of social sciences. The Journal is a platform for publishing high quality original research and experiments in the significant areas of economic, political, social, cultural and media perspectives of development.

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Journal of Media and Social Development

Kannada Popular Press: An Appraisal of Tabloid Culture
RAMESH AROLI

Analysis of Uses and Gratifications of Facebook –
A Study of College Students in the Indian IT City of Mysore
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An Analysis of International Labour Migration with
Gravity Model Between India and Other Asian Countries
MADHU GR
UMA H.R.

Putting People First: Inclusive Health Care through
Primary Health Centers
NANJUNDA

Resources for Green Infrastructure Development and Maintenance:
A Study with Particular Reference to Gated Communities in the
Bangalore Metropolitan Area
SHERIFF ANJUM VASEEM
KRISHNE GOWDA
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Kannada Popular Press: An Appraisal of Tabloid Culture

RAMESH AROLI

ABSTRACT

Indian language press in the post-Emergency period underwent a quick politicization and witnessed a shift (though not a 'print revolution') which was also part of the ongoing socio-cultural democratisation of the nation. And the scene in Karnataka was not different. The Eighties had to witness a political conflict and instability that was mirrored in media too. Various rational and literary groups that emerged in the decade engaged themselves with different formats of print journalism addressing this transition; which were popular in nature but political in terms of content. This paper intends to explore the factors that boosted the tabloid publications in Kannada and their effort to democratise the news coverage which is fundamental to the process of democratic print practices. Tabloid press, due to popular appeal has been considered as a 'low', 'yellow' or 'unproductive' journalism. Though Kannada has a flourishing tabloid press which is rhetoric and speaks to either semi-literates or 'ordinary people', it is rarely considered as a subject of academic study. With all criticism, subject needs to be studied considering the socio-political factors of the time and its cultural implications rather than looking at the institutional chronologies provided by the state. Most importantly, as it is suggested by scholars (John Fiske, Gripsrud Becker, Jönsson and Örnebring, Griffin-Foley), that in the current moment "scholarly debates about the production, values and ethics

and consumption of tabloidized media can most fruitfully take place in an interdisciplinary arena; an arena in which we can bring together past and present critical thinking in journalism, media and cultural studies around the articulation of the popular in the contemporary media landscape”.

Key words: **Popular press, tabloid culture** and **Kannada magazines**

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INTRODUCTION

By the end of Eighteenth century the practice of popular press/gutter press in the form of tabloid publications started in Britain and US. In the beginning of the Nineteenth century, experiments in the articulation of a popular voice in print were being pursued to draw the attention of the newspaper owners. Tabloid newspapers, especially in UK, boasted a very high degree of variation in terms of target market, political alignment, editorial style and circulation are concerned. Thus, various terms have been coined to describe the tabloid paper format. Broadly there are two main types of tabloid newspaper **Red top** and **Compact**. The modern popular tabloid newspapers in British have “more complex and socially inflected affair that demonstrates the national specificity of cultural developments”.(1)

In India, the historical analysis of media seems to be limited to orthodox historical narrative which is dominated by a method of ‘focusing on institutional chronologies, their relations with the state and with elites’. So, there is less scope to understand the media’s role in ‘constitution of publics’ for the formulation of new meanings of community, different social groups, nation and identity. For instance, initially the printing of



Fig.1 Front page of Hicky's Bengal Gazette (Calcutta General Advertiser) dated Saturday December 16th to Saturday Decemebr 23rd, 1780.

Source: Google Images

newspapers in India had a very limited intensions though ownership remained with *public* (of government) and *private* (of non-governmental) and a strong adversarial press had an enormous impact on Indian politics.

In James Augustus Hicky’s *The Bengal Gazette*, a four-page weekly tabloid, there were elements of popular journalism even if those were not politically motivated but clearly indicates the reporting of sensational/ gossip reporting. But as a journalistic practice ‘popular press’ emerged with the growth of Indian film industry, new literary practices and various social movements. The film and political magazines which came during the Sixties targeted a newly-educated middle class reader and were

used to promote the star persona by focusing on the politicians and their lifestyles. Almost in all major Indian languages the growth and popularity of these magazines continued over the decades, with a good number of literary figures contributing their works to these periodicals. After independence, the publishing houses from semi-urban spaces started special and general interest magazines to address the new educated 'prints consumer' class which was ready to buy a commodity that would publish something related to their stars and leaders.

Though there is no long history of *tabloid press* in India and is still an evolving concept, there were considerable number of *popular* magazines in English and most of regional languages which used to play the role of tabloids in terms of content, tone and editorial style. By proclaiming *Our Blitz, India's Blitz against Hitler!* a tabloid called **Blitz** was started by Russy Karanjia on February 1, 1941. It was in English and then branched out with Hindi, Marathi and Urdu versions. It was popular for spunky loud and screaming captions and telling photographs.

The paper's quality was coarse and the pictures grainy, but there was visual drama on *Blitz's* pages. *Blitz* appeared in an effort to break open the elite public life with a radical ideology and spunky writing. Accepting the notion of public life as the key arena of politics, the tabloid mined it for its radical potential, believing that hard-hitting, two-fisted reports could make a political difference. As a tabloid, then, *Blitz* dispensed with the convention of dispassionate observation and balanced opinion, and adopted a charged tone from the very beginning. It took on the role of a social investigator that dug beneath the surface of everyday life to ferret out the hidden truth that it announced loudly on its pages.

In Karnataka the socio-political and cultural changes that occurred during the pre-Emergency period as it happened in other parts



Fig. 2. Cover pages of *Blitz*, October 17, 1959

Source: Google Images

of the country, clearly witnessed the change in every sphere. This change was supported by the liberal policies of the period. Initially the regular periodical print publication was restricted to the urban elite classes and the rural middle class had to depend on the short-lived 'minor literature'. Hence, the popular newspapers, of a particular sort, commercial and orientated as much towards advertisers as readers, became an established part of print culture in India.

The availability of new print consumer class in all major languages made newspaper and magazine production a much more profitable activity and one which was over time increasingly targeted at lower socio-

economic groups for its readers. Inevitably, there were political implications in the sort of popular journalism which emerged in the post-Emergency period. Incorporation of ‘common’ ordinary people into a commercialized press which had a stake in economic prosperity and capital growth led the popular press to become an institution of political control. And to shape the ideas of this class there were different ideologies—Marxist, Ambedkarite, Gandhian, JP, Loahiaite and Rightwing which were prevalent in Karnataka and were influenced the every creative work and sphere. Since, there is an interlink between the different spheres, it would be more convenient to understand and locate the presence of ideologies in Kannada print culture if they are not seen separately.

In India, post-Emergency years witnessed an unprecedented “newspaper revolution” (?) and new formats of journalism came into existence. A number of political and literary magazines were started in all major Indian languages. Due to political uncertainty and imposition of censorship it caused a suffocating atmosphere for journalism. Especially for print, those were the days of humiliation. This was another important circumstance that determined the role of the press and which played a role of effective opposition due to the one-party- Congress rule, for a long time in the nation. By the end of Emergency, as Jeffery observes, technological change in the form of personal computer and Offset press entered Indian language newspaper industry that caused a drastic transformation. Since then, the questions pertaining to language, region, caste, religion, gender and identity have emerged as a central agenda in Indian politics. And in Karnataka, the generation educated since the beginning of Eighties had come into media-consuming adulthood, which was a “largest cohort of Kannada reading people in history”(2) (1997).

Newspapers have played their own role in the political, social and literary life of the state. Their part in the freedom movement is notable. Newspapers supported the state Unification movement of the region entirely and also fostered emotional integration. Though, not all, at least few small publications have played a very prominent part in propagation of new and progressive thoughts in popularizing the spirit of democracy. Some magazines like, *Sankramana* (1965), *Mungaaru* (1972) *Dalita* (1974), *Shudra* (1975), *Baduku* (1977) *Panchama* and *Andolana* gave a thrust to this development. This reflected in Kannada literature too. As *Boosa* remarks had created a huge uproar in the literary world that furthermore aroused certain fundamental questions about ‘space’ for freedom of expression and language.

For the convenience of the present study, magazines publications may be divided into two categories.

- I. General interest magazines:** a-political, literary; mostly addressing upper middle class/housewives.
- II. Popular magazines:** (including Tabloids) - political/commercial and mostly addressing newly educated lower middle-class.

In the first category, though, there were many popular general interest magazines, mostly sister publications of major Kannada dailies, such as *Karmaveera*, *Prapancha*, *Kasturi*, *Tushara*, *Mangala*, *Sudha*, *Mayura* and *Taranga* with which eminent journalists served as editors, they moulded the reading habits of the middle class by providing a weekly quantity of short stories, serialized novels, cartoons, and light articles. Many prominent Kannada writers got their break while contributing to publications like *Sudha* and some writers continued to write for it even after establishing a name for themselves.

The weekly featured generous illustrations and photographs, and built its own effective circulation system. These periodicals have

been bringing out special issues on the occasions of festivals and basically targeting the housewives. For example, *Taranga*, another leading Kannada family weekly magazine run by The Manipal Media Network Ltd publishes serials, features, fiction and the interviews of personalities. According to an ABC report(3) the weekly had an average sale of nearly 1.58 lakhs. Compared to the close competitors, *Sudha* and *Prajamata*, the content of *Taranga* was more of health, serials, women's page and children's section. Except *Prajamata* these were all mostly 'family magazines'. *Gandhi Bazaar Patrike*, another journal started by K.N. Balakrishna during Eighties, was a literary journal. Initially, it was in tabloid format which was "dedicated to current affairs" and "always picked up the latest debates, and controversies in the world of Kannada literature(4). And some of these magazines had nationalist perspective, so they were kind of 'serious' in terms of content.



Fig. 3 & 4:

Cover pages of Kannada weeklies *Sudha* (January 11, 1965) *Karmaveera* (June 27, 1971)

Source: Google Images

Before looking at the emergence of popular publications, it is essential to examine popular fiction and pulp novels in Kannada. Till recently, Kannada had a very rich popular pulp, spy-crime novels which were mostly commercial fictions even if these were never considered 'literary' ever. Writers like Narasimhaiah, BK Anantaram, Sudarshan Desai, H K Ananta Rao and Koundinya who wrote this genre of stories were very popular in the Seventies and Eighties. Most of these pulp novels had the usual ingredients and characters; a spy, a vamp that these used to give instant gratification to be read and forgotten. Narasimhaiah had penned over 550 detective novels, and over 50 social novels. '*Pattedara Purushottama*', after the detective-cum-hero of most of his novels, was the first of his novels to be published in 1952. He also wrote three other detectives, '*Pattedara Madhusoodana*', and '*Pattedara Arinja*'. Some of his novels were reprinted eight times and popularized reading habits among lower middle-classes. Sudarshan Muthalik Desai, another writer who had written variety of novels, short stories and nonfiction articles, became popular because of his detective novels like *Keralida Sarpa*, *Kari Naayi*, *Haladi Chelu*, *Bannadha Bekku*, *Apaharana*, *Sarpa Gandha*, *Vichithra Aparadhi*, *Ashti Panjara* and many others. Desai was a voracious reader of Hindi literature so he was influenced by many popular detective novels written in Hindi. Mostly these novels came out of stable publishing houses which were professionally printing handbills/posters and bill books. Being cheap and easily available, these low weighted books became immensely popular among readers in most major Indian languages that generated millions of new readers of fiction in Seventies and Eighties. As television became a medium of entertainment by the end of the 1990s, the attraction for these popular romantic fictions gradually disappeared. H K Ananta Rao, who wrote *Antha* novel which was made into movie in 1981, by S. V. Rajendra Singh Babu went on become a huge success.

'*Antha*' is considered as the first political cinema in Kannada that created a sensation.

Kannada too has no long history of tabloid press, apparently there were few tabloids edited by nationalists and literary stalwarts in different time period, which was not in 'western sense' of tabloid practice. *Kidi* (spark) edited by Sheshappa is said to be popular in the 1950s. Due to the improper documentation, no information is available about the tabloid. Bringing certain respect to tabloid journalism in Kannada, P. Lankesh created a 'space' for several protest movements and started influencing state politics through *Lankesh Patrike* (1980) reports. Perhaps, it is considered as one of the most important magazines that caught the spirit of this prevailing mood and was successful in expressing it sharply without any adornment. B.V.Vykuntha Raju's *Vara Patrike* became fairly successful with its simple straight and serious handling of public issues. He also used to edit a popular monthly *Rajupatrike*, *Suddi Sangati* of Indudhara Honnapura, *Sanketha* (a fortnightly) of I.K. Jagirdar and M.B.Singh, *Manvantara* of Ashok Babu, *Mardani* of Janagere Venkataramaiah, *Hi Bangalore* of Ravi Belagere, *Abhimani* of T. Venkatesh and *Agni* by Shreedhar, are the other worthy journalistic attempts. Shreedhar's *Agni* began with a tagline *Idu patrikeyalla pratibhataneya astra* (It is not a newspaper; but a protest weapon) has a pro-Dalit identity that to some extent, filled the gap that resulted after the fall of *Lankesh Patrike*.

Despite professional rivalry between 'serious' and 'popular' publications from a different perspective, the globalization of public sphere forced mainstream media to accept the tabloid values and issues that were raised. One of the key factors for the origin of the popular press into distinctively tabloid formats was the rise of radical politics. And interestingly, though, these popular publications were not



Fig: 5 & 6. Cover page of *Lankesh Patrike* first issue published in July in the year 1980. And a collage of cover pages of Kannada tabloids.

'commercial', they still survive without advertisements by carrying a cover story, features and part crime and so on. Inspired by the success of *Lankesh Patrike*, a good number of the tabloids were launched and later mostly started banking on – blackmail, sexual vulgarity, carrying semi-nude photos and writing in popular colloquial Kannada that captured the attention of its non-elite audience and more in 'western' style.

Also there was a boom in pornographic magazines such as *Rati Vignaana*, *Surati*, *Rati Darpana* and *Police News*. In terms of addressing readers, these too employed a colloquial vernacular and knowing vulgarity and sexualization of content that rendered them a highly distinctive brand in competitive media market. Though, some claim that they publish investigative reports, it is impossible to prove and take any legal actions against coverage of defamatory and damaging reportage. *Star of Bangalore*, *Ikyaranga* (a CPM news letter) *Hello Bangalore*, *Voice of Bangalore*, *Hi Soorya*, *Soorya*, *Dhoota*,

Praja Jagattu, Onti chirate, Diggaja, Nagarahavoo, Polisara Horata, Sanmitra, Paalegaara, Police News, Raajakeeyaranga, Sanje sphota, Crime News to name few but the list goes on. Inevitably, there were political implications in the sort of popular journalism which emerged after political changes occurred and technology available in this period. Importantly, by incorporating the new-educated middle class people into a non-commercialized press which had a stake in economic prosperity and capital growth, popular press became an institution of political control. Before this incorporation, there had been successful attempts to address the “common people” in small and literary periodical publications, representing them and their concerns in direct vernacular aimed at constructing a tangible, effective and radical political community. To counter the very idea of ‘standard’ and ‘literary’ Kannada the new brand of writers from non-dominant communities started adopting a tone and style of addressing in a very informal non-literary Kannada. For instance Siddalingaiah’s poem from **Holemadigara Haadu** (1975) “*Ikkrala Vadirla Aanannmakkla Cherma Ibbirala*” (Bash them, Kick them Skin those bastards”(5) was “an attempt to define the new Dalit identity through anger and fury. Anger was a liberating emotion and the experience of violence one of release” as D.R. Nagaraj(6) observes. This strategy helped to establish the convention of articulating an idiom to match an audience which was outside the traditional bourgeois readership targeted by the mainstream press of the time.

Previously, newspapers and magazines had assumed that their readership was a relatively homogeneous upper middle class with varied interests and opinions, characteristic of the range of bourgeois opinion of the time, manifested in their language. Having established an authentic tone of language for the targeted readership, which represented as a

community with common aspirations and values, the popular press developed through the Eighties into a new generation of popular political papers, the most successful and long-lived of which is **Lankesh Patrike**. The tabloid created a textual community which incorporated petitions and political polemic within a rhetoric, which claimed to speak on behalf of **Jaana-Jaane**, the smart readers of Karnataka. So, the language had become the site where radical political alternatives were addressed. And it also proved the democratic capability of a popular tabloid publication.

