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# INTERNSHIP REPORT

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**INTERNSHIP WORK REPORT**

**2021-2022**

*Submitted to the Department of Library and Information Science, University of Delhi, Delhi in Partial Fulfilment of the Requirement of B- 111 Bachelor of Library and Information Science: Internship Programme of B.L.I.Sc. for the Award of the Degree of Bachelor of Library and Information Science.*


Submitted by

**Aakriti**

**Exam roll no- 21206782056**

Supervisor

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University of Delhi

Delhi – 110007

# ACKNOWLEDGEMENT

I owe my deep sense of gratitude to my respected supervisor **prof. Shailendra Kumar, HOD, Department of Library and Information Science, University of Delhi,** for his meticulous and expert guidance, constructive criticism, patient hearing and benevolent behaviour throughout my ordeal of the present research. I shall remain grateful to him for his cordial, cooperative attitude, wise and knowledgeable counsel that acted as an impetus in the successful completion of my Internship Report.

I would like to particularly thank National Informatics Centre's Officer Librarian, **Mr. P.K Upadhyay: Senior**
**Technical Director & HOD Library** for giving me guidance and inspiration during my training period at National Informatics Centre. I will always be thankful for the kind help extended by the HOD of library and the help provided by the team members; **Mr. Mahesh Raj: Technical Director, Mrs. Rekha Gupta: Technical Director, and Mrs. Sharda Devi: Staff.**

I would also like to sincerely thank Mr. **Mahesh Raj** for always guiding and helping in preparation of training report.

I am sincerely thankful to all the teachers of the department viz. **Prof. Rakesh Kumar Bhatt, Prof. (Mrs.) Paramjit Kaur Walia**, **prof. K.P. Singh, Prof. Margam. Madhusudan, Dr. (Mrs.) Meera, and Dr. Manish Kumar** for their help, encouragement and guidance which helped me in learning and understanding the philosophy of librarianship. I also convey my thanks to Department Library Staff for extending their support in my study in the department. At last, but not least my friends in the department who deserves some words of thanks.

**Aakriti**

# CONTENTS

# SUMMARY

Librarianship is a distinct and distinguished profession in modern society. It is engaged in public service and plays an important role in national development. Librarianship today is termed as "Library and Information Profession" since the concept of librarianship has changed in view of the changing information needs of the society. Library and Information Science (LIS) is a noble profession. In the Paper-B111, the practical training was given to the students which encouraged to learn and achieve different kind of practical work of library profession. It gave a good exposure and confidence. With the help of this paper the practical working of different sections of the library i.e., Acquisition Section, Circulation Section, Periodical Section and Reference Section. We have also learnt the important skills and ethics of Librarianship.

National Informatics Centre is contributing to our nation by providing computer awareness, developing and implementing computer-based information systems for decision support. While the information and communication technology sources developed by NIC helps the nation to become tech savvy, the information needs of NIC's staffs and users is fulfilled by its Library and Information services division. For fulfilling the purpose, the division is equipped with latest tools of information technology and provides a number of services to its users. The library has a good collection of different types of documents, mainly in the field of information technology and allied subjects. The library's staff is highly qualified and skilled and also provides training to students in library and information science field.

**The main tasks covered during this training period included learning and gathering knowledge about the various services provided by NIC and its library. Other tasks included providing daily news-clipping services related to information technology of NIC and MeitY. Second task included a training session of e- Granthalaya, which is a digital platform developed by National Informatics Centre and Ministry of Electronics and Information Technology for government libraries, followed by preparing book entries and detailed report on e-Granthalaya. Third task included a current journals/article on Open Data Technology, Environmental Informatics, Digital Government, Electronics and Semi-Conductor from IEEE and ACM websites. Fourth task included a search of articles on Scopus and web of science of MeitY's division such as "C-DAC", "CMET", "STQC", etc. The final task performed in the training session included gathering articles affiliated to Digital Government Research in India provided by the websites of Scopus and Web of Science.**

# LIST OF ABBREVIATIONS

NIC- National Informatics Centre

ACM- Association for Computing Machinery

IEEE - Institute of Electrical and Electronics Engineers

OPAC- Open Public Access Catalogue

NIC Net - National Informatics Centre Network

UDC - Universal Decimal Classification

WOS - Web of Science

MEITY- Ministry of Electronics and Information Technology

C-DAC- Centre Development of Advance Computing

CMET- Centre for Materials for Electronics Technology

CDOT- Centre for Development of Telematics

STQC-Standardization Testing and Quality Certification

ERNET-Education and Research Network

NIELET- National Institute of Electronics and Information Technology

STPI-Software Technology Park of India

SAMEER- Society for Applied Microwave Electronics Engineering & Research

# CHAPTER1

# NATIONAL INFORMATICS CENTRE

## 1.1 Introduction

National Informatics Centre (NIC) is a premiere Science and Technology institution for providing e- governance solutions, adopting best practices, integrated services and global solutions in government sector. Information is provided about activities of the Centre such as antivirus services, computer aided design, geographical information systems, integrated network systems, internet data centre, IT training services, etc. Details of web services and web cast services are also provided.

National Informatics Centre was established in 1976 and is based in New Delhi, India.

National Informatics Centre (NIC) under the Ministry of Electronics and Information Technology (MeitY) is the technology partner of the Government of India.

