Demographic and Behavioural Segmentation of Tourist at Pilgrimages in Satara of Maharashtra State

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Abstract— *Paper aims to understand demographic and behavioural tourist segmentation at pilgrimage destinations of Satara district. There are places known for pilgrimage however, 3 well-known destinations viz. Aundh, Wai and Sajjangarh are selected for study. Structured schedule executed to interview 97 tourists at tourist sites. Descriptive and Multivariate statistical tools are used i.e. two step cluster analysis to determine the segmentation. Hypotheses proposed to test viz. There is significant difference among the demographic variable of the sample. ANOVA was used to test the hypothesis. The results show that there is significant difference in the demographic variables available in sample data. Based on demographic variables two clusters were sorted and based on behavioural pattern 2 clusters found at Wai and Sajjangarh and 3 at Aundh. Scale of demographic variable cluster quality is just adequate at all pilgrimage centres. However at behavioural based quality scale is poor at Wai, satisfactory at rest of the destination. Demographic profile denote that majority of tourist come from other than Maharashtra, family tourist, Day visitors, repeaters found more and majority have used personal car to visit the sites.. Friends and relatives reference used to know the site.*

Keywords— Tourism Marketing, Pilgrimage, Demographic, Segmentation, Behavioural, Cluster.

I. INTRODUCTION

As during eighteenth century Satara was Marathas capital. Many people migrated from Satara throughout India. Many people in recent past migrated to Poona and Mumbai metro hub. But their religious deities remained in their natives of Satara. Satara is gifted with two most popular hill stations of Maharashtra Mahabaleshwar and Panchgani. People plan hill station and pilgrimage simultaneously, so pilgrimage Tourism has gained importance. There are number of temples built in Satvana's Hemadapanthi style. As Satara was administrative place during the Maratha rule, several temples were built in that period which reflects the architecture of the Maratha style. Historical background of Aundh and Wai were princely state of Peshwa's and Sajjangarh is known for Samarth Ramdas swami who was guru of Chhatrapati Shivaji Maharaj greatest and most popular ruler of Maharashtra. Devotees flock to the place on the auspicious days. Wai Ganpati Temple is significant pilgrim site. It is called the Dakshin Kashi of India. It is located about 33 kilometres away from Satara. Maha Ganpati Temple is visited by the pilgrims to worship the presiding deity. The Yamai Devi Temple, Aundh is yet another pilgrimage spot. Sajjangad is also visited as a holy destination by number of tourists. This is the place of a great saint Samartha Ramdas Swami. Ramdas Swami is renowned for his message of mental and physical exercise. He had established temples of God Hanuman all across the country. Similar temples are situated around Satara. The tourist arrival at Aundh in April 2010-2011 was 80988 and in April 2011-12 it rose to 82474.

At Sajjangarh the figure was just double of previous year in July 2010-11 were 43800. At Wai tourist flow is also better. It shows that Satara destination attracts pilgrimage tourism.

About Pilgrimage Attraction:

A **pilgrimage** is a journey or search of moral or spiritual significance. Many religions attach spiritual importance to particular places: the place of birth or death of founders or saints, or to the place of their "calling" or spiritual awakening, or of their connection (visual or verbal) with the divine, to locations where miracles were performed or witnessed, or locations where a deity is said to live or be "housed," or any site that is seen to have special spiritual powers. Devotees are encouraged to visit for their own spiritual benefit: to be healed or have questions answered or to achieve some other spiritual benefit. A person who makes such a journey is called a pilgrim.[1]

Yamai Temple, Aundh[2]

[1] https://en.wikipedia.org/wiki/Pilgrimage, accessed on 20/7/2013 at 12:52PM

[2] http://www.aroundpune.com/aundh.htm, accessed on 20/07/2013 at 10:44AM.

Aundh is famous for Bhavani Museum in India. It is the village of Devi Yamai and the famous museum created by Shri Bhagwanrao Pantapratinidhi - the king of Aundh. Devi Yamai temple is built on a small hill which is very old but very attractive. The head of Rakshas Aundhasur, well carved Nandi the Shivling in the temple is worth to see. The idol of Devi Mahishasur Mardini Yamai is almost 2 meters high and creates a pleasant atmosphere.

