

**Systematic Study & Analysis of the impact of
E-governance Implementations in the State of Uttar
Pradesh through a case studies of SPST & IGRS portals**

THESIS
SUBMITTED TO
BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
LUCKNOW

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2021

Candidate's Declaration

I hereby declare that I have completed research work entitled “**Systematic Study & Analysis of the impact of E-governance Implementations in the State of Uttar Pradesh through a case studies of SPST & IGRS portals**” for the full time prescribed and that the thesis embodies the results of my investigation conducted during the period I worked as Ph.D. research scholar. I further declare that to the best of my knowledge the thesis does not contain part of any work submitted for the award of any degree either in this Institute/University or any other Institute/ University. I also declare that the thesis is essentially free from all kinds of plagiarism.

(Sachin Sahu)

Research Scholar

CERTIFICATE

This is to certify that the thesis titled “**Systematic Study & Analysis of the impact of e-Governance Implementations in the State of Uttar Pradesh through a case studies of SPST & IGRS portals**” submitted by **Mr. Sachin Sahu** is an original research work and has not been previously submitted in part or full for the award of any other degree or diploma to this or any other University.

The thesis submitted to Babasaheb Bhimrao Ambedkar University, Lucknow satisfies all the requirements as stipulated in the *Doctor of Philosophy (Ph.D.) regulations-1999 as amended in 2013* and it is fit for submission and evaluation for the award of the degree of Doctor of Philosophy of the University.

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ABSTRACT

India is a developing country, where e-governance projects are running using Information and Communication Technologies (ICT) services to support people and government. In recent years, the government has taken a number of initiatives towards digitalization to improve various services for citizens, entrepreneurs, politicians and MNC's etc. e-Governance has emerged as an important field in India which deals with the service governed by the government for everyone in open network. The e-Governance can make governance more efficient and effective and also brings other benefits to the citizens.

In India, Uttar Pradesh is one of the most populated states where government is working to expand the area of e-Governance administration. For proper development of administrations, government is providing the Internet facility at town level in all the regions of state. Many e-Governance projects are running in UP with the help of Central and State governments, besides in many projects UP government has also authority to set up projects of e-Governance. Now days the e-Governance projects have spread in all fields of interfaces like government-to-government, government-to-customer and government-to-business.

This thesis discusses some feeble features in State Public Service Tribunal (SPST) portal of Uttar Pradesh government which was found through a user survey conducted online involving stakeholders, officials of SPST and others. Based on the analysis of survey results, possible enhancements to this portal and a set of recommendations have been suggested.

We also explored and analyzed feature of the *Jansunwai (IGRS)* portal of the State of Uttar Pradesh which is used by its citizen as online mechanism for lodging and resolving various complaints mostly related to civic bodies. The analysis of the portal highlighted issues obtained through another online citizen's survey including various stakeholders, authorities and others. The analysis has recognized few issues and possible upgrades along with a set of recommendations with respected to the portal which has been proposed.

It has been observed that, many e-Governance portals lack in integration and interoperability. The realization towards this came through case studies of two portals (SPST and Jansunwai) of the state of Uttar Pradesh to understand the issues therein. As a result, this thesis has presented a

general framework for interconnection & integration of portals along with guidelines which may be considered for future implementation to overcome the existing limitations identified during the period of this study and research. The roadmap shown can improve the services, scope and functionality of certain portals. Central to this skeleton is the interconnection and integration of similar e-services being offered by different government in the country.

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Date:

Place: Lucknow

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LIST OF ABBREVIATIONS

Sl.No.	Abbreviation	Meaning
1	ICT	Information and Communication Technology
2	G2C	Government to Citizens
3	G2B	Government to Business
4	G2G	Government to Government
5	G2E	Government to Employees
6	NeGP	National e-Governance Plan
7	MMPs	Mission Mode Projects
8	MOOC	Massive Open Online Courses
9	NMEICT	National Mission on Education through ICT
10	PSKs	Passport Sava Kendras
11	IRCTC	Indian Railway Catering and Tourism Corporation Ltd.
12	MCA 21	Ministry of Corporate Affairs for 21 st century
13	GeM	Government e-Market Place
14	PFMS	Public Financial Management System
15	MIS/DSS	management information/decision support systems
16	CPSMS	Central Plan Scheme Management System
17	CGA	Controller General of Accounts
18	CCTNS	Crime and Criminal Tracking Networks and Systems
19	PDS	Public Distribution System
20	CSC	Common Services Center
21	NGIS	National Geospatial Information System
22	RAHI	Road and Highway Information System
23	SPST	STATE PUBLIC SERVICE TRIBUNAL
24	IT	Information Technology
25	NIC	National Informatics Centre
26	MIT	Ministry of Information Technology
27	SWAN	State Wide Area Network
28	SDC	State Data Centre
29	PARIKSHA	Paperless Recruitment for Intelligent, Knowledgeable, Skilled and Highly Able candidates
30	PRERNA	Property Evaluation & Registration Application
31	GIS	Geographical Information System
32	IGRS	Integrated Grievance Redressal System
33	MyOneEG	Malaysian One-Stop E-Government
34	BPR	Business Process Reengineering
35	SMART	Simple, Moral, Accountable, Responsible and Transparent
36	BBNL	Bharat broadband Network Ltd.
37	NOFL	National Optical Fiber Network
38	NSDG	National e-Governance Service Delivery Framework
39	CUG	Closed User Group



Chapter 1
Introduction



INTRODUCTION

1.1 INTRODUCTION

India, being a largely populated and geographically diverse nation, has had to face tremendous challenges in the efforts to reach out and include every citizen, particularly the marginalised, in the process of inclusive growth and empowerment. Time and again, the beneficiaries across all financial and social backgrounds of our country have been unable to gain access to information about different government policies, schemes and services promptly and appropriately. Thus, as has been observed in several surveys, the benefits of these schemes often do not reach the beneficiaries for whom they are intended. This gap has made it difficult for the citizens to utilize the full potential of government initiatives [1]. However, the infusion of Information and Communication Technology (ICT) is playing a major role in overcoming this challenge in the present day context. The transformation in the quality of the delivery of services to the citizens by the government has been more prominent in the recent times with the arrival of e-Governance [2, 3,4].

e-Governance has become a catchphrase and a synonym for good governance at present not only in India but across the Globe. The concept and practice of e-governance has attracted many scholars and policymakers with its efficient, accountable and transparent features all over the world. It is a governance strategy to drive ICT with the aim of bringing more accountability and transparency [5]. E-Governance has been recognized as a vital force for transformational improvement in the quality, efficiency and effectiveness of governance. It possesses all the

elements of good governance, hence it can be considered as the key to good governance [6, 7]. As explicated by the experts, governance refers to the process of decision making and the process by which decisions are implemented. In this league, *Good Governance* may be defined as the processes that guide the political and socio-economic relationships, with commitment to democratic values, trusted services and just and honest business (ibid). Inclusion of ICT enabled governance has been a major breakthrough in achieving the principles of good governance that seeks to strengthen every citizen financially and socially. More specifically, e-Governance is not only about technology. It is a mechanism that offers a prompt integration of people, processes, and results using ICT to improve the transparency, efficiency, and effectiveness of public institutions [8,9].

e-Governance is composed of two terms- electronic and governance; this shows the depth of relationship between these two different concepts. More specifically, the concept can be understood as the application of IT in the processes of government's functioning for enabling smart governance for the betterment of citizens [10,11,12]. Thus, e-Governance refers to the use of IT by government agencies such as Wide Area Networks, the Internet, & Mobile Computing that have the ability to transform relations with citizens, businesses, and other arms of the government. These technologies can serve a variety of different ends: timely delivery of government services to the citizens, improved interactions with businesses and industry; citizen empowerment through access to information; or more efficient government management [13].

The citizen feedback, in particular, would help the policymakers to understand how people access such services, and the participation of people in governance sphere.

1.2 e-GOVERNMENT & e- GOVERNANCE

In spite of the differences in the meanings of the two terms, e-Government and e-Governance, many scholars and writers have used the two concepts interchangeably. More essentially, before differentiating between e-Government and e-Governance, one must have a clear idea on what the „*government*’ and ‘*governance*’ mean. The understanding of governance, as the act of governing, has been replaced with a model of government as an actor in the process of governance. This implies that the government is a subset or a component of governance within a given polity. This has implications for the impact of technology, i.e., if the governance without the ‘*e*’ comprises many stakeholders, the addition of ICT to the mix is likely to further change the group dynamics [11, 12].

Government is an institutional superstructure that society uses to translate politics into policies and legislations. On the other hand, *governance* is the outcome of the interaction of government, the public service and citizens throughout the political process, policy development, programme design and service delivery. e-Governance is beyond the scope of e-Government. While e-government is defined as a mere delivery of government services and information to the public using electronic means, e-Governance allows direct participation of citizens in the government’s activities. e-Government is the application of ICT to improve the efficiency and accountability of government, whereas, e-governance depends on the use of ICT by mobilizing government resources, and utilizing the internal information resources by the government employees with the help of citizen’s acceptability for the changes taking place so as to provide better services to them.

e-Governance is not just about government website and e-mail and service delivery over the Internet. It is not just about digital access to government centric information or electronic

payments. Its intent is to change the ways and means through which the citizens relate to the governments, and also enable better aids for citizens in connecting with each other. e-Governance is a crucial and vital IT driven initiative that allows the government to disseminate information easily, promptly, transparently in an interactive manner and, above all, to wider network of target audience or the stakeholders. It thus helps to improve the existing status of the administration by use of information technologies.

e-Government, in particular, facilitates in organizing public management so as to increase the efficiency, transparency, accessibility and responsiveness to citizens through the intensive and strategic use of information and communication technologies in the inner management of the public sector (intra and inter governmental relations) as well as in its daily relations with citizens and users of the public services. More accurately, *e-Governance* is an ICT-enabled tool to achieve good governance and it integrates people, processes, information, and technology in the service of achieving the aim of good governance[8,13].

1.3 TYPES OF INTERACTIONS & ISSUES IN e-GOVERNANCE

Over the past few years, the e-Governance has become the backbone of any government's functioning, a tool that enables the provision of good governance in a country. It creates the path for a government to deliver services to the citizens. It also helps to develop a strong relationship between business, industries, citizens and other government bodies. The economic growth of a country is also intertwined with e-Governance projects as both the Government and the industrial sector have adapted to e-Commerce tools for their functioning. The e-Governance mainly depends on four groups of: Citizens, Business government &

Employees [14, 15,16]. The interrelationship of these groups divides the e-Governance into four blocks such as:

- i. Government to Citizens (G2C):-** The purpose of this interface is to develop a healthy relationship between the Government and the citizens. This helps in improving the quality of services being offered to the citizens, thus adding to the citizens' convenience and aiding in a better standard of living. This is the key commitment of any government.
- ii. Government to Business (G2B):-** This defines the relationship between business community and the Government. It creates transparent environment for business in dealing with the Government.
- iii. Government to Government (G2G):-** This interaction increases the flow of information and services within and between various entities of the Government. This interaction is of two types: (a) *Horizontal* (interaction between different government agencies/ functional areas within an organisation. (b) *Vertical* (interaction between national, state and local government agencies).
- iv. Government to Employees (G2E):-** This relationship is a two way communication process between the organisation and the employee. It helps in the dispensation of efficient services on one hand, and the satisfaction of employees, on the other hand.

In India, e-Governance is very helpful in solving the social and economical problems of people belonging to cities and villages. The e-Governance has various characteristics such as :-
(i) *Fast, Convenient* (ii) *Cost Effective Service Delivery* (iii) *Transparency* (iv) *Accountability*
(v) *Reduced Corruption* (vi) *Increased Participation by People*. The success of e-Governance projects depends on various factors such as (i) Clear vision and strategies (ii) Technological

change (iii) Globalization (iv) Modernizations (v) Consumer expectations (vi) government support.

1.4 e-GOVERNANCE PROJECTS IN INDIA

Over the years, many efforts have been made by the government to improve the delivery of services to the public. Various initiatives have been taken by the State and the Central government under e-Governance in this regard [17]. The concept and practice of e-Governance evolved after the start of computerization (1980s) of the government departments. The Indian government approved the National e-Governance Plan (NeGP) on 18th May, 2006 for the long term development of e-Governance projects. The Plan has also been helpful in developing a good environment for e- Governance (citizen-centric and business-centric).

The Mission Mode Projects (MMPs) are the individual projects running under the NeGP with an aim to provide services to the common man in their locality[18,19]. According to the Government of India, the MMPs under e-Kranti programme are 44, and are listed in table 1.1, 1.2 & 1.3. The e-Kranti mission has been approved in 2015 under digital India initiatives of Government of India. It aims to further redefine NeGP to the next level to achieve mobile governance and total transformation and integration of services, it is also called NeGP 2.0[20,21]. In order to implement the successful MMPs, the two key essential factors are: the managerial, and the operational factor. The Managerial factor is related to management aspects of MMPs such as strategic planning, funding, focus of projects, network resource and infrastructure, interoperability with other projects, etc. The Operational factor is related to the operations of MMPs such as awareness and uses, setting of accountability, etc.

The new thrust areas of government under e-Kranti include many projects such as Massive Open Online Courses (MOOC), e-Health Care, technologies for farmers, justice(e-Court, e-Police etc.) or cyber security etc.

1.4.1 Types of Mission Mode Projects (MMPs)

MMPs are of three different types: The Central, State and Integrated. The division of these is based on stakeholders/implementing agency basis and the constitutional status of the domain. For Example- Income Tax, Passport, Visa and Immigration are Central Subjects as per the Indian Constitution, so they have been kept under the Central's MMP. Likewise, the subjects like Agriculture, Police and Land Records are State Subjects, so these domains have been kept under the State's MMP. The domains which are in concurrent list are kept under the Integrated MMP.

1.4.1.1 CENTRAL MMPs

The list of Central MMPs has been detailed in table 1.1. Currently, 15 MMPs are running under the Central Government, out of which 10 MMPs were started in 2006 under NeGP, One MMP, i.e., Post was added in MMPs in 2011, and 4, i.e., Central Armed Paramilitary Forces, e-Bhasa, NMEICT, e-Sansad were added in 2015 as MMPs under e-Kranti.

Table 1.1. Central Government MMPs (Total-15)

<i>S.No.</i>	<i>Name</i>	<i>Beneficiaries</i>	<i>Ministry/Department</i> <i>Responsible</i>	<i>Status</i>	<i>MMPs</i> <i>Year</i>
1.	Banking	All States & UTs	Department of Financial Services	Delivering Services	2006
2.	Insurance	All States &	Department of Financial Services	Delivering Services	2006

		UTs			
3.	Income Tax	All States & UTs, All IT offices	Ministry of Finance/Central Board of Direct Taxes	Delivering Services	2006
4.	Central Excise	All States & UTs (129 offices)	Department of Revenue/Central Board of Excise and Customs	Delivering Services	2006
5.	MCA21	All States & UTs	Ministry of Company Affairs	Delivering Services	2006
6.	Pensions	All States & UTs	Department of Pensions & Pensioners Welfare and Department of Expenditure	Delivering Services	2006
7.	Passport	All States & UTs, All PSKs and PSLKs	Ministry of External Affairs/Ministry of Home Affairs	Delivering Services	2006
8.	National ID/UID	All States & UTs	Ministry of Electronics and Information Technology	Delivering Services	2006
9.	Immigration/ VISA	All States & UTs, All missions, FRROs, FROs and State Home Depts.	Ministry of External Affairs/Ministry of Home Affairs	Delivering Services	2006
10.	e-Office	All States & UTs (210 Govt. organizations)	Department of Administrative Reforms & Public Grievances	Delivering Services Partially	2006
11.	Posts	All States & UTs, 1.55 lakh POs	Department of Posts	Under Implementation	2011
12.	Central Armed Paramilitary	Central Govt.	Ministry of Home Affairs	Design &	2015

	Forces			Development	
13.	e-Bhasha	All States & UTs	Department of Official Language, Ministry of Home Affairs	Design & Development	2015
14.	National Mission on Education through ICT(NMEICT)	All States & UTs	Department of Higher Education	Design Stage	2015
15.	e-Sansad	All States & UTs	Ministry of Parliamentary Affairs	Design Stage	2015

The Government of India has been running a number of e- Governance projects from 1970s onwards [22,23, 24]. Some of the prominent projects running successfully by GoI have been listed below.

i. Income Tax

The computerization in the Income-tax department was set up in 1981. Its portal was developed under the National e-Governance Plan as a Mission Mode Project. Its purpose is to provide a single window access to the income tax related services for citizens and the other stakeholders (Income Tax) [23].

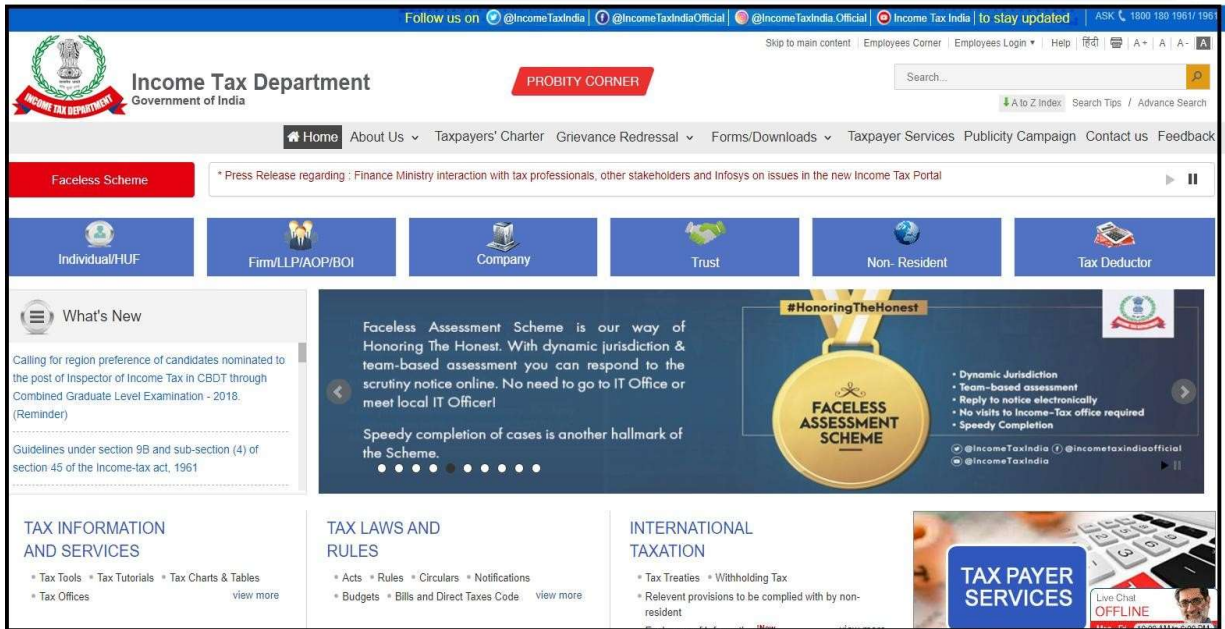


Figure 1.1: Screenshot of Income Tax Portal [23]

ii. Passport

This project comes under the Ministry of External Affairs and its purpose is to deliver Passport Services to the citizens in a peaceful environment. Currently, more than 77 Passport Sava Kendras (PSKs) are providing services to the citizens across the country. It has data centre and disaster recovery centre. All the processes of this portal minimize the utilization of papers with an aim of providing passport to the citizens within 3 working days (Passport Seva) [24].

Passport Seva
Consular, Passport & Visa Division
Ministry of External Affairs, Government of India

Home About Us Passport Offices Consular / Visa RTI Citizens' Charter Contact Us What's New Search...

PSKs and POPSKs have started resuming the Operations owing to the relaxations given by the States in line with the COVID-19 guidelines. Intended Appli

VISION
To deliver passport services to citizens in timely, transparent, more accessible, reliable manner and in a comfortable environment through streamlined processes and committed, trained and motivated workforce

National Call Centre
1800-258-1800

Passport Office Page
Passport Office

Mission/Post Page
Country

Login for Official Users
Official Users

Before You Apply

Information Corner	Forms and Affidavits	Document Advisor	Feedback and Grievance
Getting Started		Tatkaal Appointment Opening Time	
FAQs		Appointment Availability Status	
Passport Act and Rules		Fee Calculator	
Quick Guides		Know your Police Station	
Instructions Booklet		Locate Passport Seva Kendra	
All India Network of Passport Services		Locate Common Service Centers	
Public Advisory		Caution for Public	

Figure 1.2: Screenshot of Passport Portal [24]

iii. IRCTC

This portal works under the Ministry of Railways, Indian Railway Catering and Tourism Corporation Ltd. (IRCTC) with its tagline “Lifeline of the Nation”. This portal provides the ticketing facilities to the citizens with a user-friendly and efficient web interface (Indian Railway) [25].

The screenshot displays the Indian Railway Portal's booking interface. At the top, there is a navigation bar with links for LOGIN, REGISTER, AGENT LOGIN, CONTACT US, ASK DISHA, ALERTS, and a date/time stamp: 25-Jul-2021 [12:29:16]. Below this is a secondary menu with options like IRCTC EXCLUSIVE, TRAINS, BUSES, FLIGHTS, HOTELS, HOLIDAYS, LOYALTY, MEALS, PROMOTIONS, PREMIUM PARTNER, and MORE. The main content area features a 'BOOK TICKET' form with the following fields and options:

- From:** A text input field with a location pin icon.
- To:** A text input field with a location pin icon.
- Class:** A dropdown menu currently set to 'GENERAL'.
- Date:** A date picker set to '25/07/2021'.
- Classes:** A dropdown menu set to 'All Classes'.
- Options:** Three checkboxes: 'Dhryang Concession', 'Flexible With Date', and 'Train with Available Berth'. A 'Railway Pass Concession' checkbox is also present but partially obscured.
- Search:** An orange button labeled 'Search'.

Below the form, a notice states: 'IRCTC Tejas Express Train no. 82501/82502 (LJN-NDLS-LJN) and Train no. 82901/82902 (MMCT-ADI-MMCT) are being reintroduced with effect from journey date 07.08.2021. Trains are available for booking.'

The background of the page shows a train on tracks with the text 'INDIAN RAILWAYS' and 'Safety | Security | Punctuality'. A 'DEALS OF THE DAY' banner is visible at the bottom right.

Figure1.3: Screenshot of Indian Railway Portal [25]

iv. Banking

The Internet banking (or online banking) is an electronic payment system that allows the customers to perform financial transaction. The purpose of core banking is “anytime, anywhere banking” to the Indian customers [26].

The screenshot shows the official website of the Reserve Bank of India. At the top left is the RBI logo and the text 'भारतीय रिज़र्व बैंक' and 'Reserve Bank of India'. A search bar is located at the top right. Below the header is a navigation menu with links for Home, About Us, Notifications, Press Releases, Speeches, Publications, Memorial Lectures, Research, and Statistics. The main content area is divided into several sections: a 'PREAMBLE' section with a quote, 'CURRENT RATES' with a dropdown menu, 'What's New' with a list of recent updates, 'Covid-19 Measures', and 'FUNCTIONWISE SITES' with a list of service categories. The page also features the RBI logo and 'The RBI Museum' logo at the bottom left.

Figure 1.4: Screenshot of RBI Portal [26]

v. Central Excise & Customs

This portal gives the information of Customs, Central Excise, Service Tax Laws, etc., to the citizens [27]. The Customs and Central Excise was set up in the year 1855 by the British Governor General of India. It is one of the oldest government departments in India.

It comes under the Ministry of Finance India. Some of the important services provided by this portal are as follows

- Simplification of registration, returns, revenue reconciliation and exports Procedures.
- e-Registration for excise and service tax.
- Export facilitation through linkages between Excise and Customs.
- Central Excise Revenue reconciliation.



Figure 1.5: Screenshot of Central Excise & Customs [27]

vi. Insurance

The portal of insurance facilitates in the speedy handling of claims and online insurance policies on the Web for the users. It also provides the automated grievance reporting and redressal facility to the users [28].



