

# Complexities in Implementing the Frame Work of E-Governance Plan of Indian Government in using with Developmental for Tamilnadu Citizens- By using Data Mining Methods



Jayachandran.S , K.Nirmala

**Abstract:** *With the landing of advanced India affiliation, our nation is operational through solid computerized correspondence. In today circumstance, India government gives e-administrations to all people groups at their entryway ventures through e-administration. Invigorated by the need to change e-taxpayer supported organizations to e-incorporation applications, we recommend the use of information digging systems for preparing the legislative information to concentrate and partner data sections with genuine resident needs and in this manner empower the epitome of the later in future administrative choices. Information Mining systems are utilized to broke down the information gained from NeGP National e-Governance Plan is an activity of Government of India for making every administrative administration are accessible to natives of India through electronic media of different E-Governance ventures has been actualized in all states. In Tamil Nadu states providing various schemes followed by social welfare Schemes has been implemented in all districts. The recommended method of data mining can be accommodating for the government to supplementary investigate other public recipient systems.*

**Keywords :** *E-Governance, Data Mining, K-Means Algorithm, Prediction Process, Rapid Minor*

## I. INTRODUCTION

E-governance contains the exploitation of Information and Communication Technologies by government establishments for data and administration transference to citizens, corporate and government legislatures. It is an emerging field, observed with dissimilar usage issues acknowledged with innovation, legislatures, adaptability and change related issues, to specify a couple. Worldwide movements towards expanded sending of IT framework by governments rose with the approach of the World Wide Web. They have instigated expectant

progressively more data and managements online from governments and corporate associations to upgrade their metropolitan, practiced and separate lives .The idea of e-administration perform in India throughout the seventies with an prominence on improvement of government applications in the counties of protection, financial checking, arranging and the deliberation of Information Technology to superintend information escalated measurements identified with races, statistics, charge organization and so forth. The job and endeavour's made by National Informatics Centre (NIC) to associate all the area central station during the eighties was an exceptionally new imaginative methodology.

From the mid-nineties, IT advancements were enhanced by ICT innovations to expand its utilization for more extensive applications with approach execution and accentuation on contacting country regions and taking in more noteworthy contributions from NGOs and private division.

The primary parts of the issue informational index have been gathered from thiruvallur locales who are every one of the recipients' of Social welfare plans. In this association we point by point report talk about to area 3 and segment 4. At last we finish up the outcomes and forecast for these 4 social welfare plots in the area 5. We close the part in Section 5 where we moreover sketch our courses of action for future work.

Talked about in detail this was given that issue.

Marriage Assistance Schemes:

In many networks it is a standard social necessity for a young lady to wear "Thirumangalyam" made of gold during marriage and the guardians praise the marriage capacity as per their traditions and social foundations.

Moovalur Ramamirtham Ammaiyar Ninaivu Marriage Assistance Scheme

❖ Dr.Dharmambal Ammaiyar Ninaivu Widow Remarriage Assistance Scheme

❖ Annai Therasa Ninaivu Marriage Assistance Scheme For Orphan Girls

❖ Sivagami Ammaiyar Memorial Girl Child Protection Scheme

## II. FORMATIONS OF THE DATA

The identification of poor families in around thiruvallur districts have been applied various schemes under the guidance of Social welfare department, Thiruvallur.

Manuscript published on November 30, 2019.

\* Correspondence Author

**S.Jayachandran\***, Ph.D Research Scholoar, Department of Computer Science, Quaid -E-Millath Government College for Women(Autonomous), Chennai-2.. Email:jai.nov86@gmail.com.

**Dr.Mrs.K.Nirmala**, (Supervisor & Convener), Associate Professor & Head Dept .of Computer Science ,Quaid-E-Millath Government College for Women (Autonomous), Chennai-2. Email:nimimca@gmail.com

© The Authors. Published by Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP). This is an [open access](http://creativecommons.org/licenses/by-nc-nd/4.0/) article under the CC-BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>)

# Complexities in Implementing the Frame Work of E-Governance Plan of Indian Government in using with Developmental for Tamilnadu Citizens- By using Data Mining Methods

It is used to implemented e-governance projects used various parameters of name, sex, age, annual income, beneficiary eligibility and schemes.

