A Business Process Reengineering and e-Governance Model –KAVERI of Karnataka

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Abstract:

KAVERI is a model of the business reengineering process introduced to reorient the department of Registration & Stamps towards 100% automation in the registration process and speedy delivery of registered documents to the citizens of Karnataka. During the first phase of its implementation 202 sub-registries across the State have been computerized on the principle of Public-Private Participation on a BOT (Build-Operate-Transfer) basis. Connecting KAVERI to Bhoomi, inter-connectivity, revenue reconciliation, issue of encumbrance certificates through electronic media, registration anywhere; are some of the proposed innovations to be implemented during the second phase of the project's implementation.

Keywords: Business Process, Reengineering, Registration & Stamps, inter-connectivity,

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1. Introduction:

The initiatives made by various governments world over for converting the existing non-electronic delivery of government services into electronic delivery have transformed the existing belief of the citizens that Information Technology incorporation can change the 'way of life of citizens' into a firmly established faith (Tapscott, 1998, pp. 10-12) .The development in electronics, computers and Information Technology is enabling the authorities at national and international levels to automate and simplify the cumbersome bureaucratic procedures and cause elimination of long chain of intermediaries and facilitate the direct interaction of citizens with governments (Thomas, 2001, pp. 39-40). These changes are causing staggering upheaval in the familiar systems including governance.

That "governance is too costly, too inefficient and too ineffective, too self-serving, too inconvenient and too insular" is a perception, firmly and widely held across the world. More and more people are becoming, less and less inclined, to be bullied by petty bureaucrats (Adomis & Mugan, 1994, pp. 18-22). "Right now, right here" is the expectation of people in solving their problems.

Public expects government services to be comparable with the best services available from the private sector in terms of quality, accuracy, timeliness and user-friendliness. The 'Aware Citizens of the present day', no longer tolerate delays, bureaucratic mistakes or excessively time-consuming and difficult procedures. This started posing a kind of 'new threat' for survival of the governments (Bhatnagar & Srivatsava, 2000, p. 30).

In this context, Information Technology is recognized as a strategic tool that can enhance efficiencies in government very significantly (Margetts, 1999, p. 9). Governments, at the center, at the state and even at the level of local bodies like Municipalities and Panchayati Raj Institutions, are now leveraging IT for good governance. (Abramson 2003) Since one of the most promising aspects of e-government is its ability to bring citizens closer to their governments, automation is proving to be a

suitable mechanism for bridging the gap between government and citizens (Bedi & Srivatsava, 2002, p. 22). By transforming the manual methods into mechanical methods and by eliminating the long chain of intermediaries, automation assures greater improvement in delivery of the services to citizens besides bringing about transparency in functioning along with improved degree of accuracy which is the need of the hour of today (Evans, 2003, pp. 43-44).

2. Review of Literature:

In assessing the state of e-government today, it is important to examine e-government in action to see exactly how it is deployed by government agencies to improve the delivery of services to both citizens and its own employees. (Holmes 2001) In this context efforts are made to highlight various case studies to show how the State Departments are now using e-government technology as a crucial tool in enabling government managers to do their jobs more effectively and efficiently. (Barry Fulton 2003) All these case studies present a collective snapshot in time as to where federal, state and local governments are today, as they continue their march towards e-government. (Heeks 2003) Answers are also found to the fundamental question "Can information technology help reinvent government?" in the form of experiences at national and international levels. (Bimber 2003, M.P. Gupta 2005) It is also encouraging to note that governments worldwide are responding favorably to these technological changes, which offer an opportunity to reengineer and make the business of government more transparent, more efficient and more responsive to citizens' needs. (M.P. Gupta 2005)

The present case study is a large extension of the work being undertaken in the area of e-government, world over. The case demonstrates that incorporation of information technology in government has an immense potential for freeing citizens from age old cumbersome procedures involved in the registration of immovable properties and creating comfort to the citizens.

3. Need and Significance of the study:

In this back drop, the study of the changes that took place in the registration procedures which has a significant bearing on the revenues of the State government and substantially affects the people financially, assumes greatest importance as compared to any other area of e-governance initiatives of the government.

