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Impacts of Television Serials on Tamil Rural Women: A Data Mining Case Study of Theni District

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Abstract: ***Television, a medium invented for entertainment, has become burdens to today's life. Instead of improving the knowledge of the people, now-a-days the serials dramas broadcast on the Indian television channels become nuisance for human life. The rural people of Tamilnadu are greatly affected by these television dramas. The researcher conducted a case study in Theni district of Tamilnadu to analyze the impacts of television serials on rural adults and women using data mining clustering techniques. Data were collected from the public by a set of questioner and it is processed using R tool – a statistical tool which is used for data mining analysis. Gender, Age and educational level based classification is performed to analyze the impact of television serials. It is found that the rural women, irrespective of age, educational qualification are greatly affected by these serial dramas and wasting their precious time on this television serials. This research bring an alarm that these serial dramas become a threat to the socio-cultural values of Tamilnadu.***

Keywords: Television serials, Rural Adults and Women, Data Mining, K-means Algorithm, Clustering, Theni District..

directly at the computer or on hard- copy, and a well-developed, simple and effective programming language (called 'S') which includes conditionals, loops, user defined recursive functions and input and output facilities.

1. Algorithm Used

In this paper, we use k-means algorithm for cluster analysis. It is a multivariate analysis that attempts to form groups or "clusters" of objects that are "similar" to each other but which differ among clusters. Similarity is a characterization of the ratio of the number of attributes two objects share in common compared to the total list of attributes between them. Objects which have everything in common are identical, and have a similarity of 1.0. Objects which have nothing in common have a similarity of 0.0. Dissimilarity is the characterization of the number of attributes two objects have uniquely compared to the total list of attributes between them.

K-means clustering: The most common partitioning method is the K-means cluster analysis. Conceptually, the K-means algorithm has following steps:

Step 1. Selects K centroids (K rows chosen at random)
Step 2. Assigns each data point to its closest centroid
Step 3. Recalculates the centroids as the average of all data points in a cluster (i.e., the centroids are p- length mean vectors, where p is the number of variables)
Step 4. Assigns data points to their closest centroids
Step 5. Continues steps 3 and 4 until the observations are not reassigned or the maximum number of iterations (R uses 10 as a default) is reached.

R uses an efficient algorithm by Hartigan and Wong (1979) that partitions the observations into k groups such that the sum of squares of the observations to their assigned cluster centers is a minimum [3]. This means that in steps 2 and 4, each observation is assigned to the cluster with the smallest value of:

$$SS(k) = \sum_{i=1}^{n} \sum_{i=0}^{p} (x_{ij} - \bar{x}_{kj})^2$$

Where k is the cluster, x_{ij} is the value of the j^{th} variable for the i^{th} observation, and x_{kj}-bar is the mean of the j^{th} variable for the k^{th} cluster. The format of the K-means function in R is k-means(x, centers) where x is a numeric dataset (matrix or data frame) and centers is the number of clusters to extract. The function returns the cluster memberships, centroids, sums of squares (within, between, total), and cluster sizes.

2. Algorithm Implementation Using R

R has an amazing variety of functions for cluster analysis. The steps for cluster analysis are given below:

Step 1. *Data Preparation:* Prior to clustering data, you may want to remove or estimate missing data and rescale variables for comparability [3].

Step 2. *Partitioning:* K-means clustering requires the analyst to specify the number of clusters to extract. A plot of the within groups sum of squares by number of clusters extracted can help determine the appropriate number of clusters. The analyst looks for a bend in the plot similar to a screen test in factor analysis.

Step 3. *Hierarchical Agglomerative:* There are a wide range of hierarchical clustering approaches. The researcher used Ward's method for Step 3. *Hierarchical Agglomerative clustering.* The pvclust( ) function in the pvclust package provides p-values for hierarchical clustering based on multi-scale bootstrap resampling. Clusters that are highly supported by the data will have large p values. When we apply the pvrect(fit, alpha=.95)and seplot(fit) functions, we receive Fig.1.a and Fig.1.b

