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Abstract:
Urbanization in India is a complex phenomenon and has come to occupy an important place in the socio-economic development of the country. In 2001, the Level of Urbanization in Maharashtra was 42.40 % as compared to 27.8 % to that of India. In India, the state of Maharashtra had remained the most urbanized state from 1971 to 1991 and second during 2001, first being the state of Tamil Nadu. The main urban centers of Maharashtra are located on the riverbanks, strategic points or on the main transport routes. The present study is based on the Census data and the Maharashtra State Gazetteers published by the Government. Size of population is used in the present paper to classify urban centers into Primate, Secondary and Tertiary centers. The study of spatial distribution and analysis of urban population growth of the secondary cities is based on the administrative divisions of the state. Secondary cities are those that are large enough to perform important socio-economic functions; provide welfare services for their own populations and those in the surroundings areas. In the present paper all the class I cities of Maharashtra except the primate city of Mumbai are considered as Secondary Cities. The analysis based on the census data reveals that the number of secondary cities in the state during this period increased from 16 in 1961 to 39 in 2001. The primate city of Mumbai with about 29.05 per cent and 39 secondary cities with 48.63 per cent, altogether accounted for nearly 77.52 per cent of the total urban population of the state while the remaining 338 tertiary urban centers constituted only 22.23 per cent of the total urban population of the state in 2001.

It thus reveals that over the period it has contributed to regional imbalance in the distribution of urban population in the state and so do the functions associated with it. The urbanization process in Maharashtra therefore has been lopsided. It therefore calls for urban policies that favor balanced distribution of urban population at different levels of urban hierarchy besides simultaneously favoring sustainable development in its rural hinterland that prevents push migration from smaller urban centers and rural places.

**Key words:** Urbanization; Administrative Divisions; Primate City; Secondary Cities; Tertiary Centers, regional imbalance, lopsided development.
Introduction:

Urbanization in the demographic sense is “an increase in the proportion of the urban population to the total population over a period of time” (Bose, 1973, p.3). The process of urbanization in most of the developing countries is characterized by a rapid growth of the urban population and a high degree of primacy even though they continue to be at a low level of urbanization. Urbanization in India is a complex phenomenon and has come to occupy an important place in the socio-economic development of the country. The large population living in cities and towns is in large measure a consequence of extreme poverty and social discrimination in rural areas, which drives people to the cities. Thus, the influx of population to major cities has created vast slums, where millions live in sub-human conditions, thereby giving rise to several social and economic problems (Gadgil and Deshpande, 1988). Urbanization in Maharashtra is as old as Indian Civilization. The growth of any city is a result of various historical, social, economic and political processes that have operated together over a period of time. In addition to these, the significance of infrastructure facilities available in a city becomes a very critical element in determining the growth, development and quality of life in any city. In 2001, the Level of Urbanization in Maharashtra was 42.40% as compared to 27.8% to that of India. In India, the state of Maharashtra had remained the most urbanized state from 1971 to 1991 and second during 2001, first being the state of TamilNadu.

The search is on finding an urban system that is more balanced and that can fulfill the national development goals of widespread economic and social development. It is believed that a more balanced pattern of urbanization might play an important role in promoting equitable development. Friedmann asserts for systematic inter-relation between countryside and city, in which their notorious differences in levels of living and opportunity will become progressively less, pronounced (Friedmann, 1981). It needs to be emphasized that levels of urbanization are closely linked with the level of development and urbanization plays a crucial role in country’s development, and if successfully managed can lead to economic success (Watts, 1992).

Scope of the Study:

The increasing importance of secondary cities over the last four decades has proved through cross sectional data from many nations that there exists an inverse relationship between economic development and primacy. It is observed that an increasing number of governments of developing countries over the past few
years have been exploring ways of building the capacities of secondary cities to contribute to rural development as well as to achieve a more diffuse pattern of urbanization. Hence building a system of functionally efficient secondary cities linked to larger and smaller urban centers and a network that links its neighboring rural areas will relieve population pressures in largest metropolises and also help to spread the benefits of urbanization to masses by reducing interregional disparities. Thus secondary cities have started playing an important role in planning of different countries. It is also felt that there is a need to re-evaluate the role of cities in contemporary development at all levels (Armstrong and McGee, 1985). Well-documented research on the dynamics of intermediate cities as well as their interlinkages with their surrounding rural environment however, is scanty. The urban research in developing countries has focused almost exclusively on large metropolitan areas and primate cities. As a result in most developing countries policies for strengthening intermediate cities have been ad hoc and largely reactive attempts to deal with specific problems of regional inequity as they arise. In India also much of the urban research has been on the four-mega cities of Mumbai, Kolkata, Delhi and Chennai. Hence relatively little is known about the secondary cities or the roles they play in regional development. A well-distributed system of secondary cities is needed to ensure that the benefits of urban growth spread to small towns and villages. The present study therefore attempts to find the location, spatial distribution and growth of secondary cities in the state of Maharashtra over a period from 1961 to 2001, since Maharashtra state was formed on 1st May 1960.

Objectives for this research paper are as under:
1. To study the trend of growth of population of towns in the urban system of Maharashtra.
2. To study the location and spatial distribution of secondary cities in the urban system of Maharashtra.
3. To study the growth of secondary cities by administrative divisions of the state.
4. To suggest measures for regional balanced development.

Data sources and Methodology:
Secondary data has been used from different censuses of Maharashtra and Maharashtra State Gazetters to study the location and growth of towns in the State. The ranges of cities that constitute the secondary cities in an urban hierarchy vary from country to country depending on the pattern of urban settlements, levels of
development and economic structures. The size of population is one of the most frequently used criteria to classify the urban centers into primate, secondary and tertiary centers. In India, conventionally the term class I city is used to refer to settlements having a population with one lakh above. In the present work, the size of population is considered as the criterion to designate an urban settlement as a secondary city. All the class I cities of Maharashtra (according to 2001 census) except the primate city of Mumbai are considered as secondary cities. Further since Maharashtra is a large state in size these secondary cities therefore are studied with the help of administrative divisions of the state. The main urban centers of Maharashtra are located on the riverbanks, strategic points or on the main transport routes as depicted in Figure No. 1 & 2.

![Figure 1](image_url)

Maharashtra
Spatial Distribution & Location Of Secondary Cities
With Reference To Major Relief Features

Figure 1
The primate city of Mumbai, the capital of the state and financial capital of the country has 29.14 per cent and 39 secondary cities with 48.63 per cent, together accounted for 77.77 per cent of the total urban population of the state while the remaining 338 urban centers constitute only 22.23 per cent of the total urban population of the state in 2001. It thus reveals that the urban population in the state is highly unevenly distributed. The increasing dominance of secondary cities in the urban system of Maharashtra is clearly understood from table 1.

Table 1.

<table>
<thead>
<tr>
<th>Year</th>
<th>I</th>
<th>PopSize</th>
<th>%ofpop</th>
<th>II</th>
<th>PopSize</th>
<th>%Dist</th>
<th>III</th>
<th>PopSize</th>
<th>%Dist</th>
<th>IV</th>
<th>PopSize</th>
<th>%Pop</th>
</tr>
</thead>
<tbody>
<tr>
<td>1961</td>
<td>1</td>
<td>4.15</td>
<td>37.20</td>
<td>11</td>
<td>2.60</td>
<td>23.29</td>
<td>254</td>
<td>4.41</td>
<td>39.51</td>
<td>266</td>
<td>11.16</td>
<td>100</td>
</tr>
<tr>
<td>1971</td>
<td>1</td>
<td>5.97</td>
<td>38.00</td>
<td>16</td>
<td>4.20</td>
<td>26.75</td>
<td>272</td>
<td>5.54</td>
<td>35.25</td>
<td>289</td>
<td>15.71</td>
<td>100</td>
</tr>
<tr>
<td>1981</td>
<td>1</td>
<td>8.24</td>
<td>37.48</td>
<td>28</td>
<td>7.50</td>
<td>34.09</td>
<td>279</td>
<td>6.25</td>
<td>28.43</td>
<td>308</td>
<td>21.99</td>
<td>100</td>
</tr>
<tr>
<td>1991</td>
<td>1</td>
<td>9.92</td>
<td>32.50</td>
<td>32</td>
<td>13.02</td>
<td>42.63</td>
<td>303</td>
<td>7.69</td>
<td>24.87</td>
<td>336</td>
<td>30.54</td>
<td>100</td>
</tr>
</tbody>
</table>
Index: I: Primate City; II: Number of Secondary Cities; III: Number of Tertiary Centers; IV: Total Number of Urban Centers in Maharashtra.

Figure 3.


Figure 4.
The significance of the secondary cities in terms of their number and population as compared to other towns is indicated in table 1. It is evident that while the number of secondary cities has increased to more than threefold and the population housed by them has gone up to reach almost forty nine per cent from 1961 to 2001. The primacy index was high from 1961 (37.20 %) to 1971 (38 %). In 1961 all the eleven secondary cities together constituted nearly one fourth (23.29 %) of the total urban population of the state and within a span of four decades in 2001, it has nearly reached to half the percentage (48.63 %) of the urban population of the state. However, though the primate city of Mumbai is showing a decline in its primacy index where its percentage share to total share of urban population is declining from 37.20 % in 1961 to 29.14 % in 2001, yet its primacy in the state continues as it carries more than one fourth of the urban population of the state as seen in table 1 and figure 3 and 4.

It is worth noting that while the other towns increased in terms of their number i.e. from 254 in 1961 to 338 in 2001, yet their share of the urban population of the state has consistently declined over time i.e from 39.51 % in 1961 to 22.23 % in 2001. Thus a significant feature of the period 1961 to 2001 is the increase in the number and dominance of the secondary cities in the urban system of Maharashtra as noted in table 1. figure 4. It can be noted from table no. 1 that share of urban population from the year 1981 to 2001 of the primate city has declined, this trend may partly be due to: 1. The policies to divert population away from Mumbai; 2. The ‘Push’ factors arising out of the decline of the textile industry; 3. Shifting of some of the ‘wholesale markets’ and Government Offices to Navi Mumbai; 4. The escalating land prices in the Mumbai; 5. Removal of slum dwellers and their rehabilitation in the neighborhood of Mumbai.

Since Maharashtra is a large state encompassing diverse regions we would like to consider intra-regional variations in the distribution and growth of secondary cities based on Administrative Divisions of the state. The state of Maharashtra is divided into six administrative divisions with 36 districts as per 2001 census as given in table no.2.
Table No.2.

Number of Districts and the Number of Secondary Cities in the Administrative Divisions of the State: 2001

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Administrative Division</th>
<th>Name of the District</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Konkan</td>
<td>Mumbai; Mumbai Suburb; Navi Mumbai; Thane; Raigad; Ratnagiri; Sindhudurg.</td>
<td>07</td>
<td>11*</td>
</tr>
<tr>
<td>II</td>
<td>Nashik(North Mah)</td>
<td>Jalgaon; Dhule; Nandurbar; Nashik; Ahmednagar.</td>
<td>05</td>
<td>06</td>
</tr>
<tr>
<td>III</td>
<td>Pune (Western Mah)</td>
<td>Pune; Satara; Sangli; Kolhapur; Solapur.</td>
<td>05</td>
<td>08</td>
</tr>
<tr>
<td>IV</td>
<td>Aurangabad (Marathwada)</td>
<td>Aurangabad; Jalna; Parbhani; Hingoli; Nanded; Latur; Osmanabad; Bid.</td>
<td>08</td>
<td>06</td>
</tr>
<tr>
<td>V</td>
<td>Amravati</td>
<td>Buldhana; Akola; Washim; Amravati; Yavatmal.</td>
<td>05</td>
<td>04</td>
</tr>
<tr>
<td>VI</td>
<td>Nagpur</td>
<td>Wardha; Nagpur; Bhandara; Gondiya; Chandrapur; Gadchiroli.</td>
<td>06</td>
<td>04</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>36</td>
<td>39</td>
</tr>
</tbody>
</table>

* Excluding the Primate City of Mumbai.

Index: A: Number of Districts;
B: Number of Secondary Cities in the Administrative Divisions.

Classification of Secondary Cities by Administrative Divisions from 1961 to 2001:

Table 3 depicts the trend of increase in the number of secondary cities and their population in the administrative divisions of the state. It can be noted that Konkan is the only administrative division in the state that has shown consistent growth from 1971 in the number of secondary cities and in the share of population of secondary cities to the total urban population of the state.

It can thus be noted from table 3 that in the year 1991 a much more even and balanced distribution of secondary city population was noticed. However, in the year 2001 there is uneven distribution of secondary city population in the State as noted in figure 5.
### Table 3

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Administrative Division†</th>
<th>Number of Secondary Cities &amp; % distribution of Population of Secondary cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Konkan</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8.0</td>
</tr>
<tr>
<td>II</td>
<td>Nashik</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14.3</td>
</tr>
<tr>
<td>III</td>
<td>Pune</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>43.2</td>
</tr>
<tr>
<td>IV</td>
<td>Aurangabad</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>V</td>
<td>Amravati</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9.7</td>
</tr>
<tr>
<td>VI</td>
<td>Nagpur</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24.8</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

N.P. Figures in Italics represent the percentage share of secondary cities population in the respective administrative divisions to the total population of the secondary cities in the state.