The registration procedures in the state of Karnataka, till recently were substantially the same as they were hundred years ago. In spite of the considerable revenues generated by the registration department, registration of properties is one function of the government which was being done on the basis of methods prescribed during the British rule in the country.

In tune with the overall policy of using Information Technology for the benefit of citizens, the government of Karnataka has computerized the registration department and named it as "KAVERI" (Karnataka Valuation and e-registration Project). KAVERI project is Karnataka State's first Public-Private e-governance initiative for the stamps and registration department. Through this the State has attempted to incorporate IT in the registration process to offer primarily the twin benefits to the citizens – a) reducing the time spent on completing the registration procedure from 45 days to half an hour; and b) increasing the transparency in functioning by

minimizing the need of dependence on middlemen, for registration. Functioning on PPP model, the project involved investment of Rs. 1.10 crores from the government and Rs. 40 crores from the service providers for development of software, hardware, data entry and furniture for the system. The KAVERI applications suite is devoted to take care of the entire registration process inclusive of necessary report generation and property valuation. Utmost precaution has been exercised to leave the 80-year-old 5-step procedure of registration undisturbed for the benefit of end users who have adopted it wonderfully for keeping this age old and time proven methodology intact.

The present research study is undertaken to assess the functioning of the KAVERI project from citizen's perspective and thus gathering the inferences which will serve as guidelines for framing the policies relating to the implementation of similar projects world over.

4. Objectives of the study:

The KAVERI as the second e-government initiative of the State of Karnataka has totally replaced the century old registration procedures, which were hitherto functioning in the State. In the light of the above, the present research work is undertaken with the following objectives:

1. To bring to light the functioning of KAVERI project in the State, the changes it has brought to the old Registration procedures.

2. To highlight the experiences of the citizens with respect to the registration process under implementation particularly in regard to certain important variables like time taken for registration, method of getting the registration done, reasons to approach middlemen for getting the work done, problems faced in the process of registration and so on.

3. To make a comparative impact analysis of the KAVERI project with that of the old system of registration in terms reduction in the time taken for the registration process and obtaining documents like EC (Encumbrance Certificate), improvement in the degree of accuracy, transparency and efficiency, reducing the dependence on the middlemen and identify factors that can help in improving the efficiency of the system.

5. Data Sources:

The study is based on both primary and secondary data. Citizens of the two selected areas constitute the data source for primary data and the stored information at the sub-registrar office becomes the secondary data source.

6. Methodology and the statistical tools applied:

For making the comparative analysis of the selected factors, information was collected from 50 citizens, selected at random; spread over four regions in Bangalore city, the State Capital of Karnataka. A questionnaire, developed for the purpose, was administered at random to the citizens visiting the sub-registrar offices in the chosen areas (Luck & Rubin, 1987, pp. 785).

Since the data recorded is in the form of attributes, Chi-square was used to determine whether the attributes under consideration are independent or not. This test was applied between the null hypothesis (H_0) and the alternative hypothesis (H_1), where H_0 is framed with the assumption that the two

attributes are independent. Under H_1 it is assumed that the two attributes are dependent. Similar types of hypotheses were framed for each table and using the Chi-square test, conclusions were drawn as follows. If the Chi-square calculated value is less than the table value, we accept H_0, otherwise H_0 is rejected or H_1 is accepted.

For assessing the experiences of citizens with respect to the registration process under implementation prior to the KAVERI project the following hypotheses were set.

1. H_0 = Nature and the process of registration, are not influenced by the method of registration and the various problems the public encounter in the registration process are not causing the public to approach middlemen, the attitude of the staff of the SR's (Sub-Registrar) office is not responsible for the public to avoid direct registration.

    H_1 = Nature and the process of registration are influenced by the method of registration and the various problems faced in the registration process are causing the public to approach middle men for registration work; the attitude of the staff of the SR's is responsible for the public to avoid direct registration.

2. H_0 = Implementation of KAVERI project has not reduced the dependence of citizens on middlemen; it has not changed the attitude of the office staff involved directly with the KAVERI implementation which in turn is causing the public/citizens to avoid direct registration.

    H_1 = Implementation of KAVERI project has reduced the dependence of citizens on middlemen, changed the attitude of the staff of the office involved directly with the KAVERI implementation due to

which public prefers direct registration. For testing the hypothesis and analyzing the data the Chi-Square test was employed.