Sajjangarh , a Holy Place

Sajjangad (Fort) is a very famous place for pilgrims in Maharashtra. It is situated just 9 kilometers away from Satara city. Sajjangad is 3000 feet above sea level. Spiritual guru of Shivaji Maharaj-Sant Ramdas Swami, who inspired him in his fight for Swaraj, lived here for whole of his life and attained 'Samadhi' here only. Sajjangad is also known as the spiritual Capital of Shivshahi during Chatrapati Shivaji's Period.

Ganpati Temple at Wai

At the west end of the town the river Krishna forms a pool partly by the aid of a stone weir built from the steps about fifty yards above a large temple of Ganapati. In the four corners are separate shrines dedicated to Vishnu, Lakshmi, Ganapati, and Surya.

II. METHODOLOGY

Paper aims to know about tourist profile who visits pilgrimage/holy places in Satara district, to understand the segments of the tourist market at Pilgrimage destination. Study put to test null hypothesis i.e. There is significant difference among the demographic variables (Gender, age- group and Occupation) of sample data.

The market survey was conducted during 2012-13. Three well-known destinations viz. Aundh, Wai and Sjjangarh are selected for study. 97 tourists selected on purposive sampling technique interviewed at tourist site with structured schedule from which 30 tourist each from Aundh and Sajjangarh and 37 from Wai. Two step cluster analysis executed to obtain demographic and behaviour cluster groups.

ANOVA has been used to test the hypothesis. The hypothesis was set to test i.e. the demographic variables are independent in cluster.. Data analysed have been presented with tourist profile, Destination wise ANOVA tabulation, Cluster model and Cluster quality scale along with pie chart to depict cluster size. Input importance that also gives clear idea to predict the importance of variables in cluster group.

Data Analysis:

Table.1: Tourist Profile

1.	Tourist State of Origin	Maharashtra		35.05%		Other than Maharashtra		64.95%			
2.	Gender	Male		68.04%		Female		31.96%			
3.	Age Group	25-45		65.98%		45&above		34.02%			
4.	Occupation	Self Employed	13%	Supervisory Level	6%	Middle Semi Officer and Executive	13%				
		Shop Owners	2%	Junior Officer and executive	14%	Housewife	23%				
5.	Tourist Pattern	With Family	57.73%	Alone	4.12%	Group	38.14%				
7.	Purpose of Visit	Leisure	12.37%	Tourism	21.65%	Religion/Pilgrimage	50.52 %				
8.	Mode of Travel	Personal Car	68.04 %	Two Wheeler	13.40%	Bus	13.40%	Other	5.15%		
9.	Type of Visitors	Overnight	11.34%	Day Visit/Excursion	72.16 %	More than two days	16.49 %				
12.	Source Used to Know	Friends and Relatives (55.67%)	Personal Effort 21.54%	Website 22.68%	Travel Agent 4.12%	Other 5.15%					
13.	Type of Visit	1st Time	24.74%	Repeat	75.26%						

Source: (Field Data)

Table 1 shows that majority sample tourist are from other than Maharashtra. Male sample tourist found more compared to female. Majority belong to the age group 25-45. Family visits and repeat visitors are more for the purpose of religion and pilgrimage. Personal car and Day visits are more preferred to visit the destinations. Majority of them have taken reference of friends and relative to know the destination.

Table.2: ANOVA for Wai

Sr.	Variable	Cluster		Error		F	Sig.
		Mean Square	df	Mean Square	df		
1	Gender	.228	3	.151	33	1.504	.232
2	Age group	6.272	3	.730	33	8.586	.000
3	Occupation	135.120	3	.779	33	173.350	.000

Table 2 depicts that the calculated F statistics is 1.504 and probe value for testing hypotheses is 0.232. Since the probe value is larger than all of our levels of significance (α =.10, .05 .01, etc) so one cannot reject null hypotheses. However, the calculated. 'F' statistics 8.586 and probe value for testing hypotheses is 0.000 which is significant with age group and F statistics is 173.350 and probe value for testing hypotheses is 0.000 which is significant at occupation variable. It shows hypotheses test is significant at age group and occupation variable that there is significant difference from age group and occupation. But gender wise there is no significant difference from each other since the convenient sampling technique. **There is enough evidence to reject the null hypothesis that there is significant difference from variable age group and occupation among demographic variable** at 0.01 levels (two tailed).