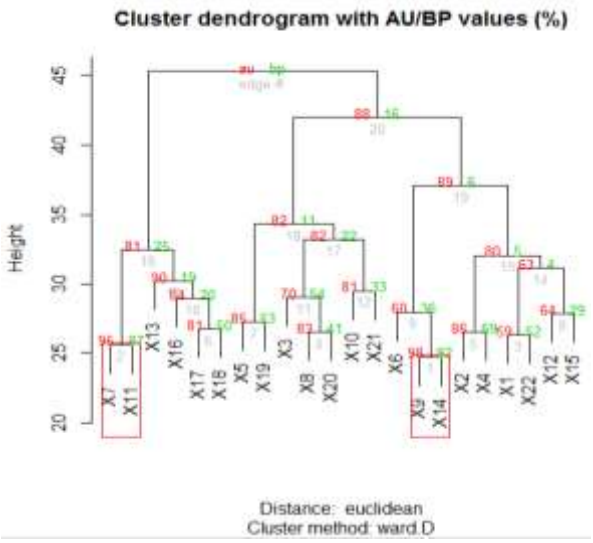

Figure 1.a. p-values for hierarchical clusters

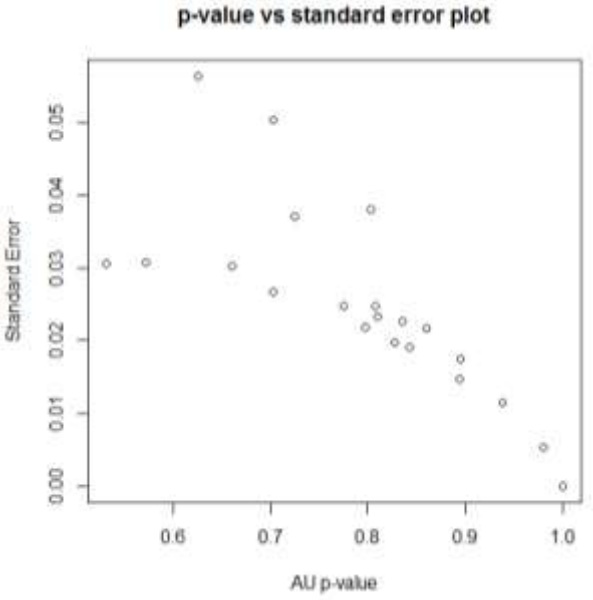

Figure 1.b. Standard Error of clusters

Step 4: *Model Based:* Model based approaches assume a variety of data models and apply maximum likelihood estimation and Bayes criteria to identify the most likely model and number of clusters. Specifically, the Mclust( ) function in the mclust package selects the optimal model according to BIC for EM initialized by hierarchical clustering for parameterized Gaussian mixture models. One chooses the model and number of clusters with the largest BIC. The Model-based clustering plots of BIC, classification, uncertainty and density are shown in Figure 2.a,2.b,2.c and 2.d.