Table:1 Share in National Circulation (of Newspapers) By Selected States

State	1964	1978	1991	1997
Maharashtra	20.08	17.17	14.70	12.62
Tamil Nadu	17.04	9.31	6.49	3.88
West Bengal	11.28	11.73	5.72	5.20
Kerala	10.82	10.95	6.52	5.53
Uttar Pradesh	5.22	6.66	16.32	16.17
Gujarat	5.10	6.52	7.34	6.16
Karnataka	4.47	6.23	4.84	3.66
Andhra Pradesh	3.34	5.24	4.40	4.20
Madhya Pradesh	2.59	3.85	6.73	9.33
Punjab	2.44	3.21	4.50	3.59
Bihar	2.39	3.27	8.81	4.64
Rajasthan	0.37	2.57	3.64	6.19
Orissa	0.37	1.30	3.20	3.86
Assam	0.37	0.88	0.28	1.48

Source: RNI, various years in Tara S. Nair, *Growth and Structural Transformation of Newspaper Industry in India: An Empirical Investigation*, EPW, Vol.38, No. 39(Sep.27-oct.3 2003), pp. 4182-4189.

For many years however, regular periodical print publication was restricted to the mostly upper classes and the poor had to find a space in the short-lived 'minor literature'. By now, popular publications of a particular sort, commercial and orientated as much towards advertisers as readers, became an established part of print culture in Karnataka. The lifting of censorship on the press after Emergency made newspaper and magazine production a much more profitable activity that was over time increasingly targeted at lower socio-economic groups for its readership. The language of these new popular commercial newspapers enabled a relationship to give an authentic account of itself to its readers if it was to continue to be successful.

The twentieth century witnessed an unfolding of sentimental fiction made possible by the rapid growth of the popular press, the spread of literacy, and the emergence of a large middle-class readership in Karnataka's urban spaces. It is appropriate to argue that popular publications helped to create an affective rational reading community within the literary public sphere whereby non-dominant castes exchanged private experiences as a mode of protest. Perhaps, the most important point that the Kannada tabloids illustrates is that, a newspaper with or without technological bells and whistles, or whether printed or passed on from hand-to-hand at public places and among the associations interactively it takes many forms. What form it takes will depend on material conditions. And these conditions have kept on changing constantly then and now. Beyond all industrial and economic conditions, the fact remains that the 'popular press' is a linguistic phenomenon in the way that it appeals explicitly to newly educated middle class and their lifestyles.

FOOT NOTES :

- 1) See When did the populars become tabloids? in *Tabloid Britain: Constructing a Community Through Language*, page
- 2) *Kannada: "We Fake It There Is competition"* EPW, Vol. 32, No. 12 (Mar. 22-28, 1997).
- 3) Audit Bureau of Circulation report 1984
- 4) *An old brew*, The Hindu, Metroplus, September 28, 2013
- 5) See H Govindaiah's chapter in *Steel Nibs Are Sprouting - New Dalit Writing from South India Dossier 2: Telugu and Kannada* edited by K. Satyanarayana and Susie Tharu.
- 6) In *From Political Rage to Cultural Affirmation: Notes on the Kannada Dalit Poet-Activist Siddalingaiah*, *India International Centre Quarterly*, Vol. 21, No. 4 (WINTER 1994), pp. 15-26

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End Notes

- i. The word *Tabloid* was introduced into the world of media by Alfred Harmsworth, who picked the term from trademarked by a pill manufacturer; originally coined out of the words tablet and alkaloid.
- ii. Gyan Prakash writes . . . Week after week, Blitz exposed truths allegedly buried beneath the surface of random and fragmentary events. The embezzlement of public funds, prostitution rackets, sordid stories of seduction and sex in the name of spiritualism, dark political designs behind high-sounding rhetoric, and the fleecing of the poor by rich industrialists and property developers were staples in the weekly. Even the sports column, called ‘Knock Out’, took on the racket-busting posture. It was written by A.F.S. Talyarkhan, whose bearded, pipe-in-mouth, face on the page appeared to lend gravity to the charges of malfeasance he made against sports authorities.
- iii. The periodicals which were loyal to literature in a panoptic sense. Little magazines generally used to publish short stories, poetry and essays together with literary criticism, book reviews, and biographical profiles of authors, interviews and letters. The little magazine movement boom and their further publication also range from being published fortnightly to annually, which were generally edited by inexperienced teenagers to experienced eighty year olds. Most of the magazines used to print both poetry and fictions, including even novels and drama. However, particular magazines publish fiction, drama or poetry only. And it was started in West Bengal around 1961, when the Hungry generation Movement transported the cultural establishment to a stormy and uncomfortable domain.
- iv. Dalit and Bandaya are the two most important radical movements of Kannada literature. Dalit writers, mostly, from untouchable castes and Bandaya of young leftist writers began writing in the mid 70s. Various forms of social and economic exploitations were the central themes of their literature.

- v. Gokak agitation was a language rights agitation in the 1980s that took place in Karnataka. Agitation was the first agitation for the language status of the Kannada language in the state. It was named after the committee that was headed by V. K. Gokak. The three language formulae were adopted in the schools of Karnataka since linguistic organization of states in 1956. In the 1960s there was a strong opposition to usage of Hindi language. Sanskrit was the dominant language in schools where students completed their education without having to study Kannada language. This created incompatibility between languages that were used for state administration and education. This led to a linguistic movement against maintaining Sanskrit as the first language in School. This movement was supported by political parties, groups of Kannada teachers, students, college and university professors, playwrights and creative writers.
- vi. A minister for Housing and Municipal Administration in Devaraj Urs cabinet -B. Basavalingappa from a Dalit community remarked that Kannada Literature as *Boosa* (cattle feed) in the function at Mysore organized by Dr. Ambedkar Vichara Vedike and Backward Class Students Forum of University of Mysore, on November 19, 1973. The event famously called Boosa Controversy that caused for decisive turn in Dalit movement in Karnataka. To Basavalingappa that meant the Kannada Literature did not have proper stuff. His contention was that the students coming from exploited sections of the society should learn English.

Analysis of Uses and Gratifications of Facebook – A Study of College Students in the Indian IT City of Mysore

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ABSTRACT

Facebook, the medium that has melted the norms of culture and value system has paved the way for public discourse of private lives. One of the post modern theories that perceived communication from an audience perspective is the theory of Uses and Gratifications. The characterization of Facebook shows that it has many features that influence the social relationships. A survey was conducted by using online questionnaire administered to regular students of undergraduate and post graduate colleges. A stratified sample of Facebook user was drawn. The study has investigated what motivates users to use Facebook and what they intend to do with Facebook and its content. Overwhelming percentage of respondents felt the motivation is friendship. Statistically, the causal relationships have been proved in this study illustrating media audience is not only active but reflective too. Instead of getting manipulated by the media, the user here customizes the media to cater to his needs and interests.

Key Words: Facebook, Friendship, Social relationships, Chat, Links, Uses, Gratifications, Motivation.

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INTRODUCTION

The emergence of Newspapers, radio, cinema and TV as agents of mass communication caused significant changes in the society establishing media as one of the important social institutions. The post modern raise in communication technology has changed the dynamics of human communication. The perception of communication has transformed since the days of Magic Bullet theory that propounded that audience is passive and powerless against the great power of mass communication. One of the post modern theories that perceived communication from an audience perspective is the theory of Uses and Gratifications. The theory is more relevant and important today as it advocates the understanding of media use pattern and content from audience perspective, 'The audience is conceived as active, they choose media, audience needs are varied, audience use media to build their identities and finally it is the audience who judge the content of media' (Katz, Blumler, & Gurevitch, 1974). This theory places more importance on the user than on the media stressing that users are responsible enough to choose their media to fulfill gratifications. The present study proposes to investigate the perception, motivation and influence of Facebook, the immensely popular social media site, on the users by revisiting the Uses and Gratifications theory.

Facebook, the medium that has melted the norms of culture and value system has paved the way for public discourse of private lives. The total users of Facebook touched 1 billion that is 12.1% penetration in world population. USA has 166 million Facebook users covering 52.9% of American population whereas India has 62 million Facebook users demonstrating its popularity over Twitter which has 33 million users. The study investigates the behavioural pattern of facebook users in terms of factors viz., Social Connection, Social Surfing, Wasting Time, Using

Applications (Lampe et al. 2007), Social communication and Public communication. Launched in February 2004, Facebook, the social networking site is owned by Facebook, Inc. and is a multi-pronged tool of communication that claims to have over a billion active users in the world. A popular social media Facebook has been the subject of innumerable studies. Facebook is a tool of mediated communication that democratizes the means of constructing public profile of a private individual. The characterization of Facebook shows that it has many features that influence the social relationships. It has text based communication attributes like posts, comments and private messages. The other important indicator that measures social relationships is the “like” variable indicating the emotional support the person enjoys with his/her Facebook friends on different type of content like posts, comments, photographs, videos and links. Tagging is another variable that reflects the emotional bond two people have when they decide to tag. Time is a significant variable that indicates the degree of interest in maintaining a strong relationship. The relationship can be termed weak if the time spent in interaction is occasional.

USES AND GRATIFICATIONS THEORY

The investigation into the mass media influence on people in early 1970s lead researchers to make path breaking studies throwing insight into the definite role media play in providing uses and gratifications to the users. The crux of the U & G theory is ‘what people do with media rather than what media does to people’ (Katz, Blumler, Gurevitch, Haas, 1973). Theorists believe that there is not merely one way that the people use media. Instead there are as many reasons for using the media, as there are media users. (Ibid). The theory basically gives us a list of basic needs the users derive out of media. Why people use media and what they get out of it are the basic questions that this theory tries to address. The original study by Katz., et.al encouraged voluminous studies on media gratifications

with variety of findings. All theorists endorsed the premise of original U & G theory that audience is active, rational and self-aware and over the course of time, they develop certain expectations about which media and contents fulfill their needs and desires (Katz et.al., 1974).

The primary theory on U & G as propounded by Katz, Blumler and Gurevitch (1974) has five basic premises:

1. The audience is active and its media use is goal oriented.
2. In the mass communication process much initiative in linking need gratification and media choice lies with the audience member.
3. The media competes with other sources of need satisfaction.
4. Many of the goals of media use can be derived from data supplied by the individual audience members themselves.
5. Value judgments of the audience’s linking its needs to specific media or content should be suspended.

The U & G theory created a comprehensive list of human needs and investigated if a particular medium is more helpful than others in fulfilling certain types of needs. The list of human needs are classified as following; (Katz, Gurevich, and Haas, 1973)

1. Cognitive needs (Knowledge and Information)
2. Affective needs (Emotions, pleasure, feelings)
3. Personal integrative (Credibility, Status)
4. Social Integrative needs (Interact with family and friends)
5. Tension free needs (Escape and Diversion)

People use media to satisfy different needs like surveillance, entertainment, correlation, cultural socialization and personal identity (Katz, Blumler, & Gurevitch, 1974). Rosengren (1974) indicated that the use of media is affected by individuals’ needs, motives, behavior patterns, media consumption, daily problems and characteristics of society. Much of the earlier theories focused predominantly on television viewing as the visual

media gave a new perspective to the studies on mediated communication. Researchers were curious to understand what prompts people to watch television and how the media helped in satisfying their basic needs. If media are presumed to have the potential to satisfy the human needs, then what are those needs and how does it work in human mind are the vital issues that the theorists have focused on. The gratifications theory is basically a psychological approach to understand the emotions and feelings that explains the human bonding with the technology driven media. Studies on television viewing cites relaxation, companionship, habit, passing time, entertainment, social interaction, information, pleasure, escape as the gratifications that users get. (Rubin, 1981).

LITERATURE REVIEW

Internet has been the subject of voluminous studies by the scholars in USA, Europe and Asia from sociological, economical, cultural and technological perspectives. Obviously, Facebook has generated significant interest among researchers as it has created a new public sphere ever seen in the history of human civilization.

Gratification research of traditional media has a vast number of studies. Recent studies have undertaken comparison of gratifications from Facebook with that of instant messaging. One of the studies (Quan-Haase and Young, 2010) has identified six key dimensions of gratifications namely pastime, affection, fashion, share problems, sociability and social information. 'Comparative analysis showed that Facebook is about having fun and knowing about the social activities occurring in one's social network, whereas instant messaging is geared more toward relationship maintenance and development' (Ibid).

Many studies have endorsed the high rates of penetration of social media in the society (Lenhart, 2009, Rankin McGill and Smith, 2007). Studies vouch for the distinct attributes of social media. Users normally do

not replace one social media with the other. Instead, they integrate all platforms of communication (Baym, Zhang and Lin, 2004; Quan-Haase, 2007; Squires, 2003). Many adopt tools of new media as part of 'communication repertoire' (Lenhart and Madden, 2007). The premise of the original theory has been applied to new media (Flanagin, 2005; LaRose, Mastro and Eastin, 2001; Leung, 2001). The original theory gave us a model of media gratifications (Katz, Blumer, and Gurevitch, 1974; Katz, Gurevitch, and Haas, 1973) in the context of newspapers and television (Kippax and Muray, 1980; Palmgreen and Rayburn, 1979; Rubin, 1983; Bantz, 1982; Bryant and Zillmann, 1984; Cazeneuve, 1974; Dobos, 1992; Eastman, 1979; Mcilwraith, 1998; Rubin, 1983;). Comparative studies have thrown insight into how people switch from traditional media to new media (Eighmey and McCord, 1998; LaRose et.al., 2001; Lee, 2008; Papacharissi and Rubin, 2000; Stafford, Stafford and Schkade, 2004). Audience control the content due to integration of consumer and producer roles of new media called as 'prosumer' (Toffler, 1980). The ability of users to control is what makes it worth to study new media in comparison with traditional media to understand how both the media motivate users to derive gratifications (Lin, 2001).

Impact of Facebook on the Social Life, Health and Behavior:

In a study to evaluate the effect of social life on medical students of Dow University of Health Sciences in Pakistan, one comes across a specific pattern in the usage of Facebook denoting a high degree of addiction of students to the social media. Interestingly, the young medical students hailing from conservative Islamic society like Pakistan exhibit the behaviours of heavy users, sparing 3-4 hrs per day on Facebook alone and 'are willing to compromise their health, social life and studies for the sake of fun and entertainment of whatever satisfaction' they derive out of Facebook (Farooqi et.al, 2013). Interestingly, in this study students have admitted

that 'their social life became worse after they start using Facebook' (Ibid). Using a survey method with a sample of 1000 respondents the study supports the contention that Facebook helps in changing the perception of people. Students who were regarded as shy were considered 'as fun loving' by Facebook friends based on their presentation in Facebook.

In a study on the characterization of egocentric networks, the researcher has endeavored to study the factors underlying social relationships. A Facebook application called Facebook Analyser (FBA) was designed for this study and the respondents were asked to use Facebook using these apps (Arnaboldi et.al, 2011). In a study spanning three weeks, the researchers have collected a total of 7665 relationships and have extracted 3245 active friendships in a methodology that helped them to electronically access all the users' pages and their conversations.

The study shows that text based interaction consisting of posts, comments and private messages demonstrate a medium correlation with the perceived strength of private messages and the results display the high importance of like-based communication inside Facebook. Study after study has endorsed that fact that 'users are willing to continuously use Facebook when user attitudes are high towards Facebook. Further, perceived enjoyment is positively related to user attitude.' (Chen, 2013).