Eligibility criteria for availing assistance under the Social welfare department thiruvallur districts.

M.R.A.N.M.A.Scheme

Plan I

Instructive Qualification: The lady of the hour ought to have contemplated tenth std(Passed or fizzled), If examined in private/Distance Education, lady of the hour ought to have passed tenth sexually transmitted disease, lady of the hour ought to have concentrated up to V sexually transmitted disease if there should be an occurrence of planned clan.

Money Assistance: 25,000 paid through Ecs.

Plan II

Instructive Qualification: Degree holders from standard schools, Distance training/Government perceived Open University are qualified; Diploma holders ought to have qualified from the Institution perceived by the Directorate of Technical Education, Government of Tamilnadu.

Money Assistance: 50,000 paid through ECS

To profit advantage under this plan, the yearly pay of the family ought not surpass '72,000.

## DHARMAMBAL AMMAIYAR NINAIVU WIDOW REMARRIAGE ASSISTANCE SCHEME

Under this plan, monetary help of '15,000 is given through ECS and '10,000 as National Savings Certificate alongside 4 gram 22 carat gold coin for making "Thirumangalyam". There is no salary roof and instructive capability recommended to profit advantage under this plan. The degree/recognition holders are given '50,000, out of which, '30,000 is given through ECS and '20,000 is given as National Savings Certificate alongside 4 gram 22 carat gold coin for making "Thirumangalyam".

## ANNAI THERASA NINAIVU WEDDING HELP THEME FOR ORPHAN WOMEN'S

There is no salary roof for profiting advantage under this marriage help conspire.

## SIVAKAMI AMMAIYAR GIRL CHILD FORTIFICATION SCHEME

Money related help to young lady kids in poor families, Family pay ought to be underneath Rs.50,000 per annum Application ought to be made before the recipient young lady kid total 3 years old .Family ought to have only one/two female tyke and no male tyke. In future no male tyke ought to be received

### III. METHODOLOGY

The subsequent segment designates the waged moralities of the future framework and algorithms with a design. To prove the practice of prevailing algorithms and future algorithm for finding the similar group and using data mining to predict the method of beneficiary people around thiruvallur districts under the social welfare scheme.

#### 3.1 Problems and apply to algorithms

In general, E-Governance list available based on eligibility conditions for poor people who have claimed in thiruvallur

district, However how to apply and check eligibility which was given that social welfare scheme in the poverty people and uneducated peoples. Numerous algorithms have been deliberated in the fiction to predict the method of beneficiary eligibility in the listed of social welfare scheme for the public citizens. However we require reducing the difficulty of preceding method such as position and concerted clarifying process.

The collections are moulded by using modified K-means algorithm with a perceptible alteration.[11][10].In K-means algorithm, the initial centre node is selected arbitrarily , the numbers of groups are not selected and not known in advance[12].

#### 3.2 Algorithm

Development Group

Stage 1. Order the two dependent on alterable since the dataset.

Stage 2. Custom the disperse outline made the dependent on factors x and y.

Stage 3. Dole out the quantity of groups=2.

Step 4.Identify two Initial Center Value (ICV) values haphazardly dependent on the method of recipient qualification.

Stage 5. Decide all the closest hubs of the ICV utilizing separation recipe.

Stage 6. Select number of information focuses in a gathering dependent on the least separation of the information point .The information focuses can be chosen for the gathering until the most noteworthy determined worth/2.

#### 3.3 Prediction Process

The following association rules are framed, which gives to prediction analysis of the given dataset. There are two groups are formed namely eligibility and Scheme that are derived by the group formation algorithm. The prediction analyses are applied into the beneficiary eligibility only. This is achieved by using association rules.