Through its ICT Network, ""NICNET"", NIC has institutional linkages with all the ministries and departments of the central government; 36 state governments and union territories; and about 737 district administrations of India. NIC has been instrumental in steering e-governance applications in government ministries and departments thus facilitating improvement in government services and transparency; and promoting decentralized planning and management.

All of this results in better efficiency and accountability to the people of India. NIC has managed to garner much experience in the design, development, and operationalization of various e-government projects in the areas of public

administration and governance, including agriculture and food, animal husbandry, fisheries, forestry and environment, industry, health, education, budget and treasury, fiscal resources, transport, water resources, court management, rural development, land records and property registration, culture and tourism, import and exports facilitation, social welfare services, and micro-level planning.

## 1.2 Objectives of NIC

NIC has also developed several digital platforms for the socio-economic development of the country with 'One-Nation One-Platform' initiative to empower citizens digitally. Its services have created a perfect interaction of the Government with citizens, Government employees and businesses. With an objective of focused study of new technology, explore and experiment their use in governance, NIC has set-up Centre of Excellence (CoE) in Data Analytics, Artificial Intelligence, Block chain and Application Security.

NIC has been continuously working towards a meaningful use of emerging technologies in governance across all levels of government.

With the objective of focused study of new technology, and explore and experiment their use in governance, NIC has setup Centres of Excellence for Artificial Intelligence and Data Analytics. Use of mobile technologies has greatly helped in delivery of services to citizens along with planning and decision making in the government.

National Informatics Centre (NIC) is a science and technology organization that provides egovernance and ICT applications, and informatics services.

NIC is responsible for a number of core activities that include the setting up of ICT infrastructure; implementation of national and state level e-governance projects; consultancy to the government departments; research and development; and capacity building.

The organization's comprehensive service portfolio includes computer-aided design, digital signature certification, geographical-information system, domain-name registration for gov.in and nic.in, informatics, internet data centre, mathematical modelling and simulation, computer networking, office-procedure automation, training, cyber security, video conferencing, and website hosting and website development.

**Website of NIC:** https://www.nic.in

# CHAPTER:2

# NIC LIBRARY & INORMATION SERVICES DIVISION

## 2.1 NIC Library

LIS Division of NIC is an internal division, started with an objective to fulfill the information needs of staff/users. The library is managed by skilled staff and has accumulated a good collection of books, journals, manuals, standards, etc. in the field of Information Technology and allied subjects. The library is equipped with latest tools of information technology from artificial intelligence to others and provides a number of services to its users.

## 2.2 Library structure

The library is located in NIC HQ building (A-Block, CGO Complex, Lodhi Road, New Delhi) at 4$^{th}$ floor. The books, current issues of journals, manuals and, standards are housed in halls present there and the bound volumes of journals are housed in different hall. The reading room is also present there which is lively and spacious in nature and provides wonderful space to read.

## 2.3 Collection

NIC library has a very good collection of following types of documents, particularly in the field of information technology and allied subjects:

**Table 1: List of library resources in NIC Library**

| LIBRARY RESOURCES | COLLECTION IN NUMBERS |
|---|---|
| IPAG collection | 5953 |
| NIC collection | 14000 (as on 2006) |
| Bound Journals | 4000 (as on 2006) |
| CDs | 300 |
| Manuals | 200 |
| Standards | 400 |

**Table 2: List of various types of collection in NIC Library**

| Type of Collection | Nos. |
|---|---|
| Books (IPAG) | 5953 |
| Books (NIC) | 14000 |
| Bound Journals | 4000 |
| Articles | 5000 |
| Manuals | 200 |
| Standards | 500 |

## 2.4 Classification

Books are arranged in the shelves of library according to classification number assigned by UDC (Universal Decimal Classification) scheme. The loose issues of current journals are displayed on display racks alphabetically by their titles.

## 2.5 Library Computerization/ Automation

NIC library is a fully computerized library, uses two different library automation software:

(a) LibSys from 1988 to 1997

(b) Basis Plus/Techlib Plus from 1998 - 2004

Later during 2005, it started to use e-Granthalaya software for computerization of library activities. Library has also been provided internet connectivity through local LAN and nation-wide NICNET. As a result of this, library provides a wide range of on-line services to its users. With the rising e-services, for the purpose of computerization, library has been provided well advanced systems in terms of hardware, software and connectivity.

## 2.6 Users and Membership

NIC library membership is open to NIC staff only.

However, temporary membership is also provided to trainees for short period. No membership fee is charged from any user.

## 2.7 Library services

NIC library offers a wide range of services such as lending of documents, reference, current awareness, inter library loan, SDI, etc.

### 1.LENDING SERVICE:

After becoming the registered library member, a user can avail the lending services in the following manner: -

- Only five number of books or bound volumes of journals will be issued on request to the circulation counter.
- The issued documents can only be retained for a period of one month only. However, if the documents required further, it may be re-issued for a further of one month.
- The loose issues of current journals will not be issued for more than one night. However, back issues (loose) of journals may be retained for one week only.
- CD-ROMs will not be issued with the books accompanying them. However, on special request, CD-ROMs may be issued for one day only.

### 2. INTER LIBRARY LOAN:

- The books/ journals not available in NIC library may be received on inter library loan from other institute/ library for 15 days only.
- This facility is also available to other institute/ library where they can get 2 number of documents only for a period of 15 days.

- To avail this service, users /libraries /institutes are expected to make request in writing with full bibliographic details of document required.
- In case of other library/institute request for ILL from NIC library, postal charges, if any, shall be borne by the concerned library/institute.