Figure 1.6: Screenshot of Insurance [28]

vii. MCA21

MCA 21 (Ministry of Corporate Affairs for 21st century) is the first successful mission mode project that received the *Prime Minister's Award for Excellence in Public Administration*. It was initially launched to transform the ministry's mode of working from paper to paperless format. It was also the first portal of the government to use the digital identity of the user [29].

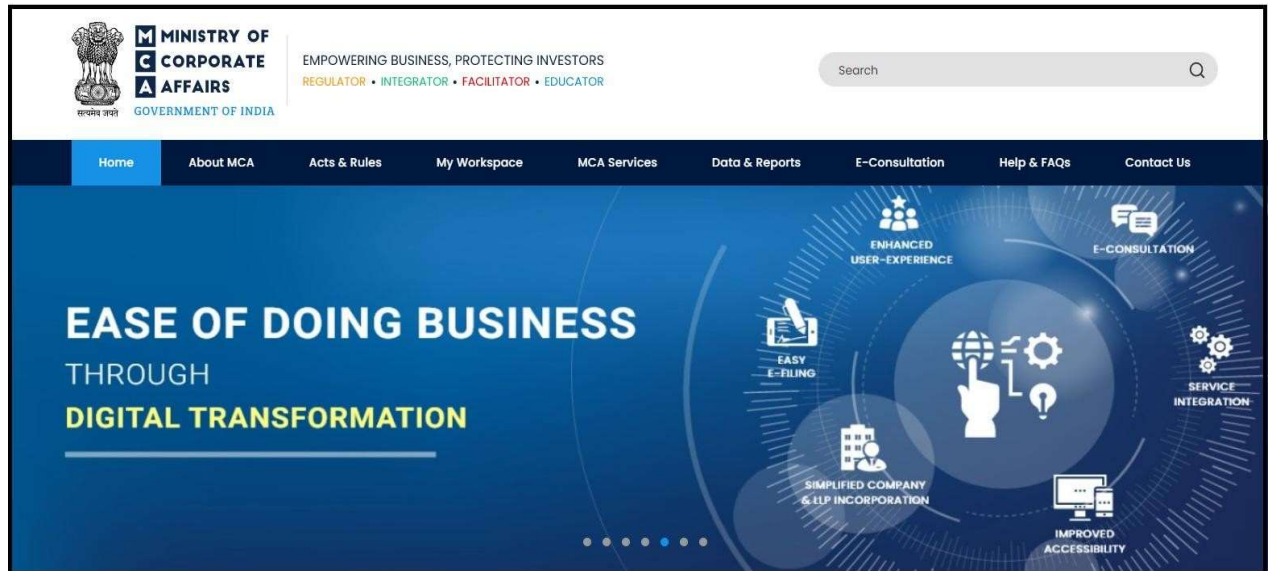


Figure 1.7: Screenshot of Ministry of Corporate Affairs [29]

The MCA21 is designed to fully automate all the processes related to compliance with the active and legal requirements under the various Acts and Rules as shown in Figure-1 which assist the industrial societies to fulfill their constitutional hardships [29].

viii. Pensioners' Portal

It works under the Department of Pension & Pensioners' Welfare of the Indian government. It is the central government's project which is used for the formulation of policies relating to pension and other retirement benefits. It also plays a role of redress of Pensioners' Grievances (The Pensioners' Portal) [30].



Figure 1.8: Screenshot of Pensioner's Portal [30]

ix. Government e-Market Place (GeM)

The Government's e-Marketplace was launched on 9th August 2016 by the Ministry of Commerce and Industry, the Government of India. GeM came into existence due to the recommendation of the Group of Secretaries to the Honourable Prime Minister. GeM provides the facilities for using Goods & Services online by various department of the Government. The main objective of GeM is to maintain transparency, efficiency between the various departments (GeM) [31].



Figure 1.9: Screenshot of GEM Portal [31]

x. Public Financial Management System (PFMS)

The PFMS is a web-based integrated system for processing payments. It also helps in tracking, monitoring, accounting and reporting all the expenditure information of the Government of India. It was initially developed to replace the separate accounting management information/decision support systems (MIS/DSS) of various departments of the government. This system evolved in December 2013 from the erstwhile Central Plan Scheme Management System (CPSMS) which was being implemented on pilot basis in four states (Madhya Pradesh, Bihar, Punjab, and Mizoram) to monitor the fund flow of four planned schemes² by the Controller General of Accounts (CGA) since 2008 [32].

Fig.1.10: Screenshot of PFMS Portal [32]

1.4.1.2 STATE MMPs

A list of 17 States' MMPs is described in table 1.2. From the column 6 of table 1.2, we can identify that 10 MMPs were started in 2006 under NeGP, 3 MMPs were added in 2011 and 4 MMPs were added in 2015 under e-Kranti.

Table 1.2: State Government MMPs (Total -17)

<i>S. No.</i>	<i>Name</i>	<i>Beneficiaries</i>	<i>Ministry</i>	<i>Status</i>	<i>MMPs Year</i>
1.	Transport	All States & UTs	Ministry of Road Transport & Highways	Delivering Services	2006
2.	Land Rec./NLRMP	All States & UTs,	Ministry of Rural Development	Delivering Services Partially	2006
3.	e-District	All States & UTs,	Ministry of Electronics and	Delivering Services Partially	2006

		All DM offices	Information Technology		
4.	Commercial Taxes	All States & UTs	Ministry of Finance	Delivering Services Partially	2006
5.	Treasuries	All States & UTs	Ministry of Finance	Delivering Services Partially	2006
6.	Municipalities	All States & UTs	Ministry of Urban Development and Poverty Alleviation	Delivering Services Partially	2006
7.	Agriculture	All States & UTs	Ministry of Agriculture and Farmers welfare	Delivering Services Partially	2006
8.	Employment Exchange	All States & UTs	Ministry of Labour and Employment	Delivering Services Partially	2006
9.	e-Panchayat	All States & UTs	Ministry of Panchayati Raj	Under Implementation	2006
10.	Crime and Criminal Tracking Networks and Systems (CCTNS)	All States & UTs, All Police Stations	Department of states/ Ministry of Home Affairs	Under Implementation	2006
11.	Public Distribution System (PDS)	All States & UTs	Department of Food and Public Distribution	Delivering Services Partially	2011
12.	Education	All States & UTs	Ministry of Education	Delivering Services Partially	2011
13.	Health	All States & UTs, All PHCs	Ministry of Health and Family Welfare	Delivering Services Partially	2011
14.	Agriculture 2.0	All States & UTs	Department of Agriculture and Cooperation	Design Stage	2015

15.	e-Vidhaan	All States & UTs	Ministry of Parliamentary Affairs	Design Stage	2015
16.	Rural Development	All States & UTs	Department of Rural Development	Design Stage	2015
17.	Women & Child Development	All States & UTs	Ministry of Women and Child Development	Design Stage	2015

1.4.1.3 INTEGRATED MMPs

The MMPs running under the coordination of State and Central Government have been enlisted in table 1.3. Initially, 7 MMPs were started in 2006 as integrated MMPs under NeGP. In 2011, the Indian Government had not included any MMPs under this category. However, later in 2015, 5 more MMPs, i.e., Financial inclusion, NGIS, Road and Highway information system, Social benefits, Urban Governance were added in the list of MMPs under e-Kranti.

Table 1.3. Integrated MMPs (Total -12)

<i>S. No.</i>	<i>Name</i>	<i>Beneficiaries</i>	<i>Ministry</i>	<i>Status</i>	<i>Year-Wise Journey</i>
1.	India Portal	All States & UTs	Department of Electronics & Information Technology, Department of Administrative reforms & Public grievances	Delivering Services	2006
2.	e-Sangam (formerly National Services	All States & UTs	Ministry of Electronics and Information Technology	Delivering Services	2006

	Delivery Gateway)				
3.	Common Services Centers (CSC)	All States & UTs, All CSCs	Department of Electronics & Information Technology	Delivering Services	2006
4.	e-Trade	All States & UTs	Ministry of Commerce and Industry	Delivering Services	2006
5.	e-Courts	All States & UTs, 14000+ courts	Ministry of Law and Justice	Delivering Services Partially	2006
6.	e-Procurement	All States & UTs,	Ministry of Commerce and Industry	Delivering Services Partially	2006
7.	e-Biz	All States & UTs,	Ministry of Commerce and Industry	Delivering Services Partially	2006
8.	Financial Inclusion	All States & UTs	Department of Financial Services	Delivering Services	2015
9.	National Geospatial Information System (NGIS)	All States & UTs	Ministry of Earth Sciences	Design & Development	2015
10.	Road and Highway Information System (RAHI)	All States & UTs	Ministry of Road Transport and Highways	Design Stage	2015
11.	Social Benefits	All States & UTs	Ministry of Social Justice and Empowerment	Design Stage	2015
12.	Urban Governance	All States & UTs	Ministry of Housing and Urban Affairs	Design Stage	2015

On comparing the data from the 5th column of each table (i.e., table 1.1, 1.2 & 1.3), it is concluded that 9 MMPs of Central Government, 1 MMPs of State Government and 5 MMPs of State and Central Government together are delivering services to the public in all manners. It is also concluded that 2 MMPs of Central Government, 4 MMPs of State Government and 3 MMPs of State and the Central Government are at the design stage.

Table 1.4: Comparative study of MMPs

S. No.	Stage	Central (15)	State (17)	Integrated (12)
1	Delivering Services	Nine (60%)	One (5.8%)	Five (41.6%)
2	Delivering Services Partially	One (6.6%)	Ten (58.8%)	Three (25%)
3	Under Implementation	One (6.6%)	Two (11.7%)	NIL
4	Design & Development	Two (13.3%)	NIL	One (8.3%)
5	Design Stage	Two (13.3%)	Four (23.5%)	Three (25%)

On comparing various projects of three types of MMPs as per table 1.4, it was inferred that around 60% of the total Central MMPs are delivering services to customer and government as compared to the State and Integrated MMPs.

State MMPs have perform much poorly in terms of service delivery (only 5.8% of 17 MMPs) where integrated MMPs has been delivering services much better than states but poorer than Central MMPs. There could be many reasons for the same such as financial issues, lack of expertise, vigilance and efforts, as we understood during the study, analysis of MMPs and expert reviews of e-Governance related aspects. However, a proper in-depth analysis may find the route cause for the same.

It is also interesting to know that around 60% of States projects are in design state. So, the States, it appears, either have taken initiatives vary late or may have other problems, which may come out after deeper analysis carried in the coming chapters. However, there are a large number of obstacles in the implementation of e-Governance in India, as identified by researchers and policy makers in past. This restrict the such initiatives to reach the common people and the financially disadvantaged sections of the society. These issues of e-Governance have been compiled as below [35,36,37]:

- **Low IT Literacy:** Though literacy rates in the country across all states have improved significantly, yet there is a noticeable lack of literacy about the awareness and use of Information Technology or ICT enabled services, especially in the rural areas. This is a major hurdle in utilizing the benefits of e-Governance in the country.
- **Different Languages:** India is a land of multi-ethnicities where people belong to different religions, cultures and speak different languages while communicating. A majority of population use or understand Hindi as well as their local languages, but unfortunately, a large number of e-Governance projects are running in English language only. This creates a problem for the users who are not well versed in the language, and thus, are unable to understand and get the benefits of e-Governance projects.
- **Lack of Awareness:** The majority of the beneficiaries for whom the schemes are planned and implemented are still unaware about the benefits of e-Governance. So, they are not getting the benefits from the highly successful projects of the Government of India.
- **Lack of Required Infrastructure:** The availability and the accessibility of the necessary infrastructure such as electricity, internet facility, is a major barrier in implementing the

projects of e-Governance efficiently and promptly. The unavailability of infrastructure affects the chain of communication at all levels of users.

- **User-Friendliness of Websites:** Users of e-Governance projects or websites are not highly educated, thus they are unable to utilize the services in an efficient manner. Hence, there is a need to guide or train the users to find the right way for performing the operations.
- **Privacy and Security:** Privacy and security are also the major issues in implementing e-Governance projects in India. Lack of appropriate safeguards leads to data theft and data breach cases, thus risking the safety of the users' personal details.
- **Minimum Participations of Various Sectors (Society, Public and Private sectors):** Any e-Governance project requires the strong relationship between the government department and the agencies of another sector (Public/Private). Currently, the communication between the government and other bodies is yet not as per the desired levels. This is a key drawback in achieving the intended targets of the e-Governance projects.

1.5 MOTIVATIONS & RESEARCH GAP

The growth of e-Governance in the last decade around the globe has been such that almost all government functionaries and policy makers have been unthrusting to use this technology. India has specially seen the fast growth of e-Governance in recent few years after the government has started digital India initiative and e-Kranti policy being termed as NeGP 2.0. Almost all States have also identified thrust areas and initiated many e-Governance programs and projects. Many MMPs have let to the success of e-Governance in the country. The central and State MMPs along with many integrated projects have been implemented by Central and State Governments.

Though the success of many such projects have been seen and realized, a number of projects have not been able to perform as per the expectations of their stakeholders due to various reasons, this has been observed after our detailed study of the entire e-Governance initiatives taken by various governments since the inception of such projects.

Any initiative towards e-Governance projects and its implementation requires to maintain proper infrastructure and cost, therefore various issues related to identifying area for e-Governance, it's development and launch must be accessed properly to see whether they are going to fulfill the intended expectations or not and whether intended citizens will find it useful.

We found that many researchers have done detailed studies, surveys etc to analyse and identify issues about how and why many such projects fail to provide their intended services to users thus by incurring considerable losses to the Governments.

Further during our extensive studies of MMPs carried so far, it has been clearly observed that central MMPs have performed much better than the state MMPs (table 1.1, 1.2 & 1.3).

Through our literature Review, we couldn't find any specific study about how and why state projects have not been as successful and user friendly as the central and integrated MMPs, it is also observed that the state MMPs also take too much time in development and implementation

Keeping all these issues as we have come across from the literature so far, this research would specifically focus on exploring certain state projects to identify issues involved their in. Usually, the issue related to usages and handling of any project that is the impact analysis can be addressed efficiency by a systematic user survey, it will also adopt the same methodology to analyse the data obtained from the survey to come to certain conclusions. Two e-Governance portals have been specifically chosen from the state of UP to analyses.

1.6 OBJECTIVES OF THIS RESEARCH

This research study is aimed at analyzing the contribution of e-Government in enhancing good governance. The prime objectives of this research are:

- To study and analyses the status of e- Governance in India.
- To study and analyses the key projects of the State of Uttar Pradesh and general implementation issues and observations.
- Detailed case study of two e-Governance initiatives of UP through user survey and critical analysis.
- To propose set of recommendations based on the result analysis of two case studies.
- To propose a generic framework for enhancing the e-Services based on recommendations.

1.7 SCOPE OF STUDY & EXPECTED OUTCOME

This research will mainly focus on the study of e-Governance related government policies, growth story, projects, their success story, a issues hurdles in Indian context.

Our special focus in this research work would be the state of Uttar Pradesh. A case study of two state portals will be perform through user survey and analysis. It results may represented as a set of observations and recommendations which may be though specific to these two portals but may reflect the other systems as well and may be taken as suggestions to improve the overall scenario and the paradigm shift towards governance. The proposed framework/Model may be useful to enhancing the features of existing and new projects for greater user satisfaction. It may also be inline with e-Kranti Mission and objectives of Government of India..

1.8 THE ORGANIZATION OF THE THESIS

Apart from the present Chapter 1, the rest of this thesis is organized in the following manner:

- **Chapter 2: e-Governance Initiatives and Challenges in the State of Uttar Pradesh:** explains the status of e-Governance projects in UP.
- **Chapter 3: Case Study 1: STATE PUBLIC SERVICE TRIBUNAL (SPST)** describes the issues and challenges of SPST portal.
- **Chapter 4: Case Study 2: Jansunwai Portal** discusses the evaluation of accuracy of challenges in Jansunwai portal.
- **Chapter 5: Proposed Architecture For Integration of e-Governance Portal Of Various State System Architecture** presents the overall proposed architecture for SPST

and Jansunwai Portals. It also explains how the functionalities of these portals can be increased.

- **Chapter 6: Conclusion and Recommendations** concludes the research and lists some of the future work which may be extended by new researchers in this area.



Chapter 2

e-Governance Initiatives and Challenges In The State of Uttar Pradesh



e- GOVERNANCE INITIATIVES AND CHALLENGES IN THE STATE OF UTTAR PRADESH

2.1 INTRODUCTION

e-Governance is the use of information technological tools and mechanisms for providing government services to the users [33]. The e-Governance is adopted by the government to minimize the corruption rate and increase transparency [34]. The use of Information Technology improves the administration's efficiency. A good administration increases the transparency and accountability between the processes of government. The Information Technology allows the citizens to participate in the development of government projects [35].

The e-Services involve various types of delivery systems, methodologies, and applications of the government in the e-Governance [36]. The various types of services provided by the government and business organizations in developed countries go through the three stages: (a) online information presentation, (b) online transaction, and (c) online information integration [37].

Nowadays, people are more aware of accessing online services provided by the government. In the 21st century, e-Governance plays an important role in developing a relationship between people, government and the other stakeholders [38]. e-Governance is the digitalisation of the Public administration; it is inspired and initiated by the aim to provide an interface between the different functionaries of the administrations and cater to the people. The network in this context includes: the people, computer interface in management, government online system, etc. [39].

The development journey of e-Governance in India can be divided into two phases. The first phase of journey started during 70s & 80s, whereas the second phase came after 1990s. The

first phase was focused on the use of Information Technology (IT) in government application. This duration basically used IT in e-Governances for central government projects such as defense, research, economics, monitoring & planning, and election data [40].

The second phase introduced the IT for public sector. In this, the IT Task Force was established and the State Government policies were also started [41].

The Ministry of IT was setup by the Government of India with the coordination of the Department of Electronics to achieve the objectives of e-Governance projects with the aim of delivering services electronically.

In India, the State governments are also working on e-Governance to give better facilities to the customer. The Government of Uttar Pradesh has also taken several initiatives to establish its own mark in e-governance [42]. However, the e-Governance projects of the government face a number of problems due to the diversities of income, culture, religion, etc.

2.2 CHALLENGES OF e-GOVERNANCE IN UP

India started technological initiatives in 1970s, which mainly focused on the automation of government functions. The National Informatics Centre (NIC) came into existence in 1980s for connecting all the district headquarters. NIC also provides better connectivity and networking.

In mid-90s, IT Vision 2020 document was released [43]. National Task Force was established in 1998 with the aim of making India as the IT superpower in near future. Ministry of Information Technology (MIT) was developed with a name to initiate the technology for various projects. MIT was a major breakthrough in this league as it provided a strong foundation for the launching of more specialized and large scale projects in India. In 2006, the GOI launched National e-Governance Plan (NEGP). Ever since then, the efforts have been made both at the policymaking level (with special mention to IT Policy 2004) and implementation. The various key challenges as discussed and realized by a number of experts for any new initiatives with respect to e-Governance which may also be applicable to UP for implementing e-Governance initiative are as follows[44,45, 46] :

- a) **Diversity:** Uttar Pradesh has huge diversities, particularly, in the context of caste, sex, income, literacy, etc. Due to this, the whole idea of e-Governance suffers because addressing this huge diversity and achieving equality and inclusiveness at all levels is not an easy task. Hence, unless all these aspects are taken care of while initiating the projects, the gaps and flaws in the efficiency of services delivered through e-Governance will continue to exist.

- b) **Cultural Challenges:** Cultural differences and individual behaviour patterns play a crucial role in the acceptance and use of new technology.

- c) **Corruption:** Administration suffers in the development of e-Governance due to corruption.

- d) **Lack of Administrative Will:** The development of new technology in e-Governance projects requires strong administrative will and vision. Hence, there is a need for renewal of entire administrative machinery and the nature of administration.

- e) **Digital Divide:** People are still not much aware about the Digital era due to illiteracy, poverty, and distribution of ICT. UP government states that people are not informed enough about ICT- its use or applications. Hence, the government must promote the use of Hindi in information technology to increase the outreach to the common man.

- f) **Inadequate Infrastructure & Budgetary Constraints:** Despite being the largest state in population with enough manpower, Uttar Pradesh has always been ranked amongst the poor states in India. This has also affected, among other projects, the e-Governance projects as well. Financial crunch has always been a major hurdle in initiating deployment and maintenance of the e-Governance projects.

- g) **Poor Handling:** It is one of the biggest issues raised by the citizens of the state. A number of projects launched in the state have poor monitoring; thus, the responses and follow up action is negligible and unsatisfactory. This communication gap often causes problems for the users who ultimately get discouraged and stop using such portals.

- h) **Maintenance:** Many of the initiatives in UP also suffer due to poor maintenance and lack of interest by its stakeholders towards upgradation of many projects and portals. Many issues arise while handling the portals due to low upgradation and poor maintenance. Sometimes the uptime of portal become an issue.
- i) **Technical Gap:** Many of the state portals are handled by non-professional staffs who are often unable to understand the issues raised by the users properly. This also shows poor coordination among the lower level staff and the ones who had the actual authority to resolve the problem.

2.3 SECURITY PARAMETERS

Security is yet another major issue for services of e-Governance applications. Secure infrastructure is also needed to develop a trustful relationship between the various departments of the government for storing, process and the exchange of information.

A number of threats may occur on e-Governance systems to break security as observed by experts. So, there is a need for the policymakers to perform continuous evaluation on the existing information security practices and controls. Trust in different processes of e-Government plays a significant role in maintaining transparency between the government, business and citizens. Therefore, security controls are one of the key factors for achieving an advanced phase of e-Governance for national development [47]. Security is related to the information properties of confidentiality, integrity and availability. These properties support services such as user authentication, authorization, accountability and reliability. The issues of security and privacy in the management of the information systems are guided by these properties. There is a pressing need to consider these issues in designing e-Government security systems [48]. As per various studies of experts as we come across during this work following are the details about key security attributes [49].

- a) **Confidentiality:** It is important aspect of any such projects as the information of any users on the portal should only be for the authorized users [50, 51].

- b) **Integrity:** Information can not be modified at any stage in the e-Governance process by unauthorized user.
- c) **Controllability:** The information should be kept secure so that only authorize person be able to access it.
- d) **Efficiency:** It helps to perform the speed and cost analysis. It also indicates how the portal provides the services to the users.
- e) **Effectiveness:** A high level of quality is the prime focus in e-Governance for providing better services to the citizens.
- f) **Accuracy:** It measures the correctness and carefulness of the services provides by the portals of e-Governance projects of the government.

These security aspects are very essential to incorporate in all e-Governance services so that thrust of users be build and therefore the real benefit of e-Governance be achieved by governments [52].

2.4 UP GOVERNMENT PROJECTS

UP has been active in popularizing e-Governance in state. It has approved a prominent category and a list of projects in a variety of areas from Education to Finance to Services to Grievances and may others areas that run under Government of UP are as Table 2.1.

Table 2.1: e-Governance Initiatives by Uttar Pradesh

S.No.	e-Governance Projects of UP	
	Domain	Projects
1	Education	e-PARIKSHA:
		e-Madarsa:
		SAKSHAM
		Online Teachers Transfer System for Secondary Education Department
2	Finance	Nivesh Mitra
		PRERNA
		e-Pension System
		Koshvani:
		Mahila Samman Kosh
3	Infrastructure & Location	Bhulekh
		Srishti
		Transit Pass Mining
		Common Service Centre (CSC)
		State Wide Area Network (UP-SWAN)
		State Data Centre (UPSDC)
4	Service	Jan Suvidha Kendra
		e-Seva
		e- Suvidha
		e-Nagar Sewa
		SPST
		DARPAN
5	Grievance	IGRS(Jansunwai)
		Lokwani
		e-Sathi
		AAPURTI
		e-Parinaypatra
		e-Tula

The description of UP government initiatives (as shown in table 2.1) are given below.