Selection: 1

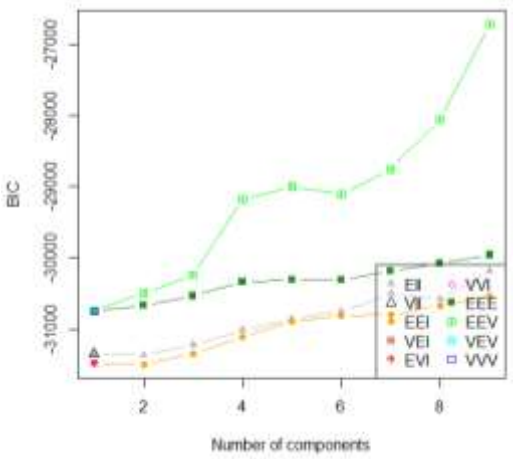

Figure 2.a. BIC plot in Model-based clustering

Selection: 2

Figure 2.b. Classification plot in Model-based clustering

Selection: 3

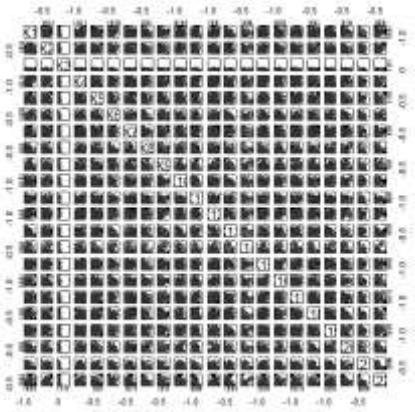

Figure 2.c. Uncertainty plot in Model-based clustering

Selection: 4

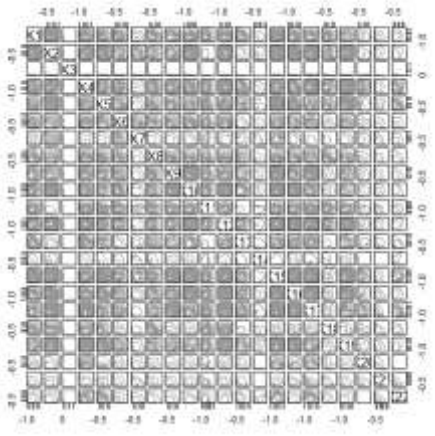

Figure 2.d. Density plot in Model-based clustering

Step 5: *Plotting Cluster Solutions:* It is always a good idea to look at the cluster results. Plotting of kmeans value is presented in Figure 3.a and Cluster dendrogram is in Figure 3.b.

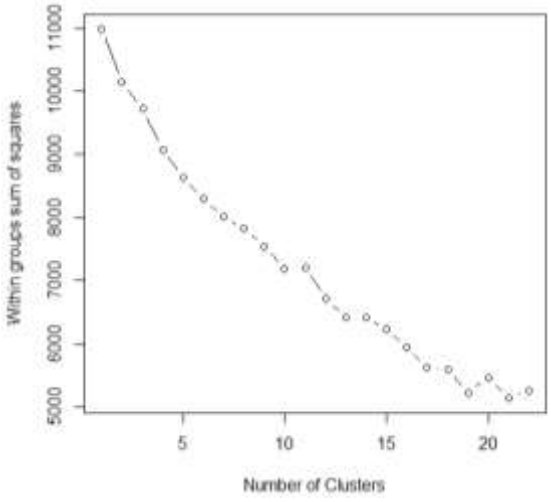

Figure 3.a.Plotting kmeans value

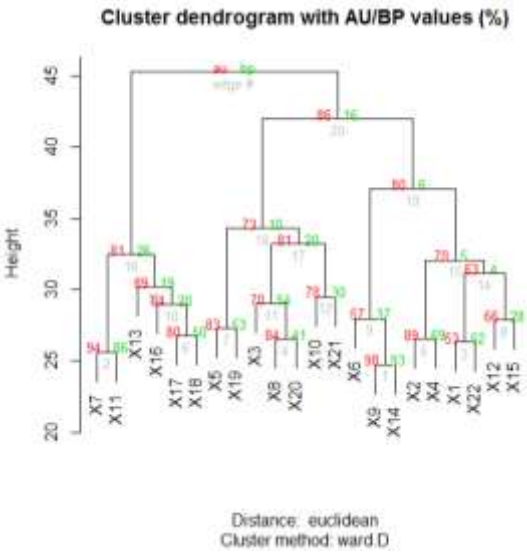

Figure 3.b. Cluster Dendrogram

The number of clusters has been presented with differ colored lines and labels shown in Figure 4.

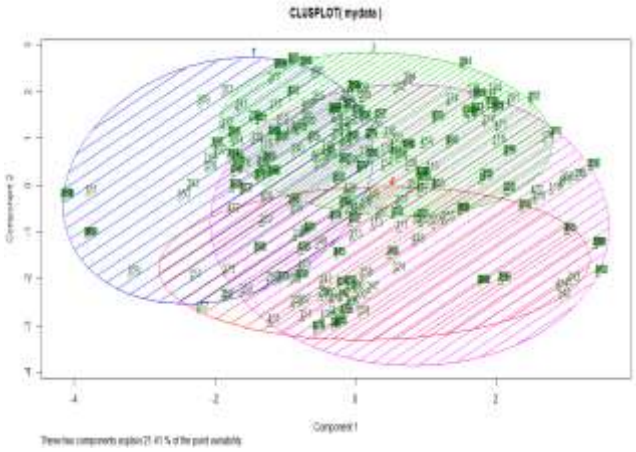

Figure 4. Plotting the cluster values in different colors and labels

Clustering solutions are presented in Figure 5.a and the number of clusters is plotting as shown in Figure 5.b.

