WHAT DO WOMEN FEEL ABOUT COMMUNITY INFRASTRUCTURE IN THEIR LIFE AND WORK?

REVEALED PERCEPTIONS OF WOMEN OF NANDIVARAM-GUDUVANCHERI TOWN, TAMIL NADU

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ABSTRACT

‘Manage your work, manage your life’ has become an axiom with the women of India, although balancing work and life is at best elusive. By making deliberate choices about which opportunities to take, and which to decline, women can and do engage meaningfully with work, family, and community. Managing work, life, and family requires a strong network of ‘behind the scene supporters’. In the absence of a primary care giver who stays at home, for example, there is paid help or assistance from extended family. Women need support at home, and in the community when they are responsible for nutrition and health of the family and the general well-being of the community. Community infrastructures / amenities such as water, electricity, essential services such as postal and police, even waste disposal facilities, newspapers, marketing and shopping services, or rather their ‘availability, accessibility, and affordability’, are a great help to balancing work and life and for carrying on life without much avoidable stress.

This paper speaks of the revealed perceptions of women of Nandivaram-Guduvancheri town of Tamil Nadu, India lying in the vicinity of Chennai (nee Madras), elicited through a questionnaire from 300 women. Asked to evaluate the nature, value and knowledge of 20 variable items of ‘behind-the-scene supporters’ of life and work in the community, using a 1-7 scale (7 = best, 1= worst), the women have evaluated them as helpful / important / necessary / effective for them to move forward in their quest for equity, for reducing gender gap in education, participation, opportunities for household economic development as they see them as infrastructures on which empowerment and equity could be built. And they are helpful in improving their quality of life and work as well. Subjected to factor analysis of the principal component method, the supporters of life and work for women yielded significant individual variances with 9 of them above 80 per
cent and four factor dimensions accounting for a total variance of 76.9 per cent. The dimensions are, based on the variables loading on the factors retained, named: ‘basic urban amenities’ (variance explained 35.69 per cent), ‘civic facilities and services’ (15.33 per cent), ‘police and print media’ (13.14 per cent), and ‘agro-marketing, repair and shopping services’ (12.78 per cent), in their order of importance in ‘managing work, managing life’ together towards equity, and towards reducing gender gap in education, participation, opportunities for household economic development.

Key words: Community infrastructures, revealed perceptions, factor analysis, women, ‘manage work, manage life’

INTRODUCTION

In today’s fast-paced living and work, ‘Manage your work, manage your life’ has become an axiom with the women of India, although balancing work and life is at best elusive. By making deliberate choices about which opportunities to take, and which to decline, women can and do engage meaningfully with work, family, and community. Managing work, life, and family requires a strong network of ‘behind-the-scene supporters’. In the absence of a primary care giver who stays at home, for example, there is paid help (a crèche or a day care centre) or assistance from extended family (grandparents). Women need support at home, and more so in the community when they are responsible for nutrition and health of the family and also the general well-being of the community. Community infrastructures / amenities such as water, electricity, essential services such as postal and police, even waste disposal facilities, newspapers, marketing and shopping services, or rather their ‘availability, accessibility, and affordability’, are a great help to balancing work and life and for carrying on life without much (avoidable) stress.

This paper has the purpose of discussing the revealed perceptions of women of Nandivaram-Guduvancheri town panchayat, lying south of the metropolitan Chennai, on community infrastructures / amenities in the town as their network of ‘behind-the-scene supporters’ in their ‘managing work, managing life’. The women interviewed for the purpose of this study have been chosen from two streams, namely, the women of self-help groups operating in the town in the last 20 or so years and the women who are not the members of the self-help groups. The study is made for an understanding of the nature, value and knowledge of suburban quality of life from women’s standpoint.

The method of analysis used in the study is that of the multivariate common factor analysis, a data reducing technique much favoured in social science researches, to gain an understanding of the human experience in space and time. In this paper, the focus is on the experience of the suburban women of Kancheepuram district in their life and work and in time and space. How they perceive and value their immediate community infrastructures or amenities, in respect of availability, access to and price of water (4 variables), electricity (3 variables), sewage or drainage, waste disposal (household, local government), public transport and connectivity, environmental pollution (land, water, air and noise), civic facilities of the panchayat, service delivery (of all services), postal and police services, newspapers, agricultural services (for nearby villages), marketing services, repair and garage services, and shopping and other services. The study
assumes importance in that the women of this suburban town panchayat are on the way to their empowerment and are actively engaged in their household economics and development. In a sense, their perceptions of the community infrastructures and amenities are a measure of the ease of their life and work, in their day-to-day living and what are their revealed perceptions about their life and work.

BACKGROUND FOR THE STUDY

The study reported here is part of a larger study on household economic development through Self-Help Groups (SHGs) of women in a peri-urban/suburban town panchayat. There are two rationales for supporting active policies to promote women for household economic development. The first is that equity is valuable in and of itself: women are currently worse-off than men, and this inequality between genders is repulsive in its own right. Kofi Annan of the United Nations says that ‘the full participation of women to all levels of decision-making is a basic human right’. The second, a central argument in the discourse of policymakers, is that women play a fundamental role in development. The gender gap in education, political participation, and employment opportunities should therefore be reduced not only because it is equitable to do so, but also because it will have beneficial consequences on many other society-wide outcomes. It should be done, in other words, to increase efficiency.