3. Comparison between the KAVERI project with that of the old registration process was also made using the Z test, with the help of the following hypothesis.

    x_1 represents the number of responses of citizens under the old system and x_2 represent the number of responses of citizens under new system. p_1 is the proportion (x_1/n_1) of responses under old system) and p_2 is the proportion (x_2/n_2) of responses of citizens under new system. For applying the chosen statistical test the following null and alternative hypotheses are set:

    $H_0 \rightarrow p_1 = p_2$ implying no significant difference in the proportions of person's opinion about the time taken to complete the registration process and to get the required documents like EC including the ease in getting the documents, degree of accuracy and transparency, method of getting the registration work done.

    $H_1 \rightarrow p_1 < p_2$ implying that there is significant difference in the proportions of person's opinion regarding the above factors.
    For testing the above hypotheses, the large sample test for proportions known as Z test (one tail) was used. The formula applied was $Z = \{(p_1 - p_2)/ SQRT (P(1-P)X0.02)\}$ and the data were analyzed as under.

    ( ) $\rightarrow$ Accepting H_0 at 5%; * $\rightarrow$ Rejecting H_0 at 5%; ** $\rightarrow$ Rejecting H_0 at 1%.

7. Results and discussion of the study:

The results of the study are divided into six parts as under:

1. Highlighting the functioning of the registration department including the modules of KAVERI software and its features.

2. Analysis of citizens experiences with regard to the Registration process in Sub-   Registrar's (SR's) office prior to computerization of the process.

3. Analysis of experiences of the citizens with the KAVERI project.

4. Comparative evaluation of the KAVERI with that of the old system on the basis citizen's experiences.

5. Future plans of KAVERI project.

I. Suggestions and II. Conclusions.

7.1 Functioning of the registration department-Karnataka:

The Department of Registration and Stamps is one of the oldest departments engaged in the administration of law relating to land transactions in Karnataka. Registration was done manually involving 5 steps namely; Stamping, Presentation, Admission of Execution, Identification by Witness and Registration, as prescribed in Karnataka Stamp Act, 1957 and Registration Act, 1908. This procedure was in vogue for a century and half. The documents Registered were copied manually in the books, compared and preserved as permanent public records, after authentication by registering officers. Certified copies of those records have the evidentiary value. The whole procedure was time consuming and it

took more than one month to return the documents.

The department made attempts to computerize the process of registration earlier, which was beset with various problems and was only a partial success. Finally Automation of the registration process was introduced simultaneously in all the 202 Sub-Registrar Offices in Karnataka and was conceived on the principle of "Public Private Participation" and "Build operate Transfer" (BOT) basis to facilitate return of documents in 30 minutes. The Centre for Development of Advanced Computing, Pune (C-DAC) was appointed as the Technical solution provider to the department in the year 2002 and was entrusted with the work of developing the suitable Software.

Hardware Architecture of the KAVERI System:

The process of registration is carried out by installing three computer counters with interface to the public, with a server and a scanner in the background. The capacity of the server is decided depending upon the volume of the transactions. The server would serve as the repository of all the important database viz. the basic values of all the properties along with the formulae for computation of the values of structures within the jurisdiction of the Sub-Registrar, the duty master which contains the rates of duty and fee for various categories of documents and the database relating to the assigned and Government lands in the jurisdiction. The server also holds the details of the index registers for the last 15 years and maintains the database files relating to the current transactions of registration as also the monetary transactions on a day-to-day basis. The entire master data including

the list of enclosures required to accompany the document for registration and the standard format of the document etc, are stored on the server to which the three computers are linked through LAN connectivity. With this, the facility of direct access of the required data is created to the public. Among the three computer counters, counter takes care of the basic details of the documents presented for registration and printing of a check slip to indicate that the documents are correctly presented and stamped. Counter 2; being basically a cash counter, it deals with, sale of stamps, receiving cash relating to deficit stamp duty, registration fee and transfer duty and issuing a receipt, referring the documents to the Collector under Section 47-A of Indian Stamp Act in case of under-valuation. Counter 3 has been designed as a public service counter, and thus undertakes all the related services such as delivering the documents to the party after obtaining an acknowledgement, Issuing of certified copies on application by the parties, issuing of Encumbrance Certificates (ECs), advising and assisting the public in ascertaining the market values of the properties to be registered and the exact value of stamp duty, registration fee and transfer duty payable.