Table.3: Cluster Summery and Cluster Quality Scale at Wai based on Demographic Segmentation

Model Summary

Algorithm	TwoStep
Inputs	3
Clusters	2

Cluster Quality

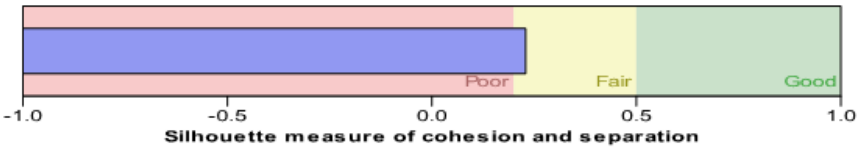
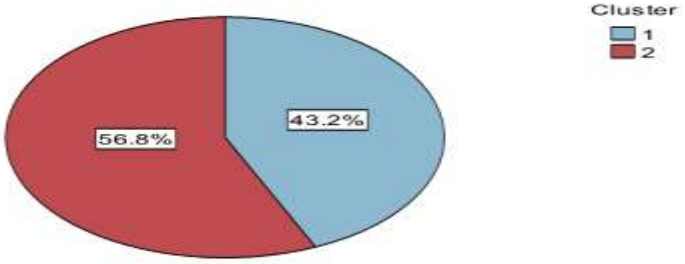


Table 3 talks about two clusters which are drawn from 3 variables viz. gender, age group and occupation in the form of input. Above table depicts two clusters from 3 inputs with independent cluster quality scale. Two clusters were obtained however; the cluster quality is not depicted towards fair enough.

Cluster Sizes

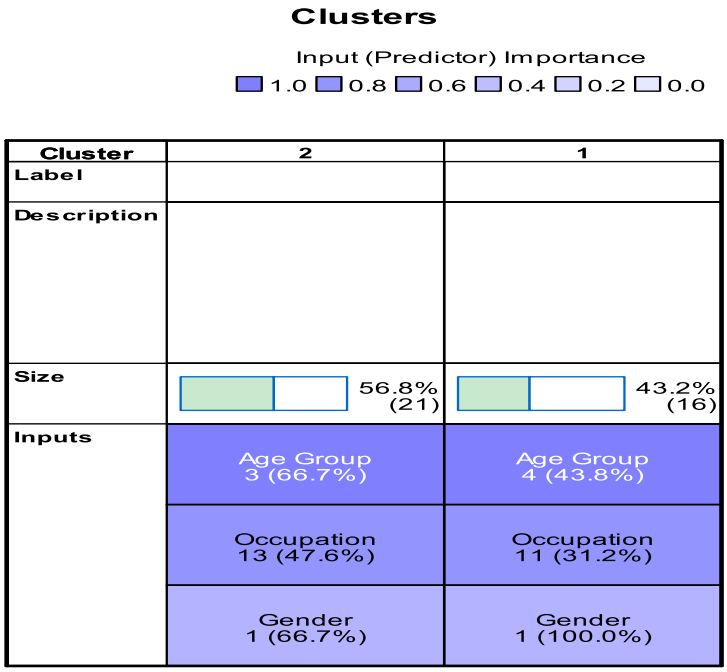


Size of Smallest Cluster	16 (43.2%)
Size of Largest Cluster	21 (56.8%)
Ratio of Sizes: Largest Cluster to Smallest Cluster	1.31

Fig.1: Distribution of Cluster Size at Wai based on Demographic Segmentation

Largest cluster size is 56.8 and ratio between two clusters is 1.3.

Table.4: Distribution of Input Importance within the clusters at Wai based on Demographic Segmentation



Age group 25-35 and occupation i.e. students is most predictor within the clusters whereas gender is least.

Behaviouristic Segmentation Model Summary based on the behavioural tourist pattern by length of stay, travel pattern, stay arrangement, average spending, and source used to know the destination, purpose of visit, and frequency of visit is shown below.