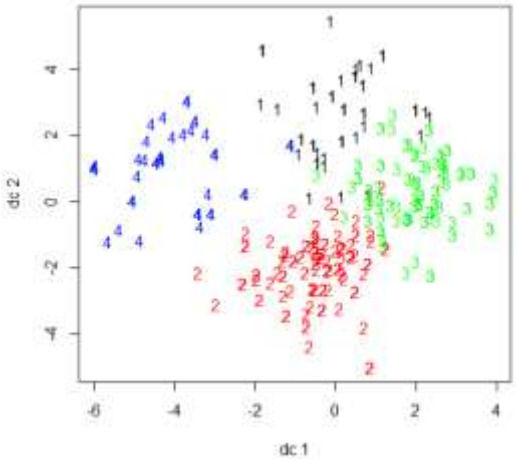

Figure 5.a. Plotting cluster solutions

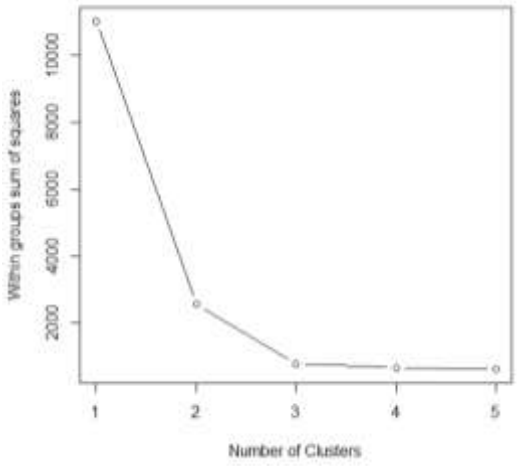

Figure 5.b. Plotting the number of clusters

Step 6. *Validating cluster solutions:* The function cluster.stats() in the fpc package provides a mechanism for comparing the similarity of two cluster solutions using a variety of validation criteria with the function cluster.stats(d, fit1$cluster, fit2$cluster) where d is a distance matrix among objects, and fit1$cluster and fit$cluster are integer vectors containing classification results from two different clustering of the same data.

Statistical values of my clusters are presented by the function cluster.stats which is given as below.

```
$ n =  500
$ cluster.number =  4
$c luster.size = 85 169 174  72
$ min.cluster.size = 72
$ diameter  = 19.503147  8.947983  8.719138  8.492398
$ average.distance = 6.073350 6.006015 5.669341 5.663161
$ median.distance =  6.026125 6.191168 5.846144 5.830922
$ separation= 1.229296 1.552890 1.229296 2.866962
$ average.toother = 6.959132 6.660244 6.599457 6.827642
$ separation.matrix

         [,1]     [,2]     [,3]     [,4]
[1,] 0.000000 2.585411 1.229296 3.724553
[2,] 2.585411 0.000000 1.552890 2.866962
[3,] 1.229296 1.552890 0.000000 3.187791
[4,] 3.724553 2.866962 3.187791 0.000000

$ ave.between.matrix
         [,1]     [,2]     [,3]     [,4]
[1,] 0.000000 7.139188 6.742046 7.061122
[2,] 7.139188 0.000000 6.418063 6.680095
[3,] 6.742046 6.418063 0.000000 6.856893
[4,] 7.061122 6.680095 6.856893 0.000000
```

3. Findings and Interpretations

- **Gender based Impact of Television Serials**: As we go through the research carefully, we can easily trace that the female viewers are greatly addicted for the television dramas irrespective of their educational qualification and geographical location. It is clearly shown in Figure 6.a.

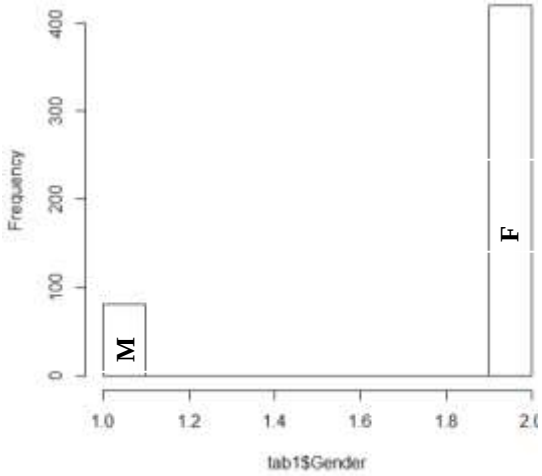

Figure 6.a. Gender based Impact of Television Serials

- **Age based Impact of Television Serials:** Irrespective of their age, people of Tamilnadu spent their time in watching the television dramas. Our research shows that the watching of television dramas start in the age of blow 10 and it continues still 60s. But it has great impact in the age of 15 – 27 only as presented in Figure 6.b.