KAVERI Software:

The Centre for Development of Advanced Computing, (C-DAC) Pune developed software to complete the process of Registration comprising of following main functional modules in the first phase namely: Registration of properties, Valuation of properties, Scanning and Archival of Documents, Reports, Vendor management system,

Utilities, Website, Societies, Firms and Marriage Registration and Data Transmission.

Features of KAVERI software:

Automated KIOSK's with touch screen operation facility installed in every Sub-Registrar's Office, through which public can have access to the following information in Kannada and English.

1. Market value of land in all Villages, Towns and Cities in the State.

2. Model formats of commonly used deeds and forms required for Registration of Marriage.

3. Model bylaws of Societies and Associations.

4. Frequently asked question and exhaustive answers.

5. Fee for Registration of documents / Registration of Societies / Firms / Marriages.

6. Acts and Rules bearing on registration of documents.

KAVERI software rolled out through out the state between August – 2003 to December – 2003. So far the department has registered 12,66,000 documents in Kaveri successfully and returned the documents to the parties concerned, within 30 minutes of its presentation.

BOT: The Kaveri project is being implemented on PPP module (Public-Private Participation) investment on hardware, supporting software to the extent of 40 crores invested by the vendors. The application software Kaveri was developed by C-DAC Pune at the cost of 1.10 crores.

The service charge to the vendors is being collected at the rate of this so collected

service charge, the vendors are paid @ 25-00 Rs. Per page in all 26 districts and Rs. 16-00 in Bangalore Urban District. The Government in turn saves additional revenue of Rs. 10 to 15 crores per annum on this account also. KAVERI is a self-sustaining project without putting one paisa burden on the state exchequer.

Encouraged by the positive response from the public the department is at present engaged in not only improving the existing module, but also developing different modules for the comprehensive automation of the entire activities of the department. The following are the modules being developed and expected to be made operational in the ensuing months.

Encumbrance Search Module: Any person who purchases a property or any Bank or credit agency granting loan will have to verify the title of the person selling or to whom the loan is granted, to ascertain the past transactions in respect of the separate property involved. The Registration Act, 1908 prescribes separate books, known as Descriptive index and Nominal Index, giving a brief description of the property comprised in the transaction registered under the Act. Manually searching transactions in the index to list past transactions is a time consuming process and prone to human errors. A thirteen years search of a property would take 3 to 4 hours of search of entries made in 20 to 25 Descriptive Indexes, volumes. The department had been doing this job and prepare the "Encumbrance Certificate" as in legal parlance and issue the same to public under the signature of the Sub-Registrar. This certificate reflects all the transactions in respect of property and is a record relied upon by Banking and other agencies and public in general, for various land transactions. Issue of Encumbrance Certificate would take any where between 1 week to 2 weeks for preparation.

The department in its resolution to adopt "Best Practices" has taken up responsibility to issue error free Encumbrance Certificate Centre for Development of Advanced Computing (C-DAC) developed software within a period of SIX months for the purpose. A pilot project was initiated and tender was called for this purpose and was awarded to Electronic Corporation of India Limited (ECIL) (a Govt. of India Undertaking). The pilot entry of 1 lakh documents of the Sub-Registrar Office, Basavanagudi, Bangalore is in process at present with the assistance of ECIL completion of entry of date of the descriptive index for 15 years would enable Registration department to generate the encumbrance certificate in 10 minutes, cutting the time to a fragment of what need to be 1 to 2 weeks earlier days. This would prove to be one of the best practices any government agency would have achieved. The department hopes to complete the work of entry of 1 crore 50 lakhs data in one year.

Registration of Marriages:

a) The department is administering the Hindu Marriage Act, the Special Marriage Act and the Parsi Marriage Act in addition to other laws. Separate softwares have been developed, for Registration of Marriages under the said Act by the department, with the assistance of C-DAC. A pilot project is in progress in the Sub-Registry Office, Shivajinagar, Bangalore. Automation of the Registration of Marriages will facilitate quick disposal of application for Marriages. This will be made operational through out the state within March 2005.

b) Department gas planned to computerize all the Marriage Registered / filed since 1954.