![Maharashtra: Administrative Divisionwise Secondary Cities](image)

Figure 5.
In 2001, the Konkan Division stands out prominently with a record number of increases in the Secondary Cities i.e from 6 in 1991 to 11 (nearly double) in 2001 as noted in Figure 5. The newly emerged secondary cities in the Konkan division are mainly in the district of Thane (4), and one in Raigarh district. Proximity to the Primate City of Mumbai is the main driving force, which is responsible for this large concentration of urban population in few secondary cities, while a large majority of other secondary cities account for a relatively smaller share of urban population in the state. This may be attributed to the fact of its proximity to the Primate City of Mumbai and its well developed infra-structure network connecting the city of Mumbai with Flyovers, Link roads, increased frequency of Suburban and shuttle trains, East-West Panvel-Diva, and Diva-Vasai rail routes and Konkan railway. This has therefore resulted in the emergence of Residential complexes with ultra-modern facilities at reasonable rates, educational institutions, specialized medical services, recreational facilities, small-scale industries, warehouses etc in this belt.

It therefore has resulted in the shifting of some of the population from the primate city of Mumbai to its neighboring
The percentage of population has therefore increased from 12.5% in 1981 to 27.4% in 2001 in the Konkan division. It is important to note that the number of secondary cities in the administrative divisions of Nashik, Aurangabad, and Nagpur has remained same from 1991 to 2001 and therefore probably its percentage share of population of secondary cities to the total population of secondary cities in the state has slightly decreased as noted in table no.3. In case of Amravati division though the number of secondary cities has increased from 3 in 1991 to 4 in 2001, yet its percentage share of population of secondary cities to total population of secondary cities of the sate has declined in 2001. The only exception (excluding Konkan division) is the administrative division of Pune with a slight increase in its percentage share of population of secondary cities to total population of secondary cities of the state from 28.3% in 1991 to 29.1 in 2001, as noted in figure 6. This may be due to the addition of one more secondary city to its total, as also due to the opening of Mumbai-Pune Expressway that has now been extended and opened up as far as the city of Kolhapur. It is evident from table 3 that the secondary cities of Konkan division have experienced an accelerated growth over the period under review. This may partly be due to the incentives rendered for industrial development during the second five-year plan that attracted a large number of migrants for employment in the region. Besides, this was also partly due to the policy of Maharashtra government to check further growth of industries in Greater Mumbai. The industrial policy of 1954 was adopted with a prime objective of taking industries out of Mumbai to different of the state that were underdeveloped. But instead of real dispersal of industries to other parts of the state, it became more of a spill over from Greater Mumbai into the neighboring cities of Thane, Ulhasnagar, Dombivili, Ambarnath, Badlapur, Mira-Bhayandar, Panvel, Navi-Mumbai, Nalasopara, Virar, and Bhiwandi. A bulk of finance, entrepreneurship, technical know-how, managerial skills, administrative institutions and availability of infrastructure facilities from Mumbai have contributed to the growth of industrialization in the region. Besides, a large increase in its jurisdictional area of the cities is also responsible for this growth. All the other administrative divisions of the state are depicting a decline in the proportion of share of urban population in the secondary cities of the state, though the number of secondary cities has increased over time.

**Conclusion:**

It can thus be concluded that in...
2001 the spatial distribution of secondary cities and the proportion of their population are very much imbalanced in the state of Maharashtra. The urbanization process in Maharashtra thus has been lopsided with majority of the population concentrating in the primate city of Mumbai and the secondary cities of the state while most of the smaller towns remain stagnant and neglected. Urban development programmes have however, to a large extent, indirectly contributed to the concentration of government investments in big cities resulting in an imbalanced pattern of urban growth and of regional development.

References:
EVALUATION OF ELECTRONIC INFORMATION SERVICES AT B.N. COLLEGE OF ENGINEERING LIBRARY

- Dr. Prashant P. Deshmukh
  Member of Senate SGB Amravati University.
  Librarian, Phulshing Naik Mahavidyalaya,
  Pusad-445204, Dist. Yavatmal (MS)

Abstract

The study aim to examine and evaluate the existing electronic services offered by the B.N. College of Engineering, Pusad library. The study discusses to know the awareness and utilization of various electronic services. The major findings of the study are that respondents are aware of the electronic services and most of the respondents are satisfied with the Internet facility provided by the library.

Introduction

The present age is the age of information and knowledge. The information and knowledge is the wealth of the nation. Technology has dominated all spheres of life. The education is also one of the fields where we can see the impact of information technology. Education and library are twin sisters. Over several years the education process has seen drastic changes in imparting knowledge. Information and communication technologies are the diverse set of technological tools and resources used to communicate and to create, disseminate, store and manage information. In general we are taking about technologies and tools that people use to share, distribute, and gather information and to communicate with one another, one to one, in a group, through the use of computers and interconnected computer networks. ICT plays a vital role to provide immediate information to the user and also for creating information. ICT is useful in business, education, research, management, science and technology etc.

About BNCOE Library

Babasaheb Naik College of Engineering, Pusad library with a rich collection of engineering, science and technology books, periodicals etc. catering to the academic and research needs of teachers, research scholars & postgraduate and undergraduate students. The libraries which collectively support the teaching, research and extension programmes of the Institute. All students, faculty members and employees of the Institute are entitled to
make use of the Library facilities on taking library membership. The Library, besides having a huge collection of 60000 books 93 journals on engineering, science and humanities, INDEST Consortia, offers library services through its various divisions. Library has more than 2000 active members.

**Objectives**
1) To study frequency and purpose of engineering students visiting to library
2) To evaluate the existing electronic services like OPAC, Internet, E-Journals offered by the Library, based on awareness, utilization and satisfaction of library users.
3) To know the most impressed facility/service in engineering college library

**Data Collection**
The questionnaire has been distributed to 600 users of BNCOE Library and requested them to fill the questionnaire as per their convenience and returned the questionnaire to the investigator as early as possible. 555 filled questionnaire has been received from the respondents for the data analysis and interpretation.

**Data Analysis and Interpretations**
On the basis of filled up Questionnaire the data has been analyzed and tabulated. All the results have been shows in tabular representation. For the data analysis only percentage technique has been adopted. The present paper addresses only the Evaluation of Electronic Information Services at B.N. College of Engineering Library.

**Data Analysis and Interpretation/Discussion**
The data collected were carefully analyzed and processed. The analysis of collected data has been tabulated and in the present report results have been shown in the tabular format.

**Distribution of Questionnaire and Response Received**

<table>
<thead>
<tr>
<th>User’s Category</th>
<th>Questionnaire Distributed</th>
<th>Questionnaire Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty</td>
<td>105</td>
<td>100</td>
</tr>
<tr>
<td>Student</td>
<td>495</td>
<td>455</td>
</tr>
<tr>
<td>Total</td>
<td>600</td>
<td>555</td>
</tr>
</tbody>
</table>

The above table no. 1 shows that 600 questionnaires were distributed to users of B.N. College of Engineering, Pusad Library, and found that out of 450 questionnaires, 405 questionnaires were received to the researcher. The overall response rate is 90%.
Gender wise Distribution of Respondents

Table 2

<table>
<thead>
<tr>
<th>Gender</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>330</td>
<td>59.45</td>
</tr>
<tr>
<td>Female</td>
<td>225</td>
<td>40.54</td>
</tr>
<tr>
<td>Total</td>
<td>555</td>
<td>100</td>
</tr>
</tbody>
</table>

From the above Gender-wise Distribution of Users table no. 2, it is observed that, out of 555 respondents 330 i.e. (59.45%) are male members and 225 i.e. (40.54%) are female members.

Frequency of Library Visit

Table 3

<table>
<thead>
<tr>
<th>Frequency of Visit</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>84</td>
<td>12</td>
<td>96</td>
<td>17.29</td>
</tr>
<tr>
<td>3-4 times in Week</td>
<td>123</td>
<td>84</td>
<td>207</td>
<td>37.29</td>
</tr>
<tr>
<td>Once in Week</td>
<td>66</td>
<td>102</td>
<td>168</td>
<td>30.27</td>
</tr>
<tr>
<td>Occassionally</td>
<td>57</td>
<td>27</td>
<td>84</td>
<td>15.15</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>225</td>
<td>555</td>
<td>100</td>
</tr>
</tbody>
</table>

From the above table 3, it is observed that out of 555 respondents 207 (37.29%) users visit library 3-4 times in week, followed by 168 (30.27%) once in week, 96 (17.29%) daily and 84 (15.15%) visit library occasionally.

Awareness of OPAC

Table 4

<table>
<thead>
<tr>
<th>Awareness</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>267</td>
<td>180</td>
<td>447</td>
<td>80.54</td>
</tr>
<tr>
<td>No</td>
<td>63</td>
<td>45</td>
<td>108</td>
<td>19.46</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>225</td>
<td>555</td>
<td>100</td>
</tr>
</tbody>
</table>

The above table 4 shows that majority of the respondents i.e. 447 (80.54%) are aware of the OPAC service provided by the library, whereas 108 (19.46%) respondents are unaware about OPAC. It can be conclude that users of engineering college library are about OPAC.
Approach to OPAC

Table 5

<table>
<thead>
<tr>
<th>Approach</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Subject</td>
<td>96</td>
<td>81</td>
<td>177</td>
</tr>
<tr>
<td>By Author</td>
<td>84</td>
<td>96</td>
<td>180</td>
</tr>
<tr>
<td>Title</td>
<td>108</td>
<td>48</td>
<td>156</td>
</tr>
<tr>
<td>Publisher</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 5 reveals that respondents approach to used OPAC to search required documents is by author and by subject. 180 and 177 respondents approach OPAC by author and subject respectively followed by title, 156 respondents and only 3 respondents used mentioned that the approach is by publisher. It can be conclude that more than one approach to use OPAC and out of them author approach is most preferable as compared to subject and title approach.

Purpose of Using Internet

Table 6

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Mail</td>
<td>105</td>
<td>36</td>
<td>141</td>
<td>25.41</td>
</tr>
<tr>
<td>Academic</td>
<td>153</td>
<td>120</td>
<td>273</td>
<td>49.19</td>
</tr>
<tr>
<td>Career Development</td>
<td>132</td>
<td>81</td>
<td>213</td>
<td>38.39</td>
</tr>
<tr>
<td>Job Purpose</td>
<td>96</td>
<td>48</td>
<td>144</td>
<td>25.95</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>12</td>
<td>21</td>
<td>3.78</td>
</tr>
</tbody>
</table>

The above table 6 highlights that 273 respondents i.e. 49.19% using internet for academic purpose followed by 213 (38.39%) for career development, 144 (25.95%) for job purpose, 141 (25.41%) for e-mail and 9 (3.78%) respondents use internet for other purpose. From above table, it can be conclude that majority of users use internet for academic purpose.

Frequency of Internet Usage

Table 7

<table>
<thead>
<tr>
<th>Frequency</th>
<th>No. of Respondents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>109</td>
<td>19.64</td>
</tr>
<tr>
<td>3-4 times in Week</td>
<td>296</td>
<td>53.33</td>
</tr>
<tr>
<td>Fortnightly</td>
<td>99</td>
<td>17.83</td>
</tr>
<tr>
<td>Monthly</td>
<td>51</td>
<td>09.2</td>
</tr>
<tr>
<td>Total</td>
<td>555</td>
<td>100</td>
</tr>
</tbody>
</table>

The above table 6 highlights that 273 respondents i.e. 49.19% using internet for academic purpose followed by 213 (38.39%) for career development, 144 (25.95%) for job purpose, 141 (25.41%) for e-mail and 9 (3.78%) respondents use internet for other purpose. From above table, it can be conclude that majority of users use internet for academic purpose.
It is observed from the above table 7 that out of 555 respondents 296 (53.33%) respondents use internet 3 – 4 times in week followed by 109 (19.64%) daily, 99 (17.83%) fortnightly and 51 (9.2%) monthly. It also observed from the above table that most of the respondents use internet service more than 3 to 4 times in week.

### Satisfaction to Internet Service

**Table 8**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>219</td>
<td>138</td>
<td>357</td>
<td>64.32</td>
</tr>
<tr>
<td>No</td>
<td>111</td>
<td>87</td>
<td>198</td>
<td>35.68</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>225</td>
<td>555</td>
<td>100</td>
</tr>
</tbody>
</table>

The above table 8 shows that out of 555 respondents 357 (64.32%) are satisfied with internet service provided by the library whereas 198 (34.68%) are not satisfied with the internet service provided by the library. It can be conclude that library users are satisfied with internet service provided to them.

### Awareness of E-Journals

**Table 9**

<table>
<thead>
<tr>
<th>Awareness</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>232</td>
<td>175</td>
<td>407</td>
<td>73.33</td>
</tr>
<tr>
<td>No</td>
<td>98</td>
<td>50</td>
<td>148</td>
<td>26.67</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>225</td>
<td>555</td>
<td>100</td>
</tr>
</tbody>
</table>

The above table 9 indicates that 407 respondents i.e. 73.33% are aware about e-journals available in the library and 148 (26.87%) are not aware about it out of 555 respondents.

### Utilisation of E-Journals

**Table 10**

<table>
<thead>
<tr>
<th>Utilisation</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>140</td>
<td>131</td>
<td>271</td>
<td>66.58</td>
</tr>
<tr>
<td>No</td>
<td>92</td>
<td>44</td>
<td>136</td>
<td>33.42</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>175</td>
<td>407</td>
<td>100</td>
</tr>
</tbody>
</table>

Out of 555 respondents 407 respondents are aware about e-journals available in the library and it is observed from the above table 10 that out of 407 respondents
271 (66.58%) use e-journals provided by the library. It can be conclude from the above table that most of the library users use e-journals.