### 3. PHOTOCOPY SERVICE:

- Users may get photocopy of articles from journals/books required for their projects.
- The request for photocopy must be given in a prescribed format (available from library) and must be signed by OIC, Library.
- At present, photocopy service is available in a very limited way. Only potential request will be accepted for this service.

### 4. ON-LINE PUBLIC ACCESS CATALOGUE (OPAC):

Library has installed / provided one computer terminal where any user can access & browse OPAC of NIC library database of books and journals. The OPAC provides full bibliographic details of documents, their location on shelf and their state of availability. No printing is allowed from OPAC.

### 5. REFERENCE SERVICE AND ASSISTANCE:

For information or assistance in the user of library and its services, the user may approach the reference desk/library staff. In case of specialized information or any difficulty in getting the assistance, the users may approach Officer in charge, Library (OIC, LIBRARY NIC)

### 6. CURRENT AWARENESS SERVICE AND SDI:

NIC library provides Current Awareness and SDI services regularly. The library keeps the records of user-specific subject requirement (user profile) matched regularly with the incoming documents Profile and thus, SDI output is generated and passed on to the users. Besides, library generates a list of recent arrivals (books) as well as articles from current journals and supply these to the users. Now, the output file for both the services is posted to users by E-Mail.

### 7. NEWSNIC SERVICE:

NEWSNIC (NIC in News) service on world wide web was started on 1st November 1998 with the help of 'Multimedia and Presentation Division'. This service covers NIC news items and other IT related news from twenty leading national dailies. The NIC news items/ ITS news items are scanned, converted to HTML format and made available on world wide web page.

## 8. NIC LIBRARY on WEB:

NIC Library is available on Web. This site is accessible to NICNET users only during working hour from Monday to Friday. Various services of Library are available through internet. The main library web page links to the various pages/services/databases like: -

a. BOOKS CATALOGUE- Here the user can search/browse the full catalogue of books available in NIC Library. At present more than 21,000 books are available in the library collection. This shows the full bibliographic details along with the current status of the book. (Free-text searching e-Granthalaya Bibliographic Database)

b. ARTICLES DATABASE- Like books catalogue here the user can search approximately 12,000 articles indexed from more than 300 journals being subscribed in the library.

c. NEWSNIC SERVICE- A News Clippings Service from Library, SQL Database, this database is in SQL Server and daily updated where important news clippings are uploaded from 23 national dailies. The database can be search over internet by NIC officials only. The news items indexed are generally about Information Technology developments.

d. DATAPRO REPORTS (FULL-TEXT Database from M/s. Gartner Group, Inc. USA) This is a commercial database available from M/s. Gartner Group, Inc; USA in the field of Information Technology. This provides more than 25000 state-of the Report in IT field. The reports are full-text and can be accessed by NIC Officials only.

e. SPECIAL ISSUES OF JOURNALS (1988-2002) - This database has been designed in SQL and published over Internet. The database provides special issues of journals available in the NIC library. So far, this includes special issues from 1988 onwards and can be searched by journal name, keywords, author name and title, etc.

f. JOURNALS HOLDINGS- This database is in SQL and contains more than 6000 bound volumes of 700 journals. The database can be searched journal-wise and accession number-wise.

**Website of NIC Library** - http://library.nic.in/

# Chapter:3

# MCIT LIBRARY CONSORTIUM MEITY- MINISTRY OF ELECTRONICS AND INFORMATION TECHNOLOGY


## 3.1MCIT Library Consortium

MCIT Library Consortium comprises organizations from Ministry of Communication and Information Technology (MCIT); Department of Telecommunication (DOT). These organizations have their own Libraries, Documentation Centres and Information Centres to meet the information needs of their officials. These organizations spend huge amount of their budget to purchase/subscribe books, journals etc. Sometimes it has been observed that these libraries purchase common/similar information resources separately. Thus, there is a need of common purchasing and sharing of information resources among these organizations for the best utilization of their library budget as well as information resources.

## 3.2 About MietY

The Ministry of Electronics and Information Technology (MeitY) is an executive agency of the Union Government of the Republic of India. It was carved out of the Ministry of Communications and Information Technology on 19 July 2016 as a standalone ministerial agency responsible for IT policy, strategy and development of the electronics industry.

## Vision.

e-Development of India as the engine for transition into a developed nation and an empowered society.

**Mission**

To promote e-Governance for empowering citizens, promoting the inclusive and sustainable growth of the Electronics, IT & ITeS industries, enhancing India's role in Internet Governance, adopting a multipronged approach that includes development of human resources, promoting R&D and innovation, enhancing efficiency through digital services and ensuring a secure cyber space.

**Objectives**

- **e-Government:** Providing e-infrastructure for delivery of e-services
- **e-Industry:** Promotion of electronics hardware manufacturing and IT-ITeS industry
- **e-Innovation / R&D:** Implementation of R&D Framework - Enabling creation of Innovation/ R&D Infrastructure in emerging areas of ICT&E/Establishment of mechanism for R&D translation
- **e-Learning:** Providing support for development of e-Skills and Knowledge network
- **e-Security:** Securing India's cyber space
- **e-Inclusion:** Promoting the use of ICT for more inclusive growth
- **Internet Governance:** Enhancing India's role in Global Platforms of Internet Governance.