Table.5: Cluster Summery and Cluster Quality Scale at Wai based on Behaviouristic Segmentation

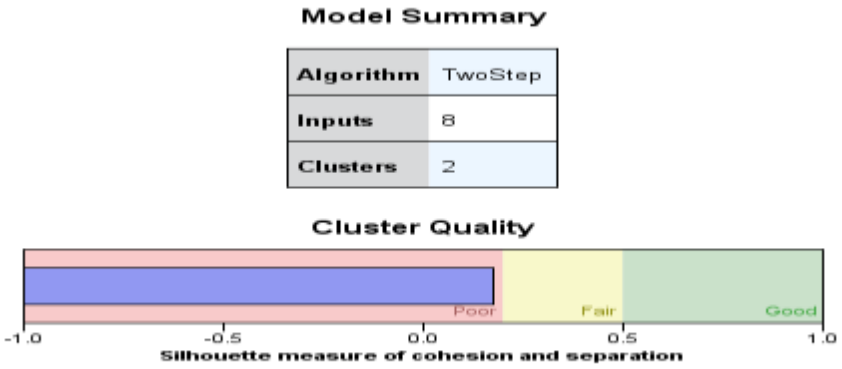
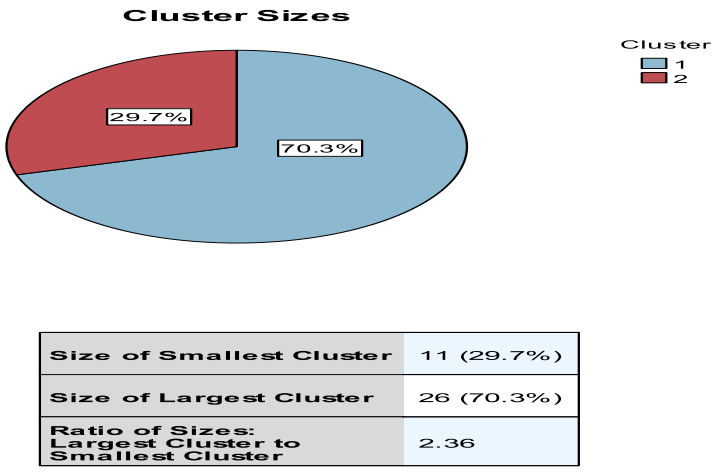


Table 5 orates two clusters which is drawn from 8 inputs viz. Travel Pattern, Purpose of Visit, Mode of Travel, Average Spending, Stay Arrangement, Source to know the destination and Frequency of visit One input is reduced in this analysis since the tourists have not preferred to stay at site. Two clusters are obtained and the cluster quality reflects poor.

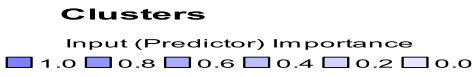


Size of Smallest Cluster	11 (29.7%)
Size of Largest Cluster	26 (70.3%)
Ratio of Sizes: Largest Cluster to Smallest Cluster	2.36

Fig.2: Distribution of Cluster Size at Wai based on Behaviouristic Segmentation

The size of largest cluster is 70.3% and the ratio between two clusters is 2.36.

Table.6: Distribution of Input Importance within the clusters at Wai based on Behaviouristic Segmentation



Cluster	1	2
Label		
Description		
Size	70.3% (26)	29.7% (11)
Inputs	2A5 4 (61.5%)	2A5 1 (27.3%)
	2A6 2 (53.8%)	2A6 2 (63.6%)
	2A3 2 (65.4%)	2A3 3 (72.7%)
	2A7 2 (65.4%)	2A7 1 (63.6%)
	2A4 8 (46.2%)	2A4 4 (36.4%)
	2A10 7 (65.4%)	2A10 6 (36.4%)
	2A11 2 (65.4%)	2A11 2 (72.7%)
	2A9 5 (38.5%)	2A9 5 (45.5%)

** (A3: Travel Pattern, A4: Purpose of Visit; A5: Mode of Travel; A6: Length of Stay; A7: Average Spending; A9: Stay Arrangement; A10 Source to Know the destination and A11 stands for Frequency of visit.)

From above table Mode of travel, length of stay and travel pattern is showing more importance whereas stay arrangement and frequency of visit least important for segmentation. Mode of travel is used personal car and day visits is common and family tourist are more compared group at pilgrimage site. Thus, tourist who visit pilgrimage site of Satara district with family and by personal car but preferred day visit rather than stay.