Rule 1:  $X(\text{Suggestion} = \text{"M.R.A.M Scheme"}) = X(A, 24000(\text{Annual Income})) \& \& X(\text{Age}, 18) \| X(\text{MI, before } 45) \| X(Q, G) \| X(Q \geq 10)$

Rule 2:  $X(\text{Suggestion} = \text{"Dr.Dharmambal Ammaiyar Widow Re-marriage Scheme"}) = X(A, \text{Income certificate}) \& \& X(\text{Death or Divorce certificate}) \| X(\text{Nativity Certificate}) \| X(\text{Invitation})$

Rule 3:  $X(\text{Suggestion} = \text{"Annai Terasa Destitute Women marriage Scheme"}) = X(A, 12,000(\text{Income certificate})) \& \& X(\text{Age}, 18 \text{ to } 30) \| X(\text{Application Submission B}, 45 \text{ Days})$

Rule 4:  $X(\text{Suggestion} = \text{"Sivagami Ammaiyar Girl Child Protection Scheme"}) = X(A, 50,000(\text{Income certificate})) \& \& X(F \text{ or } M, F\text{-Planning Operation}) \| X(\text{Birth certificate for female child}) \| X(\text{Nativity Certificate})$

### IV. STATISTICAL DESIGN BENEFICIARY LIST

In this study, analyze the data were collected from different peoples in thiruvallur districts who are all claimed and eligible for different social welfare schemes. To illustrate this approach, to use data set with 130 persons dataset respectively. Initially, construct the two groups of data namely Scheme and eligibility.

The second step of our work is prediction analysis which is applied for only Poor people under the state government norms. Beneficiary group. The groups are defined in Table 1 which is calculated by modified k –Means classifier algorithm. The initial value of the data is taken from scatter plot method using Scheme and eligibility shown in Figure 1. It is decomposed into 2 groups. Each group is defined in the Table 1 as per algorithm. In accordance with number of groups to be decomposed, the initial group centre values are

selected randomly based on the mode of poverty peoples around in thiruvallur districts. The number of iterations carried out to decompose the dataset is only 2. Calculating the Euclidean distance of each data point is considered to be the nearest ICV (Initial Center Value). The mean of each centre is calculated and correspondingly the centre is reallocated. This process continues until there is no change in the centre values.

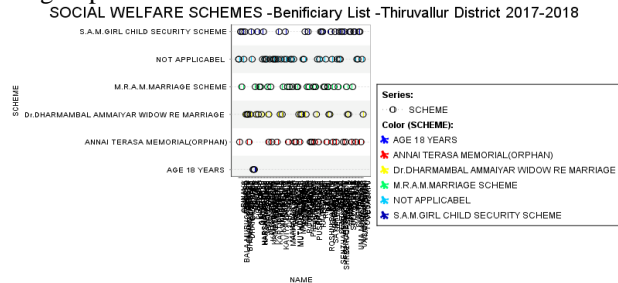


Figure 1. Scatter diagram for dataset with all schemes

Beneficiary list of 15 data set for sampling listed below that are all availed social welfare schemes and details around thiruvallur districts.

Table 1. SOCIAL WELFARE SCHEMES -Beneficiary List -Thiruvallur District 2017-2018