2.4.1 Education

The e-Governance projects that come in this domain are:

- a) **PARIKSHA (Paperless Recruitment for Intelligent, Knowledgeable, Skilled and Highly Able candidates):** Pariksha is an e-Governance project developed under the

“Implementation of National e-Gov App Store” that provides a complete solution for recruitment process. Nowadays, PARIKSHA is used by various recruitment agencies of Uttar Pradesh for recruitment. It won the “SKOCH Smart Technology Award 2015” for its services [53].

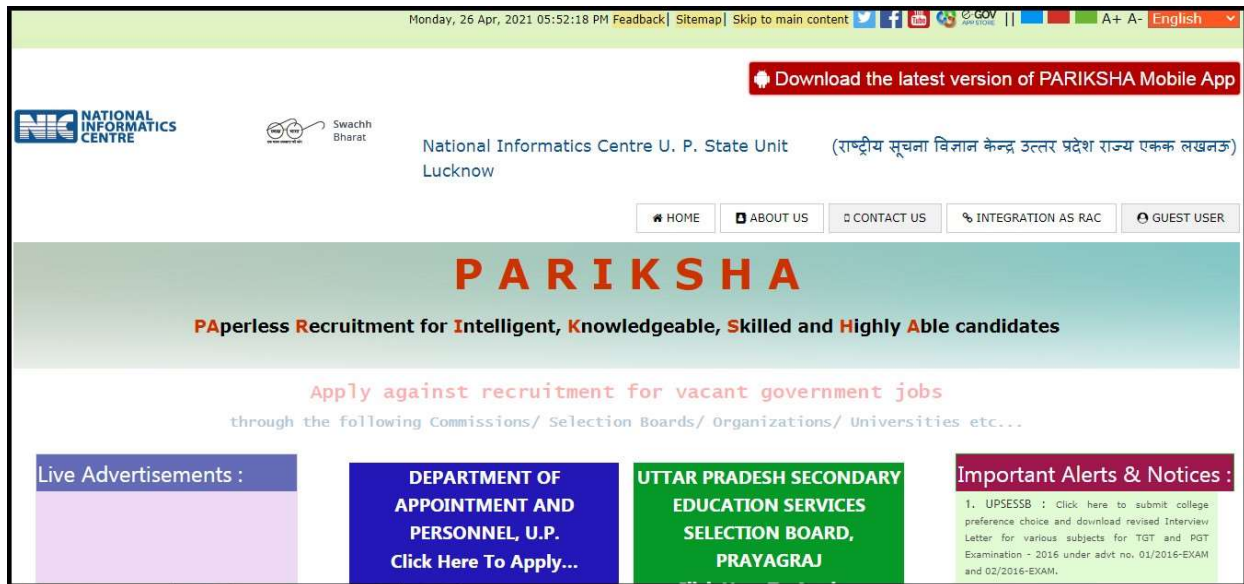


Figure 2.1: Pariksha Portal [53]

- b) **e-Madarsa:** It was developed in Lucknow by the NIC in Uttar Pradesh and its purpose was to monitor and control the educational system of the Madarsas. The government of Uttar Pradesh has made the registration for all the Madarsas compulsory by uploading all the relevant documents through e-Madarsa Portal. Madarsa Board provides the fund and education facilities to all the Madarsas that have registered through this portal. Currently, this Portal has the data of more than 20,000 Madarsas after the state registered through this portal. It has helped the government to identify the fraudulent, fake and unrecognized Madarsa from the system [54].

Latest News **NEW** | प्रेस विज्ञापित स्कूटिनी वर्ष 2020 | ANNUAL EXAM RESULT 2020 | नोवेल कोरोना VIRUS COVID 19 की जानकारी के सम्बन्ध में

मदरसा पोर्टल का उद्देश्य - पारदर्शिता, शिक्षा की गुणवत्ता में सुधार, प्रक्रियाओं का सरलीकरण

उत्तर प्रदेश मदरसा पोर्टल

आधुनिक युग में नवीन तकनीक के उपयोग से ही व्यवस्था में पारदर्शिता एवं जवाबदेही लायी जा सकती है। इस सिद्धान्त का अनुसरण करते हुए 30/08/20 सरकार विशेष पोर्टल के माध्यम से मदरसों को एकीकृत पटल पर लाने हेतु प्रयासरत है।

सभी मान्यता प्राप्त मदरसों का पोर्टल पर पंजीकरण अनिवार्य किया गया है। पोर्टल के माध्यम से ही परिषद की मुंशी/ मौलवी (सेकेंडरी) / आलिम (सीनियर सेकेंडरी) / कामिल एवं फाजिल की परीक्षायें वर्ष 2018 से सम्पन्न कराई जा रही हैं।

पोर्टल तथा योजनाओं के आनलाईन क्रियान्वयन से परिषद के कार्यों में पारदर्शिता गुणवत्ता एवं विश्वसनीयता लायी जा सकेगी।

शुभारंभ दिनांक-18/08/2017

Yogi Adityanath
Hon'ble Chief Minister
Government Of Uttar Pradesh

Shri Nand Gopal Gupta "Nandi"
Hon'ble Minister
Minority Welfare, Waqf & Hajj

Shri Mohsin Raza
Hon'ble Minister of State
Minority Welfare, Waqf & Hajj

Figure 2.2: e-Madarsa Portal [54]

- c) **SAKSHAM:** It is a scholarship management system which provides the scholarship to the students of Uttar Pradesh. The students of BPL families are also taking scholarship through this portal. The “Saksham” system has been designed to ensure timely transfer of scholarship directly to the bank accounts of the students [55].

Login | Registration | Student Profile | Institute Profile | Report | Status | Grievance Redressal System | Contact Us | Help | Demo Video for Students **NEW**

छात्रवृत्ति एवं शुल्क प्रतिपूर्ति ऑनलाइन प्रणाली उत्तर प्रदेश

Scholarship and Fee Reimbursement Online System

STUDENT | INSTITUTE | DEPARTMENT | REPORT | STATUS | GRIEVANCE REDRESSAL SYSTEM | CONTACT US | HELP | DEMO VIDEO FOR STUDENTS **NEW**

छात्रवृत्ति और शुल्क प्रतिपूर्ति ऑनलाइन प्रणाली
उत्तर प्रदेश सरकार

मुख्यमंत्री अभ्युदय योजना में पंजीकरण हेतु यहां क्लिक करें

Figure 2.3: Saksham Portal [55]

- d) **Online Teachers Transfer System for Secondary Education Department:** It was developed by the NIC with the coordination of Department of Secondary Education, and Uttar Pradesh government. Its purpose is to enable smooth and transparent transfer of the teachers in Uttar Pradesh. It was inaugurated by the Hon'ble CM Shri Yogi Adityanath on 5th June 2018 [56].

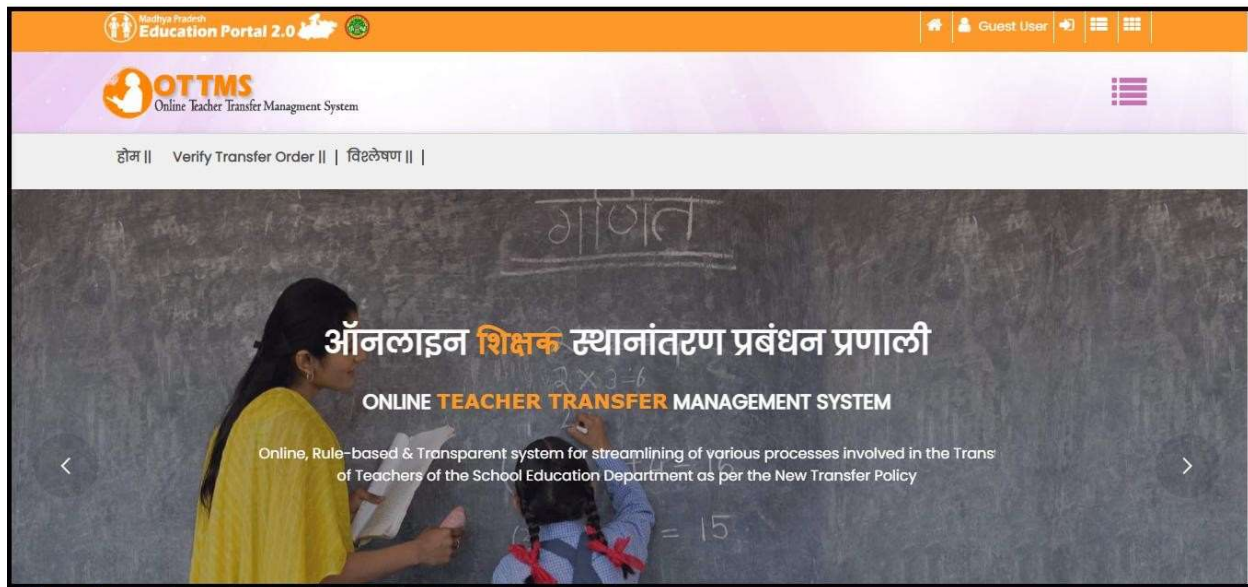


Figure 2.4: Online Teachers Transfer System [56]

2.4.2 Finance

- a) **Nivesh Mitra:** It is a single Window System developed by the Uttar Pradesh Government for creating friendly environment in industries. It also helps in monitoring and controlling the businesses in Uttar Pradesh[57,58, 59].
- b) **PRERNA (Property Evaluation & Registration Application):** It has been designed to provide complete automation in the registration process to the citizens of the Uttar Pradesh under the Stamps & Registration Department [60].
- c) **e-Pension System:** It helps the citizen in providing secure pension services. It covers those employees (except- IAS, IPS, Police & Secretariat services) of the states whose

salaries are being drawn through IPO system. Currently, it works in 75 districts of UP and covers more than 12 lakhs employees. It is a good initiatives for pensioners to enhance transparency [61].

- d) **Koshvani:** It is developed to manage the financial activities of the state; thus ensuring transparency in the functioning of the state government [62].
- e) **Mahila Samman Kosh:** It is one of the ambitious schemes of UP Government for women empowerment. It helps in monitoring and providing medical facilities to the women as well as girls who are victims of heinous crimes. All FIRs registered by the women are directly accessed by the Nodal Police Officer for taking quick action [63].

2.4.3 Infrastructure and Location

- a) **Bhulekh:** This portal helps to manage the transparency and reliability in the processes that are related to land spaces in Uttar Pradesh. Basically, Bhulekh is a land record keeping portal developed by NIC (National Informatics Portal). It contains all the information of the owner and buyer of the land [64].
- b) **Srishti:** It is a web-based GIS (Geographical Information System) framework and has been designed for the preparation of welfare schemes to overcome regional disparities. Anyone can use this framework without any prior knowledge of GIS (Geographical Information system) too. It works at the district level, Tehsil level, Block level, and the regional level [65].
- c) **Transit Pass Mining:** It provides the information about the geological and Geochemical surveys to the government. It also gives the complete details of mineral deposits. It processes prospecting/mining lease applications, under the MCR 1960 & UPMMCR 1963 demarcation of mining areas and monitors the mineral revenue [66].

- d) **Common Service Centre (CSC):** It is one of the common platforms of the Government for providing services such as Caste, Income, Domicile, Birth/Death certificates, Khatauni, etc., to the citizens of Uttar Pradesh [67].
- e) **State Wide Area Network (UP-SWAN):** It is one of the big and core networks of Uttar Pradesh. It connects the blocks, Tehsils and districts with the capital of the State [68].
- f) **State Data Centre (UPSDC):** The state data centre is implemented by the state, and it is one of the core infrastructure projects to have been implemented. UPSDC is a central storage for the information, data and services for all the departments of the Uttar Pradesh Govt. [69].

2.4.4 Service

- a) **Jan Suvidha Kendra:** Started from the Collectorate's campus in Jhansi district of Uttar Pradesh on 10th June, 2009, now operational in many other districts of the State. This platform has been developed for the contactless, quick response, cost-time-labor saving, and easily accessible services 24X7. This project provides speedy and qualitative disposal of public grievances [70].
- b) **e-Seva:** e-Seva is a service that is provided by the government or any institution. The main aim of e-Seva is to provide fast and well managed public services to the citizen such as certificates, utility bills, and redressing grievances. The e-Seva is a new form of service for the citizens [71].
- c) **e-Suvidha:** It provides an interface between the citizens and the government departments and developed by NIC. e-Suvidha has been projected as a service for implementing public utility interface across the state of Uttar Pradesh [72].
- d) **e-Nagar Sewa:** It has been developed to provides services to the urban citizens. It was launched for the first time in Uttar Pradesh and Andaman & Nicobar Islands became the second state to provide the service. e-Nagar Sewa covers 60 towns in UP for providing online services to the citizens[71].

- e) **DARPAN:** It was developed by the NIC unit of Uttar Pradesh for displaying departmental information. It also helps the government for monitoring the department by using single frame [73].

2.4.5 Grievance

- a) **Integrated Grievance Redressal System (IGRS):** It is designed and developed by NIC. It enables the citizens to register complaints/ Demands and Suggestions. An example of IGRS is the *Lokwani* which is a public private partnership programme. It has helped in improving good governance by causing certain structural and functional changes in the district and local administration of Sitapur district. The information can easily be accessed by the people whenever it is required [74].
- b) **Lokwani:** Lokwani is a Hindi term which means “*The Voice of People*”. It is a public private partnership-based project and it started on 9th November 2004 in Sitapur district under the government of Uttar Pradesh. It provides vital information such as the Birth/Death Certificates details, Income proof Certificate details, Land records, Job opportunities under a single window. Owing to its success in Sitapur district and it was disseminated in other districts of Uttar Pradesh as well [75].
- c) **e-Sathi (Janhit Guarantee Act):** e-Sathi of UP Government provides Government services to the citizens by using citizen service centers by minimizing effort and time. This project has been implemented by the UP government in 75 districts. The certificates issued under e-Sathi are also integrated with the Digital Locker and some scheme of the Government of India such as ration card, employment registration, etc., [76].
- d) **AAPURTI:** It is a bilingual portal and works on two languages, i.e., Hindi and English. Its purpose is to provide Food related information as well as the information of civil supplies departments [77].

- e) **e-Parinaypatra:** It works for issuing Marriage Registration Certificate to couples whose marriage has already been solemnized. It is a unique system, where registrant will get the Marriage Certificate online without going to the Marriage Registrar Office after authenticating the details from Aadhaar. It issues the marriage certificate to both (Husband & wife) [78].

- f) **e-TULA:** It is an integrated solution developed using open source technology. Its purpose is to maintain an effective system for issuing Licenses /Verification Certificates. It is said to be one of the most successful implementations of the State government. It works as a central Web and maintains connectivity with 151 labs of the departments in 75 districts of the State. It categorizes the web applications into three major types: 1. Department Portal; 2. Citizen Online Services Portal; and 3. Officials Dashboard [79].

2.5 SUMMARY

Based on the elaborative discussion in this chapter, it has been observed that the state has been active in many key areas where the e-Governance services has been provided. The level of success of these services, however are required to analysed properly as it has been seen that despite very good intension and efforts, many such projects has not been successful or even failed due to variety of reasons. These reasons have also been broadly described in this chapter. The Government of Uttar Pradesh needs to engage the users successfully in the implementation e-Governance.

The state of UP has recently taken many new initiatives on making its schemes reach the masses. It has also achieved success on this front as some of the projects have been very successful while some others needed to expand in all disticts of the state such as Lokvani project.

Last few years have seen tremendous growth in providing e-services to the citizens of state, however, among the major hurdles as agreed by experts is the suitable IT infrastructure backbone and the connectivity. Proper redressel mechanism may also be an issue in some e-Governance

projects; especially those related to the domains grievance as shown in table2.1. The citizens of Uttar Pradesh can take better services from the government portals. After presenting a detailed picture in this chapter about the growth story of e-Governance projects in state and general observations and hurdles security issues. The next two chapters of this thesis will try to understand the real issues from actual users perspective through the detailed user survey of two popular state portals.



Chapter 3

Case Study 1: State Public Service Tribunal (SPST) Portal



CASE STUDY 1: STATE PUBLIC SERVICE TRIBUNAL (SPST) PORTAL

3.1 INTRODUCTION

In the previous chapter, various e-Governance initiative taken by state government have been discussed.

Over the years, both the Central and State Governments have taken major initiatives for people in an era of e-Governance. Sustained efforts have been made at multiple levels to improve the delivery of public services and simplify the process of accessing them. The e-Governance in India has steadily evolved from computerization of Government Departments to initiatives that encapsulate the finer points of Governance, such as citizen centricity, service orientation and transparency. Lessons from the previous e-Governance initiatives have played an important role in shaping the progressive e-Governance strategy of the country [80, 81].

In order to operate web administrations, e-Governance works in four categories:- (i) Government to Customer (G2C), (ii) Government to Government (G2G), (iii) Government to Business (G2B) and (iv) Government to NGO (G2N). These four classifications help to collect data and to provide services to all through the electronic system [82, 83].

There are diverse online administrations under the National e-Governance Plan such as Banking administration, Income Tax administration, Insurance, online Passport administration, e-Office, UID (Unique Identification) venture, Agriculture administration, e-District, e-Panchayats, Employment trade, Road transport, Education, e-Courts and National e-Governance Service Delivery Gateway, etc. Government needs to include the critical resources in this bracket for both, better establishment and improved implementation [84].

3.2 RELEVANT CONTRIBUTION

Before the case study of SPST portal of the state. Let us have some discussion relevant contribution of e-Governance systems reviews, surveys and analysis. In order to know some implemented key outcomes. These studies are expected to help us in detailed case study that has been discussed on the basis of user survey and analysis. Many authors defined e-Government in different perspectives, but all have truly defined based on the time of that period [85, 86, 87, 88, 89,90].

In 2001, Richard Heeks examined the impact of new data on objectives of good administration in his paper. This paper also describes the commitments of e-Governance: - (i) improving government forms; interfacing residents; and building outside communications [48]. Next year Cook et al. defined the Electronic Government as “e-Government having four dimensions for major functions and activities of governments: e-Service, e-Management, e-Democracy & e-Commerce [91].

Roumeen, Islam (2003), creator of the “Information stream and e-Governance” investigated the connection between data streams and administration with the goal to analyze how the accessibility of data may influence administration [92].

Saxena, K.B.C. in 2005 states that in many countries the e-Governance guarantees a more resident driven government and reduces the operational expenses. The paper investigates the vital traits of an administration driven activity under the standard amazing e-Governance (e2-administration), and portrays an approach for guaranteeing such greatness in the usage of e-Governance [93].

In 2006, Danish Dada published a book “e-Governance Failures”. This book provides a status of e-Governance in developing countries [21].

Iyer & Srivastava (2014) proposed a theoretical model to determine the major factors which affect the intention to adopt e-Government services delivered to the public, especially through the e-Government portal. Based on various literature reviews, this paper identified six factors, which are computer anxiety, computer self-efficacy, responsiveness, familiarity, website design and security/privacy [94].

Komba & Ngulube (2015) derived a conceptual framework based on various models like Davis' model, Rogers' model, DeLone and McLean model, Trustworthiness and the UTAUT model. The factors used in this study are social influence, system quality, user satisfaction, compatibility, perceived usefulness, trust, information quality, relative advantage, and image. The conceptual framework of this study addresses the key factors related to the adoption of e-Government. The factors were tested and tracked with the aid of a survey that included 448 respondents [95]

According to Bhushan Jadhav et al., as stated in their study in (2018), there are many researchers who have proposed their views on big data enabled e-Governance. This research paper aims to provide a practical approach for integrating big data analytics in e-Governance based on hadoop [96].

Sachin Sahu et al.,(2019), states that e-Governance is one of the most critical and contemporary topics for research in India, which deals with services provided by the government to the citizens in open network. This paper studies the initiatives of the UP Government on e-Governance. This paper also describes the challenges faced by the government in developing e-governance projects [97].

Table 3.1: Some Relevant Studies e-Governance

<i>Sr.No</i>	<i>Area of Research</i>	<i>Name of Author</i>	<i>Year</i>
1.	E-government and e-governance: the future isn't what it used to be [98]	Marche. S	2003
2.	Do more transparent governments govern better [92]	Roumeen Islam	2003
3.	Enabling e-governance through citizen relationship management-concept, model and applications [99]	G. Kannabiran	2004
4.	e-Governance [88]	P.Perri	2004
5.	Towards excellence in e-governance [93]	K.B.C. Saxena	2005
6.	The Failure of e-Government in developing countries [21]	Dada, D.	2006
7.	Agricultural e-Government in China, Korea, Taiwan and the USA. Electronic Government [85]	Tzong-Ru Lee et.al	2008
8.	A study of e-government and e-governance: An empirical examination of municipal websites [100]	MJ D'agostino	2011
9.	Open government and e-Government: Democratic challenges from a public value perspective [101]	Teresa M. Harrison etc.	2012
10.	Factors Affecting Citizen Intention to Adopt E-Government Services in India [94]	Iyer, J., & Srivastava, R. K.	2014
11.	Factors That Influence E-Government Adoption in Selected Districts [95]	Komba, M. M., & Ngulube, P	2015
12.	A Practical approach for integrating Big data Analytics into E-governance using hadoop [96]	Bhushan Jadhav	2018
13.	E-governance diffusion: Population level e-service adoption rates and usage patterns. [102]	Solvak, Mihkel, et al.	2019
14.	e-Governance Initiatives and challenges in the state of Uttar Pradesh [97]	Sachin Sahu et.al	2019

In India, Uttar Pradesh is one of the most populous state where government is working to expand the area of e-Governance administration. For proper development of administrations, the government is extending the Internet facility at town level in all the regions of the State. As already discussed in the previous chapter many e-Governance projects are running in UP with the help of Central and itself. Besides this, in many projects, the UP government also has authority to set up projects of e-Governance [103,104].

In UP, Centre for e-Governance (CeG) works with the Government Departments, Private and Public Organizations [104]. It is an autonomous and independent body of UP Government constituted under the Department of Information Technology and Electronics (DITE). CeG supports the Government and acts as a Secretariat and full time internal advisory body in undertaking the e-Governance projects. It analyzes the key issues in e-Governance process, after that, it helps to develop plans which can provide solutions for the identified problem. It also explores the nature of interaction between the citizen and various agencies of the Government and to suggest deployment of technology driven solutions.



Figure 3.1: Centre for e-Governance [104]

e-Governance projects are running in different domains such as education, finance, infrastructures, location, services, grievances, etc. As already discussed in the previous chapter a number of some of the prominent e-Governance projects of UP government launched earlier are: Lokvani, e-Suvidha, Koshvani, etc.

Lokvani began in 2004 in Sitapur district of UP for giving data like birth certificates, death certificates, income certificates, land record, etc. [105, 106]. e-Suvidha gives an interface to residents to cooperate with the government offices. Administration of Uttar Pradesh has chosen to make and build up an electronic association between the regular resident and the government departments under the NIC; this undertaking called e-Suvidha [107,108]. Koshvani venture is created to keep up the money related transaction of the state and to achieve transparency into Governmental transactions. It is a useful mechanism for monitoring the flow and use of funds, more like a Financial Controller of various offices.

3.3 CASE STUDY OF STATE PUBLIC SERVICE TRIBUNAL (SPST)

The numbers of cases in the state on different issues are constantly increasing in court. This increases the workload on employees of court. Due to this, the disposal of cases often gets delayed. The money and time of people are wasted due to delays in the hearing and verdict of these cases. In order to resolve this situation, the UP government established the Public Service Tribunals on 24th Nov 1975, which deals with different cases such as: - (i) employment matters of Government servants, (ii) local authorities' employees, and (iii) employees of companies.

The aim of Public Service Tribunals is to give quick and inexpensive justice to employees. As per the state government ordinance, after the establishment of the tribunals, such suits should be barred from being filed in the subordinate courts. As per the tribunal's service, its promises to offer justice to the litigants comes with strong and clear commitment such as:-

- Fair and speedy judgments of cases,
- Speedy processing and prompt action,

- Efficiency and professionalism,
- Co-operation and transparency,
- Courtesy and understanding.