At Aundh

Table.7: ANOVA for Aundh

Sr.	Variable	Cluster		Error		F	Sig.
		Mean Square	df	Mean Square	df		
1	Gender	.555	2	.235	27	2.356	.114
2	Age group	10.333	2	1.407	27	7.342	.003
3	Occupation	308.733	2	.963	27	320.608	.000

Above table depicts that 'F' statistics is significant with age group and occupation variable and not significant with gender since the convenient sampling technique. It shows that there is significant difference into the samples belongs to different clusters with respect to age group and occupation. Test is significant which shows there is difference in the demographic variable so it shows that there is enough evidence to reject the null hypothesis at 0.05 levels.

Demographic Segmentation by considering gender, age group and occupation the summery is depicted as follows.

Table.8: Cluster Summery and Cluster Quality Scale at Aundh based on Demographic Segmentation

Model Summary

Algorithm	TwoStep
Inputs	3
Clusters	2

Cluster Quality

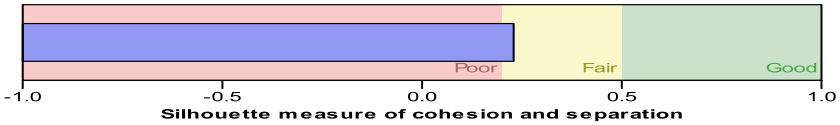
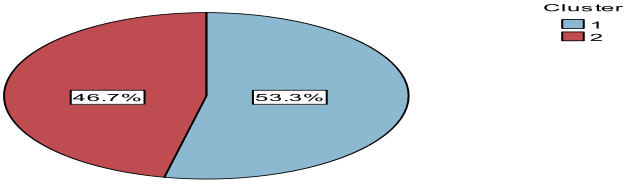


Table 8 represents two clusters drawn from three inputs of demographic variable age, occupation and gender. The scale depicts cluster quality is slight fair enough and not good.

Cluster Sizes



Size of Smallest Cluster	14 (46.7%)
Size of Largest Cluster	16 (53.3%)
Ratio of Sizes: Largest Cluster to Smallest Cluster	1.14

Fig.3: Distribution of Cluster Sizes at Aundh based on Demographic Segmentation

From the above figure two clusters are sorted, largest cluster size is 53.3% and ratio between largest and smallest is 1.14.

Table.9: Distribution of Input Importance within Clusters at Aundh based on Demographic Segmentation

Clusters

Input (Predictor) Importance
1.0 0.8 0.6 0.4 0.2 0.0

Cluster	1	2
Label		
Description		
Size	53.3% (16)	46.7% (14)
Inputs	Occupation 1 (50.0%)	Occupation 9 (28.6%)
	Age Group 6 (75.0%)	Age Group 5 (42.9%)
	Gender 2 (56.2%)	Gender 1 (64.3%)

Table 9 reveals 55 and above age group represent high importance followed by occupation unskilled worker whereas gender carries least.

Behaviouristic Segmentation

Table.10: Distribution of Cluster Summery and Cluster Quality Scale at Aundh based on Behaviouristic Segmentation

Model Summary

Algorithm	TwoStep
Inputs	8
Clusters	3

Cluster Quality

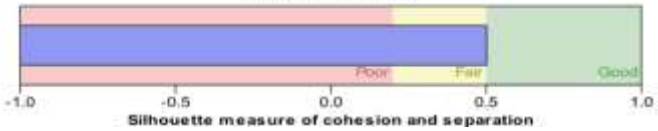
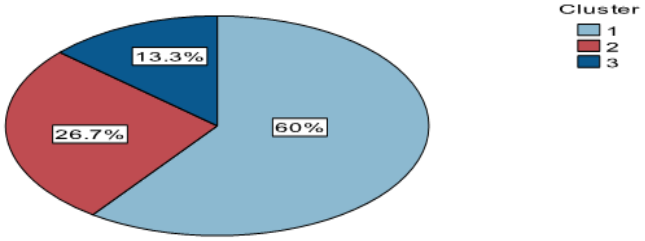


Table 10 shows the 3 clusters which is drawn from 8 inputs viz. Travel Pattern, Purpose of Visit, Mode of Travel, Length of Stay, Average Spending, Stay Arrangement, Source to know the destination and Frequency of visit Thus, 3 clusters could be sorted out from behavioural segmentation at Aundh and scale shows that the cluster quality is quite fair.