Registration of Societies and Firms: The department has been administering Karnataka Societies Registration Act 1960 and Indian Partnership Act, for the Registration of Societies / Associations and Firms respectively. Preservation of records was posing a big problem in both these cases. The department took initiative to automate this job and developed separate softwares with the assistance of C-DAC. The pilot project is in progress in the District Registrar Office, Bijapur and the automation is expected to be complete in 6 months. The department is again facing massive work of data entry of lash of Societies and Firms registered during the past 100 years. This entry involves data relating to Registration of Societies, filling of accounts, change in Governing body of the society and bylaws. This work is expected to be in place by November 2005.

Revenue Reconciliation:

Use of Stamp papers have been discontinued in the State of Karnataka, w.e.f. 1-4-2003 and consequently provision has been made for payment of stamp duty and Registration fee by Demand Draft, obtained from nationalized and Scheduled Banks. An attempt has been made for the Electronic verification of these payments to facilitate reconciliation of the remittances made to the Government, before Registration of documents. Software has been developed linking all the Banks to furnish the total payment made in the state at the end of every day to the Inspector General of Registration and Commissioner of Stamps in Bangalore. A pilot project is in progress. Completion of this automation would not only ensure the payment of tax and fee,

remittance to the State Exchequer but also eliminate physical reconciliation preventing the use of Bogus D.D. and so on.

7.2 Analysis of citizen's experiences with regard to the Registration process in Sub-Registrar's (SR) office prior to computerization of the process:

Certain variables like type of registration, time taken for completing the process of registration, the method of getting the registration done, reasons for the reluctance of public to go to SR's office directly for registration, reasons for approaching the middlemen, the common problems faced in the process of registration, perceived degree of accuracy and transparency of the functioning of the system etc. were chosen for the study. The required data and information for the above analysis was collected from Section I of the questionnaire (Annexure I) administered to the citizens who visited the SR's office.

Experiences of the citizens with KAVERI project: For the sake of brevity, the results indicating similar trend are clubbed and discussed together.

The study reveals that the type of registration and the problems faced during the process of registration are not associated. Since undergoing registration process is mandatory, all the citizens requiring registration invariably visit the SR's office irrespective of the nature of registration i.e. land or will or gift or business registration. Calculated Chi. Square value indicates that there is association between the reasons for approaching the middlemen and actually getting the process done through them. Reasons for this may be many, like lack of awareness about the availability of direct registration facility, to save time and reduce the number of trips to SR's office which

may be more for direct registration and so on. Majority of the people continue to get the registration done through middle men.

There is relationship between the reasons for approaching the middlemen and actually getting the work done through them. Lack of response from the office staff of the SR or wrong guidance of the middlemen that if citizens' approach SR office people directly, they will not have their work done on time and smoothly, are some of the causes for citizens to encourage the role of middlemen. The results of the study highlight that there is reduction in the number of people going through middle men for getting their work done at the Sub-Registrar office.

By accepting the H_0, the results indicate that there is no relationship between the method of registration and the problems faced. It is observed that if middlemen are approached for getting the work done, citizens face the problem of paying excess amount which can be avoided under direct registration and if direct registration is taken up, the problems at the office like non-cooperation of the employees to citizens, their unprofessional attitude and so on are inevitable.

a. The study highlights the fact that various problems such as lack of response at the official level, the public encounter during the course of registration work, are not the causes for them to approach middlemen for completing their registration work.

b. The results of the study highlight the experience of people who go to the SR's office for one or the other kind of registration. These experiences are: non cooperation at the SR's office, long time taken to reach out to the right person in the office and the unprofessional attitude of the employees in the office. These factors lead to a lot of discouragement of the citizens who

may be trying to break the barriers of dependence on middlemen.

c. The source of trouble for public and the nature of the problem are dependent on each other. It is observed that the source of problems for the citizens can be the link between SR's office staff and the middlemen or brokers. The problems they encounter at each source is different in nature and person to person.

d. Acceptance of H_0 at 5% LOS, indicates that reluctance of the staff of the office to guide the public in the process of registration when approached and fear of lack of response at the office, are the important causes for the public to approach middlemen for getting their registration work done.