The researchers are studying the factors that compel users to log on to Facebook in such huge numbers. One of the studies has found that 'perceived enjoyment, perceived ease of use and perceived usefulness all impact attitude towards continuance intention of Facebook' (Suki, Ramayah, Ly, 2011). The question whether Facebook is a friend or a foe has generated academic interest. Facebook 'encourages voyeurism and narcissism' but social media alone may not be the reason. 'Problems with Facebook are reflective of broader, long-standing problems with social values that lead to alienation and that this alienation does not outweigh its

benefits' (Seligman, 2011). Gender is a vital variable that has been studied in all social relationship studies of Facebook. There is correlation between user behaviour and gender in Facebook. ' Females and males exhibit contrasting behaviours while hiding their attributes, such as gender, age, and sexual preference, and that females are more conscious about their online privacy on Facebook' . (Tang et.al, 2011). Facebook has become a common digital reference point to maintain visibility among the social groups. Facebook build visual identity with the help of photographs, texts, links, video and comments that the user shares with the intended audience. The new generation is more visual and believes in exploring visual options than textual ones. 'By visually expressing their selves through profile photographs, users engage in the social construction of reality, crafting their digitally mediated identities in interaction with their online social relations' . (Uimonen, 2013). Facebook has improved over the years and technology has changed and made it user friendly. ' The 'Wasting time' factor and the growth of 'Using Applications' factor indicate that Facebook has already become an integral part of daily computing routine, alongside with the rest of the entertainment desktop and web applications' . (Giannakos et.al, 2013). Does the use of Facebook differ with generations as participants belong to different old and new generations? The studies endorse the premise that 'there are differences in how two generations of Facebook users relate to social media ' (Hilsen, Helvik, 2014).

Ethics and Facebook: Technology has eroded the privacy of individuals as private messages in the form of text and visuals are available in public domain. Privacy is a significant issue that is bothering the law makers in different countries in both democracies and others. A study on the invasion of privacy with respect to the students' Facebook data information of a US university infers that 'a set of ethical concerns must be

addressed before embarking on future research in social networking sites respecting expectations of privacy and strategies for data anonymization prior to public release'. (Zimmer, 2010). The issue of privacy has raised the debate on whether Facebook is a public space or private space as more number of judicial investigations are considering FB content as evidence in support of their findings in the courts of law. It has been found that outside non-users perceive Facebook as private space where public display their personal messages in the form of both text and visuals to an intended audience. However studies have pointed out that 'online social spaces are indeed loci of public display rather than private revelation. Further, participants view and treat online social networks as public venues' (Burkell et.al, 2013). Studies show that in the case of the students most of them are not bothered about the 'privacy settings that limit viewing of personal content' (Hinck, Evans, 2012). Young students post unprofessional content that could have negative effect on the reputation and professionalism of the student and there is need to orient the students about responsible use of social media. (Ibid). Facebook has raised serious issues concerning privacy and how to cope with as the wrong audience is unavoidable in intended audience that user intends to reach. Studies reveal that one of the probable solutions is 'to change the users' behaviour and other is to address the very architecture of social network sites' (Leenes, 2011).

Social Capital and Facebook: Technology has enabled Facebook users to create issue based peer groups to exchange information related to common interests and problems. In an exploratory study that analyzed 1352 messages posted by active Facebook diabetes group, the users bonded with each other across the globe irrespective of race, gender and nationality. The issue of Diabetes bonded all the members to exchange medical and lifestyle information through Facebook platform demonstrating the potential of this social networking site to overcome even language and

cultural barriers. (Zhang, He & Sang, 2013). Cross cultural networking on Facebook increases social capital and because of perceived benefits of FB interactions and the type of friendship. (Jiang and Bruijn, 2013). Facebook networks teachers and students and can be an excellent platform for teaching and learning. Using a case study method, a course named Introduction to Database System with code CS3462 was used by researchers by creating a Facebook account by teaching staff. The technical features of Facebook were extensively used to support the premise that 'Facebook is an excellent supplementary education framework that can replace some features of traditional classroom learning' (Shiu, Fong and Lam, 2010).

OBJECTIVES

- Fundamentally, what makes a student to engage in Facebook use? The study aims to find out the Facebook uses and gratifications of college students.
- To analyze the usage pattern of Facebook by the college students
- To study the user profile of Facebook
- To study how students use Facebook to shape their personality
- To examine the Facebook consumption pattern in satisfying needs

METHODOLOGY

The study is part a larger national survey, National Facebook Study, conducted and designed by a research team at Mudra Institute of Communications Ahmedabad, Gujarat, India in collaboration with universities and colleges in India. This paper is based on the data collected in one of the cities that participated in the national study. A representative sample of 300 undergraduate and postgraduate students was selected in the academic streams of Arts, Commerce, Science and Engineering. Sample was drawn from both public and private colleges and universities in the city of Mysore. Mysore is regarded as the IT bowl and is the head quarters

of IT giant Infosys. Mysore located in the southern state of India has a literacy rate of 72.56 per cent. A survey was conducted by using online questionnaire administered to regular students of undergraduate and post graduate colleges and who are Facebook users. Field investigators were oriented to the method of administering electronic questionnaire. The filling up of the questionnaire online would take 30-40 minutes. Provision was made to complete the partially done questionnaire at their convenience as the respondents were all students and difficult to sustain their interest for long hours. Collecting the students' email IDs and obtaining their willingness to take part in the survey was part of data collection process. The questionnaire link was sent to those students who were willing to do the survey. Those who's IDs were obtained but not willing to do the survey were given the option to follow another link to exit from the site. This is an online survey stratifying sample by education and consisted of Facebook users. Data collection was based on a system of electronically generating tokens collecting the students' basic data and a questionnaire link.

Though hundreds of students were administered questionnaire online, the response was not overwhelming as students are not used to filling up time consuming online questionnaires and most of them did not answer all the questions. Therefore, finally 164 students completed all the questions in the questionnaire and hence were considered as the sample size for the study. Despite generating over 300 tokens, the total number of students who ultimately took part in the survey was 164. Therefore, the valid sample size was confined to 164 as it consisted of respondents who voluntarily took the survey and completed the questionnaire and these students also gave their consent to use their email IDs. Questionnaire was designed to find out the motivation for using Facebook. The socio demographic and economic variables like gender, income and education formed the variables for investigation. The study intended to find out the uses and gratifications

of Facebook by categorizing the variables under selfhood, constructing personal identity, social relationship, and social interaction vis-a-vis communication in real life.

ANALYSIS AND DISCUSSION

SDE Profile

TABLE-1

Distribution of Demographic Variable of College Students Using Facebook

Demographics	f	Percentage
Gender		
Male	107	65.2
Female	57	34.8
Education		
Graduate Student	70	42.6
Post Graduate Student	94	57.3
Income		
Lower Middle Class	74	45.1
Middle Class	72	43.8
Upper Middle Class	18	10.8
College/ University		
Government	99	60.4
Private	65	39.6
Owning Media Devices		
Personal Computer	73	44.5
Laptop	70	42.7
Smart Phone	52	31.7
Tablet	13	07.9
None of the Above	24	14.6
Mother tongue		
Kannada	122	74.4
Hindi	4	2.4
Konkani	4	2.4
Tamil	5	3.0
Telugu	7	4.3
Urdu	7	4.3
Sambalpuri	1	0.6
Himachal	1	0.6
Marathi	12	7.3
Malayalam	1	0.6

Respondents consisted of 65% males and 34.8% females and all the participants were undergraduates or postgraduates and belonged to middle income group. Majority (60.4%) studied in government colleges and the rest in private institutions. More number of students owned personal computers (44.5%), Laptops (42.7%) and Smart Phones (31.7%). Majority of the respondents spoke the regional language *Kannada* (74.4%) and rest of them other languages. Language is an important variable in Facebook as it involves content generation. Though the respondents' mother tongue is not English the students preferred English (40.2%), English and Mother tongue (42.7%) but only mother tongue had very few users (9.1%) showing the preference of students to a language other than their own mother tongue in Facebook in a multilingual society like India. Accessing Facebook showed that majority access Facebook on computer at home (63.4%) followed by mobile (51.8%). The time spent on social media makes interesting revelations. Most of the students have been using Internet for more than 5 years (M=5.34, SD= 2.814) and Facebook for over 2 years (M=2.94, SD= 1.417). A student on an average spends over 2 hrs per day on Internet (M=2.91, SD= 2.579) whereas spends over 1hr per day on Facebook (M=1.8976, SD= 3.29508).

Motivation for Using Facebook

Investigating factors like why college students use Facebook and what motivates them drew interesting responses Studies have revealed that ‘perceived enjoyment, perceived ease of use, perceived usefulness, and attitude are determinants of Facebook use behavior. (Suki, Ramayah, 2012). Cyber space has widened the scope of gaining friendship among young students looking for social-emotional benefits through Facebook. Youngsters perhaps find some internal solace in their association with Facebook as their real life social relationships find an extension. It is all about the amount of freedom that they enjoy in sharing and interacting with

TABLE -2
Why do College Students Use Facebook?

	Description of the Item	Agree		Neither Agree nor Disagree		Disagree	
		f	%	f	%	f	%
1.	Gives greater visibility to friends	103	62.8	49	29.9	12	7.3
2.	Allows me to present image of myself I desire	96	58.6	43	26.2	25	15.2
3.	Makes me look cool	69	42	49	29.9	46	28.1
4.	Entertaining	114	69.6	34	20.7	16	9.7
5.	Become an extension of my personality	68	41.4	48	29.3	48	29.3
6.	Helps me to keep up with my friend circle	132	80.5	22	13.4	10	6.1
7.	Get to know latest updates from friends	133	81.1	19	11.6	12	7.3
8.	Enjoyable	122	74.4	29	17.7	13	8
9.	Because everybody uses Facebook these days	97	59.2	33	20.1	34	20.7
10.	It is fun	103	63.4	40	24.4	20	12.2
11.	Helps to express my individual character	80	48.7	55	33.5	29	17.7
12.	Helps me relax	82	50	43	26.2	39	23.8
13.	I Can keep myself informed about events happening around me	121	73.8	28	17.1	15	9.1
14.	My friends asked me to join	81	49.4	29	17.7	54	32.9
15.	My friends use it, so do I	55	33.5	34	20.7	75	45.8
16.	Update myself about people and places of my interest	93	56.7	45	27.6	26	15.9
17.	To be friends with people who are far away	122	54.2	23	14.0	19	11.6
18.	It is a medium to connect with friends with whom I had lost touch	134	81.7	22	13.4	8	4.9
19.	I get to know what are ongoing events so that I can be part of it	124	75.6	33	20.1	7	4.2
20.	Helps keep up with friends and family members	129	78.6	22	13.4	13	7.9

old and new friends. Overwhelming percentage of respondents felt the motivation to use Facebook is friendship. *Helps me to keep up with my friend circle* (80.5%) *Get to know latest updates from friends* (81.1%), *Helps keep up with friends and family members* (78.6%), *Get information to participate in events* (75.6%), *Informed about events around me* (73.8%), and *great visibility to friends* (62.8%). It is a medium to connect with friends with whom user had lost touch with say an overwhelming percentage of students (81.7%) endorsing the earlier studies that Facebook is usually used by the students to maintain contact with offline friendships rather than to develop new relationships (Ellison et al., 2007; Lampe et al., 2006). Interestingly, people are curious to know more about people whom they know in real life or through other sources in what is known as 'social searching' and 'social browsing' (Ibid). People gain access to family photo albums and day to day events of their Facebook friends satisfying their curiosity about friends. In one platform, a user gains access to all that is happening in friends' lives consequently satisfying the basic human urge to know about other people. Facebook is a kind of social newspaper that informs breaking news about people and every user has a target audience who is active by responding to user's post, upload, comments and other activities.

Chat status shows that students prefer to keep *online for all status* (37.2%) denoting their desire to interact with everybody. Some are cautious and keep online for *only some of their friends* (28%). Gender is an issue while making friends on Facebook with modest group of users (32.3%). Though gender matters in friending or defriending, an overwhelming majority of users do not think so reflecting the change in the stereotypical mindset especially in a conservative society like India. Perhaps, free access to friends irrespective of gender may be one of the motivating factors to access Facebook in many societies bound by tradition and

stringent social norms. It appears that boys and girls feel liberated and is attributed to Facebook.

'Enjoyable', 'it's great fun' and 'it's entertaining' are the responses that have received high response. 'Perceived enjoyment' has been proved to be one of the determinants of Facebook use behavior. (Suki, Ramayah, 2012). *Enjoyable* (74.4%), *Entertaining* (69.6%), *It is Fun* (63.4%), *helps me relax* (50%), and *makes me cool* (42%) responses reflect the sense of belongingness and the delightfulness of owning some private space far from the preying eyes of the family, educational institutions and society determine the students' engagement with social media. Interestingly, very few (3.7%) wants to keep *invisible* status indicating the desire to get noticed and recognized in social media.

Facebook related practices of students reveal that students *often/always* (32.31%) *accept friend requests*. *Chat* (32.92%) is another favourite pastime. The most popular practice is *sending and checking messages* (46.34%) and *commenting/sharing/liking* (41.46%) comes close second. *Sharing links* (28.65%) is preferred as it is easy to do it and it also reflects on their thoughts and ideas. So whoever passes on the links believes that it creates positive vibes / thinking about the sender in the minds of the receivers. More students prefer to upload photos (25.6 %) than video (6.7%). Students still prefer to share the photos than the videos for technical reasons. Playing games (14.63%) and using Facebook applications (15.24%) are least motivating factors among students. Majority of them have not subscribed to apps and games to avoid their Profile becoming public (54.9%).

Facebook and Profile Building

Everybody maintains Facebook profile and build a friend's list. Many students have claimed it to be *an extension of personality* (41.4%), it

allows them to *present an image of what they desire* (43%) and it helps to express their *individual character* (48.7%). The settings are designed to favour profile building. Profile (36%), photo/video albums (43.3%), wall posts (40.9%), Friends' posts on wall (42.1%), status updates (40.9%) and apps activities (37.8%) are kept open to all friends instead of anyone/public as the intention is to reach the known circle of friends. Students work towards shaping their profiles to get noticed and to prove their worth. Most of them have posted their own picture (67.1%) and some have family and friends in Profile Picture (30.5%) but have not faked while a small number of them have left the profile blank (6.7%) and some of them have posted other picture (11%) in the Picture Profile again due to social values, shyness and fear. Do users have two different profiles one in real life and the other in Facebook? Though many claim to edit their pictures to be more presentable (40.9%) by and large they share authentic information (60.4%). According to them there is no difference between their presence in real life or in virtual life (56.1%). The dedication and commitment to friendship platform is so intense that over 74.3% vouch for the Facebook album as a true representative of themselves in real life and share genuine events and happenings of their life without faking (59.1%).

Facebook and Selfhood

Friends in real life have a different meaning than all those who join the friend list once the user approve the 'friends' request'. Relatives, students, mere acquaintances, friend's friends and stranger become 'friends' once approved. The site is so designed that the phrase/labels are imposed on the users complicating the perception of the very concept of friendship. The phrase 'friend' in Facebook is born out of labeling that has been instrumental in successful marketing of virtual groups. Many of the so called friends may not meet each other in their lifetime but remain Facebook

Friends forever. So, how does user present self to the intended friends on Facebook? How do we want to be perceived by the virtual friends as we do not have such expectations from friends in real life? Facebook is a platform for image building or image makeover and every user is conscious of his/her image and works towards shaping one. One category of Users exhibits self by being true to themselves.

Comparatively, over 54.9% respondents said that they rarely initiate friendship with others in real life outside Facebook in contrast to 37.3% who do. This is corroborated by the users who rarely accept friend requests from unknown persons (48.8%) indicating familiarly in real life as one of the determinants for accepting friend requests in virtual groups. Users normally do not search (63.4%) for information about people whom they have met in person. Over 72.5% say that they express true opinion on issues in their comments and the posts are all true (65.9%). A moderate percentage of respondents feel that their Facebook profile not only tells who they are (45.8%) but also reflects their personality (46.3%). The second category of users makes efforts to portray a self that is different from the real life. Many present themselves as *simple persons* (51.2%), *positive thinking person* (41.4%), *portray in presentable manner* (51.8%) and *portray oneself different from others* (35.3%), *fake about one's personality, past life and self confidence* (22%) and those who *don't cheat in real life do fake information in order to be accepted by the virtual groups* (17.1%). Facebook do not reflect their emotional self (52.5%) is a vital finding illustrating the gap between mind boggling physical features of the site and the minds behind the content creators. Undoubtedly Facebook is an emotional succor to many users but is it a hostage to technology?