The SPST portal purviews the petitions on service matters filed against the U.P. Government. The public servant can file a petition on any given service matter against the department or organization of the government or authority, corporation or a body owned or controlled by the U.P. State Government [109].

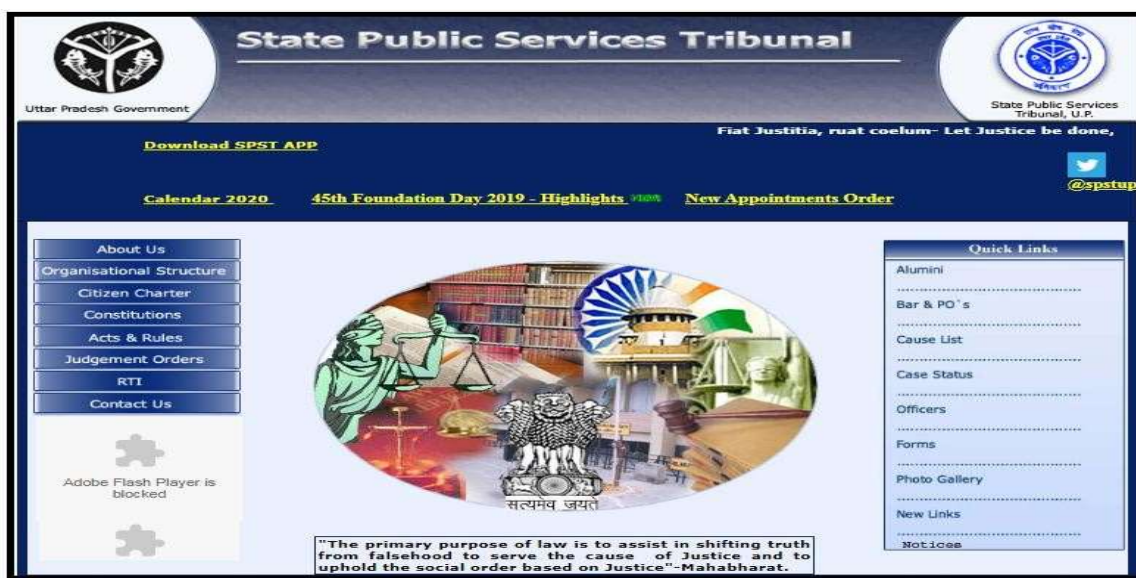


Figure 3.2: SPST Portal [109]

3.3.1 Administrative Structure and Departmental Chart:

In order to understand the SPST portal, it is important to know the administrative structure of the same. The Tribunal consists of a Chairman, two Vice Chairmen and such numbers of other Judicial and Administrative Members; the board must not have less than five in each category, as may be determined by the State Government. If the Chairman is unable to discharge his functions owing to reasons stated there in the Vice Chairman can preside over. Similarly, if the Vice Chairman is likewise unable to discharge his/her duties or the office of the Vice-Chairman also is vacant, any other designated member as determined by the special or general order of the state Government can preside over the case in hearing until the Chairman resumes the duties.

Registrar is the head of office and D.D.O. of the State Public Services Tribunal. The Registrar shall have the custody of the records of the Tribunal and shall exercise such other functions as are assigned to him under these rules or by the Chairman by separate order.

A. Joint Registrar (J):

Joint Registrar (J), in this hierarchical set up, is from the Provincial Judicial Service in status of Civil Judge Senior division. He/she exercises functions as are assigned by the Chairman and the work delegated by the registrar. JR supervises and manages the functions of the following sections:

B. Joint Registrar (E):

Joint Registrar (E) is from the Provincial Civil Service (Executive). JR (E) exercises functions as per the duties assigned by Chairman and the work delegated by the registrar. He/she supervises and manages the functions of the following sections:

The State Government determines the nature and categories of the officers and other employees required to assist the tribunal in the discharge of the Tribunal's functions. The state government also provides the tribunal with officers and other employees as they may think fit. The officers and other employees of the tribunal discharge their functions under the general superintendence of the Chairman.

Government may appoint a public servant or a legal practitioner, to be known as the presenting officer, to present its cases before the tribunal. Presently there are thirteen presenting officers including the in-charge presenting officer.

There is an association of advocates practicing in the tribunal which is called The State Public Services Tribunal Bar Association, established in 1976.

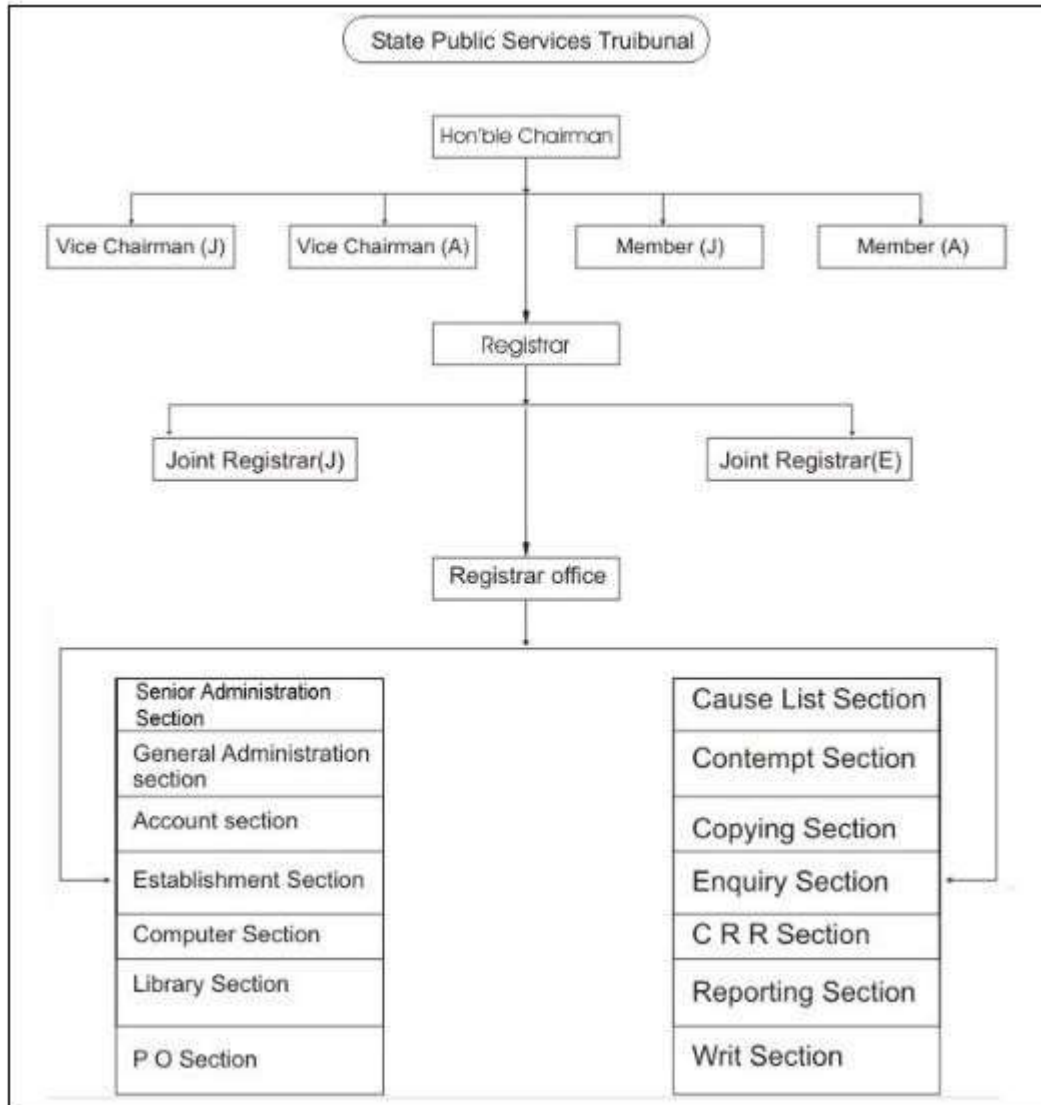


Figure 3.3: Hierarchy of Officers in SPST [116]

3.3.2 Types of Petition Sections

Mainly there are two types of petitions- (a) Claim Petition & (b) Contempt Petition.

A. Claim Petition:

This petition can be filed by any person who is, or has been, a public servant. The petitioner can appeal if he/she has been unfairly dealt with or treated by his/ her employer in a manner which is not in conformity with any contract.

B. Contempt Petition:

On the basis of disobedience/ non-compliance of the order of the court or a part of the order of the court, applicant can file a contempt petition. In contempt petition, the respondent should be mentioned by name.

3.3.3 Sections of the Tribunal

There are seven sections in the department other than Accounts, Establishment, Library, Computer, and General Administration. These are reporting section, claim (writ) section, contempt section, cause list section, copying section, central record room section and enquiry section.

A. Reporting Section:

New petitions are filed in this section along with all the related documents. This section maintains a register called Inward Register with the diary no., nature of application and other details

The reporting section scrutinizes that petition and, if found correct, then only the petition is moved to the admission bench. If the admission bench admits the case, then the bench fixes a date for filing CA / WS (Counter affidavit / Written Statement) or objection on Interim Relief (if any) from the respondent.

B. Claim Petition (Writ) Section

This section maintains all the information of every claim petition on separate registers, that includes application numbers, date of filling and other details. It maintains following registers

i. Stage Register :

It contain claim petition number, advocate name and next hearing date.

ii. Date wise Claim petition Register :

It contain date of hearing, petition number and petitioner name etc.

iii. Claim petition-wise disposal Register :

It contains petition number and disposal related details.

C. Contempt Section :

Function of this section is similar to that of the Claim Section. This section also maintains the same register as maintained in the Claim Section with two additional entries that is old claim number and date of the decision of old claim.

D. Cause List Section :

This section collects the date-wise list for admission / hearing in the court and includes the following sections:

- Reporting Section: For new cases for admission.
- Claim section: For those claim cases which have been fixed for hearing on that day.
- Contempt Section: For those contempt cases which have been fixed for hearing on that day.

E. Copying Section:

The function of this section is to issue certified copies of a final judgment delivered by the court. The file of the decided case again moves from this section to Claim/ Contempt section to maintain the records in specific registers and also maintain a disposal register.

F. Central Record Room Section:

This section keeps the files and related papers of decided cases month-wise and maintains the record in a specific register.

G. Enquiry Section:

Information regarding the status of the cases can be obtained from this section, headed by Munsarim (Enquiry). Any person desiring to ascertain any particulars relating to cases can make a search application, which is presented before Munsarim I/C Enquiry in question and answer form with a court fee stamp of Rs. 1. Search application can also be sent by post.

3.4 SURVEY AND ANALYSIS OF SPST PORTAL

One of the important task of the case study of this SPST is to know the access the impact of this project of the society. This has also been made essential in e-Kranti launched in 2015 as NeGP 2.0.

So, after study and analysis of the operations of SPST and the actual user's feedback and review to know more about how the users are satisfied about this portal. More specifically, we wanted to know if and where they face any issues and suggest improvements as solutions. Towards this intent, a questionnaire consisting of 50 questions was developed. The questions were based on our study of the portal and sought to address this thesis' objectives. The questionnaires were filled by the people of different ages, gender, places and people working in different government organizations as well as in private departments.

200 persons/respondents participated in the survey; the questionnaire was shared to various persons using a Google form, respondents were though mostly from Lucknow. Some of them also participated from other district, states and country. The analysis has been carried out in two stages, first on general awareness of e-Governance services and second on SPST portal.

3.4.1 Survey Results and Analysis on General Awareness

i. Progress of e-Governance in World, India & UP

This questions was about the growth and awareness of e-Governess of in outside country, in India and in the state of UP.

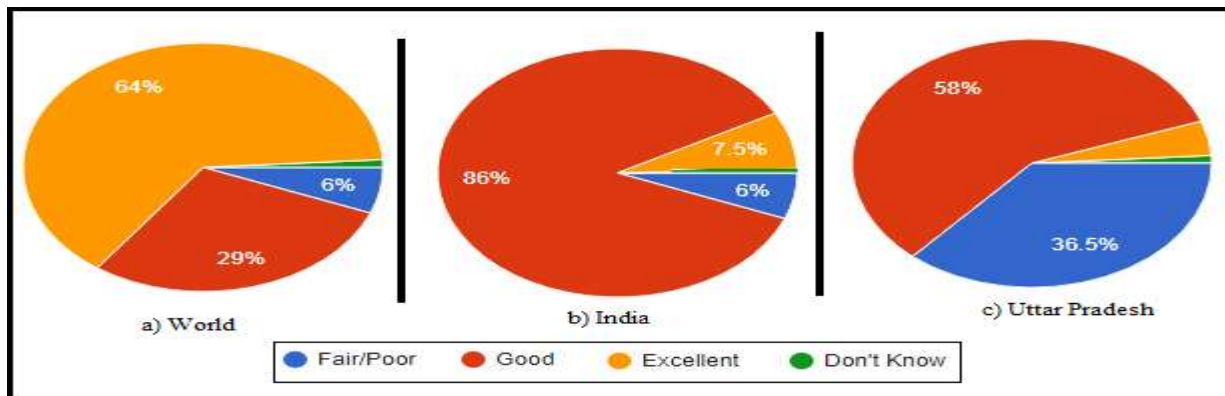


Figure 3.4: Progress of e-Governance at International, National & State Level

According to the survey, 64% of the people realized that the growth of e-Governance services are better in many other countries. In India, 86% of the people are aware about the progress of e-Governance projects, whereas in UP, the awareness level is just 58% as realized and respondent of various geographical locations (figure 3.4).

ii. Actual User of e-Governance

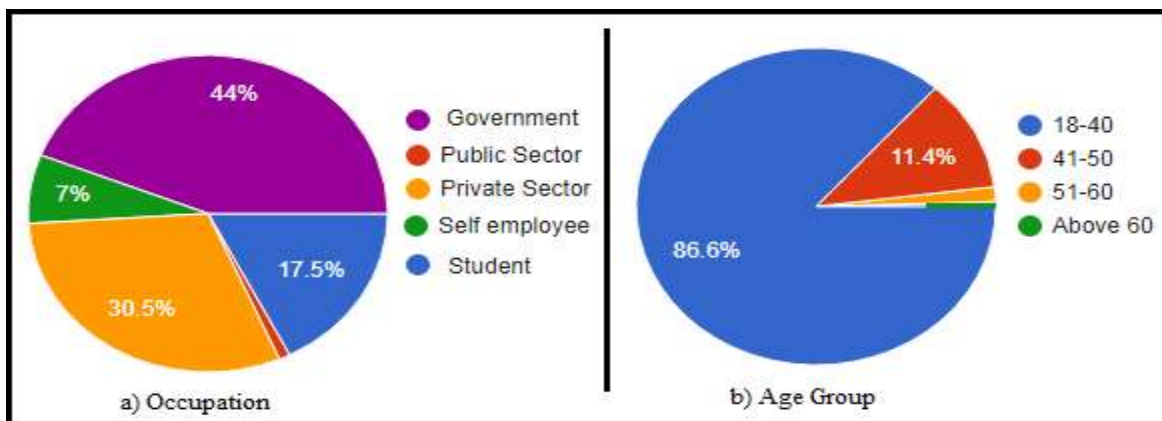


Figure 3.5: Users of e-Governance

Figure 3.5 states that the people of the Government departments followed by public sector employees are making extensive use of the e-Governance portal for various services in comparison to the other people (like public sector, private sector, students, etc.) As per the

results of figure 5(b), it was found that youngsters (at the age group of 18-40) are much more aware about the e-Governance services than any other age group of people.

iii. **Barriers in e-Governance: security, infrastructure, administrative issues, etc.**

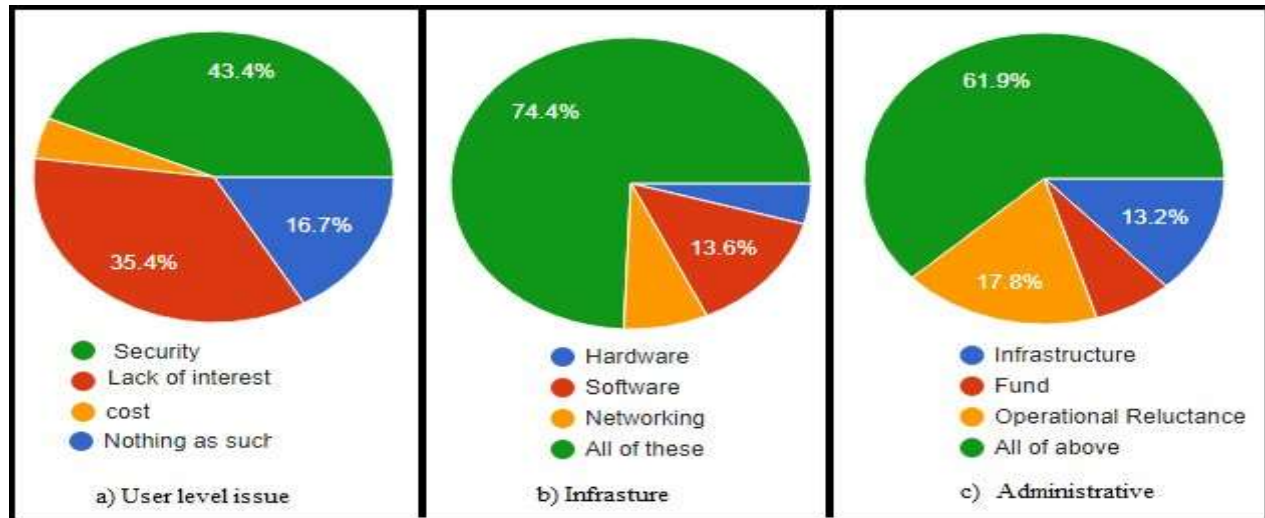


Figure 3.6: Issues in e-Governance

In reference to this question requesting the opinion of respondent towards issues such as security, infrastructure, administrative issues while using e-Governance services (figure 6(a)), as much as 41.33% of the respondents were of the view that security is the main issue followed by lack of interest on e-Governance in people. Infrastructure (figure 6(b)) is also an important issue in providing e-Governance services as almost three-fourth of the people realized that the proper infrastructure(Hardware, Software, Network and Internal etc.) is required for success of any of the e-Governance projects. Sometimes it occurs due to improper networking services. It was also realized from the survey that other infrastructure, operational reluctance, maintenance of equipments and fund availability are also important issues towards success of projects.

iv. Satisfaction Level of Users

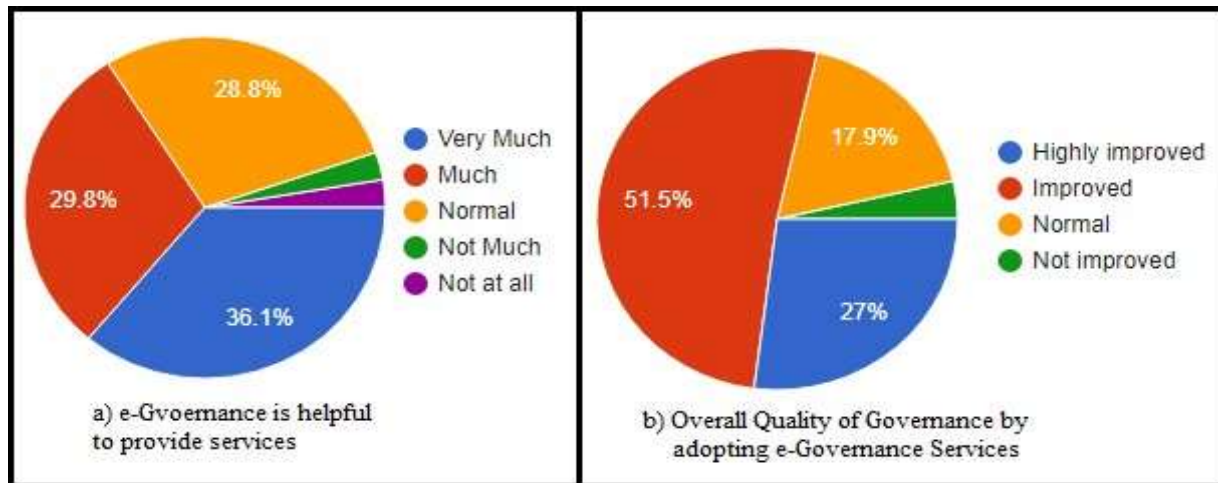


Figure 3.7: Satisfaction level of users

The outcome of the respondents states that the quality of Governance increases due to e-Governance (figure 3.7 (b)), unfortunately according to survey only 36.1% of people (figure 7(a)) are very much satisfied by the e-Governance services and another 29.8 are also overall satisfied. Adding the two numbers, around 2/3rd of the respondents are satisfied.

v. Need of computer knowledge, positive attitude & training of employees towards e-Governance initiatives

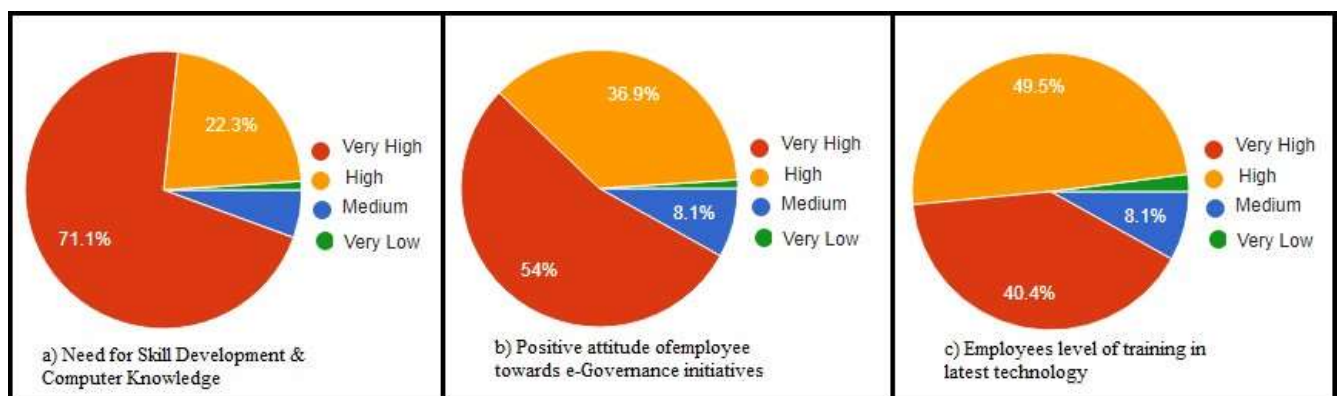


Figure 3.8: Employees training & attitude level

According to the survey, it is concluded that there is a need of skill enhancement and training on latest computer technologies (figure 8 (a) & (c)) for people and government employees in development of e-Governance initiatives. It is also found that positive attitude of the employees of various departments is also required for the growth and success of e-Governance (figure 8(b)).

Some of the important outcomes of this part of survey are:

- i. Lack of interest of people:** It appears from the survey that the awareness level among general public is low about the various e-Governance initiatives. Therefore, the government needs conduct awareness drive among general people towards the e-Governance activities, otherwise, despite the best efforts by the government, result may not be as fruit as expected.
- ii. Security:** A critical obstacle in implementing e-Governance is the privacy and security of an individual's personal data that he/she provides during e-Governance operations. Lack of security standards can limit the development of e- Governance projects that contain personal information such as income, medical history. Fortunately, it has been realized under e-Kranti policy of government to focus on cyber security aspects.
- iii. Fund (financial issue):** Limited financial resources are hurdle to implement and properly maintain the e-Governance projects. Further, regular maintenance and upgradation of the services also requires considerable funds to enable proper utilisation of the services.
- iv. Infrastructure:** Though the Internet users are growing very fast, still there is a major part of the Indian population which is not able to access e-Governance activities due to poor network infrastructure and connectivity. Though the GOI and the state have plans for major expansion of fiber networks to connect remote places, the present status is not so good, especially in the rural areas.