**Website**: https://www.meity.gov.in/

## 3.3 MeitY Organisations


### National Informatics Centre (NIC)

National Informatics Centre (NIC) of the Ministry of Electronics and Information Technology is providing network backbone and e-Governance support to Central Government, State Governments, UT Administrations, Districts and other Government bodies. It offers a wide range of ICT services including Nationwide Communication Network for decentralised planning, improvement in Government services and wider transparency of national and local Governments. NIC assists in implementing Information Technology Projects, in close collaboration with Central and State Governments, in the areas of (a) Centrally sponsored schemes and Central sector schemes, (b) State sector and State sponsored projects, and (c) District Administration sponsored projects. NIC endeavours to ensure that the latest technology in all areas of IT is available to its users.

### STQC

Standardisation Testing and Quality Certification (STQC) Directorate is an attached office of the Ministry of Electronics and Information Technology, Government of India, provides quality assurance services in the area of Electronics and IT through countrywide network of laboratories and centres. The services include **Testing, Calibration, IT & e-Governance, Training** and **Certification** to public and private organizations.
STQC laboratories are having national/International accreditation and recognitions in the area of testing and calibration.
Besides testing and calibration STQC has specialized institutions such as Indian Institute of Quality Management (IIQM) for quality related training programs and Centre for Reliability (CFR) for reliability related services.
In the area of IT & e-Governance, STQC provides Quality assurance services for Software testing, Information Security and IT Service Management by conducting testing, training, audit and certifications.

### C-DAC


C-DAC is a premier research and development Society of DeitY. Spread across 11 cities in the country, the various labs of C-DAC carry out cutting edge R&D and innovation activities

ranging from conceptualization to field deployment, in a number of areas within the space of electronics, information and communication technologies having national and international importance.
C-DAC's thematic areas of current focus include (a) High Performance Computing/ Supercomputing and Grid Computing, (b) Indian Language Technologies, (c) Cyber Security, (d) Professional Electronics covering VLSI Technologies, Power Systems Technologies, Intelligent Transport Systems, (e) Health Informatics, (f) Software Technologies covering Free & Open-Source Technologies and e-Governance Applications, and (g) Education Technologies covering e-Learning and intelligent Class Rooms. In each of the areas, it has produced significant results in terms of innovation, system design and development, research publication as well as deployment.

**C-MET**


Centre for Materials for Electronics Technology (C-MET) has been set up as a Registered Scientific Society in March 1990 under Department of Information Technology (formerly Department of Electronics) as a unique concept for development of viable technologies in the area of materials mainly for electronics. C-MET is operating with 3 laboratories located at Pune (Head Quarters), Hyderabad and Thrissur with specialized research mandate at each place.

**ERNET**


**Education & Research in Computer Networking (ERNET)**

ERNET India is an autonomous scientific society under the administrative control of Dept. of Information Technology, Government of India having one of the largest nationwide terrestrial and satellite networks with 5 points of presence located at the premier academic and research institutions in major cities of the country. Focus of ERNET India is not limited to just providing connectivity, but to meet the entire needs of the academic and research institutions by providing consultancy, project management, training and other value-added services such as web hosting, e-mail services, video conferencing, domain registration, CUG services.

**NIELIT**

National Institute of Electronics and Information Technology (NIELIT) is an autonomous scientific society under the administrative control of Ministry of Electronics and Information Technology (MeitY), Government of India. NIELIT is actively engaged in Capacity Building and Skill Development in the areas of Information Technology (IT); Electronics; Communication Technologies; Hardware; Cyber Law; Cyber Security; Geographic Information System (GIS); Cloud Computing; Electronics System Design & Manufacturing (ESDM); e-Waste; Internet of Things (IoT); Big Data; Block Chain; Data Analytics; e-Governance and related verticals. It offers courses both in Formal as well as Non-Formal Sectors and is also one of the National Examination Bodies. NIELIT accredits institutes/ organizations for the conduct of courses in the Non-Formal Sector. NIELIT is also rolling out IT Literacy Programmes for many State Governments for its employees and the masses. NIELIT is also entrusted by many organizations to conducts their **recruitment examinations**. NIELIT has vast experience in conducting **Online examinations** and **Third**-party **assessments** of courses.

**SAMEER**

SAMEER is a premier R & D Laboratory dedicated to research, design and development in the field of RF and Microwave systems. SAMEER head quarter is located in IIT, Powai campus. The R & D activities at this centre mainly emphasize RF / Microwave systems and applications. However, there is also interdisciplinary research initiative addressing broader spectrum of electronics areas like optoelectronics, Digital signal processing, Navigational aids, radars, atmospheric remote sensing systems and Linear accelerators for cancer therapy. Many of the R & D programs lead to systems, products and technologies which are directly usable in diverse applications.

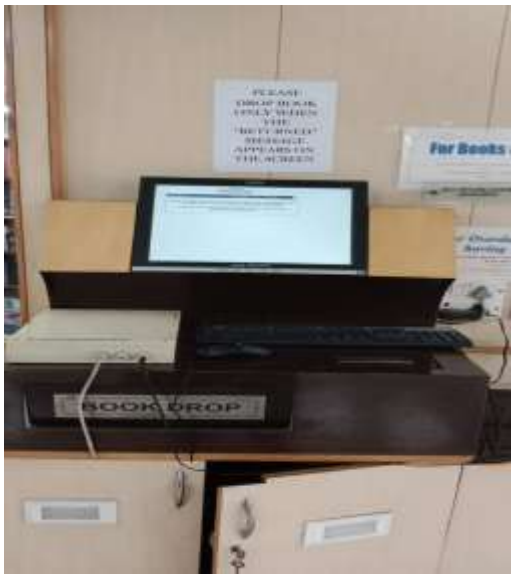
**STPI**

**Software Technology Parks of India (STPI)**

Software Technology Parks of India was set up in 1991 as an autonomous society under the Ministry of Electronics and Information Technology (MeitY). STPI's main objective has been the promotion of software exports from the country. STPI acts as 'single-window in providing services to the software exporters. The services rendered by STPI for the software exporting community have been statutory services, data communications services, incubation facilities, training and value-added services. STPI has played a key developmental role in the promotion of software exports with a special focus on SMEs and start-up units