Facebook and Privacy

Users do not have control over privacy settings as technology is rapidly changing. Every Facebook user by default has access to the Facebook page content. Wide coverage of cyber crimes seems to have some impact on the users. Respondents alter privacy settings according to their needs. Friendship is one determinant factor that runs through all major activities including privacy settings. A small percentage admit that they are not bothered about privacy on Facebook (26.8%) but the rest is concerned about privacy and take precautions that speaks volumes about their commitment to the medium. They not only want to safeguard the interests of the medium but also desire to protect their private space in a public medium. Students search for any unwanted content and report or delete it (67.7%), some of them have never uploaded their Profile Picture to protect their privacy (30.5%) and majority of them have put in limited information about themselves (73.8%). A high degree of commitment is seen in the students' profile is vouched by the fact of over 89% of them having not faked their date of birth and real name (75.6%) but few of them have indeed faked information in Profile to protect privacy (20.1%). But the moot question is whether Facebook is a public space or private space? Students believe nothing is really private once user shares personal details on Facebook (45.1%). User's pictures (64.6%) that are post are perceived to reflect their strong characteristics related to personality and skills. Facebook users perceive family and friends positively as those who understand and reciprocate their feelings (64%), those who listen to their ideas and suggestions (67.6%) and enjoy a circle of friends who seek their opinions and advice (62.2%). Users who are not insecure enjoy good circle of friends and family in real life do not fake or dishonest with 'friends' in virtual life and portray self that is true to themselves. They do not pretend to be somebody as there is no need for them to do so.

Communication Skills of Facebook Users

Facebook is all about interaction with social groups and sharing content. The site generates voluminous content by the users. The text, photos, videos and comments test the communication skills of the users. The study shows that majority of the users have not written (43.3%) anything about themselves. The online lingo consisting of couple of sentences (27.4%), couple of words (19.5%), couple of short paragraphs (8.5%) and long paragraphs (1.2%) denote the poor efforts to generate content on their own. The young students who enjoy visual content extensively indulge in posting photos and links as those activities require little physical and mental effort. Users are more interested in apparent exchange and sharing of information of themselves or of others with ease rather than walking that extra mile to collect information for their long write ups. Further, influenced by the extensive usage of WhatsApp and SMSs the new generation seems to have little interest in reading or writing lengthy write ups. This however cannot be perceived as poor communication skills.

TABLE 3

Income and Use of Facebook

Dependent Variable	Independent Variable	df	Significance	Level of Sig.
Sometimes I edit my pictures to present myself in different ways	Income	34	.085	10%
I usually do not reveal right information to people on Facebook whom I know only through Facebook	Income	34	.088	10%
At times, I fake about my personality, past life and self confidence on Facebook	Income	34	.041	5%
I try to portray myself in a presentable manner in Facebook	Income	34	.084	10%
It's fun	Income	34	.044	5%
My friends asked me to join it	Income	34	.020	5%
Average time spent on Internet every day	Income	204	.000	1%
Duration of using Internet per day	Income	255	.072	10%
Length of using Facebook	Income	170	.000	1%
Average time spent on Facebook every day	Income	238	.000	1%

Income and Gender: Use of Facebook

Income is significant in defining how users present themselves on Facebook. Faking information is dependent on income among students. Fun is the motivating factor and is significantly related to income of the user. Length of time using Internet and average time spent on it every day is dependent on income. The same is true with the length of using Facebook and time spent on it everyday. Gender is significant among users who fake information about themselves to protect privacy. Gender and privacy find correlated with boys and girls expressing different behavior and attitude in matters like privacy. Games apps is gender specific and boys obviously show great inclination towards games apps than girls. Gender is a variable in defining the personality and skills of the Facebook users. Girls are more forthcoming expressing their relationship status than boys. Gender is a determinant in revealing his/her real name in profile. Females seem to be mischievous with them posting more sarcastic or funny pictures on Facebook. How users want to portray themselves on Facebook is also gender specific. Both boys and girls exhibit different behavior in their pretences.

CONCLUSION

The study gives valuable insights into uses of Facebook, where the dominant factor is establishing social communication. The study has investigated what people want and what they intend to do with Facebook and its content. The study shows that ultimately users follow their interests, needs, passion, and curiosity to choose and create content accordingly with a truly democratic medium like Facebook that has liberated students from the stereotypical behaviour. Statistically, the causal relationships have been proved in this study illustrating media audience is not only active but reflective too. Instead of getting manipulated by the media, the user here customizes the media to cater to his needs and interests. It states the

TABLE 4

Gender and Use of Facebook

Dependent Variable	Independent Variable	df	Significance	Level of Sig.
Do not subscribe to applications and games so that my profile doesn't become public	Gender	1	.042	5%
I have given fake information about myself in my profile to protect my privacy	Gender	1	.049	5%
Users' Facebook pictures present your strong characteristics/points related to personality and skills?	Gender	1	.015	5%
Currently, what is your 'Relationship status' in your Facebook profile?	Gender	6	.023	5%
How have you described yourself in 'About you' section of your Facebook profile?	Gender	4	.023	5%
What kind of profile name do you have on Facebook?	Gender	2	.047	5%
I generally put funny or sarcastic pictures on my Facebook profile	Gender	2	.003	1%
I pretend to be more global on Facebook	Gender	2	.009	1%
At times, I fake about my personality, past life and self confidence on Facebook	Gender	2	.008	1%
I try to portray myself as a positive thinking person on Facebook	Gender	2	.016	5%
Facebook has become an extension of myself	Gender	2	.056	10%
It makes me look cool	Gender	2	.014	5%
Status Update	Gender	2	.042	5%
I try to portray myself different from others in Facebook	Gender	4	.003	1%
Length of time using Facebook	Gender	10	.088	10%

audience is active. The study endorses the thesis (Katz, Blumler, Gurevitch, Haas,) on Uses and Gratifications theory, that ‘ a media user seeks out a media source that best fulfils the needs of the user besides assuming that the user has alternate devices to satisfy their need’ (1973). The theorists believed that ‘there is not merely one way that the people use media. Instead, there are as many reasons for using the media, as there are media users’ (Ibid). The study endorses the premise that Facebook is a vital reference point in the life of the students by constructing identity, profile building and realising selfhood.

TABLE 5

Building Friendship in Facebook

	Description of the Item	Often		Rarely		Never	
		f	%	f	%	f	%
1.	How often do you initiate friendship with others in your real life outside Facebook?	61	37.2	90	54.9	13	7.9
2.	Do you accept friend requests from unknown persons?	12	7.3	80	48.8	72	43.9
3.	Do you search for people on Facebook whom you have met in person?	36	22.0	104	63.4	24	14.6
4.	When using the INTERNET, are you usually logged on to FACEBOOK all the time	46	28.0	106	64.6	12	7.3

TABLE 6

Why do College Students Use Facebook?

	Description of the Item	Agree		Neither Agree nor Disagree		Disagree	
		f	%	f	%	f	%
1.	Gives greater visibility to friends	103	62.8	49	29.9	12	7.3
2.	Allows me to present image of myself I desire	96	58.6	43	26.2	25	15.2
3.	Makes me look cool	69	42	49	29.9	46	28.1
4.	Entertaining	114	69.6	34	20.7	16	9.7
5.	Become an extension of my personality	68	41.4	48	29.3	48	29.3
6.	Helps me to keep up with my friend circle	132	80.5	22	13.4	10	6.1
7.	Get to know latest updates from friends	133	81.1	19	11.6	12	7.3
8.	Enjoyable	122	74.4	29	17.7	13	8
9.	Because everybody uses Facebook these days	97	59.2	33	20.1	34	20.7
10.	It is fun	103	63.4	40	24.4	20	12.2
11.	Helps to express my individual character	80	48.7	55	33.5	29	17.7
12.	Helps me relax	82	50	43	26.2	39	23.8
13.	I Can keep myself informed about events happening around me	121	73.8	28	17.1	15	9.1
14.	My friends asked me to join	81	49.4	29	17.7	54	32.9
15.	My friends use it, so do I	55	33.5	34	20.7	75	45.8
16.	Update myself about people and places of my interest	93	56.7	45	27.6	26	15.9
17.	To be friends with people who are far away	122	54.2	23	14.0	19	11.6
18.	It is a medium to connect with friends with whom I had lost touch	134	81.7	22	13.4	8	4.9
19.	I get to know what are ongoing events so that I can be part of it	124	75.6	33	20.1	7	4.2
20.	Helps keep up with friends and family members	129	78.6	22	13.4	13	7.9

TABLE 7
Facebook and Privacy

	Description of the Item	Yes		No		Don't Know	
		f	%	f	%	f	%
1.	While making friends on Facebook, does the gender of the person matter to you?	53	32.3	111	67.7		
2.	Have you ever read Facebook's Privacy Policy in full?	57	34.8	82	50	25	15.2
3.	Does Facebook's privacy policy allow Facebook to disclose information about you to third parties?	51	31.1	48	29.3	65	39.6
4.	Does Facebook's privacy policy allow you to have more than one Facebook account/profile?	52	31.7	45	27.4	67	40.9
5.	Does Facebook's privacy policy allow you to tag other users without their permission?	56	34.1	52	31.7	56	34.1
6.	Does Facebook's privacy policy allow you to create an account for anyone other than yourself?	54	32.9	49	29.9	61	37.2
7.	I do not subscribe to applications and games so that my profile doesn't become public	90	54.9	74	45.1	-	-
8.	I search for any unwanted content in my account and report or delete it	111	67.7	53	32.3	-	-
9.	I have not uploaded my 'Profile Picture' to protect my privacy	50	30.5	114	69.5	-	-
10.	I have given fake information about myself in my profile to protect my privacy	33	20.1	131	79.9	-	-
11.	I have put in limited information about myself on Facebook	121	73.8	43	26.2	-	-
12.	Do 'YOUR' pictures on Facebook present your strong characteristics/points related to your personality and skills?	106	64.6	58	35.4	-	-
13.	Have you mentioned your real date of birth on Facebook?	146	89	18	11	-	-

TABLE 8
Use of Privacy Settings on Facebook by the College Students

	Description of the Item	All friends		Specific people/ friend list		Friend's friends		Anyone/ Public		Only me	
		f	%	f	%	f	%	f	%	f	%
		1.	Photo/Video albums	71	43.3	25	15.2	38	23.2	27	16.5
2.	Profile	59	36	25	15.2	29	17.7	44	26.8	7	4.3
3.	Wall posts	67	40.9	24	14.6	29	17.7	37	22.6	7	4.3
4.	Status updates	67	40.9	25	15.2	36	22	29	17.7	7	4.4
5.	Apps activity	62	37.8	20	12.2	21	12.8	34	20.7	27	16.5
6.	Friend's posts on your wall	69	42.1	28	17.1	33	20.1	27	16.5	7	4.4

TABLE 9
Attitude of College Students towards Privacy

	Description of the Item	Agree		Neither Agree nor Disagree		Disagree	
		f	%	f	%	f	%
1.	I am not bothered about privacy on Facebook	44	26.8	44	26.8	76	46.4
2.	I believe nothing is really private once you enter your personal details on Facebook	74	45.1	43	26.2	47	28.6
3.	I believe that Facebook's policy of sharing information about its users with third parties	51	31.1	53	32.3	60	36.6

TABLE 10

Communicating with Others in Real Life & Outside Facebook

	Description of the Item	Agree		Neither Agree nor Disagree		Disagree	
		f	%	f	%	f	%
1.	I am afraid to speak up in conversations	54	32.9	35	21.3	75	45.7
2.	I talk less because I am shy	53	32.3	38	23.2	73	44.6
3.	I talk a lot because I am not shy	57	34.7	51	31.3	56	34.2
4.	I like to get involved in group discussions	89	54.3	48	29.3	27	16.5
5.	I feel nervous when I have to speak to others	39	23.8	41	25	84	51.2
6.	I have no fears about expressing myself in a group	88	53.7	42	25.6	34	20.8
7.	I am afraid to express myself in a group	41	25	42	25.6	81	49.4
8.	I avoid group discussions	44	26.8	39	23.8	81	49.4
9.	During a conversation, I prefer to talk rather than listen	45	27.5	73	44.5	46	28.1
10.	I find it easy to make conversation with strangers	49	32.3	55	33.5	56	34.1
11.	I do not think my friends are honest in their communication with me	54	32.9	59	36	51	31.1
12.	My friends and family do not listen to my ideas and suggestions	30	18.3	48	29.3	86	52.5
13.	I think my friends are truthful with me	80	48.7	59	36	25	15.2
14.	I do not ask for advice from family or friends when I make decisions	42	25.6	41	25	81	49.4
15.	I believe my friends and family understand my feelings	105	64	45	27.4	14	8.5
16.	My family does not enjoy discussing my interests and activities with me	37	22.6	35	21.3	92	56.1
17.	My friends and family listen to my ideas and suggestions	111	67.6	45	27.4	8	2.9
18.	My friends seek my opinions and advice	102	62.2	52	31.7	10	6.1
19.	Other people are friendly only because they want something out of me	62	37.8	60	36.6	42	25.6
20.	Talking to other people is just a waste of time	41	25	44	26.8	79	48.2

TABLE 11

Behavior on Facebook towards Identity Building

	Description of the Item	Agree		Neither Agree nor Disagree		Disagree	
		f	%	f	%	f	%
1.	I generally put funny or sarcastic pictures on my Facebook profile	53	32.3	44	26.8	67	40.8
2.	Sometimes I edit my pictures to present myself in different ways	67	40.9	39	23.8	58	35.3
3.	I pretend to be more global on Facebook	48	29.3	53	32.3	63	38.4
4.	I usually do not reveal right information to people on Facebook whom I know only through Facebook	60	36.6	58	35.4	46	28.1
5.	Generally, I avoid uploading my profile picture on Facebook in which I do not look good.	100	61.0	39	23.8	25	15.2
6.	My profile and other information on Facebook is authentic	99	60.4	44	26.8	21	12.8
7.	There is no difference between me in real space and me in virtual space	92	56.1	40	24.4	32	19.5
8.	Facebook reflects my external 'me'	77	46.9	43	26.2	44	26.8
9.	I share genuine events and happenings of my life on Facebook	97	59.1	43	26.2	24	14.6
10.	All my pictures in my Facebook album represent my true appearance	122	74.3	30	18.3	12	7.3

TABLE 12
Behaviour on Facebook Revealing their Self

	Description of the Item	Agree		Neither Agree nor Disagree		Disagree	
		f	%	f	%	f	%
1.	Facebook does not reflect my emotional self	86	52.4	45	27.4	33	20.1
2.	At times, I fake about my personality, past life and self confidence on Facebook	36	22	37	22.6	91	55.5
3.	Some of my personal information on Facebook is false	33	20.2	29	17.7	102	62.2
4.	Though I don't cheat but, I do fake some information on Facebook	28	17.1	32	19.5	104	63.4
5.	I try to portray myself as a positive thinking person on Facebook	68	41.4	57	34.8	39	23.8
6.	I try to present myself as a simple person on Facebook	84	51.2	46	28	34	20.7
7.	Facebook has become an extension of myself	53	32.3	52	31.7	59	36
8.	Anyone viewing my Facebook profile would get to know who actually I am	75	45.8	53	32.3	36	22
9.	My Facebook posts that are related to my real life, are all true	108	65.9	35	21.3	21	12.8
10.	My Facebook profile reflects my personality	76	46.3	59	36	29	17.7
11.	While commenting on friends' posts and pictures on Facebook, I write what I actually feel at that time	119	72.5	32	19.5	13	7.9
12.	I try to portray myself in a presentable manner in Facebook	85	51.8	55	33.5	54	14.6
13.	I try to portray myself different from others in Facebook	58	35.3	54	32.9	52	31.7

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An Analysis of International Labour Migration with Gravity Model between India and other Asian Countries

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ABSTRACT

Migration has always been a significant phenomenon across South Asia. The historic ties that link the various populations across the region, accentuated by the modern day dynamics of migration has given rise to multiple forms of population movement ranging from voluntary to involuntary, internal to external, long-term to temporary. This paper examines the flow of international labour migration to Asian countries and this study is based on secondary data. Secondary data has been collected from different sources for selected years 1990, 2000, 2010 and 2103. GDP per capita (US\$), population data taken from the World Bank's World Development Indicators (WDI). The UNCTAD's dataset provides the nominal exchange rates in US\$ of source and destination countries. Distance between capital cities (in km) data collected from the CEPII's database. The data on religion was obtained from the World Religion Map. Official language data of the sample countries were collected from the Central Intelligence Agency's (CIA) the World Fact Book. The study found that over the years, emigration from India to other Asian countries is on the increase and immigration to India is decreasing. Another finding of the study is there is gender discriminatory trend in the labour migration among Asian countries. There are many reasons for this trend and some are; political instability in some of the neighbouring countries, religion

discrimination in receiving countries and migration policies of the receiving countries. Gender discriminatory trend in the immigration to India from Asian countries is much less compared to emigration from India.