**Most Impressed Facility**

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collection</td>
<td>211</td>
<td>143</td>
<td>414</td>
</tr>
<tr>
<td>Arrangement of Documents</td>
<td>178</td>
<td>188</td>
<td>366</td>
</tr>
<tr>
<td>Computerised Circulation</td>
<td>172</td>
<td>137</td>
<td>301</td>
</tr>
<tr>
<td>OPAC</td>
<td>218</td>
<td>179</td>
<td>397</td>
</tr>
<tr>
<td>Reprography</td>
<td>218</td>
<td>143</td>
<td>361</td>
</tr>
</tbody>
</table>

It can be conclude from the above table 11 that most of the respondents are impressed by collection and OPAC followed by arrangement of documents, circulation and reprography respectively.

**Satisfaction with Computerised Circulation**

<table>
<thead>
<tr>
<th>Satisfaction</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>171</td>
<td>138</td>
<td>309</td>
<td>55.75</td>
</tr>
<tr>
<td>No</td>
<td>159</td>
<td>87</td>
<td>246</td>
<td>44.25</td>
</tr>
<tr>
<td>Total</td>
<td>330</td>
<td>225</td>
<td>555</td>
<td>100</td>
</tr>
</tbody>
</table>

**Conclusion**

Computers and electronic resources play a central role in teaching, research and extension activities of the engineering education system. Both faculty and students use electronic information services for study and teaching work. It was found that users are experiencing problems in gathering information from the internet; hence, suitable measures should be taken to overcome these problems. Library should conduct user awareness/information literacy programme to enhance the use of electronic information services.

**References**

THE ESSENCE OF PHILOSOPHY AND ITS INFLUENCE ON HUMAN LIFE

- Dr Rajni Sinha
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[Philosophy has captivated human mind since time immemorial as human beings are equipped with the capacity to think, analyze and comprehend the mysteries of nature and its effect on human beings. With passage of time the human knowledge has evolved about nature and its effect on human lives. Still there are always rooms for greater exploration for evolving knowledge in various forms. Philosophy is one such universal subject, which analyses knowledge gained by humans across various segmented subjects and tries to rationalize the thought process of human mind on complex subjects which remain unattended and/or unresolved due to segmentation of knowledge into various field of subjects. Here is a brief attempt to understand Philosophy, its scope and its influence on human thinking and human lives.]

PHILOSOPHY is a study that seeks to understand the mysteries of existence and reality. It tries to discover the nature of truth and knowledge and to find what is of basic value and importance in life. It also examines the relationships between humanity and nature and between the individual and society. Philosophy arises out of wonder, curiosity, and the desire to know and understand. Philosophy is thus a form of intellectual speculative inquiry through a process of analysis, criticism and interpretation on a chosen subject of interest to explore and define or re-define the most rational thought process on that subject.

The term philosophy cannot be defined precisely because the subject is so complex and so controversial. Different philosophers have different views of the nature, methods, and range of philosophy. The term philosophy itself comes from the Greek philosophia, which means love of wisdom. In that sense, wisdom is the active use of intelligence, not something passive that a person simply possesses.

Branches of Philosophy

Philosophic inquiry can be made into any subject because philosophy deals with everything in the world and all of knowledge. But traditionally, and for purposes of study, philosophy is divided into five branches, each organized around certain distinctive questions. The branches are: (1) Metaphysics, (2) Epistemology, (3) Logic, (4) Ethics, and (5) Aesthetics. In addition, the philosophy of language has become so important...
during the 1900’s that it is often considered another branch of philosophy. **Metaphysics: (Exploring the nature)**

Metaphysics is the study of the fundamental nature of reality and existence and of the essences of things. Metaphysics is itself often divided into two areas—ontology and cosmology. Ontology is the study of being. Cosmology is the study of the physical universe, or the cosmos, taken as a whole. Cosmology is also the name of the branch of science that studies the organization, history, and future of the universe.

Metaphysics deals with such questions as “What is real?” “What is the distinction between appearance and reality?” “What are the most general principles and concepts by which our experiences can be interpreted and understood?” and “Do we possess free will or are our actions determined by causes over which we have no control?” Philosophers have developed a number of theories in metaphysics. These theories include materialism, idealism, mechanism, and teleology. Materialism maintains that only matter has real existence and that feelings, thoughts, and other mental phenomena are produced by the activity of matter. Idealism states that every material thing is an idea or a form of an idea. In idealism, mental phenomena are what is fundamentally important and real. Mechanism maintains that all happenings result from purely mechanical forces, not from purpose, and that it makes no sense to speak of the universe itself as having a purpose. Teleology, on the other hand, states that the universe and everything in it exists and occurs for some purpose.

**Epistemology: (Pursuit of Truth)**

Epistemology aims to determine the nature, basis, and extent of knowledge. It explores the various ways of knowing, the nature of truth, and the relationships between knowledge and belief. Epistemology asks such questions as “What are the features of genuine knowledge as distinct from what appears to be knowledge?” “What is truth, and how can we know what is true and what is false?” and “Are there different kinds of knowledge, with different grounds and characteristics?”

Philosophers often distinguish between two kinds of knowledge, a priori and empirical. We arrive at a priori knowledge by thinking, without independent appeal to experience. For example, we know that there are 60 seconds in a minute by learning the meanings of the terms. From these facts, we can deduce that there are 3,600 seconds in an hour. From these facts, we can deduce that there are 60 minutes in an hour. From these facts, we can deduce that there are 3,600 seconds in an hour, and we arrive at this conclusion by the operation of thought alone. We acquire empirical knowledge from observation and experience. For example, we know from observation how many keys are on a typewriter and from experience which key
The nature of truth has baffled people since ancient times, partly because people so often use the term true for ideas they find congenial and want to believe, and also because people so often disagree about which ideas are true. Philosophers have attempted to define criteria for distinguishing between truth and error. But they disagree about what truth means and how to arrive at true ideas. The correspondence theory holds that an idea is true if it corresponds to the facts or reality. The pragmatic theory maintains that an idea is true if it works or settles the problem it deals with. The coherence theory states that truth is a matter of degree and that an idea is true to the extent to which it coheres (fits together) with other ideas that one holds. Skepticism claims that knowledge is impossible to attain and that truth is unknowable.

Logic: (A Tool for Un-biased Analytical Judgment)

Logic is the study of the principles and methods of reasoning. It explores how we distinguish between good (or sound) reasoning and bad (or unsound) reasoning. An instance of reasoning is called an argument or an inference. An argument consists of a set of statements called premises together with a statement called the conclusion, which is supposed to be supported by or derived from the premises. A good argument provides support for its conclusion, and a bad argument does not. Two basic types of reasoning are called deductive and inductive.

A good deductive argument is said to be valid—that is, the conclusion necessarily follows from the premises. A deductive argument whose conclusion does not follow necessarily from the premises is said to be invalid. The argument “All human beings are mortal, all Greeks are human beings, therefore all Greeks are mortal” is a valid deductive argument. But the argument “All human beings are mortal, all Greeks are mortal, therefore all Greeks are human beings” is invalid, even though the conclusion is true. On that line of reasoning, one could argue that all dogs, which are also mortal, are human beings.

Deductive reasoning is used to explore the necessary consequences of certain assumptions. Inductive reasoning is used to establish matters of fact and the laws of nature and does not aim at being deductively valid. One who reasons that all squirrels like nuts, on the basis that all squirrels so far observed like nuts, is reasoning inductively. The conclusion could be false, even though the premise is true. Nevertheless, the premise provides considerable support for the conclusion.

Ethics: (Pursuit of Ideals)

Ethics concerns human conduct, character, and values. It studies the nature of right and wrong and the distinction between good and evil. Ethics explores
the nature of justice and of a just society, and also one’s obligations to oneself, to others, and to society.

Ethics asks such questions as “What makes right actions right and wrong actions wrong?” “What is good and what is bad?” and “What are the proper values of life?” Problems arise in ethics because we often have difficulty knowing exactly what is the right thing to do. In many cases, our obligations conflict or are vague. In addition, people often disagree about whether a particular action or principle is morally right or wrong.

A view called relativism maintains that what is right or wrong depends on the particular culture concerned. What is right in one society may be wrong in another, this view argues, and so no basic standards exist by which a culture may be judged right or wrong. Objectivism claims that there are objective standards of right and wrong which can be discovered and which apply to everyone. Subjectivism states that all moral standards are subjective matters of taste or opinion.

Aesthetics: (Pursuit of Beauty)

Aesthetics deals with the creation and principles of art and beauty. It also studies our thoughts, feelings, and attitudes when we see, hear, or read something beautiful. Something beautiful may be a work of art, such as a painting, symphony, or poem, or it may be a sunset or other natural phenomenon. In addition, aesthetics investigates the experience of engaging in such activities as painting, dancing, acting, and playing.

Aesthetics is sometimes identified with the philosophy of art, which deals with the nature of art, the process of artistic creation, the nature of the aesthetic experience, and the principles of criticism. But aesthetics has wider application. It involves both works of art created by human beings and the beauty found in nature.

Aesthetics relates to ethics and political philosophy when we ask questions about what role art and beauty should play in society and in the life of the individual. Such questions include “How can people’s taste in the arts be improved?” “How should the arts be taught in the schools?” and “Do governments have the right to restrict artistic expression?”

The Language Interface:

Philosophical analysis generally tries to solve philosophic problems through analysis of language or concepts. Some versions of this philosophy attempt to show that traditional philosophic problems dissolve—that is, disappear—on proper analysis of the terms in which they are expressed. Other versions use linguistic analysis to throw light on, not dissolve, traditional philosophic problems. The most influential philosophers practicing philosophic analysis have been Bertrand Russell of England and Ludwig Wittgenstein, who was born in Austria but studied and taught in England.
The Philosophy of Language has become especially important in recent times. Some philosophers claim that all philosophic questions arise out of linguistic problems. Others claim that all philosophic questions are really questions about language. One key question is “What is language?” But there are also questions about the relationships between language and thought and between language and the world, as well as questions about the nature of meaning and of definition.

The question has been raised whether there can be a logically perfect language that would reflect in its categories the essential characteristics of the world. This question raises questions about the adequacy of ordinary language as a philosophic tool. All such questions belong to the philosophy of language, which has essential connections with other branches of philosophy.

Relationship with Other Fields of Knowledge:

One peculiarity of philosophy is that the question “What is philosophy?” is itself a question of philosophy. But the question “What is art?” is not a question of art. The question is philosophic. The same is true of such questions as “What is history?” and “What is law?” Each is a question of philosophy. Such questions are basic to the philosophy of education, the philosophy of history, the philosophy of law, and other “philosophy of” fields. Each of these fields attempts to determine the foundations, fundamental categories, and methods of a particular institution or area of study. A strong relationship therefore exists between philosophy and other fields of human activity. This relationship can be seen by examining two fields: (1) philosophy and science and (2) philosophy and religion.

Philosophy and Science:

Science studies natural phenomena and the phenomena of society. It does not study itself. When science does reflect on itself, it becomes the philosophy of science and examines a number of philosophic questions. These questions include “What is science?” “What is scientific method?” “Does scientific truth provide us with the truth about the universe and reality?” and “What is the value of science?”

Philosophy has given birth to several major fields of scientific study. Until the 1700’s, no distinction was made between science and philosophy. For example, physics was called natural philosophy. Psychology was part of what was called moral philosophy. In the early 1800’s, sociology and linguistics separated from philosophy and became distinct areas of study. Logic has always been considered a branch of philosophy. However, logic has now developed to the point where it is also a branch of mathematics, which is a basic science.

Philosophy and science differ in many respects. For example, science has attained definite and tested knowledge of
many matters and has thus resolved disagreement about those matters. Philosophy has not. As a result, controversy has always been characteristic of philosophy. Science and philosophy do share one significant goal. Both seek to discover the truth—to answer questions, solve problems, and satisfy curiosity. In the process, both science and philosophy provoke further questions and problems, with each solution bringing more questions and problems.

**Philosophy and Religion:**

Historically, philosophy originated in religious questions. These questions concerned the nature and purpose of life and death and the relationship of humanity to superhuman powers or a divine creator. Every society has some form of religion. Most people acquire their religion from their society as they acquire their language. Philosophy inquires into the essence of things, and inquiry into the essence of religion is a philosophic inquiry.

Religious ideas generated some of the earliest philosophic speculations about the nature of life and the universe. The speculations often centered on the idea of a supernatural or super powerful being who created the universe and who governs it according to unchangeable laws and gives it purpose. Western philosophic tradition has paid much attention to the possibility of demonstrating the existence of God.

The chief goal of some philosophers is not understanding and knowledge. Instead, they try to help people endure the pain, anxiety, and suffering of earthly existence. Such philosophers attempt to make philosophic reflection on the nature and purposes of life perform the function of religion.

**Historical legacy:**

We do not know exactly when Indian philosophy began. In India, philosophic thought was intermingled with religion, and most Indian philosophic thought has been religious in character and aim. Philosophic commentaries on sacred texts emerge during the 500’s B.C. The Indian word for these studies is *darshana*, which means vision or seeing. It corresponds to what the ancient Greeks called *philosophia*.

The first known Western philosophers lived in the ancient Greek world during the early 500’s B.C. These early philosophers tried to discover the basic makeup of things and the nature of the world and of reality. For answers to questions about such subjects, people had largely relied on magic, superstition, religion, tradition, or authority. But the Greek philosophers considered those sources of knowledge unreliable. Instead, they sought answers by thinking and by studying nature.

Philosophy has had a long history in some non-Western cultures, especially in China and India. But until about 200 years ago, there was little interchange.
between those philosophies and Western philosophy, chiefly because of difficulties of travel and communication. As a result, Western philosophy generally developed independently of Eastern philosophy.