3.4.2 Survey Results and Analysis on SPST Portal

i. Awareness and usage of SPST Portal

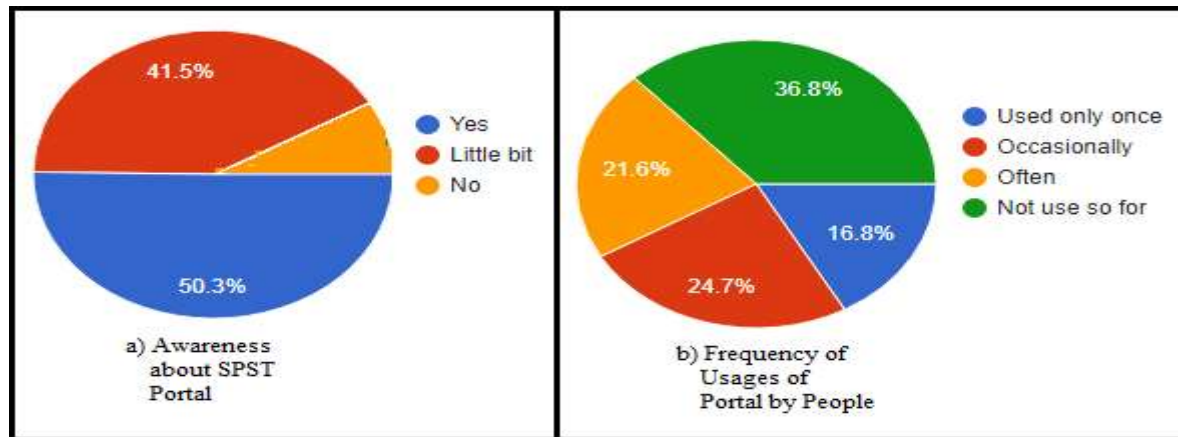


Figure 3.9: Awareness about Portal

From our survey of SPST portal, it is evident that the awareness level of this portal cannot be termed as good (i.e. 50.3%) also the frequency of usages of portal by people is also less (figure 9 (a) & (b)). This clearly indicates that the awareness among the possible users of this portal needs to be enhanced through various means of publicity. The frequency of usage is also low which means either the user doesn't have many grievances related to the portal or have less trust in the portal and find it better to address their issues otherwise.

ii. Opinion on Service Judgment in SPST

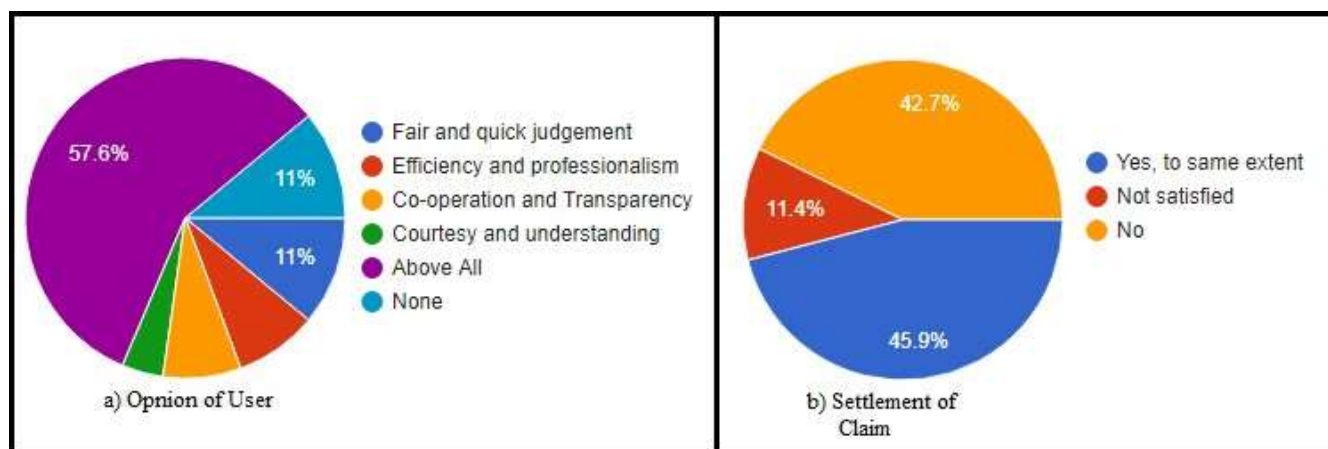


Figure 3.10: Opinion of user about Portal services

In our survey, only 11% of the people/ petitioners accessed quick and fair judgments on SPST portal (figure 3.10 (a)). It was also revealed that that the people who used this portal for their claim were also not very much satisfied (figure 3.10 (b)). As the satisfaction level of portal, as analyzed through our survey is low, certain steps need to be taken by the government to improve the functionality of the portal.

It is also found that the majority of people were not satisfied with the response time and claim settlement duration. Therefore, steps may be taken to reduce the response time and provide fair judgement for the satisfaction of all the concerned individuals/parties. This will definitely enhance the accessibility of portal and ensure efficient dispensation of the services for which it has been developed.

iii. Overall User Satisfaction & Suggestion about interconnectivity among all SPST portals

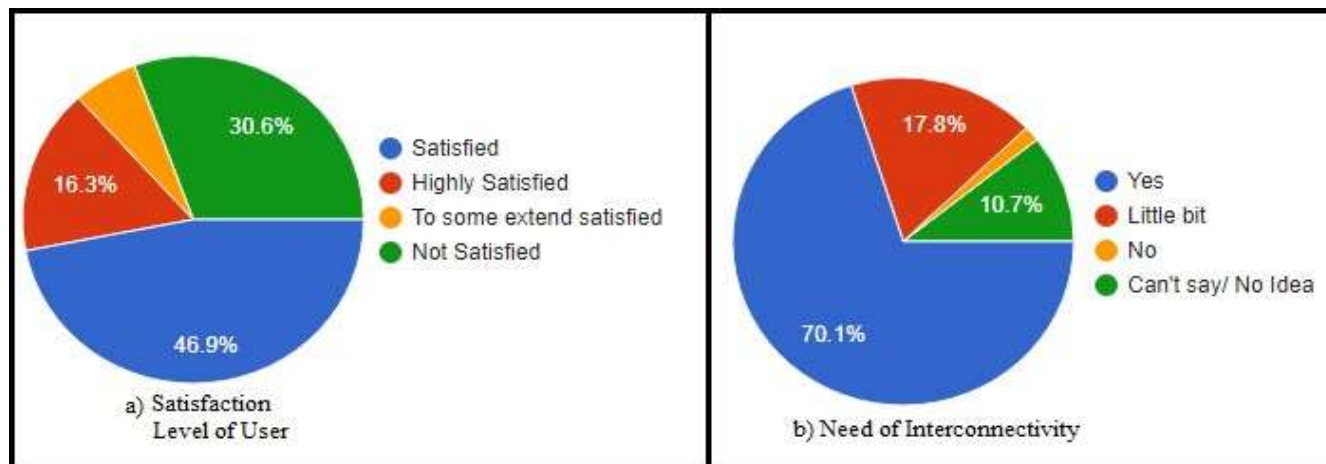


Figure 3.11: Satisfaction level about SPST

As indicated from the above questions, over 70% of the people call for interconnectivity among SPST's portals of different states in India. This is very significant observations from the point of view of users. Thus, the Government needs to focus on the issues that hamper the effective use of the services provided by SPST to users. This will increase the user satisfaction. The result has helped us to know to why the frequency of the usages is low. Grievance settlement within reasonable time is the basic expectation of any user who avails the services of SPST portal.

iv. Recommendations

Based on the response of people towards the usage of SPST portal, our analysis revealed a set of important recommendation.

- Awareness institutions must be established to raise the awareness among citizens because higher awareness automatically improves the accessibility of e-Governance services which ultimately raises the satisfaction level.
- The people are in fear due to security issue which occurs in online activities. So, must take necessary action against fraud cases.
- People are not satisfied by SPST portal claim, so it becomes responsibility of government to take necessary action against time delay or transparency in steps taken for solving user's problem.

3.5 SUMMARY

This chapter has provided a detailed review of structure and features of State Public Service Tribunal (SPST) portal of Uttar Pradesh government which was found through a user survey conducted online involving stakeholders, officials of SPST and others. Based on the analysis of survey results, we have identified some issues and possible enhancements to this portal and accordingly a set of recommendations have been suggested.



Chapter 4

Case Study 2: Jansunwai Portal



CASE STUDY 2: JANSUNWAI PORTAL

4.1 INTRODUCTION

The government is the authority to frame various welfare policies and get it implemented through various means. The citizens are the prime focus for any government while making and implementing any scheme. In a democratic setup, it is the responsibility of government to deliver the services in effective and efficient manner to make the visible changes in the citizen's life [110, 111].

Over the years, especially in the past decade in India, the e-Governance initiatives have become the key to the success of various initiatives, schemes and functioning of the governments toward offering better and improved types of services to the citizens [119, 120]. The effectiveness of e-Governance might be seen in all over the place. The developed nations have broadly utilized it while many of the developing nations are yet to completely acknowledge it. The key components like e-Administration, e-Citizens, e-Services and e-Society are the foundations to create different areas and utilizing innovation with expanded clarity and responsibility [112, 113, 114].

The basic principle of any grievances redressal system requires that the assured level of service delivery should be achieved and the right of a citizen be honored [115, 116, 117, 118, 119]. If it is not done then the citizen should be able to take recourse to a mechanism to have the grievance redressed. Administration and the citizens are intimately connected with each other in a way that the existence of one is not possible without the other in a civilized society. Therefore, there should be a broad concurrence between what the government does and what the people expect.

The citizen's grievance and their redressal mechanism in the state of U.P. have been taken care of mainly by a state e-Governance initiative launched in 2016. It has been claimed to be an

innovator and an important initiative directly involving citizens of the state by connecting them to various departments and authorities virtually to quickly listen the grievances and redressing them satisfactorily in a time bound manner [120, 121].

In view of the importance of this project, the main objective in this work has been to analyze the portal to know various aspects of its usages. Further, Due to social issues, unawareness, digital divide and other issues in a state like U.P., we have also tried to identify whether such issues have any impact on the overall growth of the e-governance services in the state.

4.2 FUNCTIONING OF JANSUNWAI PORTAL

It is notable that Uttar Pradesh state is the most popular state of the nation. Its population has expectedly crossed the figure of 230 million and majority of its population still live in rural area. Due to huge population, the public grievances are usually very high which often become a cause of worry for the state government to resolve in a time bound manner. In such a scenario, the traditional system of handling grievances by the administration often becomes insufficient due to difficulty in access to authorities, lack of accountability, and attitude among others.

Understanding this, The Government of Uttar Pradesh has come up with a complaint redressal framework i.e. Integrated Grievance Redressal System (IGRS) of Uttar Pradesh state popularly called Jansunwai. It is said to be the innovator toward this path to motivate others and set a milestone towards the compelling and effective removal of the complaints for the positive change of the general public which may drive the state of Uttar Pradesh to a progressive and successful state in e-Governance implementation.

The department of administrative reforms and public grievances launched the IGRS in 2016 for receiving, redressing and monitoring of grievances from the public. As per the information available on the IGRS official website [74], it provides the facility to lodge a grievance „online“ from any geographical location. It enables the citizen to track their grievances online being followed up with departments concerned and also enables to monitor the grievance. It is a web enabled application and can be accessed by ministries, departments, organizations through a personnel computer using an internet connection and an internet browser. Later on, a mobile app

has also been made available to access the portal. It's an integrated portal that means it combines all grievance redressal mechanisms which were being used prior to launch of this portal for various departments at one place. In 2018, a portal samadhan (www.samadhan.gov.in) was launched by state government as chief minister's helpline portal. Later, in 2020 the two portals were integrated and known as Jansunwai-Samadhan (jansunwai.up.nic.in)



Figure-4.1: Home Page of Jansunwai

As per the objective and purpose of this portal, a citizen can freely file a grievance, track the grievance lodged on all important platform and receive response to his satisfaction both in terms of quality and time. Along with lodging of complaints, citizen can also interact with Government/Departments/Offices in an easy and transparent manner.

The important components of this portal are:

- (i) Register grievance: - citizens can register their grievances on IGRS portal using registered mobile or email no.
- (ii) Track grievance: - once applicants have registered the complaint/grievance, they can track the status of the complaint online by using the reference no.
- (iii) Send reminder: - In case any applicant feels that their application or complaint is not considered and no notification was given regarding the grievance, one can send a reminder to the official through the same portal.
- (iv) Feedback: - for providing the feedback

The 11 types of complaint sources are integrated with Jansunwai portal. The aim of each source is to put the grievance on portal and mark to related offices for early solution. The information can be sent from concerned complainant to officer via SMS facility. The marking of grievances from senior officer's to junior is performed using hierarchical design. Initially (first level) marking of grievances is performed automatically while rest of the marking is performed manually. The sources of Grievances, their entry on portal and processing are mentioned in table 4.1.

Table 4.1: Integrated sources of Jansunwai Portal

S.No	Integrated Source	Purpose/Working
1.	Chief Minister References	Complaint received manually from CM/ CM Office is entered on IGRS portal as scanned copy. District magistrate of the concerned district will be responsible for time bound disposals.
2.	Chief Minister Helpline References	Complaint received CM helpline no. (1076) will be entered on portal and will be disposed through portal.
3.	Online References	Complainant can file the complaint directly to the concerned department through the grievance portal/app
4.	PG Portal References (Govt. of India)	Such complaints are transferred to state portal which are then forwarded from the CM office to the concerned officer for compulsory disposal through portal.
5.	DM/ SSP/ SP References	All the applications given to DM, SSP and SP offices along with applications coming through mail, fax, post etc. will also be compulsorily entered and disposed through the portal
6.	Financial Aid References	The citizens can apply for any financial aid, the district magistrate get it verified if the case is

		genuine.
7.	Sampurna Samadhan Divas etc. References	Such complains of citizens will also be uploaded on portal (through scanned copy) for tracking and disposal
8.	Deputy Chief Minister/secretaries/commissioner/ Minister References	Such manual complaints will also be put on the portal (with scanned copy) to mark the concerned officer for further disposal.
9.	Governance/ Board of Revenue/ Directorate References	The complaints received at Directorate levels are online forward to the concerned department officers for the speedy disposals.
10.	Commissioner/ IG/ DIG References	This level received the complaints in manual form and online mark to the concerned district under their jurisdiction for the disposal actions.
11.	Illegal Land Occupation/anti- corruption References	Complainant may upload to the portal with necessary and relevant attachments. Disposal of anti-corruption complaint will be dealt at the CM office level while the land related issue will be dealt by revenue dept.

4.3 SURVEY RESULT AND ANALYSIS

After the collection of data, it is very important to analyze the data to extract the desired information otherwise the raw data gathered on certain parameters will have no meaning. An unanalyzed data is merely a heap of certain hidden facts or information. Keeping in view the objectives of the study, the data were statistically processed by using appropriate design and techniques to draw appropriate inferences and conclusions.

A survey was conducted to test the research model for this study. A questionnaire was designed to gather the necessary information. The survey questionnaire was distributed among a total of 200 respondents. Descriptive statistics is used to summarize the group of statistical methods for quantitative data in a meaningful manner. The citizens' perspective of the e-Government system consists of ten independent variables and one dependent variable. The ten factors perceived were: *the ease of use, website quality, computer self-efficacy, personalization,*

familiarity, perceived risk, computer anxiety, security, perceived usefulness and local language. These were the independent variables; whereas, the *intention to use* was the dependent variable.

4.3.1 Demographic Profile of the Respondents

This section analyses the general and demographic profile of the respondents who participated in the survey. This will help in knowing whether the use of e-services has been fairly distribution among different demographic profile or not and the possible reasons for the same.

(i) Age group

As per our survey, the highest percentage of respondents is from the younger generation that is between the age group 21-30 years with 38.3%. If respondents of another category that is “upto 20” are also included then it becomes over 60.7%. So more than half of respondents are younger (upto age 30) who are usually very tech savvy, enthusiast and want fast services. 22.4% of the respondents are between an age group of 31-40 and 12.9% in the age group of 41-50 years. Only around 4% participants were from the age group of above 50 because this group is usually not accustomed to use the computer and online apps. Many of the elderly people, therefore could not participate in our survey.

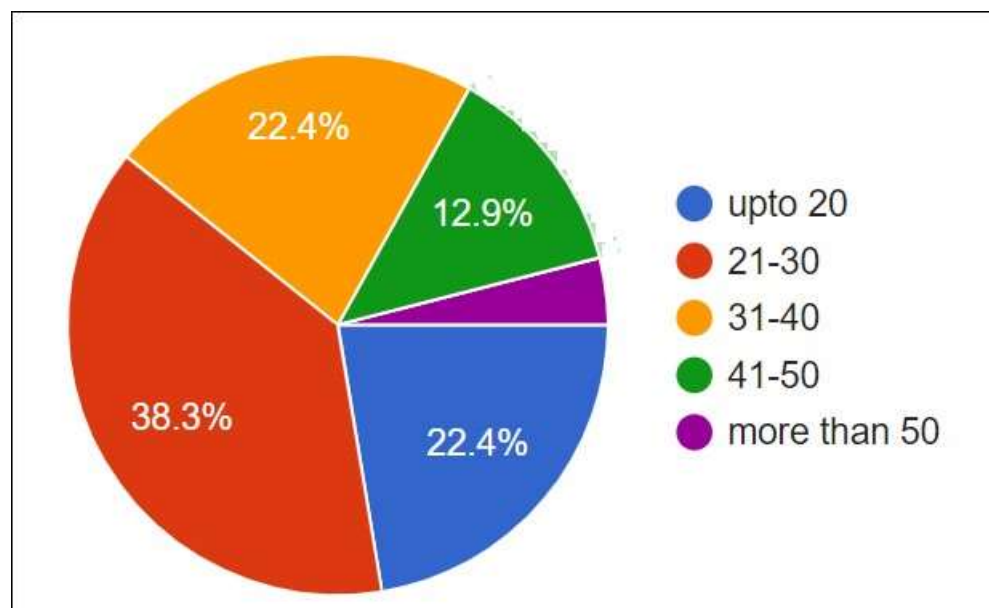


Figure-4.2: Age groups of the Respondents

(ii) Gender

There were 53.2% male and 46.8% female respondents. Male were more responsive and had used the portal more often than female.

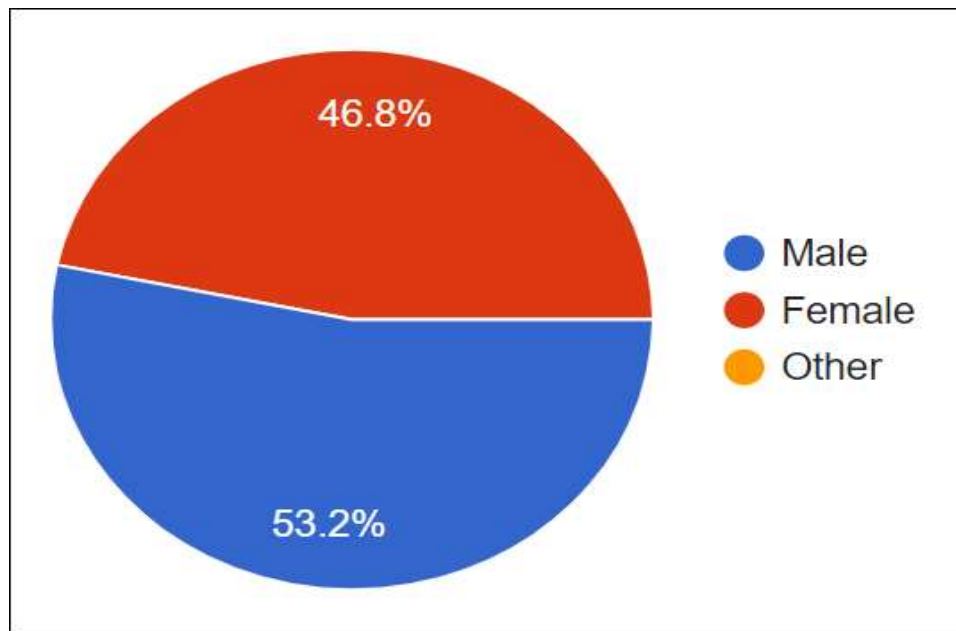


Figure 4.3: Gender distribution of the Respondents

(iii) Education Qualification

The participants were divided into five educational levels. Majority of the respondents are graduate (38.8%) and 20.9% are postgraduate degree, 31.8% are Under Graduate. Graduate and postgraduate topped in the respondents list, where very few respondents were from M.Phil/Ph.D. The overall study shows that the citizens should have formal education to be the participants of e-Governance services. Further analysis revealed that literate people get most of the benefits of e-Governance services.

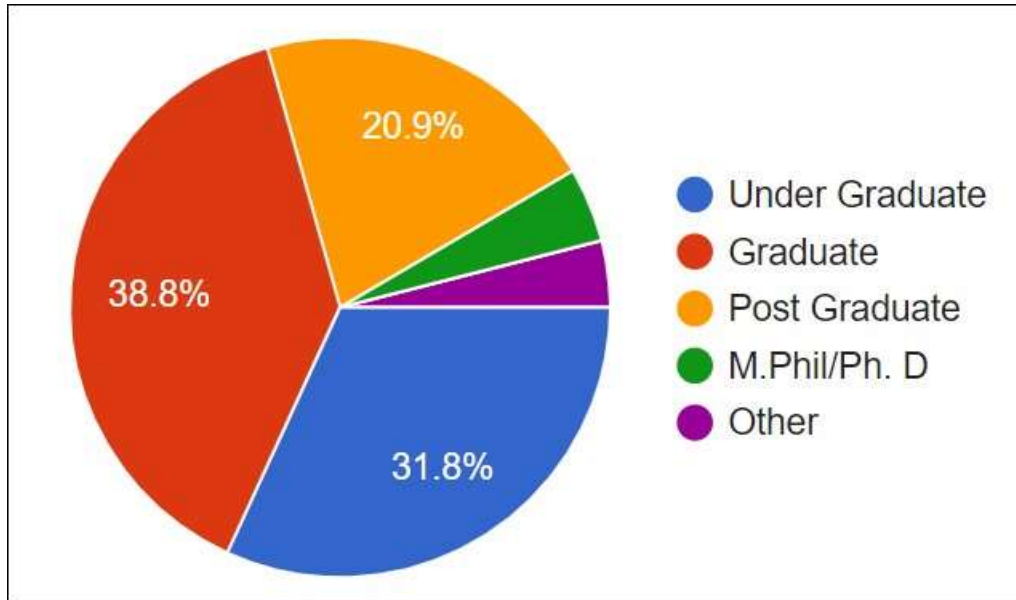


Figure 4.4: Educational Qualification of the Respondents

(iv) Occupation

Figure 4.5 shows the occupation wise distribution of respondent's using e-Governance services. Most of the users are students and govt. employees followed by private sector workers. As discussed in the one of the previous questions, students are enthusiast to explore any new technology. Closely followed by students are govt. servants, possibly due to busy office schedules they might have found e-services to be very convenient and time saving. Private sector employee also use these services (24.9%) behind only to government servants, possibly they are more engaged in offices than the formal ones.