Many push and pull factors are playing a significant role in emigration and immigration. This study applies the gravity model as the empirical tool to ascertain the determinants of emigration and immigration decision from and to India. Both emigration and immigration model includes nine variables. In this gravity model for immigration to India, except GDP of the destination country, remaining variables like population of the destination and origin country, exchange rate of origin and destination countries, religion, block and distance are significant. IN the Gravity model for emigration from India to other Asian countries, population of the destination countries, GDP per capita of the destination countries, exchange rate of destination countries, distance between origin and destination countries, religion of the destination countries and block are significant.. These are some of the determinants of the international migration. Remittance is one of the important sources for many Asian countries including India which receives 4 % of GDP per capita from the international remittance. Migration is very useful for resource mobilization to developing and under developed countries. Another advantage of migration is reducing unemployment rate, exchange of skills etc. Migration is one of the powerful tools in the development process.

Key words: *Immigration, emigration, migrant.*

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INTRODUCTION

In recent years, international migration has been receiving major attention of policy makers both at national and international levels. Responding to the rapidly transforming globalizing world, the nature, type, volume and direction of flows of international migrants have also marked significant changes. All these have thrown new challenges to the stakeholders, migrants themselves, the source, destination and transit communities and countries; and the civil society institutions including the trade unions.

It is true that globalization process has both been a cause and an effect of exponential growth in productive capacities and led to a more integrated and interdependent world. It is also equally true that the process has led to uneven growth and distribution. While the globalization process has facilitated movements of capital, goods, services and information in a significant way, movement of labour, a factor over which many developing countries of the South enjoy comparative advantage, continues to remain highly restricted. There has also been a growing appreciation of economic, social and cultural impacts of international migration. While migration has increasingly become a livelihood option for many, there has also been an increased recognition that appropriate policy measures are to be in place to reduce the negative consequences and increase the gains from migration.

Migration has always been a significant phenomenon across South Asia. The historic ties that link the various populations across the region, accentuated by the modern day dynamics of migration has given

rise to multiple forms of population movement ranging from voluntary to involuntary, internal to external, long-term to temporary. The varied nature of migration is also marked by movement within the national boundaries, within the region and across the region to other parts of the world. In today's globalized world, shifting trends and patterns have made migration management in South Asia a complex and difficult endeavor.

South Asia features prominently in the dynamics of migration in Asia. During the past half a century, after the emergence of independent States in South Asia in 1947, about 30 million people have moved from one part to another to either avoid persecution or meet basic needs. Asia's Migrant stock stands at 49.7 million migrants, which is the second highest in the world after Europe. Out of the top 10 countries of emigration three are from South Asia; Afghanistan, Bangladesh (4.1 million each) and Sri Lanka (1.5 million). The migrants from Bangladesh and Sri Lanka are mainly labour migrants while Afghanistan's outflow has in a large measure been due to the war. India and Pakistan are the sixth and tenth top countries hosting the largest number of migrants. It could be said that migration to India is particularly for economic reasons while migration to Pakistan is primarily because of the displacement from Afghanistan. This snapshot analysis highlights the complex dynamics and varied nature of migration in the region.

Research gap

After reviewing the literature of Asian labour migration with reference to India, studies are done on the different dimensions of labour migration in Asian countries. Some of the studies are concentrated on Asian labour migration to middle east countries and gulf countries (Fred Arnold et al 1984, rashid Amjad 1990), some on labour migration within Asia, internal labour migration between different Asian countries, skilled

migration from India to European countries (Divya Satija and Arpitha Mukarje 2013), Indian nurses migration from Kerala to middle east and different countries (Marie Percot, 2007), Labor Migration in Asia (Philip L. Martin 1991), Employment, Wages and Working Conditions of Indian migrants workers in UAE (K.C.Zachariah et al. 2004), globalization effect in Asian countries international labour migration, etc,. Hardly any study is done exclusively on India’s emigration and immigration to other Asian countries.

Therefore this study concentrates on Indian emigration and immigration to Asian and other countries.

Objectives of the study

To analyse the international labour migration trends between India and other Asian countries

METHODOLOGY

The study is based on secondary data, and the secondary data has been collected from World Bank databank, UN population division (economic and social affairs), International Monetary Fund, journals, etc.

Panel data of emigration from India to Asian countries and immigration to India from Asian countries, from the selected year 1990, 2000, 2010 and 2013 has been considered. Data was taken from World Bank’s World Development Indicators (WDI) like GDP per capita population. The UNCTAD’s dataset provides the nominal exchange rates in US\$ of source and destination countries. Distance between capital cities (in km) was collected from the CEPII’s database. The data on religion was obtained from the World Religion Map.

DATA ANALYSIS

TABLE-1

Male and Female Emigration to Asian Countries from India 1990 -2010

Year	Total	Male	% of male emigration	Female	%of female emigration
1990	5471415	32,71,374	59.79	22,00,195	40.21
2000	5836080	35,93,289	61.57	22,42,791	38.43
2010	9376305	63,18,585	67.39	30,57,720	32.61
2013	9886328	67,11,246	67.88	31,75,082	32.12

Source: UN population division, department of economic and social affairs

Above table shows the total, male and female emigration to Asian countries form India in the year of 1990 -2010. Emigration from India to other Asian countries has shown an increasing trend from one year to another. Emigration of male is 32,71,374 in 1990 , and has increased to 63,18,585 in 2010 and to 67,11,246 in 2013. Female emigration is 22, 00,195 in 1990, and it has increases to 30, 42,791, in 2010 and to 31, 75,082 in 2013. Both male and female emigration has increased over year. There is a visible gender discriminatory trend in emigration to other Asian countries from India. Compared to male, female emigration is less. In 1990, female emigration was 40.21% percent, but reduced to 38.43% in 2000. It decreases to 32.12 % in 2013. Emigration of female to other Asian countries is increasing in numbers, but decreasing in percentage compared to male emigration. Some of the reasons for the decrease in female emigration to other countries like Afghanistan, Iran, Gaza, etc. are war, religion, political uncertainties and cultural differences. Restrictive migration polices for women are some of the hurdles decreasing women labour migration to Asian countries.

TABLE-2

Immigration of Male And Female to India from Asian Countries
1990, 2000, 2010 And 2013

Year	Total	Male	% of male emigration	Female	%of female emigration
1990	73,09,485	38,25,697	52.34	34,83,788	47.66
2000	62,62,338	32,32,242	51.61	30,30,096	48.39
2010	53,09,734	27,27,687	51.37	25,82,047	48.63
2013	52,14,474	26,77,231	51.34	25,37,243	48.66

Source: UN population division, department of economic and social affairs.

Above table shows the immigration of labour from Asian countries to India in the year 1990, 2000, 2010 and 2013. Immigration from Asia to India is showing a trend., In 1990 total immigration was 73.09,485 and it declined to 62,62,338 in 2000, again it reduced to 52,14,447 in 2013. Male Immigration to India was 38, 25,697 in 1990, it decreased to 32,32,242 in 2000 and 26,77,231 in 2013. Female immigration to India from other Asian countries has shown a positive trend over the years .It was 34,83,788 in 1990 and decreases to 25,37,243 in 2013. Ratio of male was 52.34 in 1990, and decreased to 51.34 in 2013. And female percentage of immigration to India from other Asian countries was 47.66% in 1990 and slightly increased to 48.66 % in 2013. One of the reasons for decrease in immigration to India is the huge labour force in India. India has the second highest population in the world, thus discouraging Asian immigrants. Other reasons are restrictive migration policy with strict border security preventing illegal migrants, visa polices and unemployment rate. Good employment opportunities in Middle East attract the Asian migrants and most of the Asian countries have larger per capita income than India.

An analysis of Determinants of emigration from India and immigration to India from other Asian countries with gravity model

This study applies the gravity model as the empirical tool to ascertain the determinants of emigration and immigration decision. The gravity model has been well-proved as a robust ex-post methodology to model international trade and investment. Along with numerous applications of the gravity model in empirical studies of international economics, authors including Anderson (1979); Bergstrand (1985, 1989, 1990); Deardorff (1998); Evenett and Keller (2002); Feenstra et al. (2001); and Helpman (1987) provided theoretical justification for the model. However, migration studies relying on the gravity model are fewer than those in the fields of trade and investment. Among others, Emmanuel et al. (2009); Karemera et al. (2000); and Lewer and Berg (2008) applied this model to analyse various facets of international labor migration. Some of these studies presented empirical Estimates of factors influencing international migration while others examined the linkage between migration and development. Using different empirical settings, determinants of international migration has also been studied by Clark et al. (2007), Mayda (2007), and Pedersen (2004). In particular, Karemera et al. (2000) applied a modified gravity model by incorporating political variables to investigate the factors influencing migration flows to North America. This study reported that demographic condition of the source country, civil and political rights of people at home, and income of the destination country were important determinants of migration flows to Canada and the USA. In the context of OECD countries, Lewer and Berg (2008) developed a gravity model of immigration and justified that immigration responds in a similar fashion of gravitational forces and Distance.

Economic theory suggests that migration is determined by a set of

push and pull factors that are related to the source and destination country, respectively. The key push factor is income or wage difference between the sending and receiving country. Borjas (1987) found that migration flows was negatively related to origin-country income per capita. A study by Karemera et al. (2000) showed that source country income was negatively related to US migration but not in the case of migration to Canada. Another essential gravity factor for immigration is the population or size of labor market in the home and host country. Furthermore, international labor flows are restrained by migration cost that can be captured by geographic distance between source and destination country. Thus, the basic gravity model of migration is analogous to the specification of Tinbergen’s gravity model of trade (Tinbergen, 1962).

Equation 1 sets the basic gravity model with panel data.

$$1. M_{ijt} = \beta_0 + \beta_1 (S_{ijt}) + \beta_2 (N_{it} N_{jt}) + \beta_3 dist_{ij} + \epsilon_{ijt}$$

where, M_{ijt} represents migration from country i to country j at time t ; S_{ijt} indicates GDP per capita of destination country relative to source country; $N_i (N_j)$ stands for population of the source country i (destination country j); $dist_{ij}$ is the distance (in km) between source and destination country; and ϵ_{ijt} is the normally distributed error term. The primary economic consideration for migration decision is income differences between home and host country. According to the labor market theory of immigration, a higher per capita income at home reduces propensity to emigrate while a higher per capita income of recipient country induces immigration. Under this consideration, β_1 should have a positive effect on emigration decision. Population is the measure of labour market size in a country. The larger the size of labour pools in the source country, the higher the rate of emigration. Lewer and Berg (2008) argued that the larger the population in the destination

country, the larger the labour market for immigrants. Hence, β_2 is expected to have a positive sign. Geographic distance between host and home country is inversely related to emigration decision and therefore, β_3 should have a negative sign.

The benchmark gravity equation 1 could be extended to include some historical and cultural factors that either ‘facilitate’ or ‘inhibit’ emigration. In addition to the variables found in previous studies on international migration, the present research incorporates two new factors: bilateral real exchange rates and commonality in religion between source and destination country. Thus, this study applies the specification 2 of the gravity model to ascertain the determinants of emigration from Bangladesh.

$$2. IM_{ijt} = \beta_0 + \beta_1 S_{ijt} + \beta_2 N_{it} N_{jt} + \beta_3 dist_{ij} + \beta_4 Ex_{ijt} + \beta_5 rel_{ijt} + \beta_6 block_{jt} + \beta_{ijt}$$

$$3. EM_{ijt} = \beta_0 + \beta_1 S_{ijt} + \beta_2 N_{it} N_{jt} + \beta_3 dist_{ij} + \beta_4 Ex_{ijt} + \beta_5 rel_{ijt} + \beta_6 block_{jt} + \epsilon_{ijt}$$

Equation 2 and 3 adds four additional variables to equation 1. Ex_{ijt} indicates real exchange Rates between source and destination countries at time t which were calculated following Montenegro and Soloaga (2006). Bilateral exchange rates indicate the value of one unit of the source country’s currency against one unit of a destination country’s currency. A rise (fall) in the bilateral exchange rate indicates depreciation (appreciation) of the source Country’s currency. Depreciation of domestic currency increases emigrants’ monetary outlay due to increase in job contract fee, transportation cost, and other agency fees. As a consequence of higher initial investment requirement, currency depreciation might negatively affect propensity to emigrate. Secondly, depreciation of local currency results in higher streams of income from remittances that can cause higher rate of emigration. Thus, the sign of

β_5 can be either positive or negative. The variable relgij is a dummy variable. In this case, the dummy variable takes the value 0 for Muslim, 1 for Christian, 2 for Buddhist, 3 otherwise. Although commonality in religion is a key component of cultural similarity between two countries, no previous study has examined its possible effect on immigration. Since India is predominantly a secular country, the usual prediction is that its people would be motivated to immigrate to other same religion countries which they belong to. In order to explore the role of history on migration. It is expected to β_6 is negative influence on emigration and immigration, block is the dummy variable, countries belongs to SAARC take value 0, otherwise 1 for all other Asian countries.

Data and Empirical Results

For purpose of analysis, we selected the countries on the basis of amount of migration to India and migration from India to the Asian countries , 35 emigration countries consider to analyze the determinants of emigration from India and 22 countries consider for analyze the determinants of immigration to India. Find out the natural log value to all collected datasets. The study first estimated the panel model with time gap by using fixed effect and random effect methodology, but the results of these models are not robust as most variables are insignificant and do not have expected signs. One of the reasons for this is presence of hetroskedasticity and autocorrelation by using feasible generalized least square (FGLS) methodology for this STATA 10 version is used.

Immigration results

The influence of the population in origin country is positive influence with the co efficient value of .548, which implies that if population in the origin country India is increased by 1000, then .54% out of this is the

Table-3
Co efficient Analysis

Variables	Co efficient	Std Error	Z	P> z
Population origin	.5487674	.0894536	6.13	0.000
Population destination	-22.85221	12.41479	-1.84	0.066
GDP origin	.4621071	.115811	3.99	0.000
GDP destination	2.036093	1.481291	1.37	0.169
Exchange rate origin	-.1348819	.0421533	-3.20	0.001
Exchange rate destination	4.835075	2.215248	2.18	0.029
Distance	-.0015111	.000158	-9.56	0.000
Religion	.5350079	.1632113	3.28	0.001
Block	-1.303559	.3405137	-3.83	0.000
cons	291.6985	154.4882	1.89	0.059

No of observations: 88, cross sections: 22, periods: 4
Wald chi square = 1601.88
Probability =0.000

contribution of immigration, In the same way if the destination countries experience an increase in its population by 1000 then it can be interpreted that immigration to India has declined by 22.85. Population at destination is the negative influence with the co efficient value of the -22.85, which implies that if population increase by one thousand in destination countries immigration to India has expected to decrease by -22.85% and these values are significant at 10% level. The larger the size of labor pool in the source country, the higher the rate of emigration. Lewer and Berg (2008) argued that the larger the population in the destination country, the larger the labor market for immigrants.

The GDP of origin country is having positive influence with the co efficient value of .46, which implies that if GDP per capita increases by

one \$US million in origin countries immigration to India is expected to increase by .46% level and this value is statistically significant at 1% level .GDP of destination country is positive influence with the co efficient value of 2.03, which implies that if GDP of destination country increases by one \$US millions destination countries immigration to India increase by 2.03% and this is statistically significant at 10% level also.