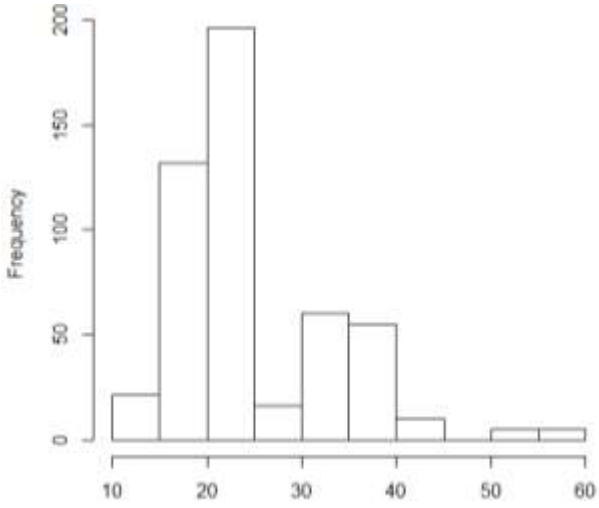

Figure 6.b. Age based Impact of Television Serials

- **Classification based Total No. of Television Serials Watching:** We understand from the research that people mostly watch three television dramas per day. But it is shocking that few people used to watch more than five dramas on the television.

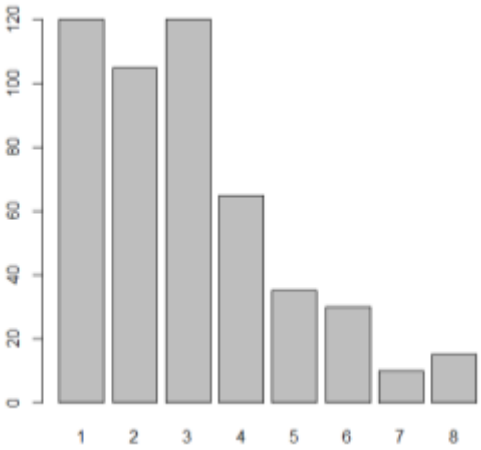

Figure 7.a. No. of Television Serials Watching

- **Classification based Total No. of Hours Watching Television Serials:** Many of our people spend two hours daily for watching television dramas. Nobody would like to spare this allotted time for anything else. They prefer to use this time for television only and giving top priority to this.

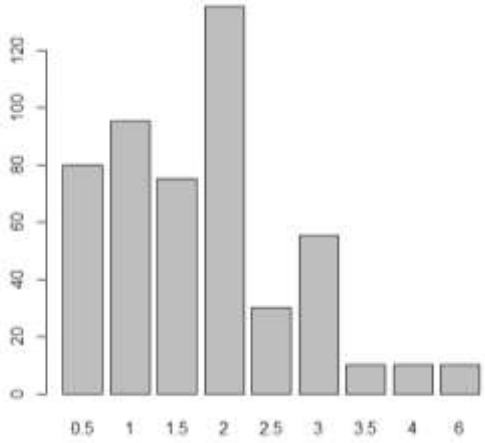

Figure 7.b. Total No. of Hours Watching Television Serials

- **Vulgar Dress up:** Television drama serials encourage bad dressing sense. In reality shows, women wear vulgar

dresses. They try to expose their body to the public. In this study, 35 % respondents admitted that, the model in the Indian drama serials are presented with filthy dress up. Especially, girls wear very short dresses to show their body by which the men can be easily attracted. Our young girls even the middle aged women, now a days, are influenced by these dresses.