e. People who apprehend lack of response at the SR's office and who suffer from the perception that pre-established link between middlemen and the office staff might lead to non-completion of the required registration at the office, are the not the only ones who approach the SR's office through middle men. All the citizens in general appear to be approaching middlemen as an old practice.

f. Assessment of the perception of the citizens about the treatment they get from middle men and the staff at the SR's office, indicates that they get the same treatment from both. Irrespective of the type of treatment given to them they prefer approaching middle men for the registration work as that saves them of the botheration of running around

the office and making number of trips to the office, before the work is completed.

g. The association between the frequency of visits to SR's office and the perception about the degree of transparency of functioning in the SR's office indicates that there is no change in the degree of transparency due to more visits.

h. The degree of accuracy perceived has no relation with the number of times people visit the SR's office as indicated by the study.

7.3. Computerized Administration of Registration Department (KAVERI):

The study highlights the degree of efficiency with which the KAVERI project is functioning in the State. Its contribution, in minimizing the dependence of the public on middlemen, brokers and document writers, and in enhancing the transparency of the system significantly thereby minimizing the scope for corruption and mal-practices are highlighted. The KAVERI, also aims at improving the document filing system, standardizing the forms, having an automatic accounting of revenue receipts for faster response and greater transparency, increase efficiency in the delivery mechanism, bring about transparent system in the of valuation of property devoid of any chance for collusive and fraudulent transactions and thus contribute to enhancing the image of the department in the eyes of the public.

Changes brought about by the KAVERI Project:

Computerization of registration process, creation of dependable database on property values, introduction of Data Security,

introduction of cross verification module to enable comparison values adopted in the registered documents with that of the standard basic values in the master file maintained at the senior level of the system i.e. DIG to know the difference in the valuation required and that which is paid for are some of the visible changes the KAVERI project has brought about. Besides, standardization of certain forms like sale deeds in English and Telugu, provision for printing of the standardized forms on A_4 Ledger Paper to resemble the quality of stamp paper so as to ensure longer life to the document, creation of facility for the use of Printed formats in conjunction with the regular stamp paper and making the availability of these standardized forms at a nominal fee across the 3rd counter, are some of the additional conveniences, the KAVERI project has brought to its citizens.

Experiences of citizens with the KAVERI project:

The following discussion brings to light the experiences of the citizens with the Project based on the data collected, consolidated and analyzed from Section II of the questionnaire.

a. The rejection of H_0 highlighted that maximum number of people who are aware about the project also have a good impression about the project for its speed in completing the Registration process. This indicates that more efforts are to be made for converting "Not Aware" people into "Aware" category, so that the benefits of the system are equally spread among the public.

b. Analysis about the sources of awareness of KAVERI project brings to focus that friends constitute the most important source for creating

c. It is observed through the study that irrespective of whether people are aware about a particular method of registration or not, people have to visit the Sub-Registrar's (SR) office for one kind or the other of registration. Acceptance of H_0 at $_5$% LOS (level of significance) indicates that the registration work to be carried out does not depend on the awareness level of people.

d. The study indicates that there is relation between the variable 'awareness' and the 'experience' in registration process. This proves that people need to be acquainted themselves of the methods of registration for getting the required work completed. If the purpose of introducing any new method is to be appreciated, efforts are to be made to cause positive and appreciable change to their present experience.

e. Acceptance of H_0 brings to focus that there is no relation between awareness about the KAVERI project and the nature of registration taken up at the SR's office. It is observed that with the introduction of the KAVERI project attempt is being made by the people to approach the SR's office directly for registration work.

f. The fact that there is no relation between the awareness about the KAVERI and its intricacies in functioning as per the accepted H_0. It is highlighted that people who are aware about the KAVERI's functioning in an area need not be aware of the intricacies in functioning like Market value calculation of land by the government, etc. but it is noticed in the study that significant percentage of the citizens are interested in knowing the basis followed for calculation of market value of land.

g. Rejection of H_0 brought to focus yet another revealing factor that there is no relation between the treatment they get in the SR's office and the implementation of the KAVERI project. People continue to face problems in the office like non-cooperation from the office staff, unprofessional and unethical behavior of some of the staff etc. To this extent the new system has failed to create comfort to citizens.