## 3.4 Ministry of Electronics & Information Technology Information & Documentation Centre (Library)

This Department has a spacious well-planned Library viz Information and Documentation Centre (I&DC), with an inventory of latest books and journals. It uses RFID based Library Management System to manage issue & return of books and journals. I&DC also provides various other services like Inter-Library loan facility to the officials of the Department through DELNET (Developing Library Network). Services are also provided to the retired officials of the Department and trainees who undertake projects in the Department. The Information & Documentation Centre possesses approximately **30,000 books** on various subjects including Electronics, Computer, IT, Computer languages, Fiction, Hindi and English literature. I&DC procures on an average 100 books and approximately **56 journals** per annum. Currently, e-Books service is also available to the authorized users. Library has RFID system for the issue and return of books.




The Department is spearheading an Intra – Ministerial Initiative viz the Library Consortium, Ministry of Communication & Information Technology (MCIT), Consortium of the Department (MCIT Consortium) comprises the users from the National Informatics Centre (NIC), C-DAC, NIELIT, SAMEER, C-MET, STQC Dte., STPI, CCA, ERNET India, DOT, C_DOT and Department of Posts. The Department provides on-line access to various e-Resources i.e., IEL, ACM Digital Library and ISO Standards to its users through MCIT Library Consortium.

# Chapter:4

## NEWS NIC: NEWS CLIPPING SERVICES


News media plays a great role in generating public opinion by keeping informed in current developments. There are thousands of news channels and newspapers in India. NIC library has been providing news clipping service (News NIC) as a part of the current literature alerts service (CLAS) to NIC officers since long time. News clips are captured from important national dallies from internet and print news media.

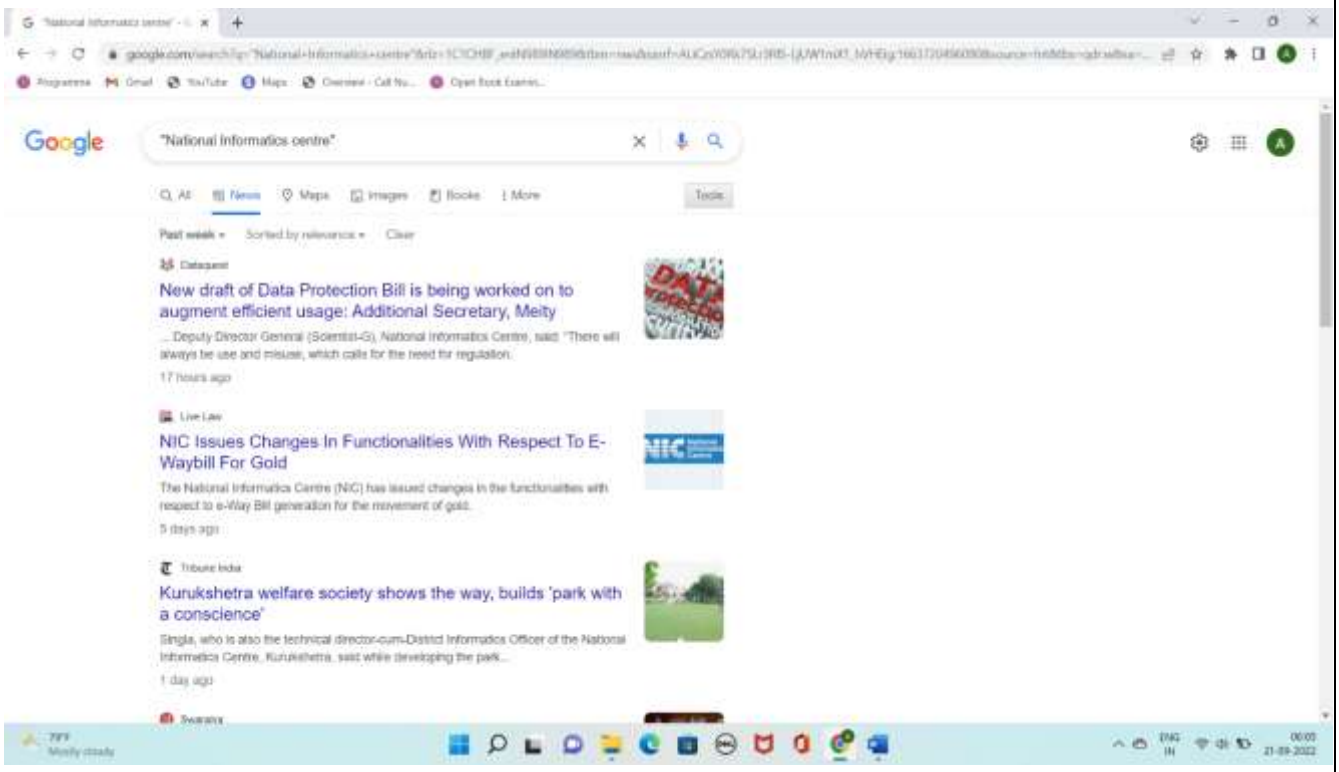
News NIC service covers the news items related to information technology and allied subjects. This news compilation also includes news items on NIC project activities and events.