There are two main traditions in oriental philosophy, Chinese and Indian. Both philosophies are basically religious and ethical in origin and character. They are removed from any interest in science. Traditionally, Chinese philosophy has been largely practical, humanistic, and social in its aims. It developed as a means of bringing about improvements in society and politics. Traditionally, philosophy in India has been chiefly mystical rather than political. It has been dominated by reliance on certain sacred texts, called Vedas, which are considered inspired and true and therefore subject only for commentary and not for criticism. Much of Indian philosophy has emphasized withdrawal from everyday life into the life of the spirit. Chinese philosophy typically called for efforts to participate in the life of the state in order to improve worldly conditions.

Chinese philosophy as we know it started in the 500’s B.C. with the philosopher Confucius. His philosophy, called Confucianism, was the official philosophy of China for centuries, though it was reinterpreted by different generations. Confucianism aimed to help people live better and more rewarding lives by discipline and by instruction in the proper goals of life. Candidates for government positions had to pass examinations on Confucian thought, and Confucianism formed the basis for government decisions. No other civilization has placed such emphasis on philosophy. Other philosophic traditions in China were Taoism, Mohism, and realism. Beginning in the 1100’s, a movement known as Neo-Confucianism incorporated elements of all these doctrines.

The Influence of Philosophy on Human Life:

Philosophic thought is an inescapable part of human existence. Almost everyone has been puzzled from time to time by such essentially philosophic questions as “What does life mean?” “Did I have any existence before I was born?” and “Is there life after death?” Most people also have some kind of philosophy in the sense of a personal outlook on life. Even a person who claims that considering philosophic questions is a waste of time is expressing what is important, worthwhile, or valuable. A rejection of all philosophy is in itself philosophy.

By studying philosophy, people can clarify what they believe, and they can be stimulated to think about ultimate questions. A person can study philosophers of the past to discover why they thought as they did and what value their thoughts may have in one’s own life. There are people who simply enjoy reading the great philosophers, especially those who were also great writers.

Philosophy has had enormous
Influence on our everyday lives. The very language we speak uses classifications derived from philosophy. For example, the classifications of noun and verb involve the philosophic idea that there is a difference between things and actions. If we ask what the difference is, we are starting a philosophic inquiry.

Every institution of society is based on some philosophic ideas, whether that institution is the law, government, religion, the family, marriage, industry, business, or education. Philosophic differences have led to the overthrow of governments, drastic changes in laws, and the transformation of entire economic systems. Such changes have occurred because the people involved held certain beliefs about what is important, true, real, and significant and about how life should be ordered.

Systems of education follow a society’s philosophic ideas about what children should be taught and for what purposes. Democratic societies stress that people learn to think and make choices for themselves. Nondemocratic societies discourage such activities and want their citizens to surrender their own interests to those of the state. The values and skills taught by the educational system of a society thus reflect the society’s philosophic ideas of what is important.

In India, as in China, people conceived of philosophy as a way of life, not as a mere intellectual activity. The main aim of Indian philosophy was freedom from the suffering and tension caused by the body and the senses and by attachment to worldly things. The main philosophies developed in India were Hinduism and Buddhism, which were also religions. Yet some Indian philosophers did develop a complex system of logic and carried on investigations in epistemology. Some Indian philosophic ideas have been influential in the West. One such idea is reincarnation, the belief that the human soul is successively reborn in new bodies.

References:
5. An Introduction To Indian Philosophy By Datta and Chatterjee
LANDSLIDE HAZARD ZONATION MAPPING, USING GIS TECHNIQUE: A CASE STUDY OF MALSHEJ GHAT AREA, MAHARASHTRA.

- Maya Unde
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- Dadasaheb R. Jawre
  Project Fellow, Research Centre in Geography, Ahmednagar College, Ahmednagar, Maharashtra, India.

Abstract:
Landslide is the most universal mass wasting geomorphic process in the mountain region. Digital elevation model (DEM) used to extract geomorphic landslide causative factors: slope gradient, slope roughness, tangential curvature, relative slope height, total slope height and etc. Digital geological map was used to extract geologic causative factors: lithology and distance to fault trace. Isolated cases of landslide of varying dimension usually reported in Malshej Ghat area during the monsoon rain every year. Such landslide activity normally interrupt vehicular traffic along Malshej Ghat to Kalyan road at least 5-10 time each year. The paper is an attempt to describe various aspects of landslide in the Ghat area including vulnerability related to transformed topography, sliding material, structural features and landslide susceptibility.

A landslide database is completed during the fieldwork. Landslide and soil erosion are the most disastrous phenomena in the Malshej Ghat area. Landslide susceptibility zonation is important to take quick and safe mitigation measure and to make strategic planning for the future.

The main objective of the present paper is to prepare landslide zonation mapping and susceptibility of the study area using Rs and GIS techniques. GIS is a useful tool for the construction of landslide prediction model and for application in regional planning, hazard mitigation, and sediments yield estimation. Four landslides have been surveyed in Malshej Ghat area with the help of total station. For preparing such maps various thematic layers have been prepared namely thrust layer, buffer, road buffer, relative relief map, aspect map have been generated from the toposheet and ARC GIS. Landslide susceptibility Index map is prepared to show zones of hazard level.

Introduction:
Landslides are a common natural phenomenon in many parts of the world, especially in hilly or mountainous terrains. A landslide event is defined as “the movement of a mass of rock, debris, or...
earth (soil) down a slope “(under the influence of gravity) (Cruden 1991). The most commonly used landslide classification system is based upon material type and type of movement describes by Cruden and Varnes (1996).

Geology and geomorphology are the main parameters that influence the occurrence of landslides, followed by other parameters such as the slope gradient, direction of slope, drainage network, alignment of road network and vegetation density (Crozier, 1986; Virdi et al., 1997; Miller and Sias, 1998).

Advances in Geographical Information Systems (GIS) technology and the mathematical/statistical tools for modeling and simulation, have led to the growing application of quantitative techniques in many areas of the earth sciences (Carrara & Pike, 2008). The study of landslide hazard also applied these basic tools frequently with intensively use of digital elevation models (DEMs). Determining the spatial and temporal extent of landslide hazard requires identifying those areas which are, or could be, affected by a landslide and assessing the probability of such land sliding occurring within a specified period of time. Specifying a precise time frame for the future occurrence of a landslide can be difficult. As a result, landslide hazard has often been represented by landslide susceptibility, where only the predisposing and preparatory landslide causes are described.

Landslide susceptibility is defined as a function of the degree of the inherent stability of the slope (as indicated by the factor-of-safety or excess strength) together with the presence and activity of causative factors capable of reducing the excess strength and ultimately triggering movement (Crozier and Glade, 2005). The identification of causative factors is the basis of many methods of susceptibility/stability assessment. The factors may be dynamic (e.g. pore water pressure), or passive (e.g. rock structure) and may also be considered in terms of the roles they perform in destabilizing a slope (Crozier, 1986). In this sense, the factors can be pre-conditioning factors (e.g. slope steepness), preparatory factors (e.g. deforestation). A landslide susceptibility map ranks slope stability of an area into categories that range from stable to unstable. Susceptibility maps show where landslides may form. Many susceptibility maps use a color scheme that relates warm colors (red, orange, and yellow) to unstable and marginally unstable areas and cool colors (blue and green) to more stable areas (National Research Council, 2004).

The reasons for selecting this study area are:
1. The study region has a high frequency of landslide occurrences.
2. The study region includes of the buffer areas surrounding the main highway between Ahmednagar to Kalyan, which is busy throughout the year.
Objectives:
1. To develop a spatial database for landslide analysis.
2. To delineate a Landslide Zonation Map using Remote Sensing and GIS.
3. To provide a decision support tool for hazard managers and planners.

Study Area:
Study area is located at the Malshej Ghat in Maharashtra. It is geographically located between 19° 19’ N to 19° 21’ N latitudes and 73° 45’ to 73° 48’ E longitudes and In the study area six old and two new landslides have been considered for this study. Average height of the Malshej Ghat is 700 m, minimum height of 300 m and maximum height of 1080 m MSL. Rainfall is around 3000 mm.

Introduction:
Landslides are a common natural phenomenon in many parts of the world, especially in hilly or mountainous terrains. A landslide event is defined as “the movement of a mass of rock, debris, or earth (soil) down a slope “(under the influence of gravity) (Cruden 1991). The most commonly used landslide classification system is based upon material type and type of movement describes by Cruden and Varnes (1996).

Geology and geomorphology are the main parameters that influence the occurrence of landslides, followed by other parameters such as the slope gradient, direction of slope, drainage network, alignment of road network and vegetation density (crozier, 1986; virdiet al., 1997; Miller and Sias, 1998).

Landslide susceptibility is defined as a function of the degree of the inherent stability of the slope (as indicated by the factor-of-safety or excess strength) together with the presence and activity of causative factors capable of reducing the excess strength and ultimately triggering movement (Crozier and Glade, 2005). The identification of causative factors is the basis of many methods of susceptibility/stability assessment. The factors may be dynamic (e.g. pore water pressure), or passive (e.g. rock structure) and may also be considered in terms of the roles they perform in destabilizing a slope (Crozier,
In this sense, the factors can be pre-conditioning factors (e.g. slope steepness), preparatory factors (e.g. deforestation). A landslide susceptibility map ranks slope stability of an area into categories that range from stable to unstable. Susceptibility maps show where landslides may form. Many susceptibility maps use a color scheme that relates warm colors (red, orange, and yellow) to unstable and marginally unstable areas and cool colors (blue and green) to more stable areas (National Research Council, 2004).

The reasons for selecting this study area are:
1. The study region has a high frequency of landslide occurrences.
2. The study region includes the buffer areas surrounding the main highway between Ahmednagar to Kalyan, which is busy throughout the year.

Objectives:
1. To develop a spatial database for landslide analysis.
2. To delineate a Landslide Zonation Map using Remote Sensing and GIS.
3. To provide a decision support tool for hazard managers and planners.

Study Area:
Study area is located at the Malshej Ghat in Maharashtra. It is geographically located between 19° 19' N to 19° 21' N latitudes and 73° 45' to 73° 48' E longitudes and in the study area six old and two new landslides have been considered for this study. Average height of the Malshej Ghat is 700 m, minimum height of 300 m and maximum height of 1080 m MSL. Rainfall is around 3000 mm.

Landslide Hazard Zonation:
Landslide Hazard Zonation (LHZ) simply means the division and preferably subdivision of a land surface into various zones according to the degrees of actual/potential hazard caused by landslides and related Phenomena

Use of the Mapping:
1. Landslide susceptibility zonation: Management of the landslides disasters can be successful only when detailed knowledge is obtained about the expected frequency, character and magnitude of the mass.
2. Movement in an area. The zonation of landslide hazard must be the basis for any landslide mitigation strategy and should supply planners and decision-makers with adequate and understandable information.

Landslide Mitigation:
Vulnerability to landslide hazards is a function of location, type of human activity, use, and frequency of landslide events. The effects of landslides on people and structures can be lessened by total avoidance of landslide hazard areas or by restricting, prohibiting, or imposing conditions on hazard-zone activity. Local governments can reduce landslide effects through land-use policies and regulations. Individuals can reduce their exposure to hazards by educating themselves on the past hazard history of a site and by making inquiries to planning and engineering.
departments of local governments. They can also obtain the professional services of an engineering geologist, a geotechnical engineer, or a civil engineer, who can properly evaluate the hazard potential of a site, built or unbuilt. The hazard from landslides can be reduced by avoiding construction on steep slopes and existing landslides, or by stabilizing the slopes. Stability increases when ground water is prevented from rising in the landslide mass by
(1) covering the landslide with an impermeable membrane,
(2) Directing surface water away from the landslide,
(3) Draining ground water away from the landslide, and
(4) Minimizing surface irrigation. Slope stability is also increased when a retaining structure and/or the weight of a soil/rock berm are placed at the toe of the landslide or when mass is removed from the top of the slope.

Discussion:
Landslide hazard can cause serious damages for people and social economic progress. Therefore, tools for landslide mapping on region scale are needed in order to remedy and prevent these damages. It is also recommended that more means should be made available to update and improve landslide inventories. Accurate investigation of past and recent landslides, with detailed characterisation of sliding features and analysis of possible causes and triggering mechanisms, are very compulsory for accurate and qualitative landslide hazard studies. Tools for landslide susceptibility assessment can only be used with success and provide meaningful results if input data obtained by field investigations are complete and comprehensive. Any lack of precision or completeness in data will downgrade or nullify modelling results, irrespective of the model quality or professional skills of the practitioner.