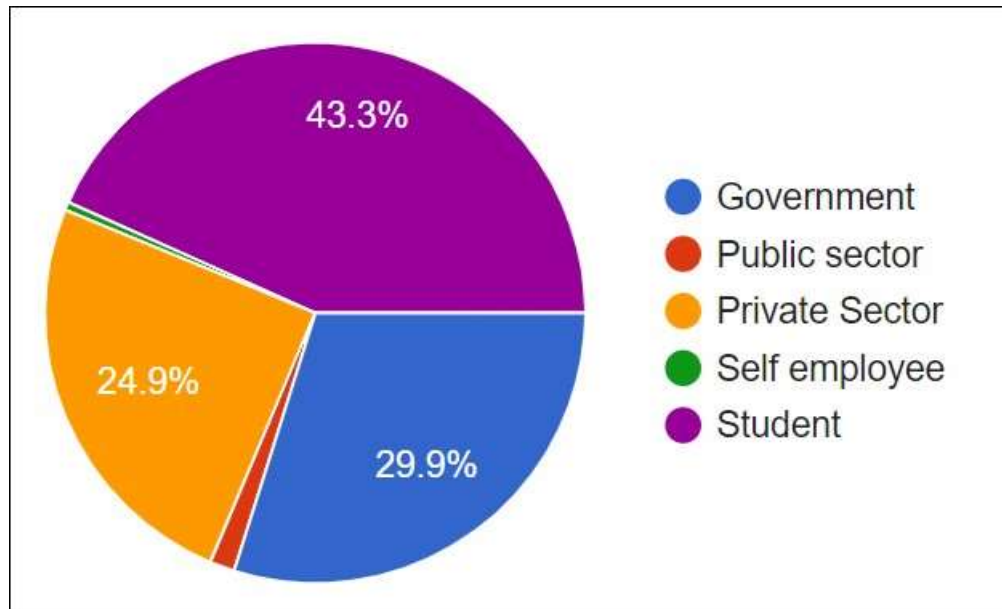


Figure-4.5: Occupation based Usage of e-governance services

(v) Marital Status

Though the participants were divided into four levels (figure.6), we found respondents only in two major categories. Married and unmarried, both the groups have been using the portals.

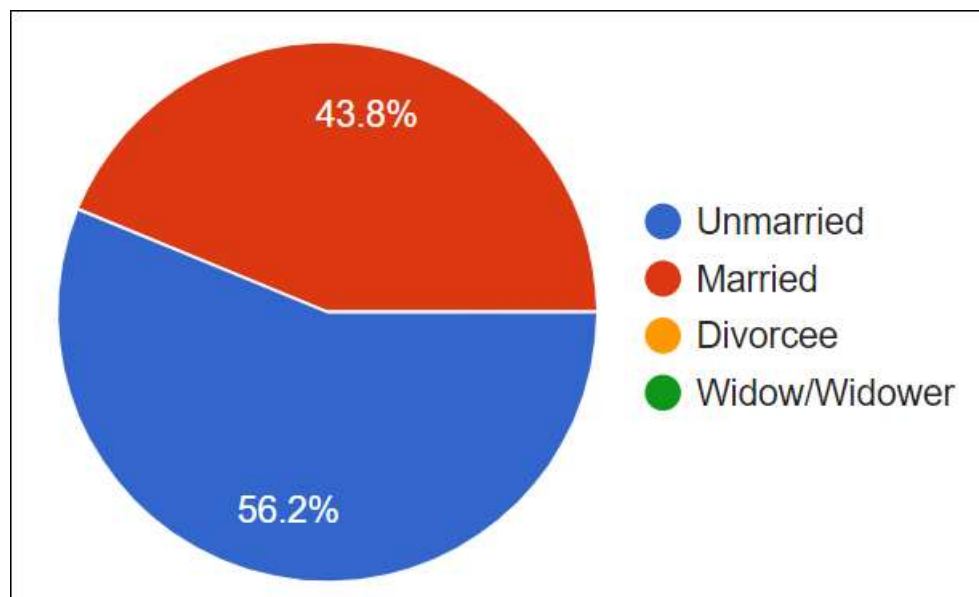


Figure 4.6: Marital Status of Respondents

Key Highlights of Analysis (III A)

Various questions about the nature, type, age, education, awareness etc. of the respondents has definitely given some useful information. It shows the usages pattern and awareness of the respondents based on the basic information. To summarize,

1. Young generation is more enthusiastic and hence use most of these services than the older ones.
2. More male than females use e services of the government, though women are not far behind
3. Literacy has a strong connection with e-Services. Graduates and post graduates use these services much more than others
4. Occupancy wise, more govt. servants than private employees use these services. But the students are the highest number of users. It reflects our point one above.
5. Over 25% of the people are not aware of Jansunwai portal and its objectives. It needs to be minimized through popularizing it.

4.3.2 Awareness and Barriers of e-Governance Services

In this part of the survey, our objective has been to know from the participants their general awareness, usages and issues of e-Governance services being extended specially in state.

(i) Awareness

The survey indicates that around 77% of citizens are aware about the e-Governance services provided by the Government. There are 22.6 % of the citizens are unaware about e-Governance services.

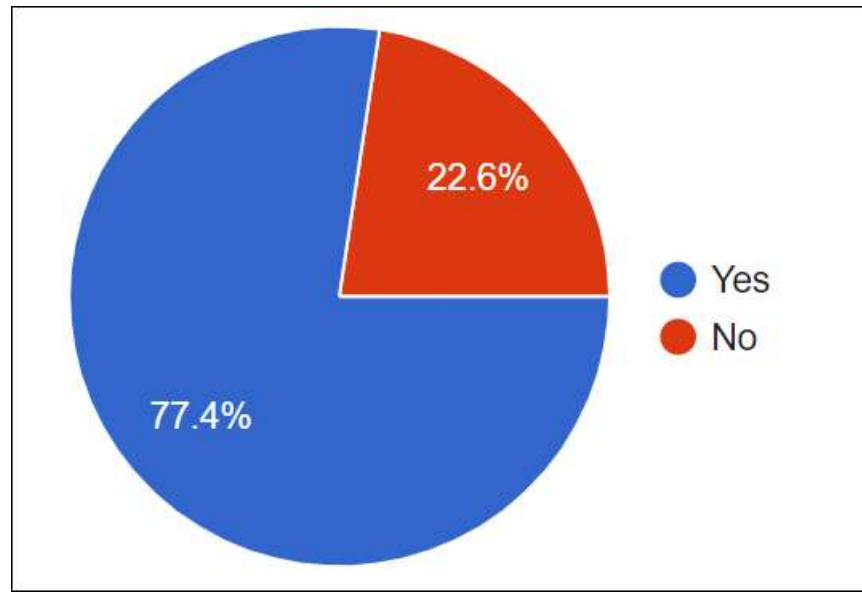


Figure-4.7: Awareness of e-Governance Services

(ii) Barriers of e- Governance

At the user level, it is always important to know the limitations and obstacles which cause roadblocks to access the technology. Therefore, in response to the possible barriers, majority of respondents expressed that they don't have proper knowledge e-Governance initiatives. Lack of appropriate portal or application was another major issue raised by 25.3% of respondents. Other hurdles include financial and training related issues.

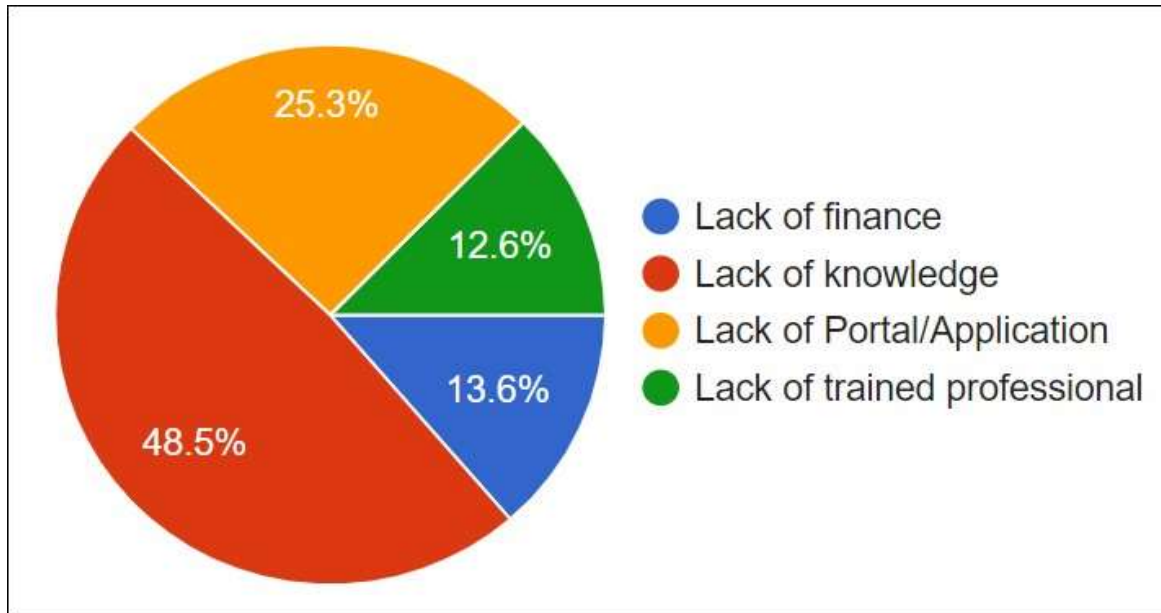


Figure-4.8: Barriers of e- Governance services

(iii) Aims of e-services

The main mission of e-Governance since it was initiated has been to improve citizen centric service provided by the government. So that availability of services at any time and transparency may be realized by all. Our respondents seem to be agreed by this (as shown in figure 9). The strong relationship between government and citizens through such services can be seen only when these services are tendered properly and people feel that their grievances awareness been addressed properly. This has also been reflected in this question.

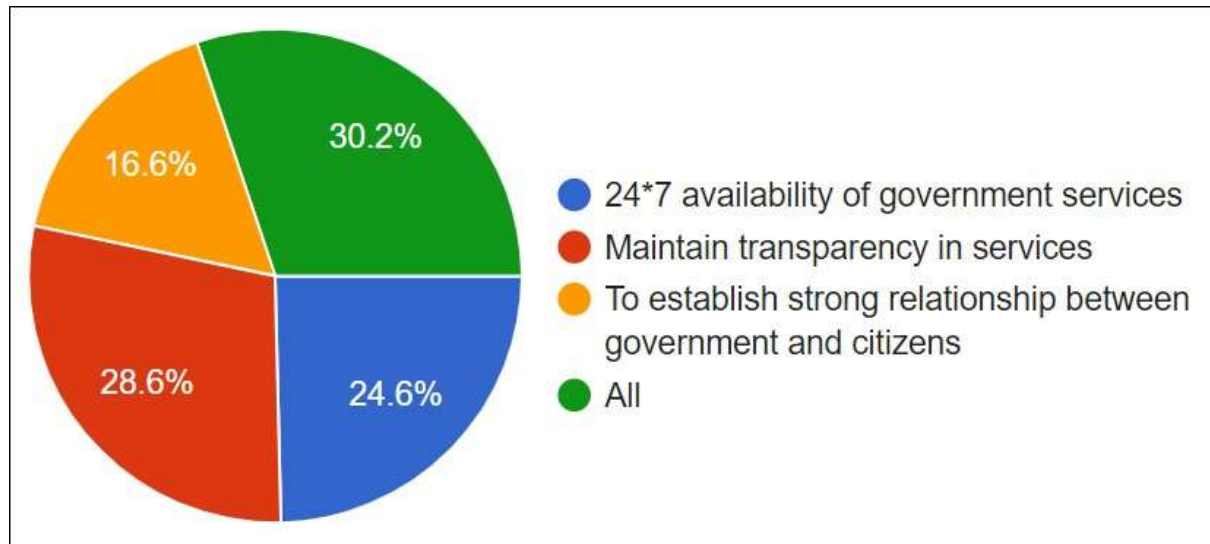


Figure-4.9: Aim of e- Governance services

(iv) Benefits

The respondent citizens perceive that present status of e-Governance projects can be best assessed on the basis of various factors, such as work going as per schedule, satisfied with the behavior of e-Governance handling officials and turn wise completion of work.

Though in general people are satisfied that they are being benefited, only a small percentage (i.e. 15.9%) of people are satisfied with the way officials handle the issues. It is a matter of concern and reflects with our previous interpretation in the same survey that the attitude of officials requires change.

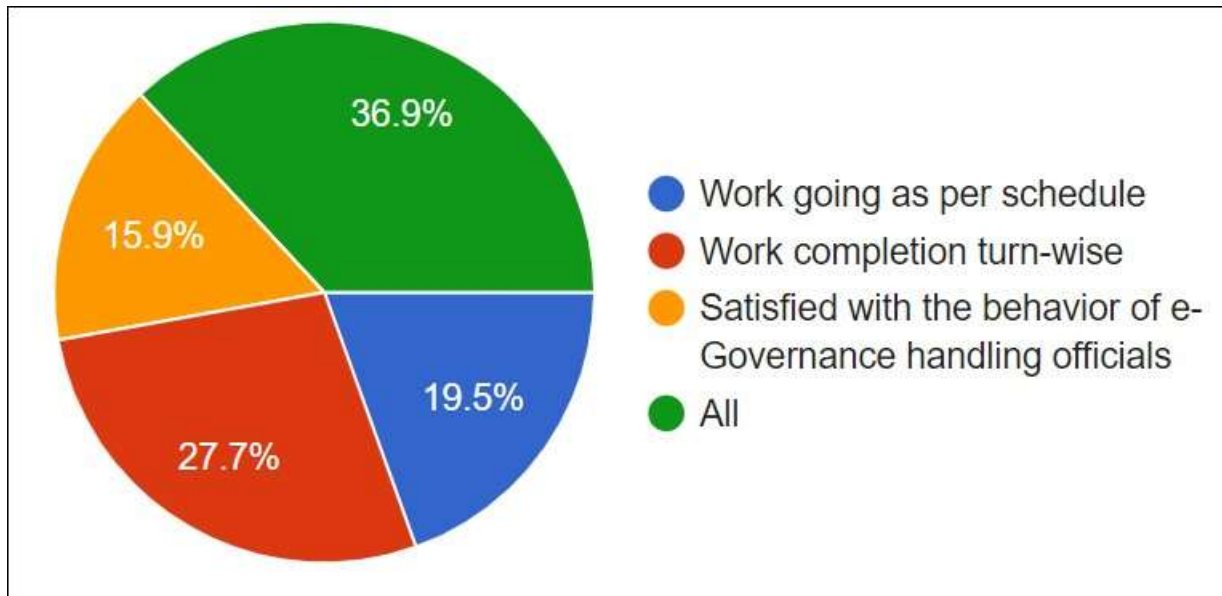


Figure-4.10: e-Governance Benefits

(v) e-Governance in Society

e-Governance provides a single window system for various Government services. Therefore, it reduces time and cost and provides everyone equal opportunity without any discrimination, thus making positive impact in the society. This is partially true as per the responses (figure 11). Though official's response has improved compared to manual systems where only a few influential ones would get to access officials to get their pending work done in time, more improvement is required to have good impact on society. Further, user participation should also be increased to get the real benefit of various portals launched by government.

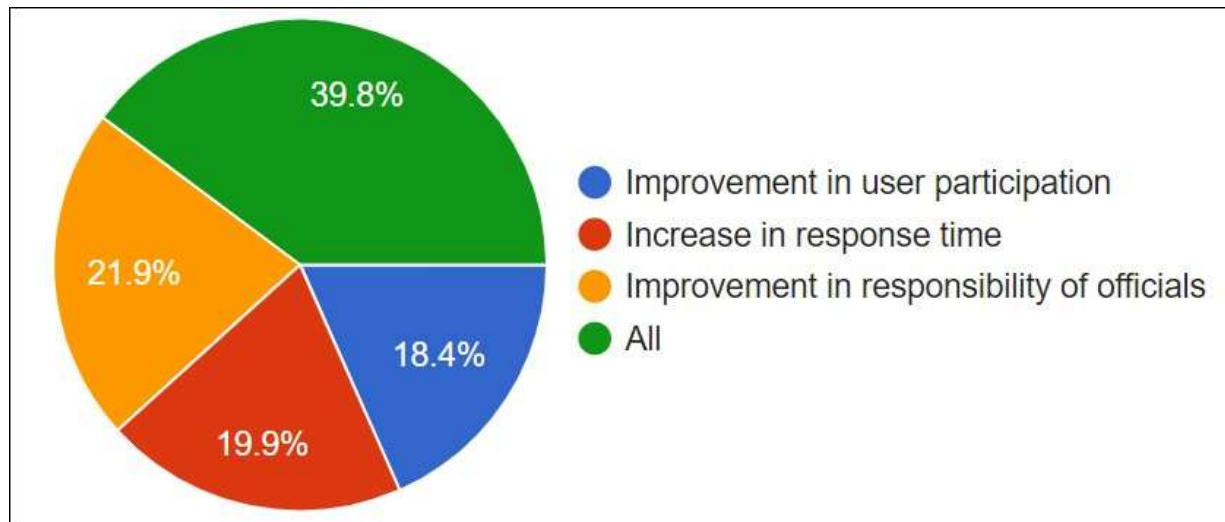


Figure 4.11: Important factors of e-Governance in society

Key Highlights of analysis (III B)

1. People must be made aware and motivated to use all e-Governance initiatives. Easy and cheap access to internet, proper working of portals, improved financial status and literacy of citizens may also increase the penetration of usages.
2. Working culture of officials has to improve to resolve the grievances in time frame. This way the services will have real benefits and impact on society.

4.3.3 AWARENESS AND USAGES ISSUE OF JANSUNWAI

In this section of survey, users were asked questions on the Jansunwai portal. We discuss the detailed analysis of the responses in this section of survey.

(i) Initiation of Jansunwai portal

Users were a general awareness question on Jansunwai as to which government it belongs to, in response a 45.6% were aware that it's a State Government initiative. 26.4% were of the opinion that it is a joint effort of Centre and State Government. Another 20.7% thought it to be the Central Government initiative. Actually, central also has portals for various types of grievances (such as PMO portal).

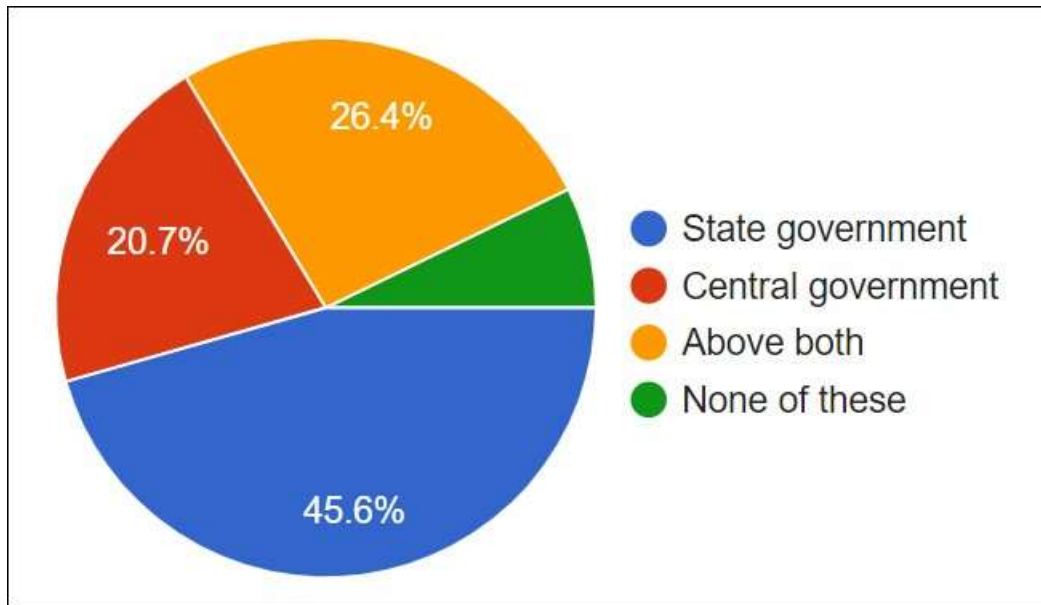


Figure-4.12: Initiatives of Jansunwai Portal

(ii) Purpose of Jansunwai

Majority of the respondents (i.e. 42.9% as shown in figure 13) were aware about characteristics (such as transparency in process, smooth registration facility and good governance) of Jansunwai portal.

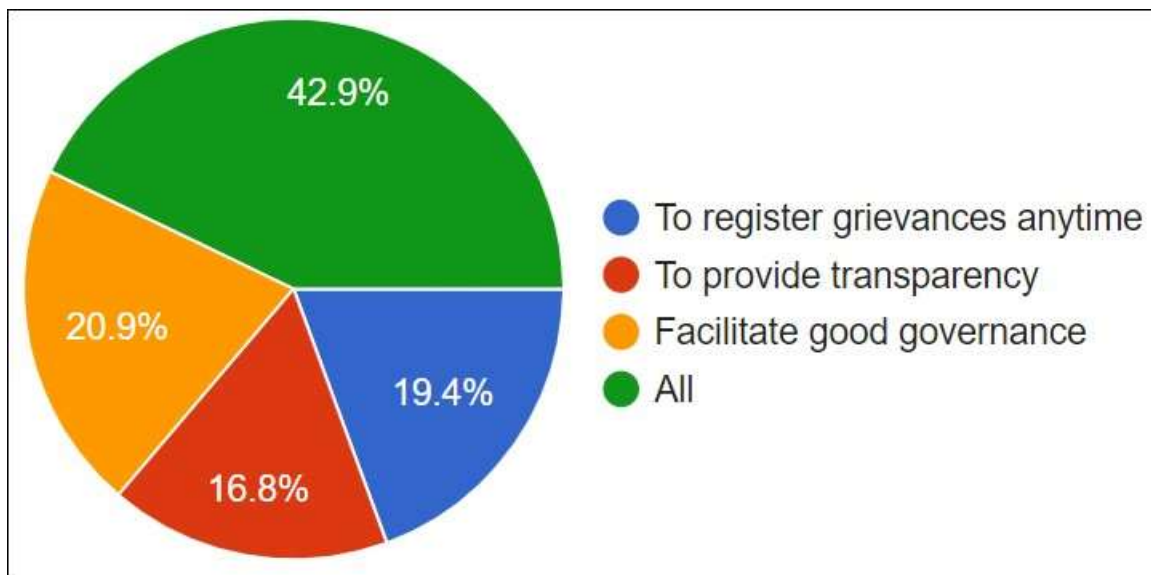


Figure-4.13: Importance of Jansunwai Portal

(iii) Language of Jansunwai Portal

The citizen has facility to register the grievances on Jansunwai Portal in four languages: Hindi, English, Urdu and Sanskrit. The citizens of Uttar Pradesh are highly using Hindi language for communication and other purposes. The outcome of survey (as shown in figure 14) shows that 76% of respondents uses Hindi and English languages for registering grievances on portal. The result also indicates that minority of citizens are using Urdu and Sanskrit languages for grievance registrations.

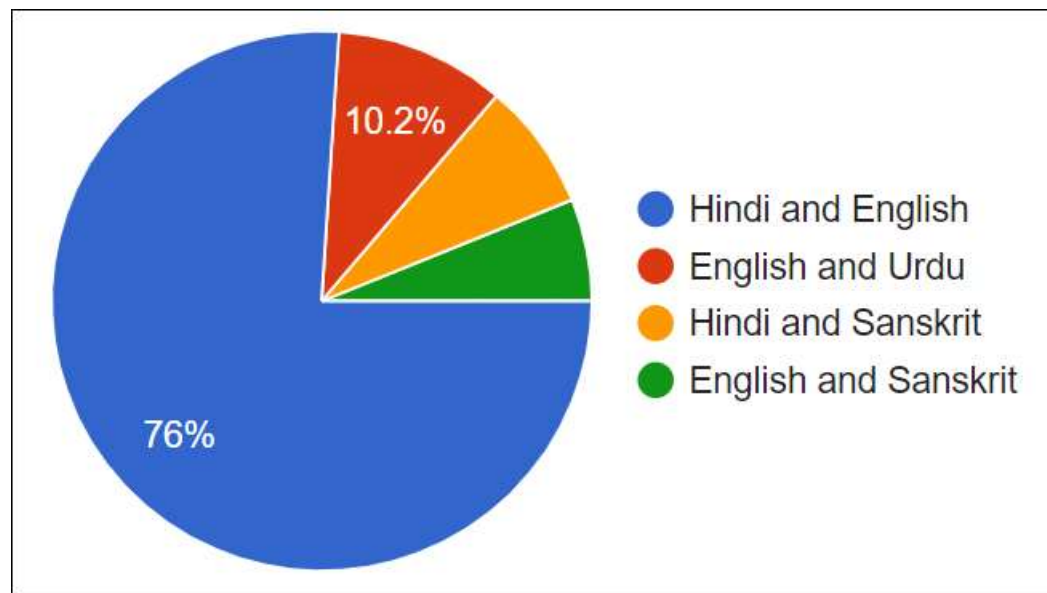


Figure-4.14: Language of Jansunwai Portal

(iv) Security

One of the biggest factors for security of portal is to maintain the confidentiality of user's data. From the survey analysis we found that majority of citizens (i.e. 29.7%) think that the information share by citizens on portal during grievance registration are not highly secure.