S.NO.	NAME	AGE	MARITAL STATUS	QUAL	ANNUAL INCOME	BENEFICIARY ELIGIBILITY	SCHEME	SANCTIONED AMOUNT
1	RAJATHI	55	YES	NIL	2,50,000	NIL	NOT APPLICABEL	0
2	PRIYA M	26	NO	M.Sc	72,000	ANY DEGREE, INVITATION,ADHAR	M.R.A.M.MARRIAGE SCHEME	50,000 & 8 GRAM GOLD
3	GAYATHRI S	35	DIV	PRI	56,000	DEATH/DIVORCE CERTIFICATE	Dr.DHARMAMBAL AMMAIYAR WIDOW RE MARRIAGE	25000
4	SELVI R	28	NO	B.COM	10000	AGE 18-30 YEARS	ANNAI TERASA MEMORIAL(ORPHAN)	35000
5	SUDAR OLI K	27	NO	PRI	72000	AGE 18 YEARS	M.R.A.M.MARRIAGE SCHEME	25,000 & 4 GRAM GOLD
6	KALAIVANI G	35	YES	MBA	3,00,000	NIL	NOT APPLICABEL	0
7	ROJA L	26	YES	M.A	45000	FAMILY PLANNING OPERATION,FEMALE CHILD BIRTH CERTI	S.A.M.GIRL CHILD SECURITY SCHEME	50,000- 20 YEARS SB ACCOUNT DEPOSIT
8	KANNAIGI T	45	YES	M.COM	3,50,000	NIL	NOT APPLICABEL	0
9	SENTHAMARAI	26	YES	M.B.B.S	5,50,000	NIL	NOT APPLICABEL	0
10	KARTHIKA	28	NO	BDS	4,00,000	NIL	NOT APPLICABEL	0
11	MENAKA H	46	YES	BE	5,00,000	NIL	NOT APPLICABEL	0
12	SIVGAMI R	23	YES	M.A	45000	FAMILY PLANNING OPERATION,FEMALE CHILD BIRTH CERTI	S.A.M.GIRL CHILD SECURITY SCHEME	50,000- 20 YEARS SB ACCOUNT DEPOSIT
13	LAKSHANA T	43	YES	M.COM	4,00,000	NIL	NOT APPLICABEL	0
14	SELVI L	26	YES	M.A	45000	FAMILY PLANNING OPERATION,FEMALE CHILD BIRTH CERTI	S.A.M.GIRL CHILD SECURITY SCHEME	50,000- 20 YEARS SB ACCOUNT DEPOSIT
15	KARTHIKA R	28	NO	B.COM	10000	AGE 18-30 YEARS	ANNAI TERASA MEMORIAL(ORPHAN)	35000

### 4.1 Classification Methods Comparison

Various classifications methods have been applied which was collected from thiruvallur district peoples to solved best accuracy using the confusion matrix.

Table 2. Comparison of classification methods

Model	Accuracy	Standard Deviation	Runtime
Naive Bayes	1.0	0.0	1143.0
Generalized Linear Model	1.0	0.0	10744.0
Logistic Regression	1.0	0.0	1649.0
Fast Large Margin	0	0	0
Deep Learning	1.0	0.0	1157.0
Decision Tree	0.2	0.1	291.0
Random Forest	1.0	0.0	16595.0
Gradient Boosted Trees	1.0	0.0	25901.0
Support Vector Machine	1.0	0.0	1483.0

### 4.2 Confusion Matrix Presentation Assessment – Social Welfare Schemes

The inclusive correctness rate is the numeral of precise groupings separated by the total number taxonomies

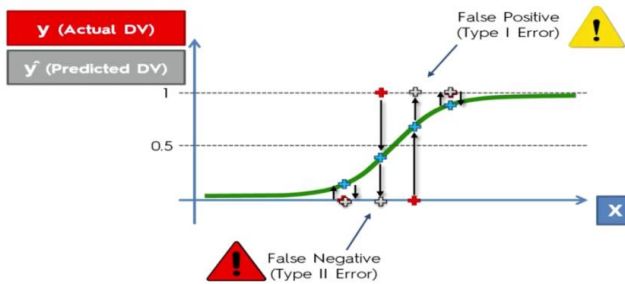


Figure 2: Confusion Matrix Performance

Table 3. Performance Evaluation of classifier

Data Set (Test Set)	Performance Evaluation			
	Classifier	Total Data Set	Actual Accuracy	Expected Accuracy
Naive Bayes		130	90	96
Generalized Linear Model		130	91	79
Logistic Regression		130	97	94
Fast Large Margin		130	94	96
Deep Learning		130	87	84
Decision Tree		130	91	90
Random Forest		130	87	84
Gradient Boosted Trees		130	80	91
Support Vector Machine		130	85	88

#### 4.2.1 Naive Bayes

Naive Bayes is a grouping performance with a conception which describes all structures is autonomous and dissimilar to each other. Naive Bayes [13] is a machine learning classifier which employs the Bayes Theorem.