This paper however looks at the question as to whether we have created (a) conditions in our towns to facilitate equity or (b) community infrastructures that might help with reducing the gender gap in education, economic participation, and opportunities for household economic development because women see them increasingly as infrastructures on which empowerment and equity could be built. And, given a set of community infrastructures, how do women of the SHGs and those who are not members of the SHGs perceive them, using a Likert scaling technique.

The rationale for taking a sample of women of both the SHGs and non-SHGs is that a mix of them may yield better, contrasting results because the women of the SHGs are generally well-informed in certain women related aspects through their involvement in self-help group work than those of the non-SHGs who in any case might as well be informed through other means. But a role in household economic development, and in achieving equity and reduction in gender gap in education, participation, and employment opportunities towards a quality of life and work, is important for both the groups.

The study recognizes that women form half of the global human resource. Unless they are given opportunities to prove their capabilities, socio-economic development of this country would be imperfect (see Manohar, 1984; Gupta, 2002). The concept of SHG is based on the following principles, namely, self-help supplemented with mutual help can be a powerful vehicle for the poor in their socio-economic development, participative financial services management and it is more responsible and efficient; poor need not only credit support but also savings and other services; poor can save and are bankable and the SHGs as clients result in wider outreach, lower transaction cost and much lower risk costs for the banks (Reddy, 2002). The primary objectives of the Self-Help Groups (SHGs) include economic and social empowerment and also skills development (Gupta, 2002; Gurumoorthy, 2002).
Self-Help Groups have proved to be an effective instrument in India to address the problem of poverty on the one hand and also empower women on the other. It is not only expected to empower women economically but also socially in terms of, say, fighting for their rights, fighting against the social evils such as gender bias, child labour, violence against women, secondary status assigned to women, dowry and crimes against women. It is true that the overall empowerment depends on the economic empowerment and as such women primarily concentrate on savings and then they extend their intervention and coverage to various other aspects including health, nutrition, environment, forestry and agriculture. Hence, several women empowerment programmes are now primarily based on the SHG concept though strictly all of them do not follow the same method (Chandra, 1999).

A study of Jothy and Sundar (2001) has shown that the SHGs have been revolutionizing the field of micro-finance and micro-credit. It is because the SHGs have a membership of 15 to 20 members. They are defined as voluntary groups, valuing personal interaction and mutual aid as means of altering or ameliorating problems perceived as alterable, pressing and personal by most of its members (Narasimhan, 1999). As groups of women from poor households, they come together for the purpose of solving their common problems through self-help and mutual help. So the SHGs promote small savings among members (Matheswaran, 2008). The savings are often kept with a bank. Micro-credit schemes or welfare agencies that restrict credit or transfers to women on the grounds that the money will be put to use germane to development implicitly recognize that women are not entirely powerless. If women were powerless, then the money would be immediately appropriated by their spouses, and we would see no impact of distributing the money to women rather than to men. Conversely, if households were harmonious entities where everyone had the same preferences and desires, then the nominal ownership of money would not matter within the household. It would all go to a common pool and channelled toward the best uses for the families (Reddy, 2002; Gupta, 2002).

PURPOSE OF STUDY

The aim of this paper is to examine the perceptions of women of Nandivaram-Guduvancheri town, Kancheepuram district as to the nature, value and knowledge of their community infrastructures and amenities as revealed by 300 women respondents in a questionnaire survey of 2013. The objective is (a) to extract four factor dimensions using a dataset gleaned from the answers to a major section of the questionnaire dealing with community infrastructures, (b) to evaluate their perceived understanding of 20 (community infrastructure) variables; and (c) to evaluate what collective perceptions do women of Nandivaram-Guduvancheri Town Panchayat hold for Life and Work in the town through an analysis and interpretation rotated factor dimensions as domains for measuring their collective perceptions.

Socio-Economic Profile of Nandivaram-Guduvancheri Town

Nandivaram-Guduvancheri is a town in Kanchipuram district of the state of Tamil Nadu. It is located in Kattankolathur block of Chengalpattu taluk of Kanchipuram district, at 35 km from the metropolis of Chennai along the National Highway 45. It lies between Tambaram and Chengalpattu and is rapidly
developing as a result of its proximity to Chennai (formerly Madras). The town connects Chennai with the cities in the southern and western Tamil Nadu. It is a social and economic (mainly market) hub for the towns such as Adhanur, Madabakkam, Kayarambedu, Perumattunallur, Pandur, Karanai Puducheri, Potheri, Nellikuppam, Thailavaram, Thirupur, and Vallancheri in the vicinity. It is at latitude 12° 84’ N and longitude 80° 057’ E. The town is generally known by the name Guduvancheri although, by the order of the Town Panchayat Director, it has been divided into two revenue divisions, namely, Nandivaram and Guduvancheri (Figure 1a). The two are divided by the Grant Southern Trunk Road (GST Road) which is also the National Highway 45. Nandivaram is on the east of the NH45 as one travels down south from the city of Chennai while Guduvancheri is on the west of the NH45.