Cluster Sizes

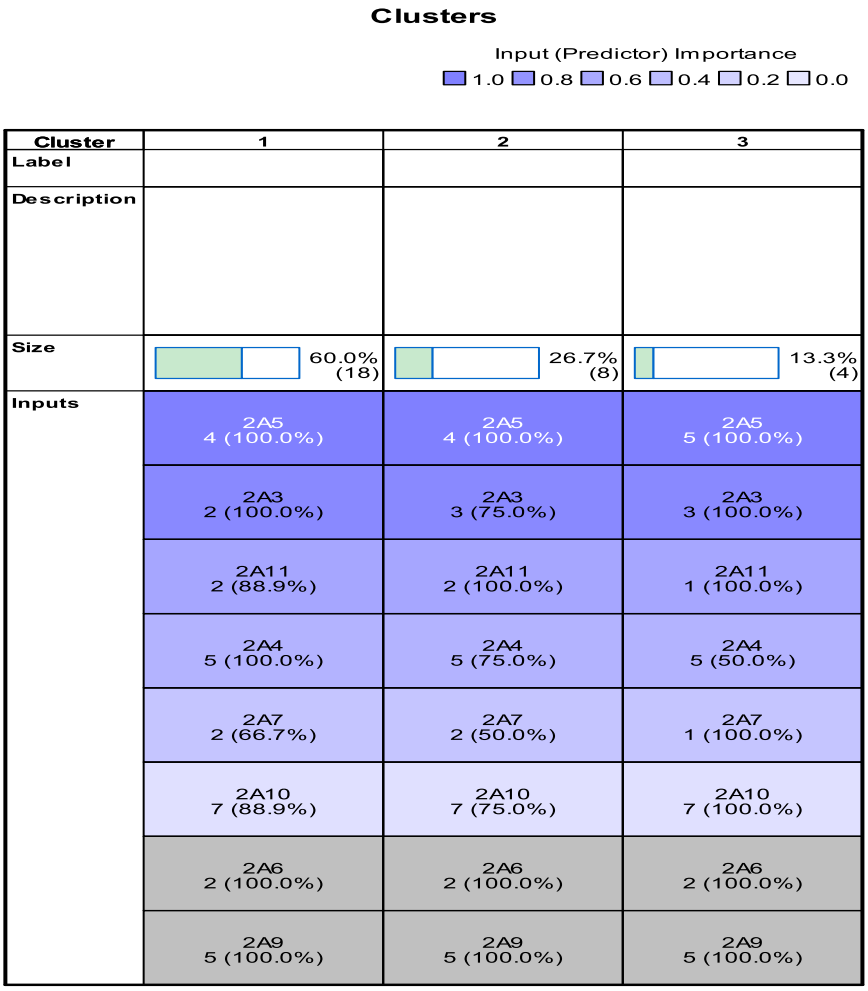


Size of Smallest Cluster	4 (13.3%)
Size of Largest Cluster	18 (60%)
Ratio of Sizes: Largest Cluster to Smallest Cluster	4.50

Fig.4: Distribution of Cluster Sizes at Aundh based on Behaviouristic Segmentation

From above figure largest cluster size is 60% and the 3 clusters are drawn and ratio between largest and smallest cluster is 4.60.

Table.11: Distribution of Input Importance within the Clusters at Aundh based on Behaviouristic Segmentation



Cluster	1	2	3
Label			
Description			
Size	60.0% (18)	26.7% (8)	13.3% (4)
Inputs	2A5 4 (100.0%)	2A5 4 (100.0%)	2A5 5 (100.0%)
	2A3 2 (100.0%)	2A3 3 (75.0%)	2A3 3 (100.0%)
	2A11 2 (88.9%)	2A11 2 (100.0%)	2A11 1 (100.0%)
	2A4 5 (100.0%)	2A4 5 (75.0%)	2A4 5 (50.0%)
	2A7 2 (66.7%)	2A7 2 (50.0%)	2A7 1 (100.0%)
	2A10 7 (88.9%)	2A10 7 (75.0%)	2A10 7 (100.0%)
	2A6 2 (100.0%)	2A6 2 (100.0%)	2A6 2 (100.0%)
	2A9 5 (100.0%)	2A9 5 (100.0%)	2A9 5 (100.0%)

** (A3: Travel Pattern, A4: Purpose of Visit; A5: Mode of Travel;A6:Length of Stay; A7:Average Spending; A9: Stay Arrangement; A10 Source to Know the destination and A11 stands for Frequency of visit.)