Table 4. Confusion Matrix of Naive Bayes

		Scheme	Eligibility	
M.R.A.M Scheme	Marriage	TN=130	FP=04	TP=94
			FN=126	
Annai Terasa Memorial		TN=130	FP=21	TP=77
			FN=109	
S.A.M Security	Girl Child	TN=130	FP=26	TP=72
			FN=104	
Dr.Dharmambal Ammaiyar Widow		TN=130	FP=22	TP=76
			FN=108	
Not Applicable		TN=130	FP=32	TP=128
			FN=128	

### 4.3 Accurateness Procedures

Naive Bayes, SVM and Decision Tree algorithms are used in this research work. Tests are achieved using inside cross-validation 15-folds. Correctness, F-Measure, Remembrance and Exactness procedures are used for the classification of this work. Table-6 explains correctness procedures underneath.

#### 4.3.1 Attributes used

The subsequent qualities are used to discovery the exactness events as Name, Annual Income, Age, Nativity Certificate, Schemes, and Eligibility.

Table 5. Accuracy Measures

Processes	Characterizations	Prescription
Precision(A)	Precision regulates the correctness of the algorithm in predicting instances.	$A = (TP+TN) / (\text{Total no of samples})$
Precision(P)	Classifier's perfection/exactness is stately by Precision.	$P = TP / (TP + FP)$
Recollection(R)	To quantify the classifier's inclusiveness or sensitivity, Recall is used.	$R = TP / (TP + FN)$
F-Measure	F-Measure is the subjective average of exactitude and recall.	$F = 2 * (P * R) / (P + R)$

Table.6. Comparative Performance of Classification Algorithm on Various Measures

Classification Algorithms	Precision(P)	Recall(R)	F-Measure	Accuracy (A)
K-Means	1.23	2.286	1.602	86
Naive Bayes	0.9	0.81	1.623	96.95
SVM	0.721	1	0.369	83.33
Decision Tree	1.627	1	0.356	90.33

Conforming classifiers concert over Exactness, Precision, F-measure, and Recall morals are registered in Table-5. Where, TP defines True Positive, TN defines True Negative, FP defines false positive, and FN defines False Negative. The equivalent classifiers concert on the basis of Accuracy, Precision, F-measure, and Recall values are listed in Table-6

## V. RESULT ANALYSIS

Table-6 signifies dissimilar presentation morals of all clustering algorithms designed on several procedures. From Table-5 and 6 it is analysed that Naive Bayes showing the minimum accuracy than the K-Means.

So the Naive Bayes machine learning classifier can expect the probabilities of numerous social welfare schemes of public peoples with less correctness as associated to further classifiers. Concerts of all classifiers based on numerous procedures are designed via a graph in Figure-3.