News clipping service is one of the common services provided by libraries and information centres. In the old days under this service, libraries used to provide copy of the important NEWS items published in various national and international newspapers. During those days, libraries used to cut and paste these news items on plain papers or take xerox of these news items and then circulate these among the key officials in their organizations. Now, use of information technology has changed the mode of news clipping service in libraries and information centres. This certainly has facilitated wide circulation of the news items in networked environment with better archives searching. Moreover, with the availability of web technology and user-friendly database technology. It has become possible now to provide news clipping service in full-text over the world wide web.

## Methodology

Step1: First Go to Web site: https://news.google.co.in

Web site: https://news.google.co.in/ Web site: https://google.com/ >> News >> Tools -
>Recent->Recent Sorted by relevance-> Sorted by date



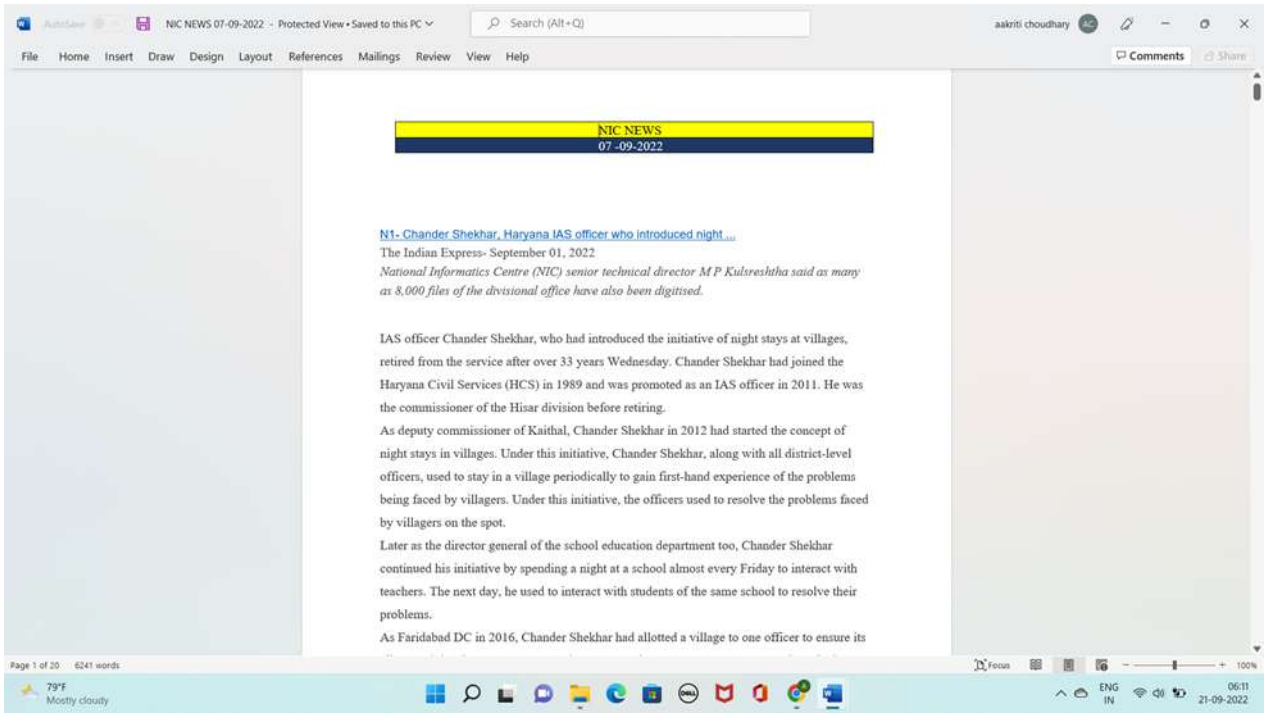

Step2: click any relevant and latest news

Step3: Copy and paste news headlines a long with full text in MS Word file. Only NIC and Meity news as full text and other news heading and summary only.

Step4: Hyper link news title with original newspaper and news web site.

Samples of News clippings of NIC **done by Aakriti** are provided below:

**Sample1**



NIC NEWS
07 -09-2022

N1- Chander Shekhar, Haryana IAS officer who introduced night ...
The Indian Express- September 01, 2022
*National Informatics Centre (NIC) senior technical director M P Kulsreshtha said as many as 8,000 files of the divisional office have also been digitised.*