From above table travel pattern and mode of travel shows most importance whereas the stay arrangement and length of stay shows least importance since tourist made day visit.

At Sajjangarh

Table.12: ANOVA for Sajjangarh

Sr.	Variable	Cluster		Error		F	Sig.
		Mean Square	df	Mean Square	df		
1	Gender	.561	3	.192	26	2.926	.053
2	Age group	7.325	3	.955	26	7.671	.001
3	Occupation	116.243	3	.874	26	132.928	.000

Table 12 shows that 'F' statistics is significant with age group and occupation variable and not significant with gender. It shows that there is significant difference into the samples belongs to different clusters with respect to age group and occupation. It shows that there is enough evidence to reject the null hypothesis and accept alternative hypotheses at 0.01 levels in case of two variables age group and occupation.

Demographic Segmentation:

Table.13: Cluster Summery with Cluster Quality Scale at Sajjangarh Based on Demographic Segmentation

Model Summary

Algorithm	TwoStep
Inputs	3
Clusters	2

Cluster Quality

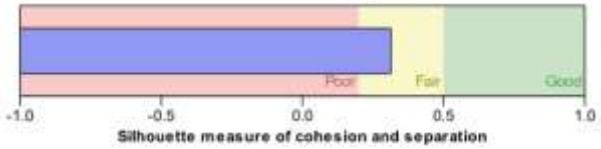
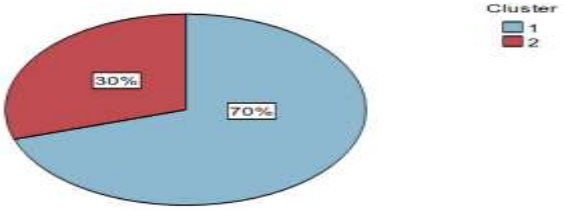


Table 13 reveals two clusters from three inputs viz. gender, age group and occupation. Thus from summery two clusters are sorted out and scale depicts cluster quality fair.

Cluster Sizes



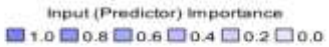
Size of Smallest Cluster	9 (30%)
Size of Largest Cluster	21 (70%)
Ratio of Sizes: Largest Cluster to Smallest Cluster	2.33

Fig.5: Distribution of Cluster Size at Sajjangarh Based on Demographic Segmentation

Figure 5 represents two clusters are drawn and largest cluster size is 70% and ratio between largest and smallest cluster is 2.33.

Table.14: Input Importance within the Clusters at Sajjangarh Based on Demographic Segmentation

Clusters



Cluster	1	2
Label		
Description		
Size	70.0% (21)	30.0% (9)
Inputs	Occupation 11 (23.8%)	Occupation 13 (88.9%)
	Age Group 4 (42.9%)	Age Group 2 (55.6%)
	Gender 1 (81.0%)	Gender 2 (66.7%)

Table 14 represents occupation officer/executive junior carry more importance in segments compared to other two variables age group 35-45 male.

Behaviouristic Segmentation:

Table.15: Cluster Summery with Cluster Quality Scale at Sajjangarh Based on Behaviouristic Segmentation

Model Summary

Algorithm	TwoStep
Inputs	8
Clusters	2

Cluster Quality

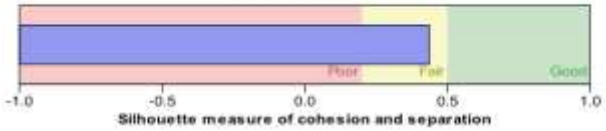
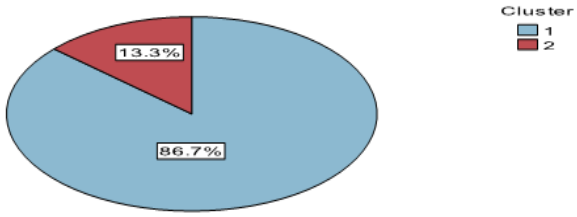


Table 15 represents two clusters from 8 inputs viz. Travel Pattern, Purpose of Visit, Mode of Travel, Length of Stay, Average Spending, Stay Arrangement, Source to know the destination and Frequency of visit Thus, data depicts that two clusters shows fair quality in behavioural segmentation.