h. Acceptance of H_0 indicates that there is no relation between the KAVERI awareness of the people and the reasons for approaching the middle men. Even people who are aware about the implementation of the KAVERI project express that going through the middlemen will save time and unnecessary effort involved in direct registration.

i. As indicated by the study, there is relationship between any specific reasons for approaching the middlemen and actually getting the work done through them. Whether it may be due to lack of response from the office staff of the SR or wrong guidance of the middlemen that if citizens' approach SR office people directly, they will demand more money etc, people continue to approach middle men for getting their registration work done.

j. The general understanding of the system reveals that there is reduction in time taken for the entire registration process under new system compared to the old system which should have increased the comfort to the citizens. As against this, the study indicates that they are not comfortable with the system. This emphasizes on the need to bring about change in the aspects that really increase the comfort of the citizens.

k. Rejection of H_0 at 5% LOS brings to light that there is significant relation between the awareness about KAVERI project and their perception on the requirement for its total implementation. People who are aware of the new system need not assert that to make people realize the importance of the new system and to eliminate middlemen in the process, more awareness has to be brought about regarding the importance of direct registration.

7.4. Comparison of KAVERI with the old system:

The analysis of the experiences of citizens under both the systems is presented in the following discussion.

a. The calculated Z values reveal that there is no significant difference in the opinion expressed by the people under old and new systems as far as the purpose of visit to SR office is concerned. People who are familiar with both the methods of registration assert that the reason for visiting SR's office is same i.e. Registration, irrespective of the type of it and method followed in the office.

b. Comparison of the time taken for getting certain important documents like the Encumbrance Certificate (EC) revealed that there is significant difference in the parameter. The time taken for getting these documents under the new system is very less as against the old system as per the study.

c. As per the general understanding of the KAVERI system of registration there ought to have been difference in the easiness in getting the important documents like EC making the process easy under new system. This view is supported by the study.

d. The effectiveness of the KAVERI project in terms of the degree of accuracy and transparency is also highlighted by the study. The study indicates that degree of accuracy of the transactions at the SR's office is more under new system as against the old system.

e. The study reveals that there is no change in the approach of public towards registration. People continue to go through the middlemen for registration despite the easiness brought about by the new system.

f. The Z values calculated indicate that there is decrease in the proportion of people saying that the degree of transparency is 0% and increase is seen in the proportion of people saying that the transparency is 75%. One of the important contributions of the KAVERI project is improvement in the degree of transparency as against the old system.

7.5 The department is contemplating the following innovations.

BHOOMI is the software developed by Revenue Department for automation of land records. Record of rights of each survey number is generated through computers in all the Taluk at present using Bhoomi software. Title deeds registered in the Sub-Registrar Officer is one of the major sources for the Record of rights, for which each at present transactions registered is being intimated to revenue department. The department is contemplating connectivity to BHOOMI to facilitate automatic transmission of information relating to every transactions registered in each Sub-Registry, to the concerned Taluk Officer of the Revenue Department. This would ultimately result in quick and efficient updatation of land records by the said department. Pilot project connecting Kaveri to Bhoomi is taking place in Bangalore South and North taluks in Bangalore urban District. After completion of pilot Kaveri will be connected to all 177 taluks in the state. This will expedite the public in getting their land records updated.

Inter Connectivity of the Sub-Registrar Office:

All the 202 Sub-Registrar Offices in the State have been provided with telephone connections as a sequel to automation of Registration process, which is now in place. The department has a plan to inter connect all the Sub-registry Offices in the state by using Leased Line. This would be further developed to assist installation of tax meters, reconciliation and video conferencing and data transmission.

Registration anywhere: At present the law required that, a document should be registered in the Sub-Registrar Offices, where the immovable property is located. This procedure is in vogue for more than a century. The department has removed this jurisdiction barrier and brought in a system of Registration of property in any Sub-Registrar in the state of Karnataka, irrespective of its situation. The present software is developed on the principle of client server bases and this needs to be rewritten as web enabled software.