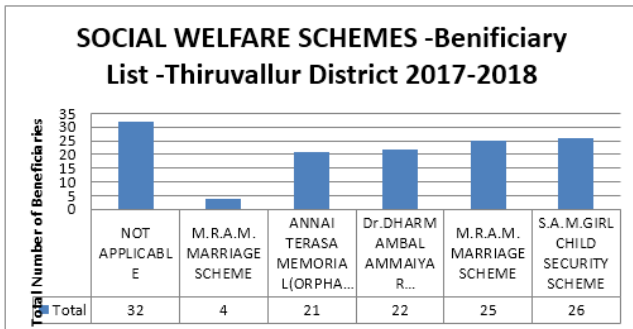


Figure 3. Beneficiary List- Social Welfare Schemes

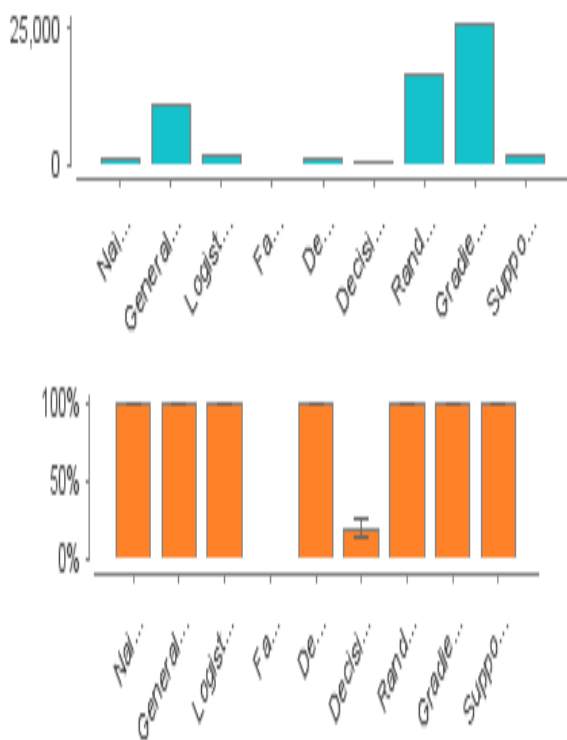


Figure 4. Various Analyses of Classification Algorithms

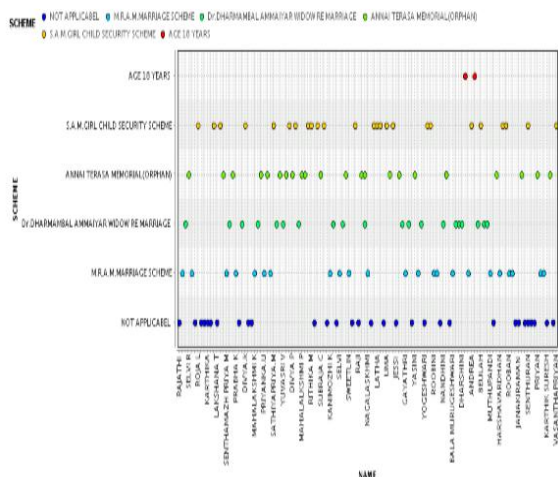


Figure 5: Scatter diagram in beneficiary name along with Schemes Using Rapid Minor

Table 6. Beneficiary Count and Sanctioned Amount for various Social Welfare Schemes

S.NO	Social Welfare Schemes	Beneficiary Count	Sanctioned Amount
1	Moovalor Ammaiya Ramamirtham Marriage Schemes	29	1450000
2	Annai Terasa Memorial (Orphan)	21	735000
3	Dr.Dharmambal Ammaiya Widow- Re Marriage Scheme	22	550000
4	Sivagami Ammaiya Girl Child Security Schemes	26	1300000
5	Not Applicable	All Schemes 32	0

## VI. CONCLUSION

Methodical exertions are completed in scheming a structure which outcomes in the expectation manner of eligible and beneficiary in various social welfare schemes around thiruvallur districts peoples. Investigational outcomes regulate the sufficiency of the intended scheme with an attained correctness of 86.0 % consuming the K-Means which yields better performance than the naïve Bayes algorithm. In forthcoming, the designed system will be enhanced and demonstrate recovering than the outstanding two classification algorithms which has previously engaged. Our method is to apply all conceivable data mining methods to invention out decorations and secreted consequences. Our motivations treasure out the defects in the e-governance system. This can also be accommodating in cumulative expansion and more public, consciousness about the scams fashionable in our towns.

## REFERENCES

1. Nkomo, P. T., Terzoli, A., Muyingi, H., & Rao, G. K. (2006, February). Smart card initiative for South African e-governance-a study. In 2006 8th International Conference Advanced Communication Technology (Vol. 3, pp. 2-pp). IEEE.
2. Marjit, U., Roy, R., Santra, S., & Biswas, U. (2009, August). A semantic web service based approach to E-Governance. In Applications of Digital Information and Web Technologies, 2009. ICADIWT'09. Second International Conference on the (pp. 232-237). IEEE.
3. Chakravarti, B., & Varma, V. (2008, November). An enterprise architecture framework for building service oriented e-governance portal. In TENCON 2008-2008 IEEE Region 10 Conference (pp. 1-6). IEEE.
4. Islam, G. Z., Khan, M. I., & Mazady, M. A. B. (2008, December). Developing a Model of E-governance for Urban and Rural Areas of Bangladesh. In Computer and Information Technology, 2008. ICCIT 2008. 11th International Conference on (pp. 587-592). IEEE.
5. Costake, N. (2001). E-Governance and the Judicial System. A point of view. In Database and Expert Systems Applications, 2001. Proceedings. 12th International Workshop on (pp. 423-427). IEEE.
6. Shackleton, P., Fisher, J., & Dawson, L. (2004, January). Evolution of local government e-services: the applicability of e-business maturity models. In System Sciences, 2004. Proceedings of the 37th Annual Hawaii International Conference on (pp. 9-pp). IEEE.