Figure 1a

Figure 1b

It has been upgraded as a municipality after Census 2011 as the town’s population has greatly increased, from 26,575 in 2001 to 44,116 in 2011. As the town is divided into two parts, there are two neighbourhoods. The main neighbourhood is Guduvancheri, the town area around the bus stand, traffic signal and railway station. The bus stand is however on the eastern side of the GST road while the railway station is on the western side of the national highway. The market area is on the western side as also the police station. Nandivaram has always been a residential area for several years. This part of the town can be reached by, and is along the Nandivaram main road, next to the Government Health Centre.

The total population of the town in 2001 was 26,575 with 13,413 men and boys (50.5 per cent) and 13,162 women and girls (49.5 per cent). Among the total population, the scheduled castes accounted for 17 per cent (4,551 persons) and the scheduled tribes accounted for a miniscule proportion of 0.6 per cent (156 persons). The number of households in the town panchayat in 2011 was 11,613. There are considerable (spatial) variations in the distribution of households in the wards of the town (Figure 1b): Ward 15 has the smallest number of households (262, or 2.3 per cent) and the ward 17 has the largest number of
households (1,305, or 11.23 per cent). Between the lowest and the highest concentrations of households in the two wards, a pattern of distribution is discernible: only 3 wards (wards 3, 8, and 15) have less than 400 households each; wards 2, 4, 5, 6, 9, 10, 11, 13, 14, and 16 have households between 400 and 800; and five other wards (wards 1, 7, 12, 17, and 18) have more than 800 households each. There are 860 households in the three wards with less than 400 households each, which account for 7.4 per cent of the total households. On the other hand, the ten wards with 400-800 households each account for 47.5 per cent (5,515 households) and those wards with more than 800 households each account for 45.1 per cent (5,238 households). As per the census 2011, the average size of the household in the town is 3.8 persons and thus most households are nuclear whereas there are some households yet which are joint or extended in character. Joint or extended households are however rare these days.

The total population of the town was 44,116 with 22,301 men and boys (50.6 per cent) and 21,815 women and girls (49.4 per cent). There were a total of 31,503 voters in the town with 16,732 men (53 per cent) and 14,766 women (47 per cent) voters. There are spatial variations in the distribution of voters as well, ranging from 926 voters in ward 14 to 3,015 voters in ward 18 among the total voters (31,503 voters or 71.4 per cent of the total population). This means that most people of the town are above 18 years of age with voting rights. Likewise, there are variations in terms of gender of the voters as well, with the lowest of 426 men voters in ward 14 to 1,507 men voters in ward 18, and with 440 women voters in ward 10 to 1,507 women voters in ward 18. Thus, ward 18 has equal number of men and women voters. The gendered distribution of voters reflects the general distribution of male and female populations in the wards of the town panchayat. The highest concentration of male voters is in 2 wards: ward 9 (1,422 voters) and ward 10 (1,346 voters). In almost all other wards, the male and female voters are more or less the same in number, with differences being small between male and female voters.

The increase in total population in the decade 1991-2001 was 7,228 persons, accounting for a decadel variation of 37.4 per cent over 1991 population. The increase in total population over the decade 2001-11 was 17,541 persons, meaning a decadel growth of around 66 per cent over the 2001 population. In the previous decade of 1991-2001, it was 7,228 persons amounting to a decadel growth of around 37 per cent or an annual average growth rate of 3.7 per cent. The town population was growing at an annual average rate of 6.6 per cent during 2001-11, primarily because of migrants from all across the country settling down in the town as a result of their newfound occupations in and around the town. The SRM University, a private deemed university of repute, is indeed the main attraction for youngsters of both the sexes for the university has on its rolls some 25,000 students. Most of them have come from nearby states such as Andhra Pradesh, Kerala and Karnataka and a good number of them have also come from the northeastern states of the Indian Union. There are also students from abroad, particularly from Africa and the Southeast and South Asian countries.

The automobile industries (Ford, for example) and IT and ITES institutions (Accenture, for example) also attract large number of industrial and IT workers from across the country and a good number of them make the town their residential precincts. MNCs and TNCs in the vicinity of the town have initiated housing projects in the town for their workers and gated communities exist nearby. Floating population of some
thousands everyday is a normal feature of the town and the traffic that pass through carrying passengers, commuters, tourists, and other long distance travellers is rather heavy through day and night and 24 x 7.

Contrasts in spatial variations in population, male and female populations are rather stark. All wards have different strengths of population and therefore differentially gendered population as well. As for total population, wards 3, 8, and 15 are with populations less than 1,500 persons each, totalling however 3,360 persons or 7.6 per cent of the total. Wards 1, 2, 4, 5, 6, 9, 10, 11, 13, 14, 16, and 18 are with populations between 1,500 and 3,500 each. The total population in the 12 wards is 27,605 persons or 62.6 per cent of the total population in the town. And wards 7, 12 and 17 are with populations above 3,500 each, totalling 13,151 persons or 29.8 per cent (Figure 2a). There are three clusters of high concentration of population in the town, two principally along the NH45 and one away from the corridor and in the southwest of the town.