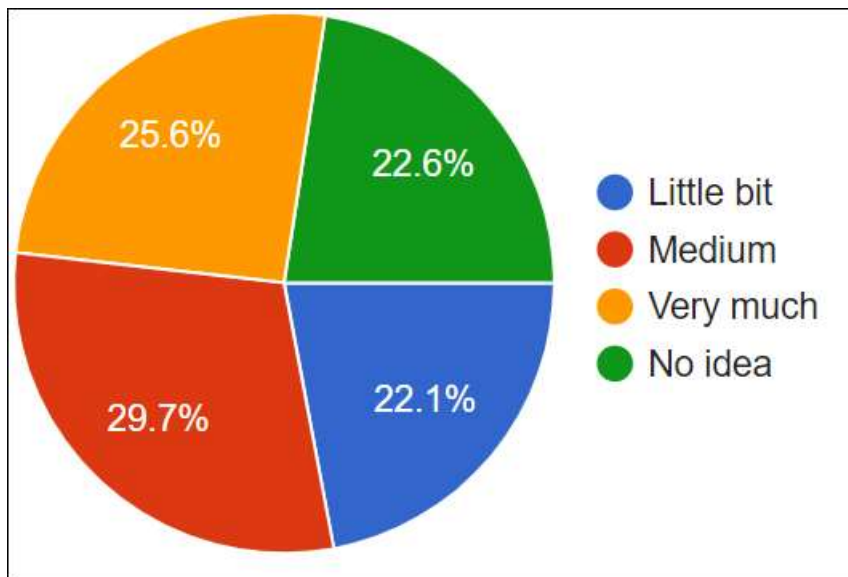


Figure-4.15: Security of portal

(v) Registered Grievances Resolved

According to survey, it is concluded that 19.5% of respondents think that registered grievances are mostly resolved. The majority of respondents (i.e.30.8%) think that few registered grievances are resolved.

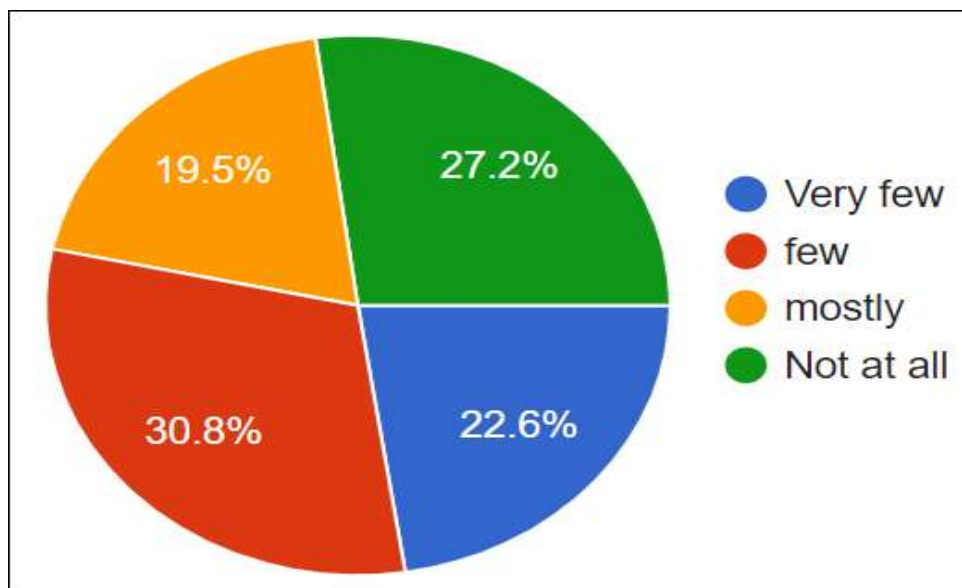


Figure-4.16: No. of Registered Grievances resolved in the Jansunwai Portal

(vi) Satisfaction Level of Service's

This is very important for the portal's success. It is concluded from the figure 16 that only 34.4% of respondents are very much satisfied with the services of portal.

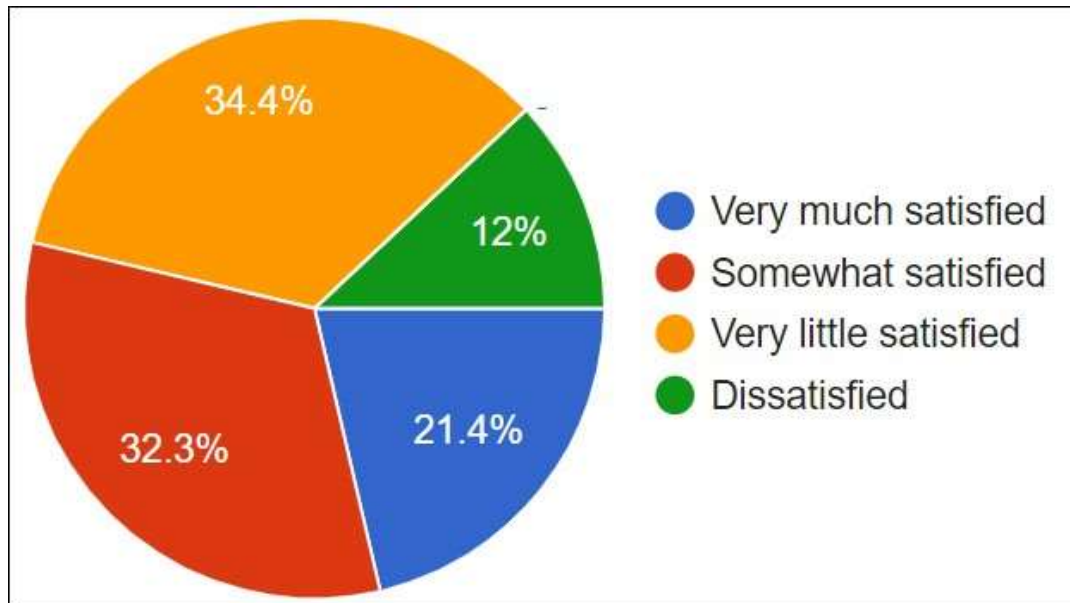


Figure-4.17: Satisfaction of Services provided by Jansunwai Portal

4.4 OVERALL ANALYSIS AND RECOMMENDATIONS

The user survey has included questions in such a way that they can easily be classified in three parts to know the social and demographical impact on the usages of e-Governance, general awareness and issues in e-Governance services and finally awareness and issues in Jansunwai portal. Amalgamation of these highlights along with the analysis of responses towards Jansunwai portal has revealed important points which are summarized below as generalized recommendations.

1. All section of society is not being benefited with the e-Governance revolution specially in U.P. The societal and demographic imbalance has led to uneven access of e-Services in state. For example, youth and literates are getting more of these services than others. Also, male have better access than females. This gap has to be minimized gradually.

2. People must be made aware of all such portals and should be encouraged to register themselves and use them whenever the need occurs. The awareness level of many portals such as Jansunwai, requires improvements as these initiatives have potential to improve individual's satisfaction level from its government
3. The working culture of government and its officials has though improved by adopting e-Governance in many areas; people have still felt that there is a clear scope of further improvement, especially in work attitude.
4. Poor network infrastructure and internet bandwidth, digital divide and poor financial status of many individuals also creates hurdles in popularizing the usages of portals.
5. Grievance redressal mechanism in Jansunwai is satisfactory, but delayed settlement and disposing the grievance abruptly requires attention. A modified flawless and reliable mechanism with justified user satisfaction system will definitely enhance multifold trust in the present system of Jansunwai.
6. Though it's an integrated system for U.P., integrating it with similar portals of other state may also be considered so that persons residing in other state may also settle any pending grievance which may require attention/information of both the states. Such integration may require only a single login to fetch all relevant data.
7. Portal security should be enhanced. The website of Jansunwai is still not secure which may cause data breach of users/officials

4.5 SUMMARY

e-Governance has the ability to revolutionize the efficiency and functioning of any government. Uttar Pradesh has been actively using various e-Services. To see any visible impact of these services, state needs to popularize various portals it has launched and reduce the digital divide. The Jansunwai portal is a great effort undertaken by the state government. Though citizens are using it with a degree of satisfaction, more effort is required to literate people and encourage them to use it so that they can settle their grievance at their doorsteps and hassle free.

On the other hand, officials handling grievances must be careful and alert to address them in a time frame up to the satisfaction of complainant. This way both citizen and officials can have the real satisfaction and the ultimate purpose of good governance may be realized.



Chapter 5

*Proposed BPR Based
Architecture for Integration of
e-Governance Portals*



PROPOSED BPR BASED ARCHITECTURE FOR INTEGRATION OF E-GOVERNANCE PORTALS

5.1 INTRODUCTION

Accessibility of public services on a single platform has become a new standard for the next level of Governance is also important [122, 123, 124, 125]. The interconnectivity and interoperability with other systems should be a key to successfully providing comprehensive services to all at one place [126, 127].

We are living in the information and knowledge age where everyone needs fast and efficient services, so the organizations have to cope with accelerated growth of online services, while taking care of data security measures [128, 129].

Realizing the powers of e-Governance, governments have taken many initiatives to provide e-Services through possible combination of other similar service to utilize shared information in order to optimize the government services. Sharing of information safely has become easier due to technological enhancements [130, 131].

Designing an interoperable e-Governance system are though complex due to involvement of center, states and various other sections/department which may have been using heterogeneous system, data, and processes [132, 133]. However, due to emergence of new technologies and guidelines, development of distributed architecture for e-Governance consisting of one-stop operation has become possible [134].

5.2 RELATED WORK

We have explored some of the prominent literatures related to e-Governance models, design, architecture etc. based on integration and other requirements that may have been felt time to time. Following are some of the most prominent contributions to provide the framework and architecture for various e-Governance based projects and has been the guiding factors for our model. Our previous works on detailed analysis of two U.P. government portals (briefly described in the next section) have also motivated us to further explore other architectures in order to present our framework.

In 2007, M.M. Lankhorst & W.L.A. Derks have described the requirements and high-level design of a service-oriented architecture for demand driven e-Governance. Central to their architecture was the integration of services from different government agencies and private parties to create truly demand driven e-Services to citizens [124].

In 2014, K. A. Sedek et al. proposed a one-stop e-Government architecture that has integrated e-government service application, and e-government service provider on a one stop portal. Authors claimed that their architecture provides seamless integration and interoperability of e-government services among different government agencies using hybrid distributed e-government architecture [125].

In 2017, Ajay Dutta et al., proposed three-layer architecture for sharing citizen information using web services useful for both Government and citizens. They proposed that each Government department accessing citizen information using web services architecture can have uniform and scalable information. Further, they proposed integration of census database with heterogeneous systems using web service to enable expandability and compatibility with upcoming e-Governance services of that time [126].

In 2018, Ajay Kumar Bharti and Sanjay K. Bharti, discusses the importance of Business Process Reengineering (BPR) approach in public transportation. They elaborates e-Governance model for public transportation in India. A set of recommendations, based on case study and issues, for delivering services in public transportation sector were also

discussed. This model delivers the integrated and quality services using National e-Governance Plan (NeGP) model to Indian citizens [135].

In 2019, Meriska Defriani & Mochzen Gito Resmi, proposed an e-Government architecture that support data and application interoperability. Their e-Government framework allows people to get information about services needed, conduct transactions, and know the status of the ongoing service process. Further, the services provided by the government as per the architecture could be accessed through an integrated e-Government portal [123].

The works cited above along with few others in the literature have presented various models and integration of work as per the requirements of services. The services provided in e-Governance based systems are usually related to a set process being followed to provide information. From integration point of view, it sometimes it requires efforts to integrate with other services which may have complex integration [136]. Going through the literature, there are approaches proposed which aimed to enhance e-Government systems with good interfaces for the users. It is therefore need of the hour towards collaboration and integration of various public services so that the typical user requirements may also be fulfilled [137, 138].

5.3 SUMMARY OF CASE STUDIES: SPST AND JANSUNWAI PORTALS

5.3.1 State Public Service Tribunal (SPST)

The numbers of cases in the state on different issues are constantly increasing in court. This has made immense pressure on employees of court; as a result, the disposal of cases often gets delayed. It also causes loss of money and time. To address this problem, UP government established Public Service Tribunals on 24th Nov 1975, which deals with different cases such as:- (i) employment matters of Government servants, (ii) local authorities employees, & (iii) employees of companies [109]. The SPST portal (as shown in figure 1) looked on the services matters against U.P. Government. As per the portals information, the public servant can file a petition on service matter against the department or organization of

the government or authority, corporation, a body owned or controlled by the U.P. State Government. The Civil Service Tribunal, in terms of organizational and functional matters, is part of the Indian Court of Justice, its members having similar status of judges of the Court.

After analyzing the SPST portal, we felt the need of actual user's feedback and review to know more about how the users are satisfied about this portal and whether they face any issues therein and also to suggest for any possible improvement. A questionnaire was developed consisting of 50 questions identified carefully based on our study of the portal. The survey questionnaire consists of two parts, the first part contains question related to awareness and issues of e-Governance at various levels and stages. The questionnaire was field by the people of different ages, gender, places and people working in different government organizations as well as in private departments. Participants were mainly from Lucknow, a few were from other state as well.

Among the main findings of this survey are the following-

1. Though around three fourth of the respondents were generally satisfied by general handling by this portal, one fourth were not very satisfied.
2. More than 70.1% of respondents were of the opinion that there is a high need of interconnectivity of SPST portal with similar portals of other states for better user satisfaction and services as there could be many cases wherein an which may require information from the other states as well. This is a very important outcome which has helped us understand the need of interconnectivity and integration.
3. The claim satisfaction level through the portal was not very encouraging as only 11.4% of the total participants were highly satisfied whereas around 43% were not satisfied with the claim settlement.

This is another important outcome of the survey as the purpose of portal is getting defeated to some extent.

Based on the above outcomes, our discussions with the participants and their suggestions, we found some very common possibilities and issues that may happen with any individual using SPST-

- i. Transfer of service matters to other state like promotion, enquiry, LTC etc.
- ii. Integrity related issues
- iii. Vigilance enquiry etc.
- iv. Past service counting related matters
- v. Service book related matters

These cases have led to the possibility of interconnecting the SPST portal with other portals where from one can get desired and concrete information.

5.3.2 Jansunwai Portal

The Government of Uttar Pradesh has made serious effort to address the public grievances of citizens related to various sections, departments and officials of the state. It has come with the complaint redressal framework for a severe complaint removal mechanism.

Jansunwai-Integrated Grievance Redressal System (IGRS) (as shown in figure 5.2) of Uttar Pradesh is a unique initiative towards the compelling and effective removal of the complaints for the positive change of the general public which drives the state of Uttar Pradesh to a progressive and successful state in e-Governance implementation [74].

The department of administrative reforms and public grievances launched the IGRS in 2016 for receiving, redressing and monitoring of grievances from the public. This portal facilitates any one to register a grievance anytime while sitting at home. It also enables them to track the status online.

After analyzing the Jansunwai portal, we felt the need of actual user's feedback and review to know more about how the users are satisfied about this portal and whether they face any issues therein and also to suggest for any possible improvement.

A total of 200 persons (with varying social/demographic profile) participated in survey conducted mainly in and around Lucknow (the capital of state U.P.) After the detailed analysis of survey results, some of the key findings are:

1. Poor network infrastructure and internet bandwidth, digital divide, illiteracy and poor financial status of many individuals restricts the access and creates hurdles in popularizing the usages of portal.
2. Grievance redressal mechanism in Jansunwai is the most important part of this portal which is in general satisfactory, but delayed settlement and disposing the grievance abruptly requires attention.
3. Interconnection/ Interaction between states is less- it's an integrated system for U.P., However integrating it with similar portals of other state may also be considered so that persons residing in other state may also settle any pending grievance which may require attention/information of both the states.

5.4 REQUIREMENT OF INTERCONNECTION OF PORTALS

In the previous section a brief description has been provided of the two portals we have considered to review. The analysis of the survey results reveals some issues with these portals as outlined in the section. Apart from other issues, an important point has been raised which indicates interconnection/integration of portals of various states having similar characteristics and functions. As these portals are specific to the state of Uttar Pradesh, several instances as stated also require the state specific portals to interact with some other states for getting essential information to process the case of any individual. For this an integrated framework will be required to process any required workflow among states and the Centre.

We have followed Business Process Reengineering (BPR) model to propose our integrated framework for the e-Governance application [139, 140].

5.5 BUSINESS PROCESS REENGINEERING

As we realized among other issues the interconnection / integration of certain portals, Business Process Reengineering (BPR) is a standard methodology used for imperative changes or improvements a business process or system or exhaustive transformation of such process [141, 142]. It means BPR methodology has the capability to relook at the system to make revolutionary changes in it to make it cost effective, fast and better in terms of quality of service. BPR are characterized by three main elements i.e. Inputs (data such as customer inquiries or material), Process of data (which go through several steps and consumes time and money) and outcome (delivery of expected result).

5.5.1 Need of Reengineering

The reengineering of certain e-Governance projects and portals involves the remodeling or reorientation of existing government process so that they should be agile and flexible to provide better services to its people so that their social and economic conditions may improve significantly and thus that of the country[143]. The main reasons to identify the need of reengineering could be the following.

- a) **Dysfunction:** a system afflicted with number of issues like inefficient or not good e-Governance, limited inter-connectivity, lack of communication, lack of online services etc. the two existing online systems under our study have some dysfunctions as already discussed
- b) **Globalization:** it is fast becoming a global trend now to interconnect applications for maximum gains, due to this exemplification changes in design and/or technology, have become obvious for many governments to cope with the trends for to provide quality experience to people.

- c) **Competitions:** Service sector is facing heavy competition from various stake holders; it is therefore duty of the government is follow facilitator-enabler-regulator kind of approach to ensure transparent and effective services with integrity.
- d) **Good Governance:** Since the inception of National e-Governance Plan's (NeGP), the government has made huge investment towards extension and up-gradation of e-Governance infrastructure such as State Wide Area Network for wider publicity. It therefore requires that many present services being offered by various states need to be analyzed time to time to incorporate and adopt all new dimensions of governance.

Certainly, existing systems need to be more efficient, more competitive and more accommodative. It should also be robust in design so that interconnectivity issue need not be a hurdle for anyone.

5.5.2 Applying BPR

In a business or governance related environment, BPR aims to change strategy, process, technology, organization and culture to attain SMART (Simple, Moral, Accountable, Responsible and Transparent) Governance. The reengineering helps in remodeling the processes to make them more effective and satisfying to the public.

The essential steps of reengineering toward our objective are:

5.5.2.1 IDENTIFICATION OF PROCESS FOR REDESIGN

- As the purposes of the two portals, SPST and Jansunwai, the services are identified in under following categories.

Government to Government (G2G) - both the portals offer service under this category as it is for the interoperability between different levels of government. For example for any inter-state service, states can interchangeably inquire any particular information from the portal of other states.

Government to Employee (G2E) services are tendered to its employees by any government, such as payrolls and their liabilities such as taxes. The portals under our consideration also provide these services.

Government to Citizen (G2C) is the most common service being offered by the two portals.

In case of interconnection/integration requirements the process boundaries and the scope has to be redefined

5.5.2.2 DEVELOPING PROCESS VISUALIZATIONS

Process visualization gives a proper action to envision the desired (To-Be) process in a proper way to achieve its advantage.

Though process visualization has been done in both the portals and has been explained also, certain changes may make them more effective, specially whether certain issues have been identified. For example, the claim settlement process of SPST needs to be revisited. Further the interconnection requirements may also require modifying various processes. The model as shown in figure 3 visualizes the blueprint to refine and streamline the process.

Awareness: It is the key to success of any good initiative and has also been identified in our study; a high level of awareness is needed from the governments to gain maximum benefit of any new service.

Infrastructure: The NeGP has given the systematic plan for the growth of e-Governance projects across the country and states. The digital India initiatives government has taken many steps to boost the infrastructure and security in the country, for example Aadhar based identity platform, Bharat broadband Network Ltd. (BBNL) to create National Optical Fiber Network (NOFL) mainly in villages, IoT, CERT to secure Indian cyber space. These plans will definitely boost ICT infrastructure in the country and cyber security aspects.

The above mentioned efforts of government of India towards a building national level infrastructure will definitely support proper access to all such projects in India. At present, a number of portals of different states similar to SPST and Jansunwai of U.P. are running on different computer networks to give access to their citizens. This restricts the inter-connectivity and interoperability of these projects to be able to be accessed on a

network of other state and hence the expansion opportunities using a common networking platform such as National e-Governance Service Delivery Framework [NSDG] [155]. The interconnectivity between portals of different state can be performed using Central Portal (as shown in figure 3). The interconnectivity between State, District and Block headquarters of state are also performed using State Wide Area Network (SWAN) [156, 157].

Capacity Building: it requires great efforts and dedication for building such a nationwide infrastructure to handle common integrated approach. Any Conflicts or issue so arising between states and the central have to be properly and timely settled promote interoperability at state and central level. Institutions like NIC (National Informatics Centre) may play key role in integration and implementation.

Interoperability: it has already been highlighted that SPST and Jansunwai can be extended to have interoperable and interconnected environment for even better services. NICNET of National Informatics Centre (NIC) and the State Wide Area Network (SWAN) may provide interconnectivity between states.

Evaluation: for all e-Governance projects, certain standards have to be set for key performance indicators for any new framework or model being proposed. Projects should be evaluated on the basis of following:-

1. Cost of planning, development, deployment and regular maintenance.
2. The tenable of projects over an extended period.
3. Success of an e-Governance project to be studied on the basis of the quality of service it provides, and its reliability.

Pilot Project: the SPST and Jansunwai projects are already under running state and are being used by many. The new framework proposed in this work is mainly due to interconnection issue as realized through our study. So, there may not be any requirement towards pilot project in case they are reengineered and implemented.

5.5.2.3 UNDERSTANDING THE EXISTING PROCESSES

It has already been done extensively and the issues have been identified and discussed in section III. Based on that need for interconnectivity of the similar portals and possible integration has emerged.

5.5.2.4 REDESIGNED PROCESS

Considering identified processes to be redesigned and understanding the process visualization of existing processes, a generalized model for implementation various portals has been proposed in Figure 5.3.

5.6 PROPOSED MODEL

In order to have a better useful experience of e-Governance services in India, dedicated fast and extensive networking infrastructure is highly required. Realizing it, the government of India has already engaged itself in such mammoth task.

Following the standard steps of process reengineering towards issues specially the interconnectivity and possible integration of various e-Governance modes, a redesigned architecture has been proposed for in this section.

The core components of architecture are as follows:

- i. User: - any citizen** after getting registered and authenticating him/her-self, fires a query on state portal to connect and start communication with the authorities. Proper authentication is done at this level using any centralize database such as Aadhar (or NRC)
- ii. State Head Quarter:** - It resolves the users problem without intervention of district or block head quarters. It is also responsible for transferring problem to lowest level as needed. It may also communicate central government for any help or information and may also fetch information from other states (if needed) related to user's problem
- iii. District Head Quarter:** - It solves the users problems on the basis of instructions received from State government.