Acknowledge:
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ABSTRACT:
Tourism impacts the environment and the dynamics of these impacts are of concern to strategic and policy planners. The relationship between tourism and environment is largely established through what is called environmental quality, which is perceived in many different ways. Thus it may also include the socio-cultural aspects of the region along with the natural elements. Tourism activity is promoted, conditioned and influenced by these environmental circumstances of each region and can be affected by modifications or changes in those circumstances. Tourism is one of many activities in a region that requires planning and coordination. The long-term sustainability of tourism rests on the ability of community leaders and tourism professionals to maximize its benefits and minimize its costs which can be achieved through proper planning. The world over increase in the form of tourism is exerting its pressure on the natural resources that are finite resources and so is sub-consciously disturbing the ecological balance as well as is becoming responsible for the erosion of social tradition and culture. However of late tourism is increasingly being appreciated as a positive factor for nature conservation and cultural preservation. Considering these contrasting roles adopted by tourism in different environments, tourism needs to be studied so that it can be analyzed in terms of social and economic transactions. Researching tourism will help it to be designed in such manner so as to contribute to the betterment of indigenous skills and cultures of local communities. The present study largely adopts a geographical perspective with the objectives of exploring the impact of tourism on the local community in Matheran. ‘Matheran’, a hill station is located at a distance of about 64 km South-East of Mumbai between Mumbai-Pune urban corridor is Bio-geographically an important region of Western Ghats mountain chain. Since its discovery by a British, Collector of Thane Mr. H.P. Mallet as a hill resort in 1850, Matheran is destination for numerous tourists and the industry is on its rise. A serious implication of this spurt in the tourist number is felt with excessive stress on infrastructure facilities besides unchecked growth of hotels and resorts industry. This has exerted pressure on the ecologically fragile
hill area as the natural landscape of the hill has been altered profoundly in the process of transformation. Matheran is experiencing the impacts of large scale and unplanned tourism development whereas the local population is not seen benefitting much from this activity. It is therefore imperative to understand the impacts of tourism based economy upon the people of Matheran and find out measures based both on ecological principles and equitable distribution of resources gained from tourism so that the local population also benefits and prospers since ultimately they are the people who will have to deal with the consequences of tourism on a daily basis. This research paper is an attempt to provide an exemplar for planning tourism based community development.

Key words: ecologically fragile areas, ecological principles, urban corridor, tourism, planning, community development.

INTRODUCTION:

Tourism brings costs and benefits to a society with differential effects. Communities are proximate to the benefits or costs of tourism, including externalities or negative impacts, which are often associated with tourism growth. With the realization of the broad impacts of tourism directly and indirectly to the host region and its population, it is becoming important that we consider the community of the tourist area as a significant participant in the tourism activity. Tourism has a tremendous potential for earning foreign exchange, generating employment, increasing tax revenue and promoting business activities like crafts, hotel, industry, entertainment and productive services (Patil R.B.2007). According to Medlik (1977), 'Tourism as a source of employment is particularly important for areas with limited alternative source of employment as is often the case in non-industrial areas deficient in industrial raw materials but are bestowed with natural scenic beauty and climatic conditions.' However if unplanned and ill-managed, tourism can be disastrous in ways like rising of the consume of land, water, energy, destruction of landscapes with the creations of new infrastructures, the raise in the production of disposals, the alteration of ecosystems, the introduction of exotic species of animals and plants, the loss of traditional habits, the increase of the illegal jobs, the narcotic traffic, more forest fires and the raise of the prices of the houses and ultimately the cost of living. Thus it becomes clear that the conventional approach of tourism analysis is incongruent with the emerging concerns of the modern tourism system, which requires analysis that explicitly considers community as a unit of analysis.

With this outlook, the present study
is undertaken at Matheran, favorite tourist destination for weekends and nature travellers. Geographically Matheran plateau lies between 18° 58’N Latitude and 73° 18’E Longitude to the west of main range of Western Ghats (Figure 1). One of the most splendid hill station in the Sahyadriris Matheran is located in Raigad district of Maharashtra, 64 kms south-east of Mumbai in the Mumbai Pune urban corridor. From Alibaug, the district headquarters of Raigad, it lies at 81 kms and from Pune at 125 kms. Matheran literally means 'Forest at the Top' (mathe: atop, ran: forest). It is a table-land with average height of about 800m above mean sea level with an area of 7.35 sq.km. The climate of Matheran is cool, healthy, salubrious and bracing. March and April are the hottest months of the year while October is the coolest. Mid June and July it experiences the heaviest showers of the monsoon with total annual rainfall averaging to 5167 mm, the highest in the Mumbai Metropolitan Region. This hill station is surrounded by hill and dale topography and thus Matheran presents a dynamic landscape. The laterite, which forms the upper strata of the plateau, appears as a purplish red rock variegated with different colours. Bio-geographically, the region is important on account of being an outlier of the main Western Ghats mountain chain and in effect sheltering a pocket of evergreen forest Memecylon-Syzigium-Actinodaphne type isolated in geological past. (Puri et al., 1983). Various tree species commonly seen on the plateau are Olea dioica (parjambul), Mangifera indica (mango), Careya Aborea (kumbhai), Memecylon Edule (anjani), Acrinodaphne Hooleri (pisa), Wrightia Tinctoria (kuda), Eugenia jambolana (jambul), Bauhinia Racemosa (apta), Xyilia Dolabriformis (suirs), Ficus glomerata (umbar), Lagerstroemia lanceolata (nanas), Heterophragma roxburghii, Bridelia retusa (asana) and Memecylon umbellatum. Predominant tree species on the slopes are Terminalia tomentosa, Lagerstroemia parviflora, Adina cordifolia, Garuga pinnata, Dillenia pentagyna, Pongamia glabra, Schleichera trijuga and Bombax malabarica. Matheran has the reputation of being abounding in monkeys. Besides there are squirrels, rabbits, fox, cats, rats, mice, bandicoots and porcupines. It is also a home to endangered endemic mammal species such as Ratufa indica elphinstonii (Giant squirrel), which is Scheduled-I species. A great variety of birds like Palm Swift, Crested Lark, Indian Small Sky Lark, Commun Green Pigeon, Blue Breasted Barbet, Malbar Trogen, Malbar Whistling, Hornbills, Eagle, Robin, Kingfisher, Bulbul, Kites, Cuckoo in different hues and colors splash the landscape. No surprise it is declared as an Environmentally Sensitive Area (ESA) in 2002 by Ministry of Environment and Forests (MoEF), Government of India. Matheran offers great panoramic view from as many as 33 points located here. Some of the most
breath-taking views can be seen from the points like Porcupine Point, Echo Point, Panorama Point, Heart Point, Monkey Point and the sunrise and sunset.

AIMS AND OBJECTIVES:
1. To study the impact of tourism and related policies of the government on local population of Matheran.
2. To suggest the planning strategies for promoting tourism that would protect the interests of the natives and further the development of the local community in Matheran.

RESEARCH METHODOLOGY:
MATERIALS AND METHODS:
Data collection through questionnaire was carried out to gain insight on opinion of the locals regarding the benefits made and the problems originating from the ongoing tourism in Mathran. Local interviews were conducted of 50 families across economic strata and belonging to different socio-cultural background. The respondents covered by interview include various individuals involved directly in tourism activities, real estate owners, hoteliers and hotel workers, horse and handcart owners, shopkeepers and the native households. Secondary data was collected through extensive literature study that comprised of original research work, government reports and data and standard articles.

RESULTS AND DISCUSSION:
The following paras under different heads discuss the life and economy of Matheran people in synchronous with the tourism.

POPULATION AND ECONOMY:
The aborigins of Matheran may be grouped as the Dhangars (the shepherds), the Thakurs (agriculturists), and the Katkaris (tribals). The local population of Matheran is 5,139 (2001 census) many of whom are residing here for not less than 50 years. Matheran being a tourist destination it has two important categories of viz Permanent population and Floating population. The permanent population was more or less stagnant till 1961 having annual growth rate between 0.12% - 0.17%. However, the
growth rate increased since 1971 and currently reached up to 2.01% 2001 (Figure 3). The floating population, mainly comprised of tourists is increasing every year and it is observed that average daily influx of floating population has increased from 4000 in 1977 to 11,000 in 2001 i.e. 2.8 times increase over a span of 40 years (Figure 4). The annual number of tourists in Matheran rose from 1.67 lakhs in 1991 to 2.51 lakhs in 1999 with an average increase of 13,000-20,000 tourists per month. But how far has this increased tourism resulted in development of the local community is a disputable issue. As much as more than 95% population (2001) was engaged in non-primary activities, most of it directly dependent on tourism.

The occupational structure of Matheran shows negligible percentage of workers involved in Primary sector. Of the total working population (44.50%), only a negligible 1.72% were engaged in primary sector (livestock and forestry) and 9.71% were engaged in the secondary sector (construction and industry) whereas 89.67% were in tertiary sector (trade, commerce, transport and communication, tourism). This trend is manifested even for 2001 census (table 2) where out of the total working population (44.29%) people engaged in primary sector further reduced to 0.20% whereas the population engaged in non-primary activities rose to about 98% most of which are tourism oriented. As also there may be a high percentage of people interacting in the tourism economy but it should be noted that of the total workers in main category (2043, 35.79% of total population) only a handful of 2.90% are employed in the hotels where the income received is decent, whereas a bulk of 96% population are dependent on other sources of income (horse-owners, shopkeepers and tribals selling artefacts, craft and other novelties etc.) which are highly responsive to the number of tourists visiting (Table No 1). It is not surprising that many people live on daily earnings, as most of the income sources are generated only on the arrival of tourists. This includes activities like providing accommodation, selling of eatables (roasted...
peanuts, berries, sweet tamarind, raw mango, guava) and local crafts like flower decorations by tribals, managing shops selling chikki; the sweet made of crushed groundnuts and coconuts, jams, jelly, honey, novelties like hats, caps, footwears especially Kolhapuri chappals, readymade garments, bags and purses, accessories, photo studios, walking sticks etc. The average earnings of shopkeepers ranges between Rs.3000 to 5000 per day during peak tourist season whereas there during rainy season there is almost no income from this business. Most of those engaged in horse-riding business belong to second or third generation however, only about 60% scyes actually own their horse as maintaining and getting license is also a costly affair for the people. With increasing tourism activity many have entered these occupations who do not own the horses. Daily earnings of the scyes range between Rs.400 to 600. The people from nearby settlements of Jummaptti and Thakurwadi also supplement their income from the tourist industry of Matheran after their seasonal rice harvest. Thus any downturn in the activity means a substantial loss of income source. Besides though the literacy rate is 60% (2001) very few people have attended colleges as it meant to migrating to some other place and lack of finance. This again results for people securing menial jobs in the local economy. Consequently entire economy of Matheran is built around the services provided to the tourists during the ‘season’. Survival during the off-season for common man is based on the savings from the income earned during the tourist season. Many families therefore are engaged in two businesses and prefer to stay in joint families. A recent trend emerging here is that at some hotels workers are brought in only during peak season from other parts of India who belong to the native place of the hotel administrative staff. However if this continues then in the long run such tendencies may result in social tensions and conflicts thereby posing dangers to the tourists and tourism industry.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>No. of Persons engaged</th>
<th>Percentage to the total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultivators</td>
<td>1</td>
<td>0.05</td>
</tr>
<tr>
<td>Agricultural Laborers</td>
<td>3</td>
<td>0.15</td>
</tr>
<tr>
<td>Hotel Industry Workers</td>
<td>59</td>
<td>2.90</td>
</tr>
<tr>
<td>Other Workers</td>
<td>1980</td>
<td>96.90</td>
</tr>
<tr>
<td>Total Workers</td>
<td>2043</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Table No.1 : Category of Main Workers
HOUSING: The lifestyle of the locals is simple and living conditions are ordinary but decent. Majority of the people live in ‘chawls’. Apartment type residential system is absent. Those with better income people have managed to convert their earlier small houses into bungalow type residences which account for less than 20% of the population. The building material is obtained from the nearest townships of Neral and Panvel. The poorer households use wood, cow dung, bricks, tin, and asbestos sheets for construction. (Figure 5). Some of these families living on the edges were victims of land collapse and hence had to relocate their houses however building a new house was not feasible and hence they opt to stay in rather temporary shelters. Due to the fixed land use pattern, a regulation under ESA, about 100 people belonging to lower economy class, migrant people have no permanent houses. (Patwardhan A.)

WATER, FOOD, FUEL AND ELECTRICITY SUPPLY: The only source of water supply to entire Matheran community is the Charlotte lake dam which stores water obtained from Ulhas river, which is about 135 km. long, and rises in the rainy ravines of the Bhor Ghat. Municipal tap connections provide metered water supply, however from past 6 months duration of supply has reduced only for a two to three hours than earlier 4-5 hours. Public taps are also arranged for which caters approximately 8 – 9 households. People have to resort to storing water in drums and tanks to meet water demand for daily chores. In summers the problem of water shortage is felt strongly as the water level in the lake also recedes and the hours of water supply too are reduced. This impacts the tourist business as well. Many swimming pools in the hotels are just rendered to gaze as they are complete dry. However there has been no adverse change in the water quality. The local ration shops and the weekly market on Sunday...
provides the locals with their regular food items like grains, vegetables, fruits. Perishables like milk and milk products, vegetables, meat, fish, poultry are made available locally by the people staying in valleys downhill at the 'Thakurwadi' and 'Dhangarwadi' and Neral. The grocery shops obtain their supplies from nearby towns like Neral. All the items fetched uphill are priced a little high than the MRP rates. However vegetables and other items are obtained from as far as Mumbai by the hoteliers who have their own transport system. LPG gas is the chief fuel used for cooking and heating (geysers) purposes, which is collected at Dasturi from Neral and then carried on horses to reach the houses. The mere transport charges of the gas from Dasturi naka to Matheran are priced between Rs. 30 to 50. It is no surprise that even today many poor families opt for kerosene and firewood as their chief fuel mainly for heating and boiling for poorer families, while gas is only used for cooking. As regards to electricity supply, from past 5-6 months people get 24hrs supply, earlier people had to deal with load shedding for almost 4hrs on a daily basis. This is a severe hindrance to hotel business as low power results in non-usage of high power consuming appliances like air conditioners, heating irons, geysers etc. It is also worth mentioning that inspite of ban of illegal cutting of trees, people have marked that tress are chopped downhill and on the slopes for making charcoal. This makes the entire surrounding landscape below Matheran appear barren and dry.