Figure 2a shows the distribution of population density in the town by the wards. Being a town in the southern periphery of Chennai metropolitan centre has relatively high population densities in comparison with the other towns in the vicinity. It is bound to be so when the town is a host to the industrial and IT employees and students of the private university in the proximity. Concentration of high densities of 5,000 persons to a km$^2$ is in the middle of the town and along the NH45 and suburban rail track. Densities between 2500-5000 persons to a km$^2$ are on either side of the high density wards in Guduvancheri (in the
southwest and the east of the town). Milder densities of 2,500 persons or less to a km$^2$ are also found in both the neighbourhoods, in the north and northwest and in just one ward in the southeast of the town.

The town is characterized largely by built-up area (nearly 70 per cent of the area under it), interspersed with fallow lands in 5 scattered pockets (roughly 12 per cent of the total geographical area), agricultural lands in adjoining areas (about 8 per cent of the geographical area), water bodies in the form of lakes (about 7 per cent of the geographical area), and vegetation in just about 3 per cent of the area of the town. With the arrival of the automobile and IT industry, newer gated communities, and the development of the private university, the skyline of the town has changed drastically. Real estate has appreciated for more than 300 per cent in the peripheral areas and even more than 500 per cent in some parts of the inner town, making it impossible for the poor and the marginal to afford housing in the town. There has been a conversion of agricultural lands into non-agricultural lands but primarily for housing and infrastructure development. Industrial scene of the area has also changed with most industries becoming responsive to the changing times, despite the economic slowdown in the country and the state.

DATA AND METHOD

The sample for the study has been selected purposively randomly using a snowballing procedure. Introductions have been provided by the functionaries of the select number of SHGs, who have also given us access to their non-SHG friends. The interviews have been recorded over a period of six months during the second half of 2013.

The data matrix represents multiple items or scales (300 cases x 20 variable items) reflecting fewer underlying constructs. As indicated, this paper draws on data from a larger questionnaire study but uses perceptual data (of the nature, value and knowledge of 20 select conditions now of people in the town panchayat of our concern).

The scholars, with field assistants, have conducted face-to-face interviews with women of varying ages 19-72 years (11.5 per cent of under-30 years, 37.8 per cent of 31-40 years, 42 per cent of 41-60 years and just 8.3 per cent of 60 plus years). Specifically, the data for this paper focus on the following, from the questionnaire indicators of community infrastructures / amenities in the town panchayat. As for women of the SHGs (150), varying numbers of women members have been interviewed for the study in order to gather information on the characteristics of the self-help groups operating in the town panchayat of Nandivaram-Guduvancheri. Anywhere between 1 (Vasantham, Vaibhava Lakshmi, for example) and 8 women (Allimalar, for example) have been interviewed from each of the self-help groups.

As far both SHG and non-SHG women are concerned, industrial employment (shoe company, garment factory, small time businesses) accounts for 20.8 per cent while self-employment (tailoring, constructional help, home-based eateries) accounts for 20.7 per cent. Next to these, women work as maid servants in the neighbourhood households (9.3 per cent), flower sellers (5.3 per cent), wage labourers (5.3 per cent), food,
vegetable, fish, fuel and other goods sellers (6.1 per cent). The rest of them are housewives, and some 34 per cent among them work as labour and on odd jobs but only when it is lean months for men folk.

A very negligible proportion of the women interviewed (0.7 per cent) have completed lower primary education (1-5 grades), while about 19.0 per cent of them have completed upper primary education (6-8 grades), 23.4 per cent of them secondary school (9-10 grades) and 44.0 per cent higher secondary school education (11-12 grades). Those with collegiate or university or technical, industrial education constitute 12.0 per cent. Women interviewed report of having either small families (1-4 members: 94.6 per cent) or medium families (5-6 members: 5.4 per cent). There are families with one (1.3 per cent), two (20.1 per cent), three (11.4 per cent), four (61.7 per cent), five (4.0 per cent) and six (2.0 per cent) members.

Most households have two economically active persons in them (85.3 per cent) whereas 10.7 per cent of the households have only one economically active person and 3.3 per cent of them have three economically active persons. Those with four economically active persons account for a mere 0.7 per cent of the households. A majority of EAPs is engaged in businesses (58.1 per cent), followed closely by those engaged in industrial work (22.7 per cent), then services sector (11.4 per cent), livestock and poultry farming or other businesses (6.6 per cent) and agriculture (1.4 per cent). Wages account for 46.6 per cent of the households, salaries account for 30.7 per cent of the households, interest from deposits constitute 14.7 per cent while businesses (shops) and rent from housing and commercial spaces account for 7.3 per cent and 0.7 per cent of the households, respectively.

Community Infrastructures / Amenities at Nandivaram-Guduvancheri Town Panchayat Scaled: Twenty variables /items included in the questionnaire for survey and the directions given for scaling them are shown below.

Directions and a Note: Below are certain indicators / items for your evaluation (your perceived understanding of the nature, value and knowledge of them). Using the 1-7 scale below, indicate your evaluation of each item by placing the appropriate number alongside that item. Please be open and honest in your responding. Remember you are evaluating the community infrastructures / amenities in a way that you feel they are helpful / important / necessary for you to move forward in your quest for equity, for reducing gender gap in education, economic participation, and opportunities for household economic development because you see them increasingly as infrastructures on which empowerment and equity could be built. They are also helpful in improving your quality of life and work. The scaling is: 7 = Best; 6 = Better; 5 = Good; 4 = Average; 3 = Bad; 2 = Worse; 1 = Worst.