- iv. **Block Head Quarter:** - It solves the users problems on the basis of instructions received from State or district head quarters of government.
- v. **National Level:** - The centralized portal establishes the strong communication between portals of different states. It helps to provide the required data to the needed state.
- vi. **SWAN:** - As already pointed, SWAN may serve as core infrastructure components under NeGP. This will create dedicated Closed User Group (CUG) network to provide a secured and high speed connectivity for Government functioning, State Headquarters, District Headquarters, Blocks Headquarters and even to gram panchayats.
- vii. **State Data Centre (SDC):**- Government has identified SDC as one of the important element of the Core infrastructure components to support supporting NeGP. SDC has the key role of a central repository of the state, security and online delivery of services, it also servers the purposes information/service portal, State Intranet portal, disaster recovery, remote management and service integration, among others.
- viii. **NICNET:**- NIC, through its ICT Network, "NICNET", has institutional linkages with all the Ministries/Departments of the Central Government and State Governments/Union Territories [48], [49].

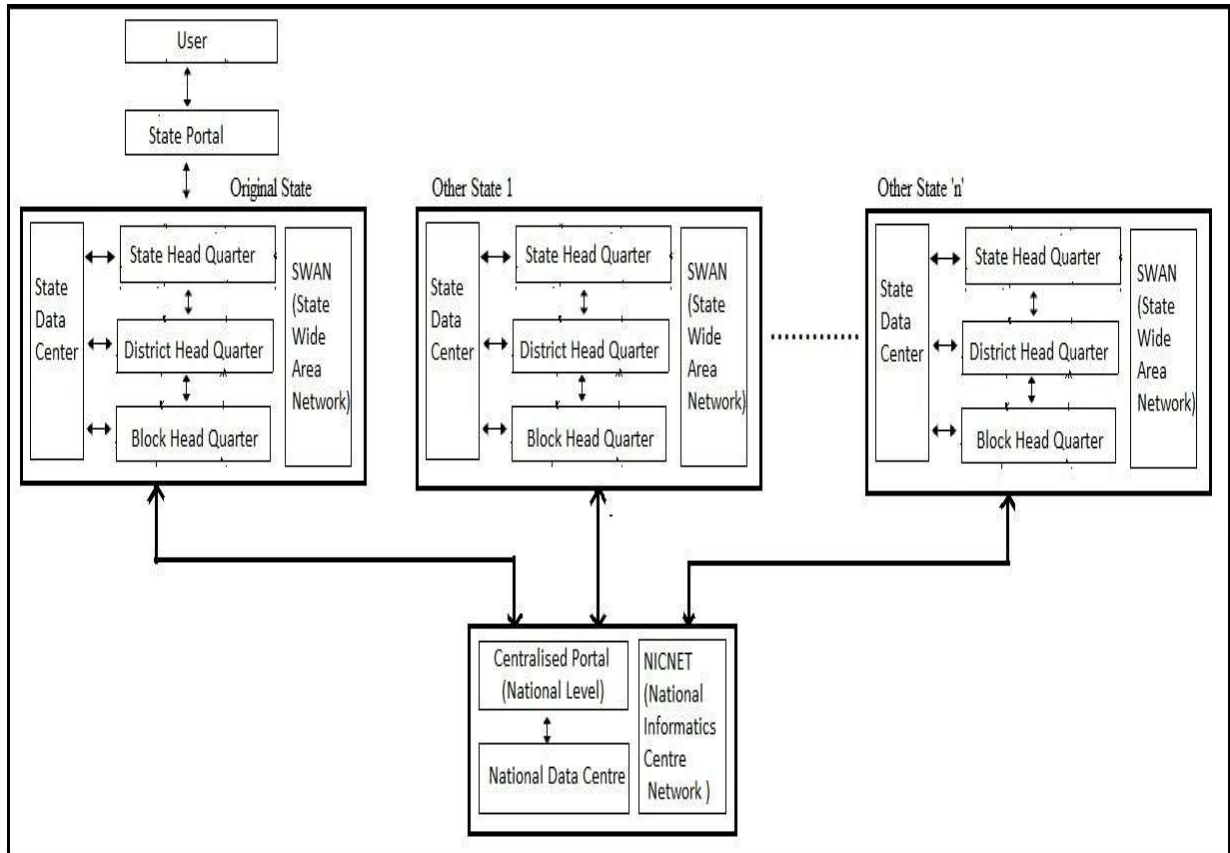


Figure 5.1: Proposed Framework for Integration

This framework has been a step towards nationalization of SPST and Jansunwai. It may help improve the accessibility of various service through its integrated and interoperable design. It will serve every citizen of a particular state who may have pending service related issues or other issues in other states may also get proper information immediately. At the same time the concerned officials handling such grievance too may find themselves in a comfortable position by getting all needed information instantly. This will help in resolving the grievance well within time frame.

5.6.1 Work Flow

The work flow diagram of proposed model is described in figure 5.4.

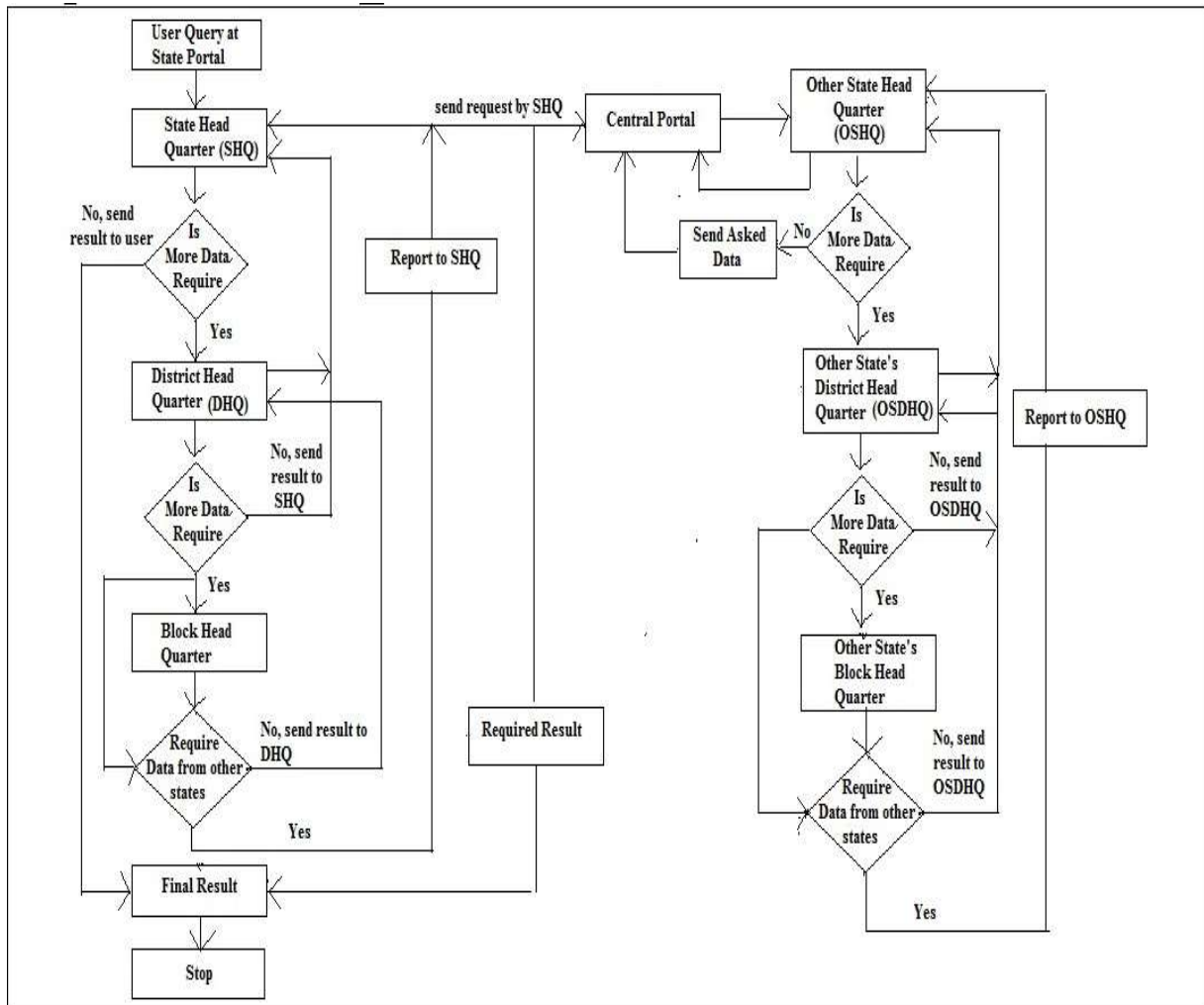


Figure 5.2: General work flow of the model

Step 1: User interacts with the system along with his/her query/grievance through state portal.

User will provide all details and let the portal know if he/she has any pending cases requiring attention/assistance of other states data, if so, he/she will select the state and select grievance type, further other details may be provided in a specified online form by selecting the type of grievances and providing details, if any, of the same on the portal itself.

Step 2: In case a query/grievance requires data/information from the other state, state code grievance type and other details will automatically be fetched for further processing it through the centralized portals database.

Step 3: State head quarter will check the query and other details provided by the citizen/employee and will try to solve it. If for solving the query, State head quarter require any data from district head quarter, the user query will moves to District head quarter.

Step 4: District head quarter will check the query and will try to solve it. If for solving the query, District head quarter require any data from Block head quarter, the user query will moves to Block head quarter.

Step 5: State getting answers of users query the State portal will reply to users.

Step 6: If for solving the query, a need occurs to get any required information from other States. Simply a request will be sent which will be fetched and processed through Central Portal.

Step 7: The Central Portal having the details of request in a predesigned format along with the name of state will communicate with the respective state's data center to provide the relevant information related to users query.

State 8: The state on getting a request will immediately fetch all related record to provide the require information to the original state through the Central Portal.

State 9: Finally the intended user will get desired information/solution to his/her grievances.

The central database record all such communications with states up to a particular time for all future purposes and also for evaluation purpose. It may also maintain a common list of

information/grievances which is usually sought by citizens most of the time and the model presumes that various states have digitized all necessary records of its present and past employees and other citizens. Regular updates of such records are also important for flawless functioning of the system.

5.7 SUMMARY

With the evident and planned growth of e-Governance across the country, its positive impact is being observed on society. Many services can now be accessed like never before. Getting grievances of the citizens addressed has also been simplified. State of Uttar Pradesh is also working fast to let its citizens feel that government is at the door steps.

Two of its popular projects of U.P. government have been studied and analyzed for their features and issues from the user's point of view. Based on the feedback and suggestions, a generalized framework has been proposed to overcome certain deficiencies. This framework is based on reengineering approach which interconnects other similar project with a centralized database so that citizens of one state having pending issues in other states may also get benefitted by getting information sought or resolving their issues properly.

The framework can be seen as a step towards nationalization of various state specific portals such as SPST and Jansunwai to facilitate one stop solution to every citizen irrespective of his/her geographical location or domicile.



Chapter 6

Conclusion, Recommendations and Future Direction



CONCLUSION, RECOMMENDATIONS AND FUTURE DIRECTION

The e-Governance initiatives have played an important role in shaping the modern India. The Government of India has taken many initiatives in identifying key areas at the Central and State level which are required to be automated to provide time efficient and transparent services to the Indian citizens. In this league, concerted steps were taken as early as in 2006 with the induction of NeGP for systematically indentifying and implementing e-Governance projects.

6.1 CONCLUSIONS

Through our study and analysis of various e-Governance initiatives taken by both the Central and the State governments, it was found that many of the Central MMPs have been very successful in delivering services. However, the State MMPs have not been so successful due to a variety of reasons. It is therefore required to take efforts to increase the success rate of various State projects in order to achieve the overall improved experience by all stakeholders. The deeper penetration and fruition effect will only be ascertained when the other MMPs, as identified by the government, would also be successful.

In the context of this thesis, the Government of Uttar Pradesh needs to engage the users successfully in e-Governance implementation. This requires a range of iterative and integrated planning steps and design processes such as:

- i.** Conducting technology assessment.
- ii.** Availability and accessibility of technology and services to fulfill the users' needs.
- iii.** The participation of citizens in e-Government using technology literacy.
- iv.** Providing better services and resource to the users.

- v. Continuous assessment of services with respect to the user issues and satisfaction.
- vi. Catering to the need of huge population of the State by encouraging maximum participation.

As the usage of Information Technology is growing very fast, Indian government is making systematic efforts to provide e-services to its citizens. Throughout this work, we observed that, although the government is spending a lot of money and efforts on e-Governance projects, still many good efforts taken in this direction are not being utilized by the public for one or the other reason. It has also been observed that certain initiatives are highly successful while some others could not accomplish the intended targets.

Some of the very common challenges in success of e-Governance as revealed during our study include: lack of interest among the people in availing the e-Governance services, security and privacy of personal data, technological and infrastructure related difficulties among others. Awareness among the people and participation of all can play a vital role in popularizing e-Governance in India.

As part of this research, after the detailed analysis of two popular state portals i.e. *Jansunwai* and *SPST*, being used facilitate common people to address their civic grievances and to solve cases online without going to court respectively, it was found that although the interest of people is increasing gradually, however, due to certain issues the users' satisfaction is not as per the expectation. Hence, there is a need to focus on the services provided by this portal especially in the context of quick and fair settlement of claims.

6.2 RECOMMENDATIONS

The user survey for the two portals, as discussed in the thesis, included questions in such a way that they can easily be classified in three parts to know the social and demographical impact on the usages of e-Governance, general awareness and issues in e-Governance services and finally awareness and issues in *SPST* & *Jansunwai* portal. Based on the analysis, the overall recommendations of the work have been listed below.

6.2.1 On e-Governance

1. All section of society is not being benefited with the e-Governance revolution specially in U.P. The societal and demographic imbalance has led to uneven access of e-Services in state. For example, youth and literates are getting more of these services than others. Also, male have better access than females. This gap has to be minimized gradually.
2. The reach and smooth access to the technology is also crucial towards the popularity of e services. The required infrastructure for these services including good network connectivity and electricity etc. will really help people of all regions specially in remote areas.
3. Awareness institutions must be established to raise the awareness among citizens because higher awareness automatically improves the accessibility of e-Governance services which ultimately raises the satisfaction level.
4. The people also have concerns of security issue which may happen in online activities. Necessary measures towards high level security of all the application needs enhancement to build faith among people.

6.2.2 On SPST Portal

Based on our in depth analyses of SPST portal, following are the conclusive recommendations:

1. This portal needs to be popularized among its stakeholders; therefore the institutions that would spread information at regular intervals must be established to raise the awareness among citizens because higher levels of awareness will automatically improve the accessibility services and may also raise the satisfaction levels.
2. The people are anxious about breach and theft of their personal data due to security issues which occurs in online activities. Hence, sensitizing them about using appropriate safeguards, such as using the appropriate case and number sensitive passwords, is a necessary step that needs to be taken by the government. This should be accompanied by making a dedicated taskforce for detecting and taking stringent action against all online fraudulent activity, particularly in the case of e-Governance.

3. Our survey reveals that a considerable percentage of people are not satisfied by SPST portals claim and claim settlement process, so the state government has to focus on this aspect and may take necessary action against time delays or enhancing transparency by taking prompt steps to solve the users' problems.
4. Interconnection and integration of similar portals of other states with that with central government MMPs may also be very helpful to resolve various cases involving the previous pending issues of other states of employees.

6.2.3 On Jansunwai Portal

The user survey and its analysis have disclosed some of the important recommendations on Jansunwai, these are as follows:

1. People must be made aware of all such portals and should be encouraged to register themselves and use them whenever the need occurs. Like SPST, the awareness level of Jansunwai and some other portals requires improvement as these e-Initiatives have potential to improve individuals satisfaction level form its government
2. The working culture of government and its officials has though improved by adopting e-governance in many areas; it has been felt that there is a clear scope of further improvement, specially in work attitude. It would be a much needed step, once taken will definitely improve the satisfaction level of Jansunwai portal.
3. Poor network infrastructure and internet bandwidth, digital divide and poor financial status of many individuals also creates hurdles in popularizing the usages of portals.
4. Grievance redressal mechanism in Jansunwai is satisfactory, but delayed settlement and disposing the grievance abruptly requires attention. A modified flawless and reliable mechanism with justified user satisfaction system will definitely enhance multifold trust in the present system of Jansunwai.
5. Though it's an integrated system for U.P., integrating it with similar portals of other state may also be considered so that persons residing in other state may also settle any pending

grievance which may require attention/information of both the states. Such integration may require only a single login to fetch all relevant data.

6. Portal security should be enhanced. The website of Jansunwai is still not secure which may cause data breach of users/officials

6.3 FUTURE DIRECTIONS

The research carried in this thesis mainly has been based on the systematic study of e-Governance initiatives, policies and guidelines framed by governments, its growth over a period of time. The study of two portals of state has also helped us a lot to understand the real world challenges and also the actual potential of e-Governance in building new India.

Based on our understanding, the framework model we proposed as one of the major outcome to this work can be further explored for possible implementation. The integrated approach of e-Governance services will definitely boost the usages and satisfaction level of users. A new paradigm shift is required where in a centralize database of citizen of India such as the proposed NRC by government would serve a key to provide all relevant information sought by a concerned individual or an official to deliver the best of service.

Any policy and its implementation with respect to e-Governance may be framed based on the actual user's feedback of the usages and the satisfaction level of the existing services. Hence time to time detailed review of various projects (and policies) across the country may also be beneficial so that the money invested and the infrastructure build could be justified.



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Appendix



Appendix I

Questionnaire for SPST and Jansunwai (IGRS)

This questionnaire has been given to you so that you may help the State Public Service Tribunal (SPST) and Jansunwai (IGRS) Uttar Pradesh in planning for future implementations.

General Information

1. Name of the Respondent

2. Present Occupation
 - a. Government
 - b. Public Sector
 - c. Private Sector
 - d. Self Employee
 - e. Student

3. AGE
 - a. 18-40
 - b. 41-50
 - c. 51-60
 - d. Above 60

4. Gender
 - a. Male
 - b. Female
 - c. Prefer Not to say

5. Educational Qualification
 - a. Under Graduate
 - b. Graduate
 - c. Post Graduate
 - d. MPhil./Ph.D.
 - e. Professional Qualification (if any)

6. Marital Status
 - a. Unmarried
 - b. Married
 - c. Divorce
 - d. Widow/Widower

SECTION A

1. According to your opinion progress of e-Governance at Global Level
 - a. Fair/Poor
 - b. Good
 - c. Excellent
 - d. don't know

2. According to your opinion progress of e-Governance at National Level(India)
 - a. Fair/Poor
 - b. Good
 - c. Excellent
 - d. don't know

3. According to your opinion progress of e-Governance in Uttar Pradesh
 - a. Fair/Poor
 - b. Good
 - c. Excellent
 - d. don't know

4. Are you aware of e-Governance services implemented by Uttar Pradesh Government
 - a. Yes
 - b. No

5. In your opinion, What are the barriers in e-Governance services
 - a. Lack of finance
 - b. Lack of Knowledge
 - c. Lack of Portal/ applications
 - d. Lack of trained professional

6. What is the air of e-Governance services
 - a. 24*7 Availability of Government services
 - b. Maintain transparency and services
 - c. To establish strong relationship between Government and Citizens
 - d. All

7. What is your view on the benefits of e-Governance projects made by Government of Uttar Pradesh.
 - a. Work going as per schedule
 - b. Work completion turn wise
 - c. Satisfied with the behaviours of e-Governance of handling officials
 - d. All

8. In your opinion what are the important factors of e-Governance in society
 - a. Improvement in user participation
 - b. increasing response time
 - c. improvement in responsibility of officials
 - d. All

9. In which way do you learn about the government e-Governance initiatives
 - a. Media(newspaper/TV/Radio)
 - b. website
 - c. Post from Government
 - d. In person

10. In your opinion what kind of various exist which effect business and citizens when they are trying to access e-Government.
 - a. Nothing as such
 - b. Security
 - c. Cost
 - d. Lack of interest

11. What are the infrastructure related hurdles to implement e-Governance services?
 - a. Hardware
 - b. Software
 - c. Networking
 - d. All of these

12. What kind of administrative issues are involved with the existing systems to implement e-Governance ?
 - a. Infrastructure
 - b. Fund
 - c. Operational reluctance
 - d. All of the above

13. In your opinion up to what extent e-Governance is helpful to avail the services .
 - a. very much
 - b. much
 - c. normal
 - d. Not much
 - e. Not at all

14. Please indicate your perception about the overall quality of governance by adopting e-Governance services
 - a. Highly improve
 - b. improve
 - c. normal
 - d. Not improve

15. Do you think that implementation of e-Governance applications has helped to improve the image of the government administration
 - a. Yes
 - b. Very low
 - c. No change
 - d. No

16. How much has e-Governance initiatives avoided the possibility of discrimination among people in providing various services.
 - a. Very low
 - b. Medium
 - c. High
 - d. Very High

17. There is any need to improve computer knowledge and skill among employees for e-Governance
 - a. Very low
 - b. Medium
 - c. High
 - d. Very High

18. Positive attitude of employees towards e-Governance initiatives
 - a. Very low
 - b. Medium
 - c. High
 - d. Very High

19. Employees level of training in latest technology
 - a. Very low
 - b. Medium
 - c. High
 - d. Very High

20. Has e-Governance environment been able to protect the confidentiality of processed information of people.
 - a. Very low
 - b. Medium
 - c. Very High
 - d. No

SECTION B

1. Are you aware of e-Governance portals of State Public Service Tribunal (SPST) and Jansunwai (IGRS) ?
 - a. Yes
 - b. Little bit
 - c. No

2. How often do you use State Public Service Tribunal (SPST) and Jansunwai (IGRS) portals?
 - a. Used only once
 - b. Occasionally
 - c. Often
 - d. Not use so far

3. What is true about the services provided by SPST?
 - a. Fair and quick judgement
 - b. Efficiency and professionalism
 - c. co-operation and transparency
 - d. Courtesy and understanding
 - e. above all
 - f. None

4. Are you satisfied by settlement of claim by SPST portal.
 - a. Yes, to some extent
 - b. Not satisfied
 - c. No

5. Are you Satisfied with the current services provided by SPST
 - a. Satisfied
 - b. Highly Satisfied
 - c. To some extent Satisfied
 - d. Not Satisfied

6. Do you think there is need for the interconnectivity among all SPSTs and IGRS portals of India?
 - a. Yes
 - b. little bit
 - c. No
 - d. Can't say/ No idea

7. Jansunwai (IGRS) is a portal of which Government
 - a. State Government
 - b. Central Government
 - c. above both
 - d. None of these

8. What is the purpose of Jansunwai (IGRS) Portal
 - a. Register Grievances any time
 - b. To provide transparency
 - c. facilitate good governance
 - d. All

9. In which language pair Jansunwai Portal (IGRS) are offered
 - a. Hindi and English
 - b. English and Urdu
 - c. Hindi and Sanskrit
 - d. English and Sanskrit

10. In which area can the complaint / demand/ suggestions for grievances be registered.
 - a. Rural
 - b. Urban
 - c. Above Both
 - d. Can't say

11. In your opinion the Jansunwai Portal (IGRS) is secure to use
 - a. Little bit
 - b. medium
 - c. Very much
 - d. No idea

12. How any Grievances Registered by you have been resolved in the Jansunwai Portal (IGRS)?
 - a. Very few
 - b. few
 - c. Mostly
 - d. Not at all

13. Does Jansunwai Portal helps poor people to solve grievances ?
 - a. Yes
 - b. Sometime
 - c. No
 - d. Can't Say

14. Are you satisfied with the services provided by Jansunwai (IGRS)?
 - a. Very much satisfied
 - b. Somewhat satisfied
 - c. Very little satisfied
 - d. Dissatisfied

15. Are you Satisfied with the user authentication in the process of Portals(SPST & IGRS)?
- a. Yes , Fully
 - b. No, But Aadhar number is compulsory
 - c. No idea

LIST OF PUBLICATIONS

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