## Complexities in Implementing the Frame Work of E-Governance Plan of Indian Government in using with Developmental for Tamilnadu Citizens- By using Data Mining Methods

7. Hashemi, S. M., Razzazi, M., & Teshnehlab, M. (2008, April). Streamlining the global village grid through unifying E-Governments, E-Businesses, and E-Commerce services. In *Information and Communication Technologies: From Theory to Applications*, 2008. ICTTA 2008. 3rd International Conference on (pp. 1-4). IEEE.
8. Gopakumar, K. (2006, May). E-governance services through Telecentres-Role of Human Intermediary and issues of Trust. In *2006 International Conference on Information and Communication Technologies and Development* (pp. 131-142). IEEE.
9. Allan, J. D. O., Rambajun, N., Sood, S. P., Mbarika, V., Agrawal, R., & Saquib, Z. (2006, November). The e -Government Concept: A Systematic Review of Research and Practitioner Literature. In *2006 Innovations in Information Technology* (pp. 1-5). IEEE.
10. Joarder, M. M. M. (2003, December). Brain gain network: a proposal e-governance model to convert the brain drain into brain gain. In *Multi Topic Conference, 2003. INMIC 2003. 7th International* (pp. 424-427). IEEE.
11. Murthy, D. N., & Kumar, R. V. P. (2003, October). Software architectural design model for e-governance systems. In *TENCON 2003. Conference on Convergent Technologies for the Asia-Pacific Region* (Vol. 1, pp. 183-187). IEEE.
12. Bhatnagar, S., *E-Government: From Vision to Implementation*, Sage Publications, India, 2004
13. Chakrabarty, T., 'Towards an ideal e-governance scenario in India', 2008 (available at [http://www.tcs.com/SiteCollectionDocuments/White%20Papers/tcs\\_government\\_idealegovernanceindia.pdf](http://www.tcs.com/SiteCollectionDocuments/White%20Papers/tcs_government_idealegovernanceindia.pdf))
14. Gupta, G.K. 'Introduction to Data Mining with Case Studies', PHI, 2011.
15. DataQuest. <http://dqindia.com>
16. Inmon, W.H., 'Building the Data Warehouse', Fourth Edition, WILEY dreamtech India Pvt. Ltd., 2005.
17. Karthika, D. and RangaRaj, R. (2013), "Survey of E-Governance based Higher Education System in India with Data Mining", *International Journal of Science and Research (IJSR)*, Volume 2 Issue 12, December 2013
18. Nair, P., 'E-Governance; A Step towards Digital Democracy' 2008 (online available at <https://www.researchgate.net>)
19. Sharma, M.K., "Application of Data Mining in e-governance data Warehouse", (Available at <http://www.egovonline.net/articles-list/47-features/4168>).
20. Martin, G., "Data Mining techniques and the decision Making Process in the Bulgarian Public administration".
21. R.J. Brachman, Khabaza, T. Kloegan, W., Piatetsky-Shapiro, G. and Simoudis, E. (1996) Mining Business databases, *Communication of the ACM* 39,11,42-48.
22. Syvajarvi Anitt et al., "Information management as function of Data Mining and ICT in City Government", EGPA 2009, SGI.
23. The E-Government Magazine for Asia and The Middle East, "e-Gov", published in technical collaboration with Centre of Science, Development and Media Studies.