Community Infrastructures / Amenities Scaled in the Survey

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<tbody>
<tr>
<td>1.</td>
<td>Water availability</td>
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<tr>
<td>2.</td>
<td>Water quality</td>
</tr>
<tr>
<td>3.</td>
<td>Cost of water</td>
</tr>
</tbody>
</table>
4. Piped water  
5. Availability of power (electricity)  
6. Quality of power distribution  
7. Cost of power (tariff)  
8. Sewage or drainage  
9. Garbage disposal (household, local government)  
10. Public transport and connectivity  
11. Pollution (land, water, air, noise)  
12. Civic facilities (in the panchayat)  
13. Services delivery (all services)  
14. Postal services  
15. Police services  
16. Newspapers  
17. Agricultural services (nearby town)  
18. Marketing services  
19. Repair and garage services (nearby town)  
20. Shopping and other services (nearby town)

The Method: The paper reports on the results of one specific run of factor analysis and hence only the method of factor analysis is described briefly and in non-technical terms.

Factor analysis manages over a hundred variables, compensates for random error and invalidity, and disentangles complex interrelationships into their major and distinct regularities. It is mathematically complicated and has diverse and numerous considerations in application. The purpose of this discussion is to enhance the understanding and utilization of the results of factor analysis, rather than provide a technical description.

Conceptually, factor analysis is a means by which the regularity and order in phenomena can be discerned. As phenomena co-occur in space and in time, they are patterned; and as these co-occurring phenomena are however independent of each other, there are a number of distinct patterns (Velicer and Jackson, 1990). What factor analysis does is this: it takes measurements and qualitative observations and resolves them into distinct patterns of occurrence. It makes explicit and more precise the building of fact-linkages going on continuously in the human mind.

Factor analysis applied to delineate patterns of variation in characteristics is called R-factor analysis. It is applied in order to explore a content area, structure a domain, map unknown concepts, classify or reduce data, illuminate causal nexuses, screen or transform data, define relationships, test hypotheses, formulate theories, control variables, or make inferences (Rummel, 1970; Ram, 1982; Davis, 2002).
When a table of data, say, answers to a questionnaire, are interrelated in a complex fashion, then factor analysis is used to untangle the linear relationships into their separate patterns. Each pattern appears then as a factor delineating a distinct cluster of interrelated data. It is useful for reducing a mass of information to an economical description. For example, the data are facilitated by reducing them to their common factor patterns. The factors concentrate and index the dispersed information in the original data and can therefore replace the characteristics without much loss of information.

Factor analysis is often employed to discover the basic structure of a domain. It can be used to group interdependent variables into descriptive categories. It is also used to classify, for example, individual profiles into types with similar characteristics or behaviour. Or it is used on data matrices of a social-choice type to show how individuals or social groups cluster on their transactions with or choices of each other.

An investigator often wishes to develop a scale on which individuals, or groups, or even a community can be rated and compared. One problem in developing a scale is however to weight the characteristics being combined. The analysis thus offers a solution by dividing the characteristics into independent sources of variation (factors). Each factor then represents a scale based on the empirical relationships among the characteristics. The factor score results are actually such scales, developed by summing characteristics times the weights (see Distephano, Zhu and Mindrila, 2009).

Hypotheses abound regarding dimensions of attitude, personality, group, social behaviour, and revealed perceptions. Since the meaning usually associated with 'dimension' is that of a cluster or group of highly inter-correlated characteristics or behaviour, factor analysis is used to test for their empirical existence. Which characteristics or behaviour is, by theory, related to which dimensions can be postulated in advance and statistical tests of significance can be applied to the factor analysis results (Steiger, 1990).

Common factor analysis is concerned with defining the patterns of common variation among a set of variables. Variation unique to a variable is however ignored. In contrast, another factor model called component factor analysis is concerned with patterning all the variation in a set of variables, whether common or unique (see Kaiser, 1958; Harman, 1960; Lawrence and Upchurch, 1983; Vinayakam and Sekar, 2013).

**Revealed Perceptions on Community Infrastructures and Discussion**

Table 1 shows the communalities extracted of the 20 variables entered in the analysis. All variables / items included in the analysis are scaled variables, using 1-7 as the scales indicating their evaluation of each item on the questionnaire in an open and honest manner in their responses (scaling: 7 is the best; 1 is the worst).

Communalities, or the values representing the variables’ individual variances, indicate that all of them have significant variances and that 9 among the 20 variables have more than 80 per cent variance. All of them are therefore highly eligible variables for loading on any of the four factor dimensions extracted from the analysis. In fact, all the variables have loaded significantly on one or the other factors. Among the 20
variables/items with significant individual variances, ‘public transport and connectivity’ has the highest individual variance at 90.9 per cent, followed closely by ‘quality of power distribution’ with 89.4 per cent, and ‘civic facilities (panchayat)’ with 85.2 per cent. A municipal town close to Chennai metropolis should be very good in public transport and connectivity as well as quality of power distribution. In fact, even during the worst power outages in the last few years, the city and the peri-urban localities have done commendably well, with minimum hours of power cut. As a newly designated municipality after Census 2011, the town could actually boast of certain civic facilities.