The exchange rate of origin countries is having negative influence with co efficient value of -.34 , which implies that if the exchange rate of the origin country increase one \$US in origin country immigration to India was expected to decrease by -.34% level and this is statistically significant at 5% level . Exchange rate of destination countries is having positive influence with the effect of 4.8, which implies that one \$ US increase in the exchange rate of destination country immigration to India decreases by 4.8% and it is statistically significant at 5% level.

The influence of the Distance between origin and destination countries is having negative influence with the co efficient value of -.005, which implies that if distance increases by one kilometer between origin to destination country, immigration to India is expected to decrease -.005 % and this value is statistically significant at 1% level. Geographic distance between host and home country is inversely related to emigration decision and therefore, should have a negative sign.

Religion is one of the most influencing factors on immigration. Influence of religion has positive influence with the co efficient value of .53, which implies that if religion of the destination is same with the origin country, religion or migrant’s religion is expected to increase immigration to India by 53%. This value is statistically significant at 1% level. The influence of language in origin country also has positive influence with the co efficient value of 1.34, which implies that if language is same in destination country, it increases immigration by 1.34 % and it is statistically significant

at 5% level. Migrants usually prefer countries with the language they know for better communication. The block having negative influence with the co efficient value of -1.3, implies that blocks different from the origin to destination countries are expected to decrease the emigration from India at -1.3% . And this result is statistically significant at 1% level.

Determinants of Emigration

TABLE-4
Determinants of Emigration

Variables	Co efficient	Std Error	Z	P> z
Population origin	-8.560692	19.98107	-0.43	0.668
Population destination	.4306725	.0642873	6.70	0.000
GDP origin	.6074611	2.403996	0.25	0.801
GDP destination	1.131729	.0869262	13.02	0.000
Exchange rate origin	1.651082	3.578599	0.46	0.645
Exchange rate destination	-.2936923	.0389862	-7.53	0.000
Distance	-.0011966	.000116	-10.32	0.000
Religion	.3648542	.1731766	2.11	0.035
Block	-1.80134	.3821211	-4.71	0.000
cons	111.2292	248.7062	0.45	0.655

No of observations: 228, cross sections: 57, periods: 4
Wald chi square = 439.44
Probability = 0.0000

According to neo-classical economic theory, international labour flows exist as a consequence of wage differences between countries. In the case of two countries only, the wage difference between the labour-

importing and the labour-exporting country has a negative effect on net international (labour) migration in the latter country and a positive effect on net international migration in the former country. However, with multiple countries, a country's net migration figure is the net result of the aggregated migration flows between this particular country and all other countries.

The influence of origin country exchange rate has positive effect with the coefficient value of .86, which implies that if one \$US increases in the exchange rate, emigration from India is expected to increase .86%. and it is statistically significant at 10 % level also. The influence of destination country exchange rate is having negative effect with the coefficient value of -.29, which implies that if one \$ US increases in the exchange rate of destination countries it is expected to decrease emigration from India by -.29% And this results is also statistically significant at 1%.

CONCLUSION

Migration in Asian region is one of the leading issues in Asian region as well as international level. This paper concentrates on international labour migration from India to Asian countries and migration to India from the Asian countries and this study found that immigration to India is decreasing year by year, while at the the same time emigration from India to other Asian countries is increasing. There is a Gender disparity in emigration from India to Asian countries, but very little gender disparity is found in immigration from Asian countries to India. Population, GDP per capita, exchange rate of origin and destination countries and distance, religion, blocks are determinant factors of international labour migration, all these factors are significantly contributing to the international labour migration in India.

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Putting People First: Inclusive Health Care through Primary Health Centers

NANJUNDA

ABSTRACT

In India, Primary Health Centers (PHCs) are the keystone of healthcare. PHCs play a vital role as the first level of contact and a connection between individuals and the health system, bringing healthcare delivery as close as possible to where people live and work. Primary health care services are incomplete if they lack appropriate and efficient referral systems to secondary and tertiary care hospitals. Also PHCs have to provide precautionary, remedial and rehabilitative care. Even though there are numerous reasons for a meager performance of PHCs, almost all of them stem from weak stewardship of the sector, which results in a deprived inducement structure. Primary healthcare being crucial, it is based on sensible, systematically sound and culturally appropriate methods. Information about it is made available to individuals in the community through their full involvement and at a cost the community and country can afford to sustain. This helps self-reliance and self-determination. This paper is based on the author's experience in various health care issues and provides a solid platform for discussion about the role of PHC in inclusive health care for the marginalized section of society.

Key words: Health, PHC, Inclusion

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BACKGROUND

Health is one of the vital indicators reflecting the quality of human life and it is a well-established fact that there is a positive correlation between health of the population and the economic development of the country. Alma Ata Declaration of 1978 by WHO adopted Primary Health Care (PHC) Programme as a strategy for 'Health for All'. Primary health care forms an integral part of the country's health care system and is the driving force behind determining policies. Primary health care can be defined as: socially appropriate, universally accessible, scientifically sound first level care provided by a suitably trained workforce supported by integrated referral systems and in a way that gives priority to those most need, maximizes community and individual self-reliance and participation and involves collaboration with other sectors. It includes the following:

- health promotion,
- Illness prevention, care of the sick, advocacy, community development etc (Kumari, 2009).

Long before the Declaration of Alma Ata, India adopted a primary health care model based on the principle that incapacity to pay should not put people off from accessing health services. Based on the recommendations of the Health Survey and Development Committee Report (the "Sir Joseph Bhore Committee Report") of 1946, the Indian Government decided to focus services on rural people. This with programmes such as the national family planning program, launched in 1952, and the policy of one community health worker per 1,000 people in the 1970s. India had already committed to most of the Alma Ata principles when the global primary health care movement began.

Studies show that the strength of a country's primary care system is associated with improved population health, decreasing all-cause mortality, all-cause premature mortality, and cause-specific premature mortality, from major respiratory and cardiovascular diseases. This relationship is significant at the macro-level and micro-level. Unfortunately, in India, not only is there

pre-existing inequality in healthcare provisions, but this is further enhanced by difficulties in accessing it, which is due to geographical, socio-economic or gender distance. Studies from developed countries demonstrate that an orientation towards a specialist based system enforces inequity in access. Health systems in low income countries with a strong primary care orientation tend to be more pro-poor, equitable and accessible (Sharma, 2009; Anand , 1993).

Recent National Health Policy (2006) has laid stress on people centered primary health care approach. Few ICMR reports have revealed that more than 80 percent of the population has no access to any form of health care. However, curative service, people perception about functioning of PHCs, preventive activities and attitude of the health staff need to be properly evaluated through various research approaches yet. In 2005, the United Progressive Alliance Government launched the National Rural Health Mission (NRHM) to improve access to quality health care, especially for poor rural women and children, to strengthen primary health care institutions, increase equity and the decentralization of services, and encourage states to generate alternate sources of financing. While the mission covers the entire country, its emphasis is on 18 states with the poorest infrastructure including Karnataka state. It is found that NRHM is very effective in certain states and fairly failed in certain states.

Primary care services are incomplete if they lack appropriate and efficient referral systems to secondary and tertiary care hospitals. Primary health care services considerably affect the rural population; however many factors weaken the excellence and effectiveness of primary healthcare services in rural areas. In India, although there are many reasons for poor primary health care performance, almost all of them stem from weak stewardship of the sector, which produces a poor incentive framework. The World Health Organisation (WHO) specifically points out that to some extent, the deterioration in health status is attributed to inadequacies in primary health care implemen-tation, neglecting the wider factors that have

been responsible for this deterioration such as lack of political commitment, inadequate allocation of financial resources to primary health care and stagnation of inter-sectoral strategies and community participation in rural areas. The main ones being bureaucratic approach to healthcare provision, lack of accountability and responsiveness to the general public and incongruence between available funding and commitments (Jones 2009).

PRIMARY HEALTH CENTERS (PHC)

The PHC concept implied delivery of integrated health services through an appropriate institutional framework to the smallest unit of population possible. The PHC in itself embodies an integrated approach to health services development through Curative, Preventive and Promotive service. The operational responsibilities of the PHC are to cover medical care, maternal and child health services, family welfare, nutrition, health, education school health, control of communicable diseases, protected water supply, environmental sanitation and collection of vital statistics. In spite of the criticism they have faced regarding quality of care and poor infrastructure, they continue to be the major primary care provider for the majority of India's population in rural areas (Banerji, and others 2004).

A typical Primary Health Centre covers a population of 20,000 in hilly, rural, or difficult areas and 30,000 populations in plain areas with 4-6 indoor/observation beds. It acts as a referral unit for 6 sub-centers and refer out cases to Community Health Centers (CHC) (30 bedded hospital) and higher order public hospitals located at sub-district and district level. In each Community Development Block, there is one primary health centre and eight or ten sub-centers at present. An average primary health centre in a community development block covers a geographic area of 400 sq km, with a population of 1, 00,000 to 1, 20,000 persons living in about 100 to 125 villages. Medical relief in primary health centers is designed as an institutional service. PHCs and Sub Centre's (SC) are designed to make primary health care services available throughout the rural areas. Mudaliar

Committee (1955) Chadha Committee, (1963) Arthar Singh Committee (1973) and Shrivatsva Committee (1975) Bajaj Committee, (1986) have also highlighted the importance of upgradation of PHCs (MHFW, 2006)

The National Health Policy (NHP) 1983 envisaged a three-tier structure of primary, secondary and tertiary health-care facilities to bring health care services within the reach of the rural population. The whole concept of infrastructure for primary health care services in our country revolves around two major components of static service centers in the form of the PHCs and SCs (sub centers) and providing of extension services to villages and individual families through planned and continuous visits to villages and individual families by the doctors and para medicals. Studies show infrastructural facilities should be adequate to accomplish the multiple tasks (curative, preventive and promotive health care), family welfare, and maternal and child health service assigned to the PHCs for the successful implementation of the programmes. Performance of PHCs will be greatly affected due to the absence of material resources like building, equipment, vehicle, medicines, and vaccines etc (Varatharajan, 2004).

PHC's are functioning as peripheral health service institutions with little or no community involvement. Increasingly, these centers came under criticism, as they were not able to provide adequate health coverage, partly, because they were poorly staffed and equipped and lacked basic amenities and plagued with corruption. Various high level committees have found both rural and urban PHCs are not spared from issues such as the inability to perform up to the expectation due to (i) lack of man power (ii) scarce physical infrastructure and facilities; (iii) deficient quantities of drugs; (iv) lack of accountability to the public and lack of community participation; (v) lack of set standards for monitoring quality care etc.

Experts felt the performance of any health care delivery organizations can be assessed against the set standards. Standards are a means of describing the level of quality those health care organizations are expected to meet or aspire to. Key aim of these standards is to underpin the delivery

of quality services which are fair and responsive to client's needs, which should be provided equitably and which deliver improvements in the health and wellbeing of the population. Standards are the main driver for continuous improvements in quality.

Studies have also shown that, in the improved access to primary health centers and its timely function, lead to less hospitalization, less utilisation of specialist and emergency centers and less chance of patients being subjected to inappropriate health interventions. In low-income settings, the cost effectiveness of PHCs compared to other health programmes has been reinforced by World Bank findings; selected primary healthcare activities such as infant and child health, nutrition programmes and immunization appeared as 'good buys' compared to hospital care. Such interventions could avert a large number of deaths and it is demonstrated that even in resource-poor settings, it is possible to implement and sustain basic PHC services. Few debates also stressed about handing over the responsibility of PHCs gradually to Panchayats (local self Govt.) with technical support, guidance and leadership from State Health Services. However, there are several problems and shortcoming in the PHC system of many states which the district Panchayat has not been able to address effectively (Ranga Rao, 1993; Laveesh, 2009).

Primary care services are incomplete if they lack appropriate and efficient referral systems to secondary and tertiary care hospitals. Primary care referrals in India have not received as much attention. In one study (Patro, 2008) concluded that the referral system was availed of by most of the patients and that longer distances to the referral institution reduced favorable outcomes. Next, referrals depended primarily on issues related to the diagnosis and availability of adequate treatment resources. It is also suggested that appropriate referrals had to be necessary for the patient, appropriate in the course of the disease, successful in reaching its aims and cost effective at PHCs. It is also reported that referrals were more common

when the specialist hospitals were located closer to the general practice. Some time the closest referral hospital would be more than 15-20 kilometers away, which is as well the case with the majority rural sub centers/primary health centers in rural parts of India. It could be thus assumed that the referrals that were made would more likely have been out of necessity than otherwise (Raghvan, 2005).

PHC AND RURAL HEALTH SERVICES

The differences in urban-rural health indicators are a harsh reality even today; infant mortality rate is 62 per thousand live births for rural areas as compared to 39 per thousand live births for urban areas (2007). Only 31.9% of all government hospital beds are available in rural areas as compared to 68.1% for urban population. When we consider the rural-urban distribution of population in India, this difference becomes huge. Based on the current statistics provided by the Government of India, It is found that at a national level the current bed-population ratio for Government hospital beds for urban areas (1.1 beds/1000 population) is almost five times the ratio in rural areas (0.2 beds/1000 population). Apart from this shortfall in infrastructure, shortfall in trained Doctors enthusiastic to work in rural areas is also one of the factors responsible for poor health care delivery systems in the rural areas. The rural areas are still unable to access the services of the qualified Doctors. There's shortfall of 9% doctors in all Primary Health Centers (Ajit, 2005).

Rural health services in India are provided through a network of integrated health and family welfare delivery system. These are mainly dependent upon networking of PHCs which involve in both curative and preventive activities as well as promoting family welfare services. The PHCs are the first contact point between the village community and the medical officer, whereas sub-centers are the most peripheral contact point between the PHC and community. Lack of access to these institutions is a reflection of an overall deprivation and it results on many health indicators. Many

studies indicated that the health services are inaccessible or poorly accessible for the poor and disadvantaged communities of the society.

Some noted studies have highlighted rural PHCs suffered from a variety of limitations (both institutional and financial) and shortcomings across the country. Limitations to rural health infrastructure and services include (a) Inadequate of medical and paramedical staff (b) lack of amenities in PHC buildings; (c) Scarcity of construction materials causing delay in creating infrastructure, especially sub-centre buildings; (d) Unsatisfactory supply and maintenance of drugs and equipments (e) lack of set standards for monitoring quality care (f) Poor maintenance of vehicles at the PHCs etc. These problems throw up several issues that need to be immediately examined. Prominent among these is the funding and maintenance of rural health infrastructure. Scarcity of trained manpower is another major problem. Moreover, qualified medical and paramedical staff is not willing to work in rural areas because of professional, personal and social reasons. Regarding management of health services at the primary health centre level, various problems relating to suitability of the personnel, coordination of work of different health functionaries (CHC/SC), field logistics and facilities, infrastructural support and services, sectoral coordination with organizations related to health, etc., have been noticed (Umamani,2010; Srinivasan1994). This problem was further compounded by bureaucratic procedures and practices relating to postings and transfers of medical and paramedical staff. Even when we judge from the point of view of government expectations, the overall performance of PHCs has been greatly wanting (Mavalankar, 2009; Rajesh,2006; Srinivasa, 2001).

ADEQUACY AND ACCESSIBILITY OF THE PHC SERVICE

In the rural areas, a large number of rural people seek medical treatment and health care by the PHCs. In terms of ratio of population and availability of services the rural areas have inadequate services, particularly in some specific PHCs. However, in urban areas the PHCs rendering

various services seems to be adequate enough because the people of the higher rungs of the society do not depend upon PHCs at all. Hence, PHCs are more needed in rural than urban areas. Urban areas have many favorable conditions (availability of multi-specialty hospitals etc) leading to less dependency on PHCs by the people. Therefore, more number of PHCs and sub centers are needed in rural areas in a developing country (Smith, 2009). Sometimes certain services are available in PHCs but people do not get these services due to various reasons. In rural areas, certain services are available and medicines are supplied in plenty. However, the benefits of these facilities do not reach the beneficiaries. This may be due to the factors like lack of propaganda, awareness and education, lack of hygiene, wrong notion about the quality of medicines provide in PHCs, lack of transport system etc (Aldana, 2001).