The slopes of small hills entirely appear to be cleared of the natural vegetation for agricultural purposes. (Figure 6 & 7). With restricted supply of water, absence of tablelands and a favourable soil, vegetables which have only a seasonal demand from tourists become one of the main items of food supply in which Matheran cannot attain self-sufficiency. The cost of bringing these articles up the hills adds to their price which makes living on this hill station costly for the common man.

CIVIC AMENITIES: Matheran only has two schools which provide education viz the St. Xaviers School and the Municipal School. However there are worries among the parents who fear that the private school may shut down. The quality of education received also poor according to the parents. For higher education students have to go to Mumbai or Pune. Recently degree college is also opened at Neral. Jijabai Municipal Hospital is at dispense of the people for medical aid however only for 6hours from 8.00a.m to 12.30 p.m and 4.00p.m. to 5.30 p.m. Medical staff is inadequate and no specialised treatment facilities are available, for which people have to rush to Karjat, Panvel, Mumbai or Navi Mumbai as per the case of emergency. A private dispensary is also present here. Pharmaceuticals and chemists are also...
present in sufficient numbers. Karsandas Mulaji Library is present here. Communication facilities like telephone services (telephone exchange office), post offices, (India Post) are also available within its domain. Financial services are currently provided by banks like Matheran Nagari Patsanatha Bank and Union Bank of India, whereas the Pen Urban Co-operative bank however is not functional. ATM facility was also noted here. The people of Matheran as well as the Municipality are very conscious about the cleanliness and aesthetics of the environment. The waste is regularly collected and removed from places of residences. Waste pits are located within 2 -3 min distance from the settlements and door to door garbage collection is also carried out. Roads and pavements are regularly swept, drains are properly maintained and the required sanitation and hygiene is taken care of, though in some areas drains are seen open where garbage can easily find getting heaped. With regards to making purchases of household utilities people depend on the markets of Neral, Vashi, Karjat, Khopoli and even far of places like Kalyan and Ulhasnagar, Badlapur where the commodities like garments, furniture, kitchen utilities are relatively cheaper.

What makes Matheran probably different from any other hill stations is the absence of vehicles in its Municipal limits. The only vehicle road is up to the Dasturi naka, the outer limit of corporation. Also it does not have multiple points of entry, which controls illegal access, unlike other hill stations. Hence the residents rely completely on hand pulled rickshaws for getting their goods home which makes the cost even higher, whereas for tourists a ride on horses as well as these rickshaws are a pleasant journey up the hills. Taxis and private vehicles ply between Neral to Dasturi Naka. Public transport facilities like the buses and train are available upto Neral. Since 1907, a narrow gauge railway line popularly known as the Mini Train, connects Matheran to Neral in the plains. However the residents feel the need to increase the frequency of the public transports especially the shuttle service especially between Matheran to Neral since many a times there occurs a delay in supply of goods for sale. Also these services are quite affordable to the locals when compared to the private vehicles as people have to visit the nearby markets of Karjat and Khopoli for marketing and other businesses. People residing more over 30 years have noticed change in climate conditions. According to them the summers are getting hotter and winters are becoming shorter and warmer too. However rains are as usual heavy. Under afforestation measures bamboo, neem and gulmohar trees have been planted on the slopes prominently at the settlements of Jummapatti. Sadly this has not helped much as the tree cover is away from the residential areas as well as it is sporadic.
SOCIO-CULTURAL ASPECTS:
Because of limited income sources people prefer to stay in joint families. Also the residential areas to certain extent represent a social differentiation as it came to notice that the people belonging to same community prefer to reside in specific areas such as the Panchavati Nagar, Rohidas Nagar, Panchasheel Nagar etc. (Figure 10). However the people maintain communal harmony. In aspects of security of general public and tourists from anti-social elements moving about in Matheran can be considered as quite safe in the market areas though incidents of burglary have also occurred in residential areas. A major cause of concern is the absence of street lights not only in the areas of jungle which connect the resorts and the main market but also in residential areas as in Panchasheel nagar. Recently to stop anti-social behaviour among youth police frequently raid the hotels and private accommodations to prevent ‘enjoy couples’ from being entertained. The local public and the hotel owners are strictly informed not to accommodate them; only family and married couples should be allowed accommodation.

CONCLUSION:
Increasing tourism has led to a boom in construction of new hotels and resorts and allied activities on the hill. Matheran being close to the mega city of Mumbai is overcrowded during peak periods. The business industry seeks to tap this opportunity at the cost of the natural environment. A serious implication of this spurt in the tourist number is excessive stress on infrastructure facilities besides unchecked growth of hotels and resorts industry. This has exerted pressure on the ecologically fragile areas as it demands increase use of fuel wood, felling of trees (mainly private lands to accommodate additional construction), and greater pressure on water and sanitation system. Secondly being a seasonal attraction the people are not employed on a regular basis and as such have lower income levels. With large family to support taking up higher education is rather costly and this results in youth opting for less rewarding jobs. Thus they are forced into the vicious cycle of less economic opportunities and low education levels. These low-income group people are vital for smooth functioning of tourism industry as they work in hotels, as tourist guides, home servants etc. Hence measures to provide a regular and guaranteed income source to the locals should be taken for enabling them to increase their living standards and also their educational standards. Certain policies such as offering discounts for certain types of visits like study tours etc can be directed to attract tourists throughout the year, by the municipal authority and the individual entrepreneurs. Today the people of Matheran are in dilemma and the ESA declaration of Matheran is facing some
conflicts because of 1) The ban on new constructions, 2) No change in existing land use pattern is allowed, 3) Unemployment etc. This has incurred strong opposition by shopkeepers and hoteliers as these restrictions hamper their business interests. And also from the Matheran Municipal Corporation (MMC) to some extent, as their development plans cannot gain support from the legal framework of ESA.

In times when the basic services (water, land, schools, hospitals, electricity) are short of supply to the locals it is imperative to check and properly document the carrying capacity of the area, which is absolutely required for the smooth functioning of the tourism activity without impairing the growth of local community. Besides, the local people should be encouraged and trained to participate in tourism activity as entrepreneurs and not mere labourers so that they reap the real benefits of tourism. This brings us to conclude that planning for Sustainable tourism is the need of the hour. Mere ratification of the region as Environmentally Sensitive Area won’t help solve the problems unless problems of the locals are addressed. The research emphasizes the need to adopt a holistic approach while planning for tourism development so as to benefit the local community along with the conservation of its natural environment.

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URBAN HEAT ISLAND : A CASE OF GREATER MUMBAI.

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Abstract:

A heat island is a climatological concept which indicates an area of higher temperature surrounded by areas of lower temperature. Heat islands are more common over urban areas for obvious reasons like closely built up land, reduction of percolation in to the ground, destruction of natural vegetal cover and output of enormous heat through industrial combustion, quarrying activities and domestic heat. Such a heat island is recognized by a higher temperature in comparison to other places along the same latitude.

The urban heat island over Greater Mumbai is a firmly established fact and is largely associated with its urban functions. Mumbai, in spite of having a maritime location is warmer for its latitude by 2 to 3 degree c. in winter months, a trend that is observed to be on rise. By constructing graphs specifically of the daily range and relative humidity over 130 years an attempt is made in this study to explain the nature of the urban heat island of Mumbai.

Keywords- Heat island, air quality, ozone, ecosystems, urban thermal plumes, concrete, asphalt, heat capacity, thermal conductivity, albedo, emissivity, energy balance, urban canyon effect, convection, electromagnetic radiation.

Introduction-

The lesser used term heat island refers to any area, populated or not, which is consistently hotter than the surrounding area. An area, such as city or industrial site, having consistently higher temperature than surrounding area because of a greater retention of heat by building, concrete, and asphalt.

Urban Heat Island-

An urban heat island (UHI) is a metropolitan area which is significantly warmer than its surrounding rural areas. The phenomenon was first investigated and described, though not by name, by Luke Howard in the 1810’s. As population centers grow they tend to modify a greater and greater area of land and have a corresponding increase in average temperature. The main cause of the urban heat island is modification of the land surface by urban built up development which contains materials which effectively retain heat. Waste heat generated by
energy usage is a secondary contributor. In a city, air temperatures are often as much as 3-4°C higher than over open country. These higher temperatures are generated by the combustion of fuels in factory, heating, and transport systems, and more importantly, the release at night of heat which has accumulated during the day in the fabric of the city, for the bricks and concrete of the buildings act as enormous storage heaters. This effect is compounded by air pollution, which reduces night time terrestrial radiation, during calm conditions, winds disperse heat. The temperature difference usually is larger at night than during the day, and is most apparent when winds are weak. Seasonally, UHI is seen during both the season's viz. summer and winter.

Monthly rainfall is greater downwind of cities, partially due to the UHI. Increases in heat within urban centers increases the length of growing seasons, and decreases the occurrence of weak tornadoes. An increase in the death rate during heat waves has been shown to increase by latitude due to the urban heat island effect. The UHI decreases air quality by increasing the production of pollutants such as ozone, and decreases water quality as warmer waters flow into area streams, which stresses their ecosystems. Not all cities have a distinct urban heat island. Mitigation of the urban heat island effect can be accomplished through the use of green roofs and the use of lighter colored surfaces in urban areas, which reflect more sunlight and absorb less heat. Despite concerns raised about its possible contribution to global warming, any impact of the urban heat island on global warming is uncertain, its impact on climate change has not been proved observationally or by any quantitative modeling, though recent quantitative speculations indicate that urban thermal plumes may contribute to variation in wind patterns that may itself influence the melting of arctic ice packs and thereby the cycle of ocean current.

**Causes of Urban Heat Island**

There are several causes of an urban heat island(UHI). The principal reason for the night time warming is that building block surface heat from radiating into relatively cold night sky. Two other reasons are changes in the thermal properties of surface materials and lack of evapo-transpiration in urban areas. Materials commonly used in urban areas, such as concrete and asphalt, have significantly different thermal bulk properties (including heat capacity and thermal conductivity) and surface radioactive properties (albedo and emissivity) than the surrounding areas. This causes a change in the energy balance of the urban area, often leading to higher temperatures than the surrounding rural areas. The energy balance is also affected by the lack of vegetation in urban areas, which inhabits cooling by evapo-transpiration. Other causes of a UHI are due to geometric effects. The tall buildings within many
urban areas provide multiple surfaces for the reflection and absorption of sunlight, increasing the efficiency with which urban areas are heated. This is called the "urban canyon effect". Another effect of buildings is the blocking of wind, which also inhibits cooling by convection. Waste heat from automobiles, air conditioning, industry, and other sources also contributes to the UHI. High levels of pollution in urban areas can also increase the UHI, as many forms of pollution change the radioactive properties of the atmosphere. Some cities exhibit a heat island effect, largest at night. Seasonally, UHI shows up both in summer and winter. The typical temperature difference is several degrees between the centre of the city and surrounding fields. The difference in temperature between an inner city and its surrounding suburbs is frequently mentioned in weather reports: e.g., "68°F (20°C) downtown, 64°F (18°C) in the suburbs". The color black absorbs significantly more electromagnetic radiation, and causes the surfaces of roads and highways to heat up substantially.

Study area-

Today, the Greater Mumbai covers an area of 480.24 sqkms. with a population of 1,19,14,378 as per the census of 2001. Greater Mumbai is the urban agglomeration of 18 million people (the largest in India and one of the six largest in the world) which comes under the Municipal Corporation of Greater Mumbai. The metropolis accounts major portion of India's international trade and government revenue, from being one of the foremost centers of education, science and technological research and advancement. The Mumbai district is broad and flatter rain flanked by north – south trending hill ranges. The area is drained by Mahim, Mithi, Dahisar and Polsar rivers. These small rivers near the coast, form small rivulets which intermingle with each other resulting in swamps and mud flats in the low lying areas. There are a number of creeks, dissecting the area. Among them, Thane is the longest creek. Other major creeks are Manori, Malad and Mahim which
protrudes in the main land and give rise to mud flangs and swamps.

**Objectives:**
1) To study the temperature trends in Greater Mumbai area.
2) To identify the causes related to urban heat island phenomena over Greater Mumbai area.
3) To suggest measures for mitigating and reducing the heat effect.

**Data source and Methodology:**
The study has been completed with the help of secondary data collected from the government records. The relevant information and data have been statistically analyzed using suitable techniques and is depicted graphically to arrive at meaningful conclusions.

**Analysis and Interpretation:**
A heat island is recognized by a higher than the mean for the latitude is generally identified and measured by the daily range of temperature in the winter months. This is done so because the winter thermal ranges are higher than any other months of the year. Mumbai city and its suburbs forming a metropolis is a hub of industries, commerce and closely built urban space.

The vegetal cover in the city has been practically reduced to nil except for the northern part which is a reserve forest. While in the suburbs as a whole it is only a cover of about a quarter of the land and that too declining fast. The entire drainage system of Mumbai has become derelict and seasonal urban flooding in rainy months is quite common. Mumbai’s winter temperature in spite of a maritime location is 2° to 3° c higher for the latitude. This urban heat island over Mumbai is practically visible and seen by a strong flow over Mumbai while flying into it. This glow is seen from as far as Baroda, Nasik, Pune and Ratnagiri far more pronounced in winter months. Strong inversions of temperature in these months holding the pollutants in the air close to the ground gives rise to this urban glow.

To study urban temperature over a period of time various parameters like Mean daily temperature, relative humidity, extreme weather events in month of December, mean monthly and annual extremes, periodic and non periodic diurnal range of temperature, a number of graphs for the 134 years (1873-1905) are constructed specifically of a daily range and relative humidity. As seen in the graph it is noted that winter daily range of temperature is much higher than that of summer months because of the cool nights especially in early hours. What is even more striking is the fact that this daily range of temperature in winter months over the 100 years shows that it is increasing.