**TABLE 1: COMMUNALITIES FOR COMMUNITY INFRASTRUCTURES/AMENITIES IN NANDIVARAM-GUDUVANCHERI TOWN PANCHAYAT**

<table>
<thead>
<tr>
<th>Community variables</th>
<th>Initial</th>
<th>Extraction</th>
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<tbody>
<tr>
<td>Water availability</td>
<td>1.000</td>
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<tr>
<td>Water quality</td>
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<td>Cost of water</td>
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<td>Piped water</td>
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<td>Availability of electricity</td>
<td>1.000</td>
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<tr>
<td>Quality of power distribution</td>
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<td>Cost of power (tariff)</td>
<td>1.000</td>
<td>0.548</td>
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<td>Sewage or drainage</td>
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<td>0.672</td>
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<tr>
<td>Garbage disposal (household, local government)</td>
<td>1.000</td>
<td>0.720</td>
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<tr>
<td>Public transport and connectivity</td>
<td>1.000</td>
<td>0.909</td>
</tr>
<tr>
<td>Pollution (of land, water, air, noise)</td>
<td>1.000</td>
<td>0.807</td>
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<td>Civic facilities (panchayat)</td>
<td>1.000</td>
<td>0.852</td>
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<td>Services delivery (all services)</td>
<td>1.000</td>
<td>0.825</td>
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<tr>
<td>Postal services</td>
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<td>0.827</td>
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<tr>
<td>Police services</td>
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<td>0.748</td>
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<td>Newspapers (local, regional)</td>
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<td>Agricultural services</td>
<td>1.000</td>
<td>0.812</td>
</tr>
<tr>
<td>Marketing services</td>
<td>1.000</td>
<td>0.710</td>
</tr>
<tr>
<td>Repair and garage services</td>
<td>1.000</td>
<td>0.816</td>
</tr>
<tr>
<td>Shopping and other services</td>
<td>1.000</td>
<td>0.723</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Method.

The variables with equally high and significant variances are: ‘postal services’ (82.7 per cent), ‘water quality’ (82.6 per cent), ‘services delivery’ (82.5 per cent), ‘repair and garage services’ (81.6 per cent), ‘agricultural services’ (81.2 per cent), and ‘pollution (land, water, air, and noise)’ (80.7 per cent). Services of all kinds and
their delivery in the Chennai’s proximal town are also very good; specifically, postal services, repair and garage services, and even agricultural services are the best the people may aspire for. The town acts as a service town for rural backwater agriculture and this has been a traditional activity of the town for several decades and the tradition continues even now. Although ‘water availability’ (variance is 75.6 per cent) can be a problem during summer months, and during the drought years, water quality has never been a big problem in the town.

But the fact that pollution of all kinds, land, water, air, and noise is also significant has to be taken with a pinch of salt. With industries disposing of effluents and residential areas disposing of their wastewaters in the water bodies (like lakes, ponds), people littering uncontrollably and prominently using plastic carry bags instead of cloth bags, water and land pollution have become an eyesore in the suburban town. Automobile and other vehicular traffic has added to air and noise pollution. NH45 is a very busy highway 24 x 7 and lorry and truck traffic throughout the night could be a nightmare for many for noise could be intolerable.

And that the 20 variables entered in the analysis has very significant individual variances must be taken as a sign that the women of the town rate their community infrastructures / amenities as being very helpful in their day-to-day living and effective towards bringing about equity and reducing gender gap in education, participation and employment. Observations over the years by the scholars have also confirmed the confidence women of the town place on the infrastructures.

Table 2 shows the eigen values, percentage of variance and cumulative (total) variances explained by the 4 factors retained in the analysis. As for eigen values, all the 4 factors have eigen values more than 1.0, which is a selection criterion for the factors. Both the eigen values and percentages of variances decline progressively, with the factors retained: eigen values from 7.137 for the first factor retained to 2.556 for the fourth or the last factor retained; and percentage of variances declining from 35.685 per cent for the first factor to 12.782 per cent for the fourth factor.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Initial Eigenvalues</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>% of Variance</td>
</tr>
<tr>
<td>1</td>
<td>9.162</td>
<td>45.811</td>
</tr>
<tr>
<td>2</td>
<td>3.462</td>
<td>17.311</td>
</tr>
<tr>
<td>3</td>
<td>1.705</td>
<td>8.523</td>
</tr>
<tr>
<td>4</td>
<td>1.058</td>
<td>5.288</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Method.

A comparative picture of the initial factor solution with the rotated factor solution in regard to eigen values and percentage of variances explained is possible from the output of the common factor analysis. Figure 1,
on the other hand, shows the scree plot for the factors that could be retained (factor retainable is always \( p < m \) variables entered in the analysis) against eigen values. With a cumulative percentage of variance explained by the 4-factor matrix retained at 76.934 per cent, the factor structure is quite significant in explaining away the revealed perceptions of women on the community infrastructures and also on the infrastructure-dependent quality of life and work in the town, as deduced from the last three of the columns in Table 2.

**Factor Dimensions**

It is important at this juncture to reiterate that ‘managing work, managing life’ does require some very important and strong ‘behind-the-scene supporters’ which are by our perception the available, accessible and affordable community infrastructures / amenities, which facilitate life and work for women as breadwinners, caregivers, and as those responsible for nutrition and health of the family, and general well-being of the community.