- **Stir up sexual behavior:** Another complaint we receive from the survey is that these drama serials inflame sexual behavior. Indian Tele dramas are consisted of events, full of sexual harassment, revenge, aggressions and sorrowfulness. But this study identified that, 45 % respondent claimed that these serials instigate sexual behavior. There is no denying the fact that the filthy dresses of the models provoke sexual behavior that leads the uncontrolled sex life and accelerates social degradation. Many times, children in the family try to act what they learn from these drama serials.
- **Provoke Pre-Marital Relationship**: To fall in love with opposite sex without being married is the common scenario of Television daily soaps that was reported by 30 % participants. For getting love from opposite partner, today's youngsters are ready to do anything. Parents love and affection become less valuable to them.
- **Extra Marital Affair:** Our Study revealed that, majority of the respondents (65%) who participated in the study believe, Television drama serials are also responsible for extra marital relationship like pre-marital love. Husband build relationship with their female colleague or past girl-friend and wife also maintain relationship with other man is also the subject matter of these serials. And these illicit affairs are presented so decently that the people who are engaged with this infidelity are right. But it does not focus on the severe consequences of this relationship and how it is destroying our family system. Watching these serials extra marital affair seems very common among the viewer.
- **Originate Eve Teasing:** Eve teasing is also taught by Television drama serials according to 29 % participants. Boys are teasing girls and working women in the streets, colleges even in the buses and trains. To some extent, girls are also teasing boys. Viewers of all ages especially our young generation follow and apply it and they enjoy it very much.
- **Nurture Conflict between Daughter in Law and Mother in Law:** In this study, 33 % viewers admitted that one of the subject matters of drama serials is conflict between daughter and mother-in-laws. They are busy to beat once back always stage conspiracy against each other which is breaking the normal relationship among daughter and mother-in-laws. After watching these serials, the daughter-in-law sees her mother-in-law as her enemy and likewise mother-in-law thinks daughter-in-law as her rivals. In this way, serials instigating family dispute. Apart from these, conflict between brothers and sisters regarding property or power etc. are also telecasted in these serials from which less constructive things are taught.

4. Recommendations

Television drama serials are not only wasting our valuable time, interrupting children's education but also these are instigating sexual behavior, conflict among family member, criminal activity, pre and extra marital relationship. Apart from these, it is imposing cultural intrusion that is affecting our prolonged enriched cultural norms and values which can be observed through tremendous North Indian culture in dress up and festivals. So this can be regarded as source of social disorganization in rural area instead of source of entertainment. In order to save our traditional culture and stop cultural aggression, some initiatives are indispensably needed to implement such as:

- The programs should not be telecasted which is hazardous for our cultural values and traditions. The government should take initiatives in this concern. For example sensor board for the serials also must be launched.
- Our local drama has to be made more attractive that can avert our viewers both male and female from watching Indian daily soaps.
- Drama serials should convey the message what is good and what is bad. It must practically show to stop the evil and go well.
- The guardian should watch the channels which telecast educational program such as BBC, CNN, Discovery and National Geography make the other family member interested to watch these channels.
- Awareness has to be raised among people about the long term impacts of drama serials on rural family and social system.
- Viewers should realize that North Indian society and South Indian society is not same. So they should stop following their life style.
- Rural people have to be conscious. They should be aware of their own rights and values. They should not allow such discrimination to take place. They must not be influenced or guided by some other culture.
- Television drama serials are not only popular in rural area. People enjoy these dramas and imitate the life style depicted in these serials which is undermining our culture and spreading the culture of others. Our culture is at a stake now due to the addiction in Hindi drama serials. There is proverb, "If you lose your culture, you will lose your identity'. So, time has come to think what is telecasting in this daily soaps and what we are learning. Otherwise, if we fail to identify the negative consequences of these serials we will lose our identity as Indian in the course of time.

8. Conclusion

From our above research, we found that the television which is invented with good purpose is not serving it. Though there are many politics around this television and issuing of free television is a matter of another critical research but the television channels are to be closely watched and any units like Censor Board for cinemas can be formed and practiced. Many of the viewer opt for this kind of checking has to be formed in near future.

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B. Nivetha is also pursuing her PG degree in Computer Science and Information Technology in Jayaraj Annapackiam College for Women (Autonomous), Periyakulam, Theni Dt., Tamil nadu. She participated and won prizes in many competitions in inter-collegiate competitions. Willing to work hard and put her efforts to reach the heights of IT field is her life time goal.