![Graph of Mean Daily Temperature](image-url)
This is also noted from the temperature map of India. This increasing daily range of temperature in winter months during the 20th century is somewhat difficult to explain. It was initially considered to be a possible result of the El nino effect and the fact the Arabian Sea is distinctly warmer than a Bay of Bengal. Of late there is a growing thinking amongst a Indian and global climatologists that possibly global warming due to an increase urban gases in the atmosphere seems to be a definite fact. In that last 10 years the IMD has indicated a more rapid rise in a sea level around Mumbai that is 1 cm in 10 years. While the Mumbai urban heat island can be certainly related to the metropolitan output of pollutants and carbon gases has
rise over time and got to be explained perhaps only in terms of global warming effects if there is any other causal factors it has yet to be identified.

THE RISE AND FALL OF MERCURY (1901-2007)

Average Temperature Rise: 1.62°C
Significant Rise In The Average Maximum Temperature Of Mumbai
Conclusions-
There is a significant rise (1.62 degrees Celsius) in the average maximum temperature in Mumbai. It means that the city is getting warmer and, if this warming trend continues, Mumbai may cease to have any winter in a decade or so. There is an average rise is about 2.98 degree Celsius in December’s temperature over the past 100 years. The rare cold that we experience in this month is because of the air flowing in from the north but the warming is bound to affect the weather in Mumbai. “We are paying a heavy price for our disregard for the environment”.

Urban heat island is one of the most important hazards in the city which impact on quality of life. Urban Heat Island is expected to pose increasing challenges for cities in the following decades, placing greater stress and impacts on multiple social and biophysical systems, including population health, social comfort, urban infrastructure, energy demand and water supplies. Unless cities change, these raised temperatures will only get greater, as cities expand. Changing existing cities in a city-planning point of view is an impossibility; such an attempt would demand the existence of many small parks in the urban fabric, according to the direction of the prevailing winds (Givoni, 1998), which could mean the demolition of buildings and the fundamental change of cities. On the other hand, if alterations capable of lowering urban temperatures could happen on building scale, this would not affect the city planning. If the urban building fabric is altered, the heat island intensity could lower. The following recommendations are suggested for mitigating harmful effects of UHI like achieve sustainable transport for mitigating air pollution, increasing the albedo of building materials, greening the buildings by terrace or roof gardening or balcony gardening, reducing congestion of buildings etc. The alterations that need to be done are on the building envelopes. By covering roofs and walls either with higher albedo and evapotranspiring surfaces, urban temperatures can decrease significantly.

Bibliography-
3) http://cgwb.gov.in/District_Profile/MaharashtraGreater%20Mumbai.pdf
OCCUPATIONAL STRESS OF TEACHERS: A COMPARATIVE STUDY OF SECONDARY SCHOOL TEACHERS AND PRIVATE CLASS TEACHERS

- Dr. Shailaja Bhangale
KCES College of Education, Jalgaon 425002

Abstract
This study investigated the level of occupational stress among the teachers who are currently teaching in secondary schools and private classes living in different socio-economic situations. Stratified random sampling technique was used to choose sample from Jalgaon city. Occupational Stress Index [OSI] by Dr. A.K. Srivastava and Dr. A.P. Singh was used to collect data for the study. The t-test analysis at 0.05 level of significance indicated that there was a significant difference between the occupational stresses of secondary school teachers. There was no significant difference between the occupational stress experienced by male and female secondary school teachers.

Introduction
Teaching is a profession field where rapid changes are taking place. Teacher’s job is very challenging one and if he is to do well he develop professionally and to inspire his students to higher aspirations and achievements. National development hinges on the contributions of the teachers towards attainment of academic excellence by the students. The major work of teachers is human resources development and no nation can develop above her human resources. The different professionals trained by teachers have their contributions to make to national development. Thus, teachers are very important in the actualization of the school goals and national development.

Stress is an inherent factor in any type of vocation or career. At its best, the presence of stress can be a motivator that urges the individual to strive for excellence. However, excess amounts of stress can lead to a lack of productivity, a loss of confidence, and the inability to perform routine tasks. Occupational Stress is stress involving work. Stress is defined in terms of its physical and physiological effects on a person, and can be a mental, physical or emotional strain. It can also be a tension or a situation or factor that can cause stress. Occupational stress occurs when there is a discrepancy between the demands of the environment/workplace and an individual’s ability to carry out and complete these demands. Often a
stressor can lead the body to have a physiological reaction which can strain a person physically as well as mentally. One of the main causes of occupational stress is work overload. As with other forms of tension, occupation stress can eventually affect both physical and emotional well being if not managed effectively. Stress sources of teachers may be summarized as crowding classes, student’s discipline problems, the pressure of time and the work load, employers are not supportive, discriminating in favor of some employees at the expense of others, do not offer encouragement, or create a hostile work environment, Interpersonal conflicts within the workplace, uncertainty about job security underutilized job abilities, conflict and indefiniteness of roles, bad working conditions and self-respect. EI was a significant factor influencing occupational stress among secondary school teachers while gender was not. Thus, the ability to effectively deal with emotions and emotional information in schools would assist teachers in managing occupational stress. (Akomolafe Moyosola Jude 2011) Turkish teachers have mild stress levels and Macedonian teachers have moderate stress levels. There is a meaningful difference in the stress level points of Turkish and Macedonian teachers (Dr. Figen Eres, Dr. Tatjana Atanasoska 2011) Five teacher stress Sources were studied: pupil misbehavior, teacher workload, time and resources difficulties, interpersonal relationships, and recognition. The overall stress level of respondent was moderate. The stress levels among technical teachers were moderate. Among the five stressors, pupil misbehaviour was the strongest determinant of teacher stress. (Prof. Madya Dr. Azizi Haji Yahaya, Shahrin Hashim, Tee Sook Kim) Gender issues in work stress are a non-issue, at least in the occupational stress variables measured here, the differences in the strain measures were examined, with the main one being the importance of examining the role of extra-organizational stressors on female managers’ distress. (Karen Miller*, Mike Greyling1, Cary Cooper2, Luo Lu3, Kate Sparks2 and Paul E. Spector 2000) Higher levels of job stress and less job satisfaction among managers of 25-35 years age than their counterparts in the middle age (36-45 years) and the old age groups (46-55years). The study also found that the age found to be negatively correlated with occupational stress and positively with job satisfaction (K. Chandraiah, S. C.Agrawal, P. Marimuthandn, Manoharan 2003) Occupational stress is found higher among private bank employees compared to public bank employees. Among different occupational stress
variables role over load, role authority, role conflict and lack of senior level support contribute more to the occupational stress. (Nadeem Malik 2011) The present research was designed to understand occupational stress differentials of secondary school teachers and teachers working in private classes.

Objectives
1. To study the occupational stress among the teachers working in secondary schools and private classes.
2. To compare the factors of occupational stress of the teachers.

Hypothesis
1. There are no significant difference between teachers working in secondary schools and private classes.
2. There is no significant difference between role overload, role ambiguity, role conflict, unreasonable group and political pressures, responsibility, powerlessness, under participation, poor peer relations at work, intrinsic impoverishment, low status, strenuous working conditions, and unpredictability of teachers working in secondary schools and private classes.

Methodology
Secondary schools and private classes were selected from Jalgaon district and 60 teachers were selected from the schools, 40 teachers from private classes, keeping in view the requirement of the study, only regular teachers with experience above 5 years. Occupational Stress Index [OSI] by Dr. A.K. Srivastava and Dr. A.P. Singh were administered to the selected teachers of both the groups, viz., teachers working in secondary schools and teachers working in private classes. This scale developed and standardized by Shrivastva and Singh (1981), is a useful tool to assess the occupational stress of employees. It consists of 46 statements each with 5 response alternatives. The index assesses the perceived stress of the employees arising from twelve dimensions of their job life i.e. role overload, Role ambiguity, role conflict, unreasonable group and political pressures, responsibility, powerlessness, under participation, poor peer relations at work, intrinsic impoverishment, low status, strenuous working conditions, and unpredictability. The collected data was scored and statistical treatment was given.
Discussion of the Results

Table 1: Means, SDs and ‘t’ values for 12 Sub factors of Occupational stress scores

<table>
<thead>
<tr>
<th>Dimensions of OS</th>
<th>Secondary school teachers N=60</th>
<th>Teachers in Private classes N=40</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean  SD</td>
<td>Mean  SD</td>
<td>t value  0.05</td>
</tr>
<tr>
<td>role overload</td>
<td>5.87  2.31</td>
<td>11.75   3.35</td>
<td></td>
</tr>
<tr>
<td>Role ambiguity</td>
<td>7.5   2.56</td>
<td>12.44  2.96</td>
<td></td>
</tr>
<tr>
<td>role conflict</td>
<td>6.78   3.37</td>
<td>15.34  2.42</td>
<td></td>
</tr>
<tr>
<td>unreasonable group and Political Pressures</td>
<td>10.44  3.65</td>
<td>10.21  3.54</td>
<td></td>
</tr>
<tr>
<td>Responsibility for person</td>
<td>6.85  3.87</td>
<td>8.54   4.26</td>
<td></td>
</tr>
<tr>
<td>Powerlessness</td>
<td>8.67   2.98</td>
<td>10.42  3.7</td>
<td></td>
</tr>
<tr>
<td>under participation</td>
<td>10.5  2.57</td>
<td>12.98  2.21</td>
<td></td>
</tr>
<tr>
<td>poor peer relations</td>
<td>6.42   3.86</td>
<td>11.68  3.42</td>
<td></td>
</tr>
<tr>
<td>intrinsic impoverishment</td>
<td>8.67   2.41</td>
<td>10.2   3.62</td>
<td></td>
</tr>
<tr>
<td>low status</td>
<td>7.32   3.56</td>
<td>9.45   2.78</td>
<td></td>
</tr>
<tr>
<td>strenuous working conditions</td>
<td>11.5  2.28</td>
<td>13.85  3.26</td>
<td></td>
</tr>
<tr>
<td>unpredictability</td>
<td>9.63   2.54</td>
<td>12.74  4.62</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the present investigation both male and female teachers were found to exhibit equal levels of teacher effectiveness. Male teachers were found to be more stressed than female teachers. Further, the analysis shows that teachers with high emotional intelligence were more effective in their teaching and have less occupational stress while teachers with low emotional intelligence have more occupational stress and less teacher effectiveness. There was no interaction between sex of the teachers and emotional intelligence of the teachers on the scores of teacher effectiveness and occupational stress.

Thus, the findings are useful for administration, meaning thereby, the principals should organize such programmes which develop and increase emotional intelligence of teachers so that they may give better performance.

Occupational stress and strain induce worsening physical and mental conditions for teachers, while coping resources could promote their health. This study suggests that having adequate coping resources, especially social support, in workplaces may be an important factor for improving teachers’ quality of life. Moreover, psychological interventions should be set up for teachers, and psychological counselling should be provided to relieve stress and enhance quality of life.

**Occupational stress**: The results obtained above show significant decreases in the mean stress score.
<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Dimensions of OS</th>
<th>Secondary school teachers N=60</th>
<th>Teachers in Private classes N=40</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>1</td>
<td>Role overload</td>
<td>5.87</td>
<td>2.31</td>
<td>11.75</td>
</tr>
<tr>
<td>2</td>
<td>Role ambiguity</td>
<td>7.5</td>
<td>2.56</td>
<td>12.44</td>
</tr>
<tr>
<td>3</td>
<td>Role conflict</td>
<td>6.78</td>
<td>3.37</td>
<td>15.34</td>
</tr>
<tr>
<td>4</td>
<td>Unreasonable group and Political Pressures</td>
<td>10.44</td>
<td>3.65</td>
<td>10.21</td>
</tr>
<tr>
<td>5</td>
<td>Responsibility for person</td>
<td>6.85</td>
<td>3.87</td>
<td>8.54</td>
</tr>
<tr>
<td>6</td>
<td>Powerlessness</td>
<td>8.67</td>
<td>2.98</td>
<td>10.42</td>
</tr>
<tr>
<td>7</td>
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</tr>
<tr>
<td>8</td>
<td>Poor peer relations</td>
<td>6.42</td>
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<td>11.68</td>
</tr>
<tr>
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<td>8.67</td>
<td>2.41</td>
<td>10.2</td>
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<tr>
<td>10</td>
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<td>11</td>
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<td>11.5</td>
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<td>13.85</td>
</tr>
<tr>
<td>12</td>
<td>Unpredictability</td>
<td>9.63</td>
<td>2.54</td>
<td>12.74</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>8.34</td>
<td>2.99</td>
<td>11.3</td>
</tr>
</tbody>
</table>

* Significant at .05 level  ** Not Significant at .05 level

The analysis shows that role overload, role ambiguity, role conflict, responsibility, powerlessness, poor peer relations at work, intrinsic impoverishment, low status, strenuous working conditions, and unpredictability were higher.
experienced by private class teachers. In the present investigation both teachers were found to exhibit equal levels of unreasonable group and Political Pressures. Unreasonable group and political pressures was same level of both teachers. Teachers in Private classes were found to be more stressed than Secondary school teachers. Teachers working in private classes have more occupational stress. Secondary school teachers were found higher level of the important factor of occupational stress under participation than private class teachers. Secondary school teachers experienced more under participation than private class teachers. Secondary school teachers have less occupational stress as compare to private class teachers.

There was significant difference between role overload, role ambiguity, role conflict, responsibility, powerlessness, under participation, poor peer relations at work, intrinsic impoverishment, low status, strenuous working conditions, and unpredictability of teachers working in secondary schools and private classes. The important factor of occupational stress i.e. unreasonable group and Political Pressures was not significant difference between teachers working in secondary schools and private classes. The difference between overall occupational stresses of teachers working in secondary schools and private classes was significant at 0.05 levels.