Table 3 is the rotated factor matrix retained in the analysis. The 4-factor matrix retained explains a total, cumulative variance of 76.934 per cent as shown in Table 2 above. The factors extracted are considered the dimensions of the problem being investigated; that is, the revealed perceptions of the nature, value and knowledge of community infrastructures / amenities towards equity, and towards reducing the gender gap for achieving the quality of life and work of women folk in Nandivaram-Guduvancheri town. Following the convention of interpretation of factor analytical results, each of the factors retained have been labelled using variables or items loading highly significantly on the factors.

The four factors retained in the order of importance for managing work and managing life of the women folk of the town of Nandivaram-Guduvancheri are: ‘basic urban amenities’ explaining a total variance of 35.79 per cent is the main factor, ‘civic facilities and services’ is the bipolar and the second most important factor explaining a total variance of 15.33 per cent, ‘police and print media’ is the third, reduced dimension explaining a total variance of 13.14 per cent, and ‘agro-marketing, repair and shopping services’ is the fourth and the last dimension extracted explaining a total variance of 12.78 per cent. In the considered and educated perceptions of the women of the town, all of the 20 infrastructures / amenities are important and necessary for achieving equity and reducing gender gap but decidedly ‘some are more important than others’ and that women can, and do, see them as needed behind-the-scene supporters of their life and work and their management in their suburban living.

**Factor 1: Basic Urban Amenities**

Eleven of the 20 variables / items scaled load significantly on the first factor. As most variables loading on the factor are basic urban amenities, the first or main factor is labelled as the ‘Basic Urban Amenities’ Dimension. As we can see, water, electricity or power, drainage, waste disposal, public transport and connectivity, and even pollution related infrastructures are the basic urban amenities. Within the main factor dimension, that is, in the first most important set of community infrastructures / amenities, the
following is the order of significance from the first to the last: water availability (rotated factor loadings: 0.894; individual variance 75.6 per cent), water quality (0.892; 82.6 per cent), cost of water (0.883; 71.5 per cent), piped water availability (0.874; 78.5 per cent), availability of electricity (0.818; 73.2 per cent), quality of power distribution (0.816; 89.4 per cent), cost of power (0.752; 54.8 per cent), sewage or drainage (0.638; 67.2 per cent), garbage disposal – household, local government (0.624; 72 per cent), public transport and connectivity (0.578; 90.0 per cent), and (land, water, air, and noise) pollution related infrastructures (0.534; 80.7 per cent). A simple and straightforward understanding of the revealed perceptions here is:

- water, its availability, quality, cost because the households have been pushed to a situation of buying bottled water for home use, for drinking as well as cooking, and piped water, potable and at home or close quarters, are the very first needs of women for managing work and managing life at home and in the community;
- availability of electricity because outage has been a regular feature of power supply in the last few years, its quality of distribution for many households experienced low voltages during the hot hours of a day and warm hours of the night, and cost of power because the price of power has been upped not long ago (2012-13) slapping a higher power tariff per unit so much so paying electricity bills, although every two months, has become a burden;
- facilities such as the drainage, garbage disposal practices of the households and the facilities / sanitary staff of the local government are important because the sanitation and health of the people and the community would suffer without them and it is in their interest that women are not unduly stressed about cleanliness, sanitation and health of their household because of the absence of such facilities; having them in place in the localities of their residence greatly eases their minds about wastewater and solid waste disposal;
- as women have become increasingly mobile, because they have now joined the mainstream workforce by taking to a range of employment categories, wage earning to salaried, public transport and connectivity have become part of their support bases; they are now travelling to and from work, mainly using the public transport, train or bus or both; also they have taken to two-wheelers and bi-cycles to get around quickly and with economy; and
- pollution load on land and water has increased on land and in water, air has become hazy and with petroleum-diesel smell while noise has gone up in great many decibels because of fossil-fuel using automobiles and two-wheelers, causing concern for environment and human health – in fact absence of pollution-abating mechanisms in place in the town has been producing stress amidst the people, especially women.

Thus there are both positive and negative aspects of basic urban amenities which are appropriately perceived by the women of the town as to their effect on living and work.
Factor 2: Civic Facilities and Services

Three of the 20 variables load significantly on the second factor. Based on the nature of the variables loading, the second, bi-polar factor, is labelled as the ‘Civic Facilities and Services’ Dimension. Civic facilities of the town panchyat are the highest loading among all the variables entered in the analysis, with 0.940 as loadings and 85.2 per cent as the individual variance. But this variable loads significantly only on the bipolar, and the second most important factor dimension, make it only of reduced importance in the overall scheme of ‘managing work, managing life’ among women of the suburban town. But as civic facilities are those provided by the governments (local, regional and state) and the municipality for the common people such as bridges, flyovers, public toilets, and in fact all utilities that are used by the resident as well as visitor populations, they are indeed the most important amidst the other facilities including the basic facilities such as the water supply, electricity, drainage and garbage disposal. As a municipality the town does have more than a semblance of all of them and thus help with the getting-on in life and work for women. Services delivery, of all services such as education, sanitation, health, banking and what have you load with 0.742 and has an individual variance of 82.5 per cent. The other vital service that loads with statistical significance on this factor is of postal services (0.722; 82.7 per cent). The inclusion of postal services in the factor is of special significance in these days of mobile phones and couriers. It is an indication that the suburban milieu still values postal services as a certain definite and reliable means of communication, especially for the enterprises women are affiliated to in their work.