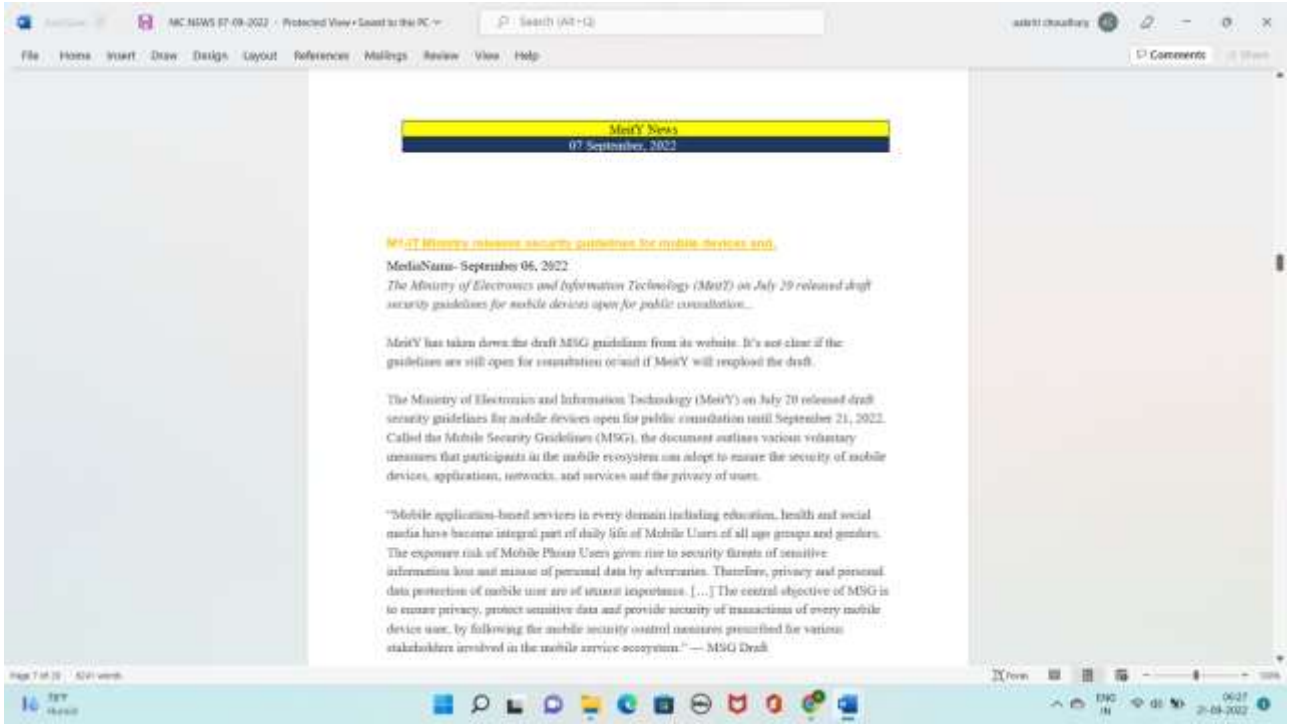
IAS officer Chander Shekhar, who had introduced the initiative of night stays at villages, retired from the service after over 33 years Wednesday. Chander Shekhar had joined the Haryana Civil Services (HCS) in 1989 and was promoted as an IAS officer in 2011. He was the commissioner of the Hisar division before retiring.

As deputy commissioner of Kaithal, Chander Shekhar in 2012 had started the concept of night stays in villages. Under this initiative, Chander Shekhar, along with all district-level officers, used to stay in a village periodically to gain first-hand experience of the problems being faced by villagers. Under this initiative, the officers used to resolve the problems faced by villagers on the spot.

Later as the director general of the school education department too, Chander Shekhar continued his initiative by spending a night at a school almost every Friday to interact with teachers. The next day, he used to interact with students of the same school to resolve their problems.

As Faridabad DC in 2016, Chander Shekhar had allotted a village to one officer to ensure its

**Sample2:**




- "National Informatics Centre"
- "Neeta Verma"
- राष्ट्रीय सचना ू विज्ञान कें द्र
- एनआईसी
- "इलेक्ट्रॉननक्ट्स और सचना ू प्रौद्योगिकी मंत्रालय"
- "इलेक्ट्रॉननक्ट्स एंड इनफामेशन टेक्ट्नोलॉजी"
- "Ministry of Electronics and Information Technology" OR " Ministry of Information Technology "

➢ "Centre for Development of Advanced Computing" OR CDAC OR C-DAC

- "Electronics and Information Technology" OR "Electronics and IT"
- "Electronics & Information Technology" OR "Electronics & IT"

➢ **"**Ajay Prakash Sawhney"

- "Ravi Shankar Prasad"
- "Sanjay Shamrao Dhotre"
- "Software Technology Parks of India" OR STPI
- STQC or Standardisation, Testing and Quality Certification

- "CERT-IN" and India
- Indian Computer Emergency Response Team (ICERT)
- Unique Identification Authority of India (UIDAI)
- National Informatics Centre Services Inc.(NICSI) (PSE under control of NIC)
- National Institute of Electronics and Information Technology (NIELIT - Formerly DOEACC Society)
- "Cyber security" and MEITY
- "Cyber security" or NIC
- "Cyber security" OR "cybercrime" OR "cyber-attack" OR "cyber threat" OR "website hack" AND India
- "Websites hacked" OR "website hacked" OR "website hack" OR " hacking website "
- [1] ***https://government.economictimes.indiatimes.com/nic***
- [2] https://government.economictimes.indiatimes.com/tag/digital+india
- [3] https://cio.economictimes.indiatimes.com/
- [4] https://ciso.economictimes.indiatimes.com
- [5] https://economictimes.indiatimes.com/tech
- [6] https://www.bing.com/news?FORM=Z9!H4
- [7] https://www.thehindubusinessline.com/info-tech/
- [8] https://www.financialexpress.com/industry/technology/
- [9] https://www.expresscomputer.in/

[10] https://cio.economictimes.indiatimes.com/news/digital-security

# Chapter:5

# e-GRANTHALAYA APPLICATION


## 5.1 About e-Granthalaya:

e-Granthalaya is a Digital Agenda for Automation and Networking of Government Libraries. It is a Digital Platform developed and maintained by **National Informatics Centre, Ministry of Electronics and Information Technology, Government of India**. Under this platform, NIC Provides Library Management Software with Digital Library Module and Cloud Hosting facility to Government Libraries on request basis.

e-Granthalaya is useful to transform traditional libraries to e-Library with Digital Library Services which includes, automation of in-house activities of libraries, digital library integration, and to provide various online member services using Single Window Access System.