**Conclusion**

Occupational stress and strain induce worsening physical and mental conditions for teachers, while coping resources could promote their health. This study suggests that having adequate coping resources, especially social support, in workplaces may be an important factor for decreasing occupational stress of Teachers working in private classes. Yoga, psychological interventions should be set up for teachers, and psychological counseling should be provided to relieve stress and enhance quality of life. The findings are useful for administration; the headmasters should organize such programmes which decrease occupational stress of teachers so that they may give better performance.

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A STUDY OF LANDUSE PATTERN IN UDGIR TAHSIL

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Shri. Hawagiswami College, Udgir, Dist Latur (M.S.)

Introduction:
The classification of land for the whole country is not applicable to the area under study. General landuse pattern of the Udgir tahsil differ from that Latur district and Maharashtra state. Due to its location and physical setting. The nature of land having marked local variation in slope, soils, fertility, insured irrigation and availability of water. The land not available for cultivation is more in the central part of tahsil. The potential agriculture is coifing to the central and eastern part of the tahsil.

Study Area:
Udgir tahsil is located in South eastern part of Maharashtra state. It is situated between 18°24' North latitude to 18°26' North North latitude and 77°7' East longitude to 77°9' East longitude. The highest elevation above sea level of Udgir is 639 meters.

Objectives:
Comparative circle-wise study of landuse pattern in Udgir taluka.

Methodology:
The data collected are tabulated and processed through statistical techniques and divided circles are to show landuse pattern in taluka.

Analysis:
Of the total landuse are under cultivation is highest (79.02%) followed by fallow land (110.21%). Uncultivated excluding fallow land (5.53%), land not...
### Table No.1
Percentage of General Landuse in Udgir Tahsil For (1999-2004)

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Classification</th>
<th>Udgir</th>
<th>Mogha</th>
<th>Her</th>
<th>Deverjan</th>
<th>Wadhona</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Forest</td>
<td>0.20</td>
<td>0.41</td>
<td>0.35</td>
<td>0.13</td>
<td>0.24</td>
<td>1.33 (0.26%)</td>
</tr>
<tr>
<td>2</td>
<td>Land not available for cultivation</td>
<td>6.78</td>
<td>5.06</td>
<td>3.64</td>
<td>4.42</td>
<td>4.88</td>
<td>24.78 (4.95%)</td>
</tr>
<tr>
<td>3</td>
<td>Uncultivated expenditure follow land</td>
<td>4.49</td>
<td>4.52</td>
<td>5.86</td>
<td>5.01</td>
<td>7.80</td>
<td>27.68 (5.53%)</td>
</tr>
<tr>
<td>4</td>
<td>Follow land</td>
<td>13.78</td>
<td>4.26</td>
<td>15.54</td>
<td>9.43</td>
<td>7.06</td>
<td>51.07 (10.2%)</td>
</tr>
<tr>
<td>5</td>
<td>Cultivated land</td>
<td>74.75</td>
<td>85.75</td>
<td>73.61</td>
<td>81.01</td>
<td>80.02</td>
<td>395.14 (14%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
<td><strong>500.00 (99.97%)</strong></td>
</tr>
</tbody>
</table>

available to cultivation (4.95%) and under forest the land is (0.26%). When individual study of land use is carried out circle-wise area under forest is found in Mogha. It is followed circles like Her, Wadhona, Udgir and Devarjan. Increase of second category for cultivation Udgir has highest area and followed by Mogha, Wadhona, Devarjan and Her. Fallow land is largely found in Udgir circle and highest area under cultivation is in Mogha circle (85.75) followed by Devarjan, Wadhona, Her and Udgir. If we compare the landuse pattern data of 1994-99 of Udgir taluka with that of
1999-2004 data. We find that there has been marginal changes in cultivated landuse (3.74%), land not available for cultivation (1.8%), uncultivated excluding follow land (1.29%), fallow land (2.75%) and there has been no change in landuse under forest.

There is obvious change in area under cultivation in the circle of Devarjan and Wadhona during 1994-2000. But in other landuse case. There have been no significant change.

**Conclusion:**

Area under forest has not changed during the given decade, positive changes have occurred in uncultivated excluding follow land and fallow land but a negative trend could be witnessed in land not available for cultivation.

**References**

5) Socio-economic review and district statistical abstract of Latur District (1999-2004)
Abstract:

Maharashtra State is one of the developing state in India marked by the holy presence of many saints and spiritual leaders. The birth places, salvation centers and abode of these great souls have turn as pilgrimage centers for common people. Shegaon is one of the pilgrimage city located in Maharshtra. Shegaon a pilgrim centre is well-known in India for massage of saint and salvation centre of Shri Gajanan Maharaj. This present research work is based on primary data and secondary data collected from various sources. Primary data is collected from a random sample survey of 315 pilgrims during the summer season with the help of structured questionnaire who were interviewed at the time of fair in the temple of Shri Gajanan Maharaj. The pilgrim amenities satisfaction index is conducted for each amenities available in the Shegaon. The cummulative result is presented as satisfaction index (SI) in a scale of 10. Satisfaction index of various amenities varies in the pilgrim centre.

Key words : Shegaon, Satisfaction Index, Amenities, Salvation centre.

Introduction:

Tourism is one of the important occupation developed in various part of India. Tourism development in the region play significant role in economic, socio-cultural life of that region. India has a great potential for the future development of tourism industry. In this modern time tourism is a basic and desirable human activity includes attracting people to a destination, transporting people from his origin, providing them accommodation boarding, recreation and facilitating them and to return to their homeland. Today increasing standard of living, increase in income, environmental pollution, development of transport and communication facilities play significant role on origin and development of tourist centers in India. Shegaon is developed as pilgrim centre as Samadhi of Saint Shri Gajanan Maharaj. Thousands of pilgrims visit Shegoan as a faith on Shri Gajanan Maharaj.

Study Region:

Shegaon is one of the small town developed in Buldhana district of Maharashtra. Sheaoon is located on 20°45'
N and 76° 40'E longitude. It is situated on the Mumbai-Nagpur railway route. This town is very famous for Samadhi of Shri Gajanan Maharaj. Recently Anand Sagar project was developed in this town. Thousands of local as well as tourist from Madhya Pradesh, Karnataka were attracted at this place.

**Objects of the study:**
To Study the level of satisfaction of pilgrims/ tourist at Shegaon.

**Data collection and Research Methodology:**
This applied research work is based on secondary data and primary data collected with the help of intensive questionnaire survey. Structural questionnaire and random sampling method has used for the selection of survey sample. With the method 315 pilgrims at Shegaon were interviewed by researcher. The data collected from the field was converted into numerical value e.g.8 -10 considered as excellent, 6 - 8 as good, 4-6 as satisfactory and 0-4 as unsatisfied. Then the detailed values were used for calculating the amenity satisfaction index by using the above method.

**Satisfaction index of tourist:**
\[
SI_i = \frac{SM_i \times N_i}{N}
\]
Where, \(SN\) = Satisfaction index for ‘i’ amenities.

\(SM_i = \) Numerical value for particular level of satisfaction for the ‘i’ amenities.

\(N_i = \) No. of respondents deriving the particular level of satisfaction for the ‘i’ amenities.

\(N = \) Total No. of respondents for that factor for all level of satisfaction

**Levels of amenity factor:**
Development of tourist place needs pilgrim’s opinion about the facilities. For the future planning for the tourist place

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Amenities</th>
<th>Excellent</th>
<th>Good</th>
<th>Satisfactory</th>
<th>Not Satisfied</th>
<th>Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Food &amp; Drinking water</td>
<td>108</td>
<td>96</td>
<td>86</td>
<td>23</td>
<td>315</td>
</tr>
<tr>
<td>2</td>
<td>Accommodation</td>
<td>90</td>
<td>98</td>
<td>108</td>
<td>14</td>
<td>315</td>
</tr>
<tr>
<td>3</td>
<td>Darshan facility</td>
<td>108</td>
<td>102</td>
<td>86</td>
<td>14</td>
<td>315</td>
</tr>
<tr>
<td>4</td>
<td>Local Behaviour</td>
<td>55</td>
<td>105</td>
<td>128</td>
<td>24</td>
<td>315</td>
</tr>
<tr>
<td>5</td>
<td>Personal Safety</td>
<td>56</td>
<td>115</td>
<td>113</td>
<td>28</td>
<td>315</td>
</tr>
<tr>
<td>6</td>
<td>Tourism Marketing</td>
<td>50</td>
<td>113</td>
<td>126</td>
<td>23</td>
<td>315</td>
</tr>
<tr>
<td>7</td>
<td>Transport &amp; Communications</td>
<td>63</td>
<td>116</td>
<td>123</td>
<td>08</td>
<td>315</td>
</tr>
<tr>
<td>8</td>
<td>Recreational facility</td>
<td>82</td>
<td>94</td>
<td>104</td>
<td>32</td>
<td>315</td>
</tr>
<tr>
<td>9</td>
<td>Infrastructure amenities</td>
<td>41</td>
<td>78</td>
<td>121</td>
<td>72</td>
<td>315</td>
</tr>
<tr>
<td></td>
<td><strong>Average Value</strong></td>
<td>71.23</td>
<td>102.02</td>
<td>110.57</td>
<td>22.08</td>
<td>315</td>
</tr>
<tr>
<td></td>
<td><strong>Percentage</strong></td>
<td>22.98</td>
<td>34.08</td>
<td>35.68</td>
<td>7.26</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Source – Field Survey, 2011**
Origin and further development of tourist place is dependent upon the availability of infrastructure facilities in the tourist place. The tendency and amenities satisfaction of pilgrim play key role in further development of the tourist place. To measure a opinion and satisfaction about the amenities of pilgrim there is no universal acceptance method to measure these aspects. In this research work an attempt is made to access the same by adopting certain simple statistical method. In this study important nine amenities has been considered for study, which influence the level of satisfaction seen in table A. The pilgrim tourists were asked to indicate the level of amenities satisfaction as a stating excellent, good, satisfactory, not satisfied.

The important nine amenity-wise percentage reveals that the excellent 22.98%, good 34.08%, Satisfactory 35.68% and not satisfied 7.26%. Above figure shows that pilgrim are satisfied by amenities available in the Shegaon. Only 7.26% pilgrim noted that they were not satisfied by the visit.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Amenities</th>
<th>Excellent</th>
<th>Good</th>
<th>Satisfactory</th>
<th>Not Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Food &amp; Drinking water</td>
<td>9.45</td>
<td>7.09</td>
<td>4.79</td>
<td>2.16</td>
</tr>
<tr>
<td>2</td>
<td>Accommodation</td>
<td>9.60</td>
<td>7.23</td>
<td>5.25</td>
<td>2.31</td>
</tr>
<tr>
<td>3</td>
<td>Darshan facility</td>
<td>8.70</td>
<td>7.08</td>
<td>5.29</td>
<td>3.10</td>
</tr>
<tr>
<td>4</td>
<td>Local Behaviour</td>
<td>9.11</td>
<td>7.30</td>
<td>5.44</td>
<td>2.15</td>
</tr>
<tr>
<td>5</td>
<td>Personal Safety</td>
<td>9.03</td>
<td>6.98</td>
<td>5.45</td>
<td>2.63</td>
</tr>
<tr>
<td>6</td>
<td>Tourism Marketing</td>
<td>9.40</td>
<td>7.39</td>
<td>5.80</td>
<td>2.43</td>
</tr>
<tr>
<td>7</td>
<td>Transport &amp; Communications</td>
<td>8.80</td>
<td>7.16</td>
<td>5.04</td>
<td>3.32</td>
</tr>
<tr>
<td>8</td>
<td>Recreational facility</td>
<td>9.42</td>
<td>6.81</td>
<td>5.78</td>
<td>1.61</td>
</tr>
<tr>
<td>9</td>
<td>Infrastructure amenities</td>
<td>9.20</td>
<td>7.04</td>
<td>5.15</td>
<td>3.09</td>
</tr>
</tbody>
</table>

Source – Computed by Author

The pilgrim’s views about the amenities available at the Shegaon shown in the table is calculated to understand the average level of satisfaction in the scale of 10, namely 8-10 for excellent, 6-8 for good, 4-6 for satisfactory and 0-4 points for not satisfied.
The tabulated average values are used to calculate satisfaction index and rank are given to those factors which indicate the priority of the amenity. The first rank satisfaction index is for accommodation at 6.97, second rank for darshan facility at 6.93, the details of these amenities and ranks were placed in the Table C. Shegaon is one of the accessible town linked with rails and roads to main cities of India. During the survey 66% pilgrims were from various districts of Maharashtra and 34% pilgrims from the various states of India.

**Findings and Suggestions :**

Shegaon is one of the popular and important pilgrims destination in India due to Samadhi of Shri Gajanan Maharaj. It is observed that the flow of pilgrim is continuously increasing due to various amenities provided by trust. The amenity-wise satisfaction index showed accommodation getting 9.97, followed by Darshan facility 6.93, third food and drinking water amenities 6.82 and last rank for personal safety should be developed at the pilgrim centre. There must be change in the attitude and behaviour of local people. Indian moto ‘Atithi Devo Bhava’ should be develop among the local people.

**References :**

* Annual report book of Gajanan Maharaj
I, Dr. Shailaja Dongar Bhangale, here declare that the particulars given above are true to the best of my knowledge and belief.

Date: 1 April, 2012

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Signature of Publisher
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