Digitization of Old Records: The department has established Central Record Room in Bangalore Urban District. Where the records of all the Sub-Registrar Office of Bangalore urban district are being preserved at present. Many records are in bad shape, and there is an urgent necessity to protect an reconstruct them. The department is planning to either digitize million's of these old and permanent public records or microfilms them for archival purposes. This is a massive job and the department hopes to achieve this in a period of two years. Digitization of these records will totally eliminate the scope for tampering records there by error free encumbrance certificate can be also generated instantaneously.

Finally the department is determined to go for innovative operations narrated as above and to achieve Best practices for world class services delivery to the citizens of the state.

7.6. I. Suggestions for better results of the KAVERI project:

Citizen's view: As the staff is pivotal for bringing success to any method, efforts are to be made to bring about the attitudinal change among them; only then the objectives of the project are realized. This can be achieved by arranging regular training to all the employees of the office including the Sub-Registrar's, exclusively with a focus on 'attitudinal change'.

- Presently a large number of middlemen are involved in the activity and their deriving income from this activity. Their intervention is at a cost and is treated as a burden

to the citizens. But the efforts of so many middlemen go into the entire gamut of the registration process. This means, their role is inevitable and but for them, the entire process may not go through smoothly. Then, why not take a view on the feasibility of absorbing them as part of the office staff, even through temporary appointment and charge the citizens an additional fee for their role. A part of the additional fee can serve as a source of monthly salary for middlemen. This additional work force besides providing assistance to the citizens on one hand, arrest the proliferation of unscrupulous practices and provide job avenues to the countless educated unemployed on the other. This process also enhances the direct interaction of citizens with the government.

- Serious sincere efforts are to be made to educate the citizens about the facility of direct registration in SR's office and the ease with which it can be carried out. Public should also be educated to remove the preconceived notions of the old registration department about its unfriendliness to citizens. Public should also be made aware of the latest changes brought about in regard to use of any paper for writing the particulars relating to the document and make the final payment in the office and that the practice of writing the documents on costly stamp papers has been done away with.

Employee's views:

- The SR's office staff develops links with the middlemen only to ensure that they get some additional income

to supplement their meager salaries. To prevent employees from accepting bribes from the citizens, a system may be evolved in which the staff gets a percentage of the income received from the citizens, (charge on each transaction), as an incentive. Office staff is yet to become familiar with the functioning of the system not because they are not exposed to training but because of the state of complacency. Through implementation of a transfer policy for employees from one office to another or through some other motivational measures, the work ethics and functional efficiency of the employees may be enhanced.

- Management's perspective:

- Attitudinal change has to be brought about in the implementing officer.

- Old auditing procedures are to be replaced by new methods.

- Computer hardware should be updated from time to time to increase the speed of the work and efficiency.

- Issuing of certificates is the major job which is still being done on manual system. Introduction of IT tools to copy the certificates directly from the books into the system.

- Manual procedures are simultaneously followed in some areas along with KAVERI project which amounts to redundancy of work which can be done away with.

7.6 II. Conclusions:

The KAVERI project has not only replaced the age old, cumbersome and time

consuming registration process but also contributed to a tremendous relief in the work load of the employees besides increasing the degree of transparency and accuracy in functioning of the registration system in the department. The study revealed that people were going through long, cumbersome and highly time consuming procedures for registration of immovable properties. Introduction of KAVERI project has brought great relief to the citizens from these hardships. The time taken to get important documents like EC and the time required for completing the total registration process has reduced tremendously from one week to three days and from one day to one hour. The study is also highlighted that in spite of the reduction in the time taken for the registration process, the dependence of citizens on middlemen has not reduced, the achievement of which is one of the important objectives of the project. Still citizens are apprehensive to go to SR's office directly for registration. Lack of adequate response from the officials at SR's office, payment of varying amounts of money to middlemen for getting the work done, fear created by the middlemen that if anyone approaches the office directly huge sum of money will be demanded; unprofessional and unethical attitude of some of the staff at the office, an atmosphere of unwillingness in the office in general to go an extra mile for helping the public etc. are the problems faced by the common public at the registrar's office. The study has also brought to light that citizens get better treatment by going through middlemen even though it means payment of varying amounts of money. Efforts at creating more awareness through media about the KAVERI project will make every one appreciate the purpose of it and enjoy the benefits thereby produced. To achieve the objective of creating awareness among the citizens about the project can be achieved through wide publicity by employing the mass media and the Internet.

Acknowledgements

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