Ganguly (2008) opined that some time rural PHCs are usually under-utilized because they fail to provide their clients with the desired amount of attention and medication, inconvenient locations, and long waiting time. Utilization of health services is a complex phenomenon, which is affected by various factors like people's perception about illness, severity of illness, need for health care, knowledge about healthcare services, economic and social accessibility of health system, and biases of the healthcare providers. The economic viability of the PHCs solely depends on the visit by the patients. This is dependent on the basic conditions of the Centers. The government invests more money every year for medicine, staff, bed and other logistics but neglects the variables that affect the annual turnout of patients. It is at this point the PHCs fail to attract beneficiaries. Therefore, they remain economically not viable (Jones and others, 2009).

Approximately one-third of the people of our country, particularly living in the rural, hilly and arid as well as feudal areas have critical health status. Active participation of the people in managing their own health and that of the communities where they live, are associated with the issues of food security, hygiene and underdevelopment. The health of this population

is directly linked to their economic, social and political status and all of them directly depend on PHCs for their health needs. Major thrust should be to help them reverse the situation through a well-planned, adequately financed community-oriented Integrated Health and Development Programmes with substantial participations from voluntary organizations. There have been several efforts in the Planning Commission in identifying these vulnerable areas. Interventions for enhancing community participation in health and family welfare services were designed and implemented. The interventions mainly focused on the active participation of Panchayati Raj Institutions (PRIs) and non- government organisations (NGOs). Dynamic participation of voluntary organisations in the scheduling, supervision and completion of health programmes, mainly in the susceptible areas is more necessary than ever (Kamat, 1995).

PUBLIC-PRIVATE PARTNERSHIP (PPP) AND PHCs

Public-Private Partnership (PPP) has emerged as one of the important strategies for health sector reforms in the country. Various states have taken Initiatives by NRHM, Health & FW Dept to undertake effective PPPs in health services including RCH-II and other national health programmes like Malaria, TB etc. Studies found that the quality of PHCs service have improved considerably after an effective PPP in many rural areas of the country. In Many states through PPP, PHCs have initiated variety of activities including Community Health Insurance, Telemedicine, Tele-agriculture and farmer advisories (with ISRO), Mainstreaming of Traditional Medicine in Primary care with herbal gardens at PHC, Integration of mental health care, Improved community participation, Health Management Information Systems, stipulation and administration of necessary drugs, accomplishment of normal treatment strategy and drugs and therapeutics board in all-PHCs-etc. Further, to augment the PPP initiatives, it is proposed to have Regional Resource Centre (RRC) to provide technical support for PHC- PPP – NGO activities in various States.

Moreover For an unrestrained development of PHC, flexibility and adaptation in long established bureaucracies are essential at both within the administration and at community level and emphasis on preventive approaches (Dipankar, 2005; Laveesh, 2009).

Till date, hardly one or two studies (Srinivasa,2001; Nanjunda, 2011) have been conducted on primary health care and found that in rural areas, health services provided by the PHCs suffer from quality degeneration because of non-availability of emergency services in time, absenteeism and lack of laboratory facilities or equipment. Difficulties in communication and information usage of expired drugs etc are the causes for low quality service by the PHCs in rural areas of Karnataka. Sometimes, staff of the PHCs have to work in an unsecured zone. Situation in many rural pockets are really bad where PHCs are working in rented congested spaces. News paper report says there are delays in the receipt of funds for drugs by the district government and in the procurement and delivery of drugs to PHCs; and PHCs do not conduct proper accounting. Corruption exists in purchasing medicines. Communities and NGOs lack access to pertinent information on health services, and they are not involved in supervising the programmes and the service providers. Hence, it is essential to look further into the problem .Also no such systematic and holistic study undertaken so far in understanding the effective functioning of primary health centers in the rural areas of the country. The present attempt may go a long way in bridging the gap between the philosophy of working of primary health centers and the reality of the situation.

CONCLUSION

It is essential to get an insight into the functioning of the PHCs which were established with the objective of minimizing the hardships of the rural people arising out of lack of specialized medical services in the nearby areas or to district and other rural referral hospitals which are already

overcrowded. Evaluating the scheme will make available useful pointers to the policy makers and the implementers for taking corrective measures on bottlenecks, disparities, etc., if any, in the functioning of rural PHCs.

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Resources for Green Infrastructure Development and Maintenance: A Study with Particular Reference to Gated Communities in the Bangalore Metropolitan Area

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ABSTRACT

The objective of this study is to identify resources for the development and maintenance of green infrastructure in the privately developed gated communities. The study is primarily with a view to obtaining an environmental planning strategy and guidelines for creation and conservation of green infrastructure in the gated communities. This paper explores the resources for green infrastructure development and maintenance in selected gated communities in the Bangalore Metropolitan Area.

Key Words: *Green Infrastructure, Gated Community, Civic Amenities, Bangalore Metropole.*

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INTRODUCTION

The bane of 21st century is unprecedented urbanization and the vagaries of climate change. Several studies have estimated that by 2030 more than half of the world's population will be living in urban areas. This means that sustainable development of cities and metropolises will be the major challenge confronting administrators, planners, architects and designers globally. Green infrastructure, its design, development and maintenance is a part of any urban facility and administration. Providing resources for the development of green infrastructure is a major issue.

The “green infrastructure” of a city is made up of natural as well as deliberately designed and raised flora systems and elements of the city that significantly contribute to natural processes in maintaining the quality of air, water, microclimate and energy resources. The most essential part of this infrastructure is places that are constituted by water-pervious surfaces and/or soil to support plant material. The most visible elements of this infrastructure are the trees, shrubs and bowers. The principal parts of this infrastructure include natural areas as well as open to sky spaces. Parks, green medians of major roads, avenue trees are some of the obvious elements of green infrastructure in the city.

A gated community providing housing facilities is one of the planned prominent spatial manifestations of rapid process of urbanization. In its contemporary version, a gated community is a form of residential complex or housing estate with many self-contained and possibly exclusive amenities. Gated communities have their own enclosure made of walls, fences and hedges; exclusive entrances and paths for pedestrians, cyclists and motorists. Since they are located in the suburbs they have to develop their own parks and recreation spaces. The objective of this study is to identify resources for the development and maintenance of green infrastructure in the privately developed gated communities. The study is

primarily with a view to obtaining an environmental planning strategy and guidelines for creation and conservation of green infrastructure in the gated communities. This paper explores the resources for green infrastructure development and maintenance in selected gated communities in the Bangalore Metropolitan Area.

THE STUDY AREA

Bangalore, the capital of Karnataka, is the 5th largest metropolis of India. Geographically, it covers an area of 1307 sq. kms enclosing the *Bruhat Bangalore Mahanagara Palike* (greater Bangalore) and surrounding villages. The Bangalore Metropolitan Area has witnessed a fast increase of population (9.5 million, an estimate based on the 2011 census) very much as a result of the growth of the Information Technology (IT) industry. This has spawned pockets of haphazard urbanization especially along the outer ring planning districts. A spatial concomitance of this growth is the emergence of privately developed gated communities to cater to the housing needs substantially of the IT industry incumbents with relatively high disposable incomes. The emergence of these largely exclusive gated communities has led to its own environmental and social specificities. They manifest in the form of paucity of expert personnel for design and maintenance of green infrastructure and other service inputs needed.

Gated communities are generally well-planned with various collateral facilities. They are located in the suburbs and access to them is generally exclusive to private groups and community members. Therefore, the onus of developing green infrastructure here is entirely on the private developers and maintenance is generally the responsibility of the Residents' Welfare Associations. A larger proportion of open space is available for rest and recreation and is a common feature of these gated communities.

The design guidelines, exclusivities and open spaces, recreation facilities, self-contained service centres etc. of gated communities and

NGO's role therein also are to be recorded and especially those oriented towards the resources required for the green infrastructure. The structure and functioning of residents' welfare associations need to be studied with specific reference to green infrastructure related issues. The Bangalore Development Authority had sanctioned 96 residential group housing development plans till 2011. These are located in the 3rd Ring Planning Districts which are suburban areas and are developed as gated communities by private developers to attract buyers from the higher income segments with their own security specificities. The selling price of these properties increases in direct proportion to the amenities provided. As per the Land Use Zoning Regulations of RMP 2015, 10% of the total area has to be developed as parks and recreation areas.

CASE STUDIES

Six gated communities have been selected for study based on variables like location, site area, site geometry and housing type. The following is a brief account of the case-studies.

Six Gated Communities were studied along with their residential development plans sanctioned by the Bangalore Development Authority.

A brief description of each of the above case-studies including the green infrastructure of each is given below.

Adarsh Palm Meadows Gated Community: This community is a residential development by M/s Adarsh developers at *Bhoganahalli Village* and *Doddakannahalli Village, Varthur Hobli, Bangalore East Taluk*, Bangalore is located off the Outer Ring Road. The total site area is 114094.96 sq.mt. and the site has an irregular periphery. The roads constitute an area of 472.26 sq.mt. and the net site area for development is 113622.70 sq.mt. Two parks have been provided and the total area for parks and open spaces is 11409.496 sq.mt. while 6928.53 sq.mt is dedicated for civic amenities.

Table 1: Few Gated Communities in the Bangalore Metropolitan Area

Sl. No.	Gated Community	Location	Developer
1	Adarsh Palm Meadows	Gated Community on Survey nos. 89/1P, 89/2, 112/1P, 112/2 of Bhoganahalli and Survey nos 94/4P, 94/6P, 96/2P, 97/P, 98/2P, 98/1AP, 98/1BP, 99/P and 100/P of Doddakannahalli village, Varthur Hobli, Bangalore East Taluk, Bangalore	Adarsha Developers
2	Adarsh Serenity	Gated community on Survey nos. 180/1, 180/2, 181/1, 181/2, 182, 183/1, 177/1P, 179/1, 179/2, 179/3A, 179/3B, 179/4, 179/5, 185 (P) of Kanna-Mangala village, Bidarahalli Hobli, Bangalore East Taluk	Adarsh Developers
3	Sobha Althea	Gated Community on Survey nos. 62/2, 62/3 Chokkanahalli village, Yelanka Hobli, Bangalore North Taluk and Survey nos. 7/1, 9/1, and 9/2, Nagareshwara, Naganahalli village, K.R Puram hobli, Bangalore East Taluk.	Sobha Developers Ltd.
4	Chaitanya Smaran	Gated community on Survey nos.143/1, 143/2P, 144/1, 144/2, 144/3, 144/4, 144/5, 144/6, 144/7, 145/1,145/2P1, 146/1, 146/2, 146/3, 147/1, 147/2, 150/1, 150/2, 150/3 of Kannamangala village and 24/12, 24/13 of Seegehalli village, Bidarahalli Hobli, Bangalore East Taluk.	Chaitanya Smaran
5	Shriram Chirping Woods	Gated Community at. Ltd.on Survey nos. 70/1, 2, 75/1, 2, 3, 4, 6, 7, 76, 77/1 of Harohalli village, Yelahanka Hobli, Bangalore North Taluk	M/s Shriprop Housing Pvt
6	Sobha Amethyst	Gated community by on Survey nos. 3/1B, 3/2, 7, 162 of Haralur village, Varthur Hobli, Bangalore East Taluk.	Sobha Developers

The total built up area is 68390.29 sq.mt while ground coverage of 34.45 percent has been achieved. The development is a low-rise development with the maximum height being 7.71m.

There are 216 villas in 17 blocks. The smallest block has 3 villas while the largest blocks have 16 villas each. The blocks are organized in a linear parallel format. The villas are accessed from driveways with an average width of 18 m. Car parking at the rate of 2 cars per villa has been

provided and it includes both covered and non-covered surface parking. Visitor car parking at the rate of 10% has been provided. The total car parking provided is 475 nos. The layout along with the green infrastructure has been shown in Fig.1.

Fig.1 Green Infrastructure of Adarsh Palm Meadows Gated Community



The prominent green infrastructure assets of this development are the two parks. They have been located in such a way as to provide easy public access. The internal streets facilitate avenue plantation. Rain water harvesting pits are located in the park area. The sewage treatment plant has been located close to the road with the prospect of possible connection to widen the city sewerage system.

Adarsh Serenity Gated Community: Adarsh Serenity gated community is a residential development by M/s Adarsh developers at Bhoganahalli Village and Doddakannahalli Village, Varthur Hobli, Bangalore East Taluk, and is located off the Outer Ring Road.

The total site area is 98238.30 sq mt and the site has an irregular boundary. The net site area for development is 97732.45 sq mt. Six parks have been provided and the total area for parks and open spaces is 9773.24 sq mt. while 4957.00 sq mt is dedicated for civic amenities. The total built up area is 57125.69 sq mt while ground coverage of 31.51% has been achieved. The development is a low-rise development with the achieved height being 7.93 m.

There are 171 units in 27 blocks. The smallest blocks have 1 unit while the largest blocks have 14 units each. The blocks are organized in a linear parallel format. The villas are accessed from driveways with an average width of 9.76 m. Car parking at the rate of 2 cars per villa has been provided and it includes both covered and uncovered surface parking. Visitor car parking at the rate of 10% has been provided. The total car parking provided is 444 nos.

The prominent green infrastructure assets of this development are the six parks. They have been located in such a way as to provide easy public access. The internal streets facilitate avenue plantation. Rain water harvesting pits are located in the park areas. The sewage treatment plant has been located far from the public road and connection to the general city sewerage system has yet to be worked out. The waste water treatment plant has been located in one of the park areas.

Sobha Althea Gated Community : This community is a residential development by M/s Sobha Developers Ltd at *Chokkanahalli* village, *Yelahanka Hobli*, Bangalore North Taluk and *Nagarareshwara*, *Naganahalli* village, K.R Puram *Hobli*, Bangalore East Taluk is located off the Peripheral Ring Road. The total site area is 148214.77sq.mt. and the site has an irregular boundary. The road area is 187.60 sq.mt and the net site area for development is 145641.17sq.mt. Nine parks/open spaces

have been provided and the total area for parks and open spaces is 14825.78 sq.mt. while 7415.86 sq.mt is dedicated for civic amenities. The total built up area is 360075.31 sq.mt while ground coverage of 35.19% has been achieved. The development is a high-rise development with the maximum height being 72.45m.

There are 1559 residential units (row houses and apartments) in 16 blocks. The smallest block has 6 residential units while the largest block has 500 residential units. The blocks are organized in a linear parallel format. The residential units are accessed from driveways with an average width of 12 m. Car parking at the rate of 2 cars per residential unit has been provided for row houses/flats more than 225sq.mt but less than 325sq.mt and at the rate of 1 car per residential unit less than 150 sq.mt area. Visitor car parking at the rate of 10% has been provided. The total car parking provided is for 1639 cars. The layout along with the green infrastructure is shown in Fig. 2.

Fig. 2: Green Infrastructure of Sobha Althea gated community



The major green infrastructure asset of the community is the park and open space area provided as per regulations. The park/open space area has however been fragmented into nine smaller spaces distributed all over the entire area. This to a certain extent limits public access. Avenue plantations of the internal streets contribute significantly to the community's

green infrastructure assets. Rain water pits are located in the park areas. The sewage treatment plant has been located close to the road in view of possible connection to the larger city sewerage system.

Chaitanya Smaran Gated Community: *Chaitanya Smaran* gated community is a residential development by M/s *Chaitanya Smaran* at *Kannamangala* village, and *Segehalli* village, *Bidarahalli Hobli*, Bangalore East *Taluk* is located off the White field *Hoskote* Main Road. The total site area is 1,22,330 .08 sq.mt. and the site has an irregular spread. The roads constitute an area of 996.84sq.mt and the net site area for development is 1,22,330 .08 sq.mt. Eleven parks/open spaces have been provided and the total area for parks and open spaces is 12,628.03 sq.mt. while 6,207.37 sq.mt is dedicated for civic amenities. The total built up area is 54,559.70 sq.mt while ground coverage has been of 23.98 percent. The development is a low-rise development with the maximum height being 9m.

There are 123 residential units (villas and mansions) in 123 individual blocks. There are six types of residential units. The blocks are organized as groups of parallel row houses. The residential units are accessed from driveways with an average width of 6 m. Car parking has been provided for 361 cars. The layout and green infrastructure are shown in Fig. 3.