<table>
<thead>
<tr>
<th>Table 3: Rotated Factor Matrixa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component</td>
</tr>
<tr>
<td>Community variables</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>Water availability</td>
</tr>
<tr>
<td>Water quality</td>
</tr>
<tr>
<td>Cost of water</td>
</tr>
<tr>
<td>Piped water</td>
</tr>
<tr>
<td>Availability of electricity</td>
</tr>
<tr>
<td>Quality of power distribution</td>
</tr>
<tr>
<td>Cost of power (tariff)</td>
</tr>
<tr>
<td>Sewage or drainage</td>
</tr>
<tr>
<td>Garbage disposal (household, local government)</td>
</tr>
<tr>
<td>Public transport and connectivity</td>
</tr>
<tr>
<td>Pollution (of land, water, air, noise)</td>
</tr>
<tr>
<td>Civic facilities (panchyat)</td>
</tr>
<tr>
<td>Services delivery (all services)</td>
</tr>
<tr>
<td>Postal services</td>
</tr>
<tr>
<td>Police services</td>
</tr>
</tbody>
</table>
Factor 3: Police and Print Media

Only two of the 20 variables load significantly on the third factor. The factor dimension is labelled as the ‘Police and Print Media’ Dimension as Police services (0.851; 74.8 per cent) and (local, regional) newspapers (0.655; 70.7 per cent) are the two variables in the factor. This dimension brings about the importance of ‘safety and security’ and ‘law and order’ on the one hand and ‘politically informed-status’ on the other, for women perceive the two as essential services in managing work and life. The two also have roles in the smooth, and to use a strong word ‘righteous’, functioning of the social system and socio-politically aware family and community responsibilities. Note that managing work, managing life, and building a gratifying ‘career’ in a small, suburban town and managing behind-the-scene supports and above all carrying on life in a not-so-equal could be a tall order for women.

Factor 4: Agro-marketing, Repair and Shopping Services

The variables that load significantly on the fourth and last factor retained in the analysis are four of the 20 entered in the analysis. The dimension is labelled as the ‘Agro-marketing, Repair and Shopping Services’ Dimension. This last dimension is indicative of the fact that these services are primarily useful for people outside the town first (agro-marketing, repair or garage works, and shopping) and also for those inside the town (repair and garage services and shopping services). Nandivaram-Guduvancheri in reality acts as a service centre for the agricultural hinterland as well as the repair and shopping centre for the villages and towns in the vicinity. Agricultural services load on the factor with 0.791 and an individual variance of 81.2 per cent. Marketing services load with 0.720 (variance 71.0 per cent), repair and garage services with 0.610 (81.6 per cent) and shopping services with 0.590 (72.3 per cent). Among the services loading on the last dimension, agricultural services have primacy followed by marketing services, both of which serve more than the town’s population along with the repair or garage services and shopping services, for both of which there are alternative spatial choices, for example, Tambaram in the north and Chengalpattu in the south of the town. This dimension is also indicative of the interdependence that is characteristic of suburban societies.

Overall, there are certain variables which have loaded on more than one factor. For example, sewage or drainage (0.541) and garbage disposal (0.516) load on the third dimension although they have higher
loadings in the main dimension and therefore have been counted as valid part of the main dimension ‘basic urban services’. Likewise, repair and garage services also load on the third dimension when in fact it has higher loading on the last dimension. Their appearance in more than one factor dimension extracted could be taken to mean that they are better infrastructures / amenities in the town.

Conclusion

The study reported here has shown that women of the town Nandivaram-Guduvancheri are highly perceptive of the need for ‘managing work and managing life’ in their day-to-day living with the help of behind-the-scene supporters such as the community infrastructures / amenities. ‘Basic urban amenities’, ‘civic facilities and services’, ‘police and print media’, and ‘agro-marketing, repair and shopping services’ are the four factor dimensions extracted from a factor analysis of the 20 scaled variables entered in the analysis. The discussion on the factor dimensions has been a reflection on the collective perception of 300 women, half of whom have been from the SHGs and the other half with no allegiance to any such self-help groups. The urban essentials for work-life balance are the basic urban amenities such as water, electricity, drainage, garbage disposal services, transport and connectivity and so on. Together with civic facilities and other services such as education, health, sanitation, banking, and also police and print media, agro-marketing, repair and shopping services, which are behind-the-scene support for managing work, managing life, the women are hoping to build equity and reduce gender gap in education, participation, and opportunities. But our reflection on the perceptions of women on the town’s community infrastructures / amenities is that support may come in many forms but what it almost always boils down to is making sure women of the town panchayat manage their own human capital effectively. We also recognize that the pressures and demands on women are intense, multi-directional and unceasing. Men of the households can help them keep their eyes on what matters, budget their time and energy, live healthfully, and make deliberate choices about work, and take an active part in household economic development and community involvement. If they do that, together with women they could build equity and reduce gender gap in almost everything.

Acknowledgements

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References