Cluster Sizes

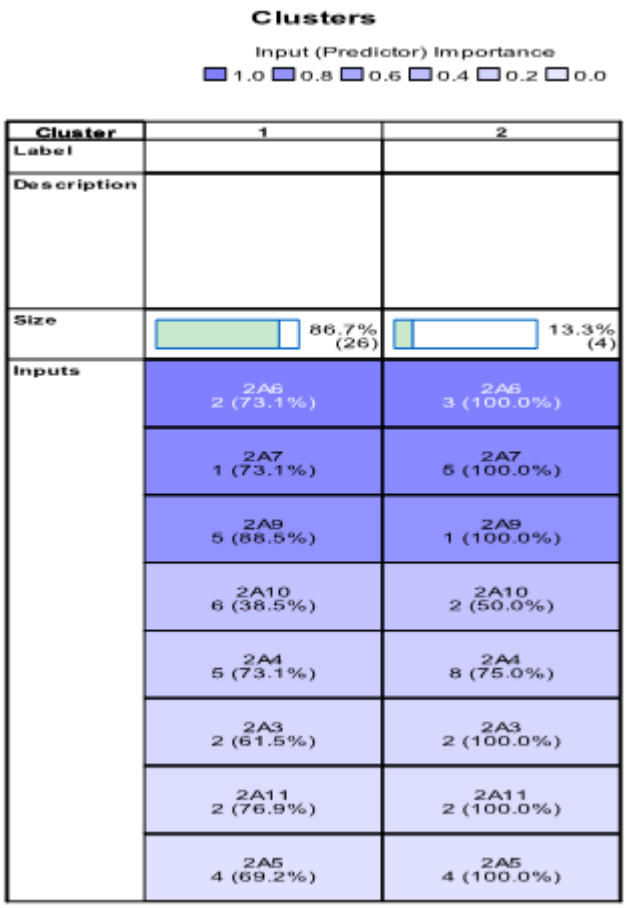


Size of Smallest Cluster	4 (13.3%)
Size of Largest Cluster	26 (86.7%)
Ratio of Sizes: Largest Cluster to Smallest Cluster	6.50

Fig.6: Distribution of Cluster Size at Sajjangarh Based on Behaviouristic Segmentation

From the figure 6 largest cluster size is 86.7% between 2 sorted clusters and ratio is 6.50.

Table.16: Distribution of Importance of Input within the Clusters at Sajjangarh Based on Behaviouristic Segmentation



** (A3: Travel Pattern, A4: Purpose of Visit; A5: Mode of Travel; A6: Length of Stay; A7: Average Spending; A9: Stay Arrangement; A10 Source to Know the destination and A11 stands for Frequency of visit.)

From the table 16 length of stay i.e. day visitors are more, average spending less than Rs. 500 and stay arrangement not required depicts high importance compared to the rest of variables in tourist pattern.

III. CONCLUSION

To conclude majority sample tourists are from other than Maharashtra, preferred personal car with their family to visit. Day visits and repeats visitors found more There is significant difference in the demographic variables available in sample data. Based on demographic variables two clusters found each at Wai, Sajjangarh and Aundh and based on behavioural pattern 2 each at Sajjangarh, Wai, 3 at Aundh,. The demographic based scale of cluster quality is just fair and behavioural point of view it is poor at Wai.

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[10] http://maharashtra.gov.in/english/tourist/Pages/Home.aspx, 5/2/2013, at 2pm
[11] http://maharashtra.gov.in/english/Pages/Home.aspx, 5/2/2013 at 2.15pm
[12] http://cultural.maharashtra.gov.in/english/gazetteer/SATARA/home.html, 11/5/2013 at 4.35.