Park and open space area is the major green infrastructure asset of the community provided as per the regulations. However, the park and open space area has been fragmented into eleven smaller areas and distributed throughout the site which may restrict easy public access. The internal streets have avenue plantations and since the nature of development is in the form of villas there is a considerable variety in the gardens maintained by individual owners which enhances visual delight. Rain water harvesting pits have been located in the park areas. The sewage treatment plant has

Fig. 3: Green Infrastructure of Chaitanya Smaran Gated Community



been located close to the road with the prospect of possible connection to the general city sewerage system.

Shriram Chirping Woods Gated Community: *Shriram Chirping Woods* gated community is a residential development by M/s *Shriprop Housing Pvt Ltd* at *Harohalli* Village, *Yelahanka Hobli*, Bangalore North *Taluk*, is located off the *Doddaballapur* Main Road.

The total site area is 37,129.60 sq.mt. and the site has an irregular boundary. The road area is 3,986.06 sq. mt. and the net site area for development is 35,273.12 sq. mt. The total area for parks and open spaces is 3,712.96 sq. mt while 1,856.48 sq. mt is dedicated for civic amenities. Two parks have been provided. The total built up area is 17, 859.36 sq. mt while ground coverage is 24.77 percent. It is a low-rise development with the maximum height being merely 11.7 m.

Fig. 4: Green Infrastructure of Shriram Chirping Woods Gated Community

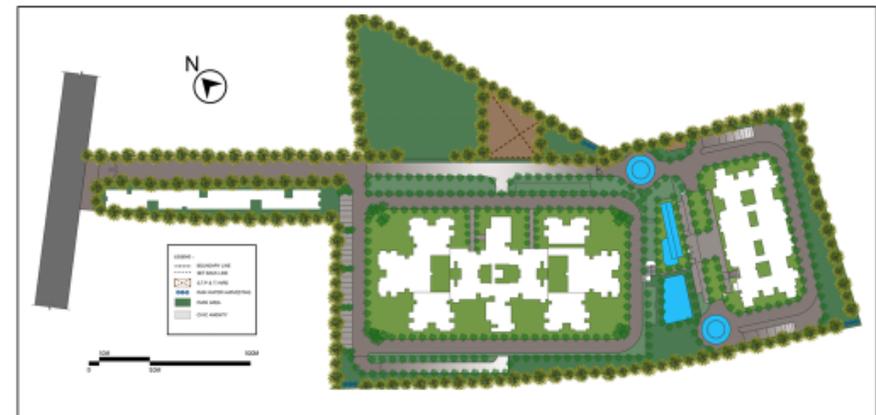


There are 118 residential units in 2 blocks. The smaller block has two floors of residential units while the larger block has three floors of residential units. Stilt floor car parking has been provided at the rate of one car per residential unit. Visitor car parking at the rate of 10% has been provided. The total car parking provided for 137 four wheelers. The prominent green infrastructure assets of this development are the two parks. One of the parks has been located in such a way as to provide easy public access while the other acts as a buffer between the railway line and the residential development. The internal streets facilitate avenue plantation. Rain water harvesting pits are located in the park areas. The sewage treatment plant has been located close to the road with foresight of possible connection to the city-scale sewerage system.

Sobha Amethyst Gated Community: Sobha Amethyst gated community is a residential development by M/s Sobha Developers Ltd at Haralur village, Varthur Hobli, Bangalore East Taluk is located off the Sarjapur Road beyond the Outer Ring Road.

The total site area is 28,110.42 sq mt and the site has an irregular geometry. The road area is 132.12 sq mt and the net site area for development is 26,572.78 sq mt. A large park has been provided and the total area for parks and open spaces is 2,814.04 sq.mt. while 1,405.52 sq.mt is dedicated for civic amenities. The total built up area is 75,447.32 sq.mt while ground coverage is 14.21 percent. It is a high-rise development with the height being 62.75m. There are 275 residential units in 2 blocks. There are four types of residential units. The residential units are accessed from driveways with an average width of 6 m. Car parking has been provided for 408 cars. The layout and green infrastructure of the community are shown in Fig. 5.

Fig.5: Green Infrastructure of Sobha Amethyst Gated Community



Park and open space area, which is the major green infrastructure asset of the community, has been provided as per the regulations. The park and open space has been provided at one side of the residential unit

with easy public access. The internal streets have avenue plantations. Rain water harvesting pits have been located in the park and set back areas. Waste water treatment system has been provided. The sewage treatment plant has been located close to the road with the idea of possible connection to the city-scale sewerage system.

DISCUSSION

The following observations with particular reference to green infrastructure can be made from the above study of the six gated communities based on their sanctioned residential development plans. In compliance with the bye laws and the Land Use Zoning Regulations of RMP 2015 10% of the total site area has been developed as park for recreational purpose in the gated communities. It is also observed that in some gated communities this area is fragmented into small park spaces and distributed across the gated community whilst in others it is concentrated and developed as a single large open space. However, it is noted that there is ease of public access in both the cases. In some of the case studies outdoor sports facilities like tennis and basket ball courts are provided.

Water is critical for the development and maintenance of green infrastructure. It is interesting to note that rain water harvesting is being carried out by all the gated communities and the rain water harvesting pits and collection ponds are appropriately located in the park areas and are designed to be part of the park landscaping scheme.

Waste water treatment plants are present in all the gated communities. An interesting observation has been the presence of grey water spouts and outlets, duly marked, in the open spaces and parking areas. This water it is observed has been used to maintain the green infrastructure as well as for functions like washing and cleaning the vehicles, dust bins etc.

All the six gated communities are located in the suburbs and are remote from the city sewerage network. The sewage generated by the community is treated *in-situ* and the sewage treatment plants are appropriately but discreetly located. In some cases it appears as if the sewage treatment plants are located in anticipation of a future connection to the larger city sewerage system.

Table 2: Density of Population in Gated Communities

Sl. No.	Gated Community	Site Area (sq.mt)	No. of units	Population	Density of Population (persons/sq.mt)
1	Adarsh Palm Meadows	114094.96	216	1080	0.01
2	Adarsh Serenity	98238.30	171	885	0.01
3	Sobha Althea	145641.17	1559	7795	0.05
4	Chaitanya Smaran	122330.08	123	615	0.01
5	Shriram Chirping Woods	37129.60	118	590	0.02
6	Sobha Amethyst	28110.42	275	1375	0.05

The population density in the gated communities is low. The residents have the benefit of enjoying the landscaped open spaces of the community.

Table 3: Built-up Area Open Space Ratio in the Gated Communities

Sl. No.	Gated Community	Site Area (sq.mt)	Total Built-up Area (sq.mt)	Open space Area (sq.mt)	Ratio of Built-up area to Open space
1	Adarsh Palm Meadows	114094.96	68390.29	11407.49	6:1
2	Adarsh Serenity	98238.30	57125.69	9776.62	6:1
3	Sobha Althea	145641.17	360075.35	14825.78	24:1
4	Chaitanya Smaran	122330.08	54559.70	12628.03	4:1
5	Shriram Chirping Woods	37129.60	17859.36	3712.96	5:1
6	Sobha Amethyst	28110.42	75447.32	2814.04	27:1

The internal streets of the communities provide opportunity for avenue plantation which will become the green infrastructure assets of the community. The mandatory set back areas in addition to providing space for visitors parking in some communities also function as open spaces for the development of the community’s green infrastructure assets. In yet others, they facilitate the development of jogging and cycling tracks. The population density in the gated communities is low. The residents have the benefit of enjoying the landscaped open spaces of the community. There is a wide variation in the ratio of built-up area to open space in the case studies.

The Nature of Vegetation

The most essential resource for green infrastructure is all places and spaces that have water-pervious surfaces and/or soil to support plant material. The most visible elements of green infrastructure are the trees, shrubs and bowers and other areas with greenery. Gated communities are located mainly in the suburbs and are remote to the general city parks and other passive recreational spaces. The community members need breathing space where they can relax and enjoy the endowments of nature.

As per land use Zoning regulations 10% of the respective site areas have to be in the form of parks and open spaces. This bye law has been in force because the gated communities are considerably distant suburban developments and access to the city’s general parks for passive recreation is not easy. The developers of the gated communities have to develop the parks and other open spaces like playfields for recreational needs—both passive and active—of the residents. The compliance of this regulation in the case-studies is given in the following table.

Table 4: Ratio of site area and parks and open space area in the selected gated communities

Sl. No.	Gated Community	Site Area (sq.mt)	No. of units	Popula- tion	Density of Popu- lation (persons/ sq.mt)
1	Adarsh Palm Meadows	114094.96	216	1080	0.01
2	Adarsh Serenity	98238.30	171	885	0.01
3	Sobha Althea	145641.17	1559	7795	0.05
4	Chaitanya Smaran	122330.08	123	615	0.01
5	Shriram Chirping Woods	37129.60	118	590	0.02
6	Sobha Amethyst	28110.42	275	1375	0.05

A visual survey has been made to identify the prominent green elements which are also the green infrastructure assets of the community in case-studies here considered. Trees are the most dominant green infrastructure assets. Peripheral trees planted in the set-backs serve as good visual characteristics of the site boundary. The internal private streets of the gated communities have avenue trees which provide shade as well as visually characterize or define the internal site circulation system. Trees also constitute visual barriers for activity spaces which require visual segregation or privacy like swimming pool areas.

The environmental quality and visual ambience of open spaces have been enhanced by bowers as areas shaded by trees and other plants or as places enclosed by overhanging boughs of trees. Topiaries and trellises covered with vines or arbors with flowering vines have also been used to add significance and wholesomeness to open spaces. Shrubs are used to divide and distinguish spaces.

Seasonal flowering plants have been judiciously planted in open spaces and parks in such a way that there are some flowers throughout the year i.e. all through the different seasons. Lawns have been raised in parks

and serve as passive recreation space as well as to provide considerable visual delight by its color and texture unique to flora. Incidentally, lawns are used in the berms that separate the internal circulation streets from individual homes as well as in the spaces between homes.

Resources for Green Infrastructure in Gated Communities

From the above study the following have been identifiable as the **main resources** for the development of green infrastructure in these privately developed gated communities:

1. Land with soil to support vegetation
2. Water for sustenance of plants
3. Funds for the development of the green infrastructure assets
4. Micro climate or conducive environmental conditions
5. Plant material - Seeds and saplings
6. Specific Manpower needed for development and maintenance

Land with soil to support vegetation

The Bangalore Development Authority approves and sanctions the development of gated communities through the residential development plan. The residential development plan is defined as “Plan containing proposal for construction of one or more residential buildings on a plot measuring more than 20,000 sq m in extent.”

One of the significant elements in regulations for the Residential Development Plan is 10 % of the land has to be reserved for Park & Open space. The open space (park) shall be relinquished to the authority free of cost and the same may be allowed to be maintained by the local residents association (registered), if the Authority so desires. This regulation legally ensures the provisioning of land for the development of green infrastructure. It also secures man-power for its development and maintenance through the local residents association.

Water for sustenance of plants

Water is a key resource for the development and maintenance of green infrastructure. The gated community could be viewed as an opportunity for rain water harvesting, use of bio-swales, as well as waste water re-cycling. Rain water harvesting is the collection and storage of rain water for use before it reaches the aquifer. It is a mandatory requirement in the Land Use Zoning Regulations of the RCDP 2015.

Visual survey of the gated communities reveals that the collected rainwater is used predominantly for maintaining the green infrastructure of the community. The water collected is also redirected to a deep pit with provision for percolation.

The harvested water has been used for domestic purposes where the storage tanks can be accessed and cleaned as and when needed. However, neither the developers of the gated communities nor the resident welfare associations appear to be in favor of use of harvested water for domestic purpose. Thus, the entire resource was utilized for the maintenance of the green infrastructure assets of the community.

Funds for the Development and Maintenance of the Green Infrastructure Assets

The gated communities being privately developed the residents themselves should generate funds for the development and maintenance of the community's green infrastructure assets. Raheja Jade Garden, an upscale lifestyle residential layout, fully gated posh community, was developed by K Raheja Group in the 1990s. It is located off the 6 Lane highways to the Bangalore International airport. Jade Garden has truly captured nature for great living. Tree lined walkways, serene open space for a variety of outdoor family activities, parks and beautiful homes sheltered by a canopy of shady trees. The Jade Garden Plot Owners Association works hard on improving and maintaining the community facilities including its green infrastructure

assets. A Contingency Fund of Rs 10,000.00 per plot is collected at the time of association membership which is used to build up the Reserve Fund. Maintenance charges per annum are collected from the plot owners by the association for the betterment of the layout including the maintenance of the parks, green areas, avenue planting, hedges in addition to other maintenance work.

Micro-climate and conducive environmental conditions

Bangalore provides a salubrious climate and has been historically referred to as the Garden City because of its numerous public parks of varying scales as well as privately maintained gardens.

The climatic conditions are conducive for a wide variety of flowering and non-flowering plants as well as sustaining biodiversity. The construction process of the gated community should ensure that the local environmental conditions and microclimate are not polluted which would be detrimental to the development of green infrastructure. Since the developers benefit from the development of green infrastructure by an enhanced selling rate they are generally inclined to develop it professionally.

Plant Materials: Seeds and Saplings

The peoples' efforts at augmenting their community's green infrastructure assets have departmental as well as institutional support. The Karnataka State Horticulture Department along with the Bangalore Mahanagara Palike offers horticultural services to the citizens. The BBMP has 12 small nurseries located in the three zones, East Zone, West Zone and South Zone and a large nursery in *Bommanahalli*. The request for saplings can be made at 12 small nurseries located in 3 zones as well as one large nursery located at *Bommanahalli*. In addition there are several private nurseries from where seeds and plant material can be procured.

Manpower for development and maintenance

The initial development initiative of the green infrastructure lies with the developer of the gated community. The per sq. ft selling cost increases directly with the nature and kind of amenities provided including parks and open spaces or green infrastructure. The developer commissions professional consultants like landscape architects and agencies providing green infrastructure development services for the initial development of the community's green infrastructure.

Later the responsibility of maintaining and further developing the community's green infrastructure assets lies with the resident welfare association. The gated communities being privately developed the resident welfare associations play a vital role in the development of green infrastructure. The Laughing Waters community is one of the oldest planned/gated communities in Ramagondanahalli, Whitefield, Bangalore. It was developed by Prestige Builders in 1994 and consists of 360 households. It has a total area of 48 acres with 2 acres of common area developed as a park. The effort of the Laughing Waters Owners and Residents Association (LWORA) is a good example of man trying to reestablish harmony with nature through the development of the community's green infrastructure assets. Tree planting is undertaken for greening the precincts and recharging groundwater. The children of LW have formed a group EcoLife and have started planting trees along the roads and plan to plant trees in the vacant slots. There are 1,188 trees and the goal is to plant 2,000 trees. The trees include *Gul Mohrs, Flame of the Forest, Asoka, Indian Cork Tree, Red Silk Cotton, Wild Almond, Jacaranda, Java Plum, Neem, Temple Tree, Mountain Ebony, Jack Fruit Tree, Pongam (Honge), Banyan Tree, Peepul, Drumstick Tree, Golden Champa, Goose Berry, Terminalia arjuna*.

CONCLUSION

Land with soil is the key resource for the development of the gated community's green infrastructure. The bye-laws mandate that 10% of the total area be developed as parks and open spaces. In addition there is a mandatory set-back that has to be provided. This area has also been used for the development of the communities' green infrastructure assets. There is however a need of a bye-law for the ratio of pervious to impervious surface and also soil to paved surface. Water for the maintenance of the greenery is ensured by rain water harvesting and waste water recycling. The recycled water is entirely used for the maintenance of the green infrastructure assets of the community. The initial green infrastructure development is by the developer/promoter of the community who benefits from enhanced selling rates. Later the resident welfare association raises the funds on a pro-rata basis for the development and maintenance of the green infrastructure assets. Bangalore embodies a salubrious climate throughout the year conducive for a wide variety of flowering and non-flowering plants. Plant material can be procured from state nurseries. Since the community members are the primary beneficiaries of the green infrastructure assets there is enthusiasm and active participation often in their development and maintenance as also a sense of pride and community identity.

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