The various organizations under Ministry of Electronics and Information Technology, Government of India have their own Libraries, Documentation Centres and Information Centres to meet the information needs of their officials. This forms a complete cluster is dedicated to these libraries where all these libraries are using e-Granthalaya 4.0 hosted in NIC National Cloud.

The cluster provides online mode for data entry and member services. It provides access to Union Catalogue of these libraries as well as access to e-Books and Digital Repository.

**Version of e-Granthalaya:** Current version e-granthalya in use is version 4.0,developed in the year 2015 and is an enterprise edition based on PostgreSQL an open source DBMS.

## 5.2. Web Address and Demo User-Ids/Passwords:

Web address of e-granthalaya: https://eg4.nic.in/mcit/

Web address of e- granthalaya 4.0 Demo: https://eg4.nic.in/demo/

First account:

- Demo user Id 1: DEMOUSER1
- Password: Dem$123

Second account:

- Demo user Id 2: DEMOUSER2
- Password: Dem$123

To access the OPAC: https://eg4.nic.in/MCIT/OPAC/

## 5.3 Development Platform:

The current version of e-Granthalaya came in 2015 with enterprise edition. The e-Granthalaya software is not installed in libraries, rather it is hosted in NIC cloud libraries need to use it online

Tools used: -

- Front –End: ASP.Net 4.0 Framework
- Back – End: Postgre SQL- an open-source DBMS
- Report: Crystal report

## 5.4 Hosting Server:

e-Granthalaya application is hosted in NIC National Cloud (Meghraj) and used SAAS type of cloud computing. e-Granthalaya used .NET programming.

## 5.5 Modules Under e-Granthalaya:

1.Library Administrator

2.Master Data

3.Books Acquisition

4.Catalouging

5.Circulation

6.Serials

7.Micro Documents

8.Bills Processing

9.Search and Reports

10.OPAC

# Chapter:6

# CURRENT ARTICLES AND JOURNALS FROM IEEE AND ACM

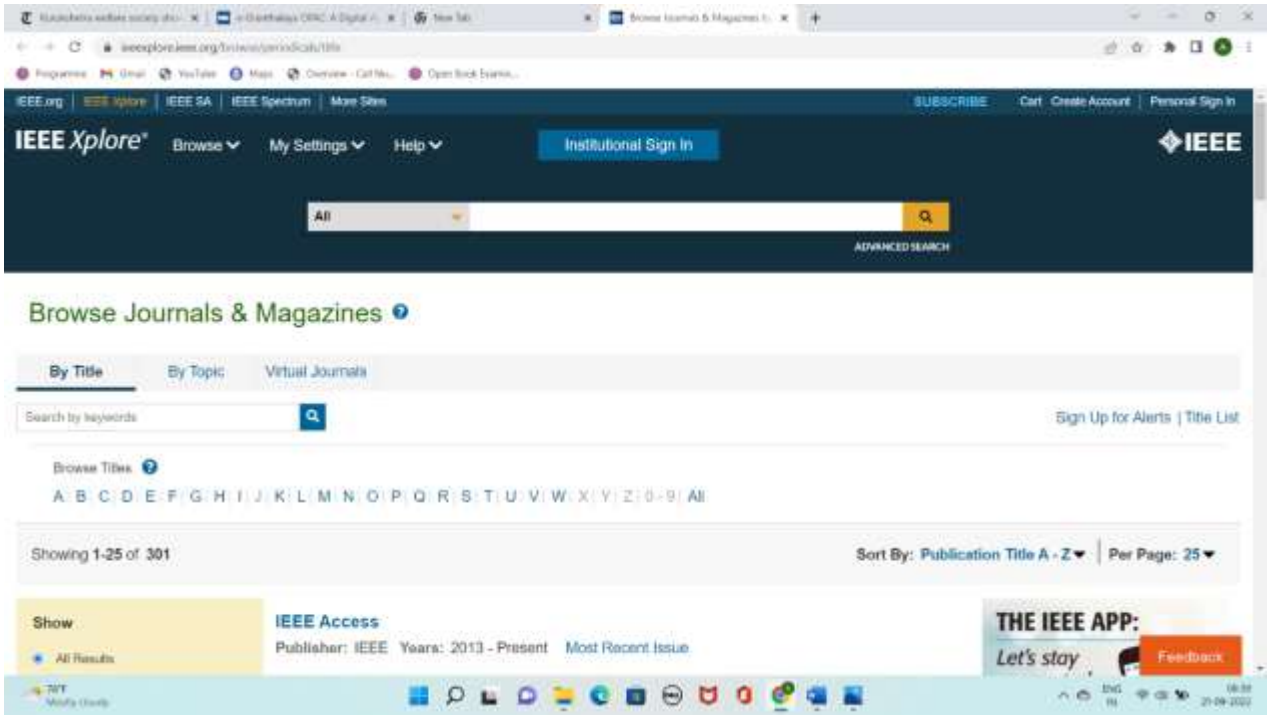
## Task1: IEEE (Institute of Electrical and Electronics Engineers)

Methodology

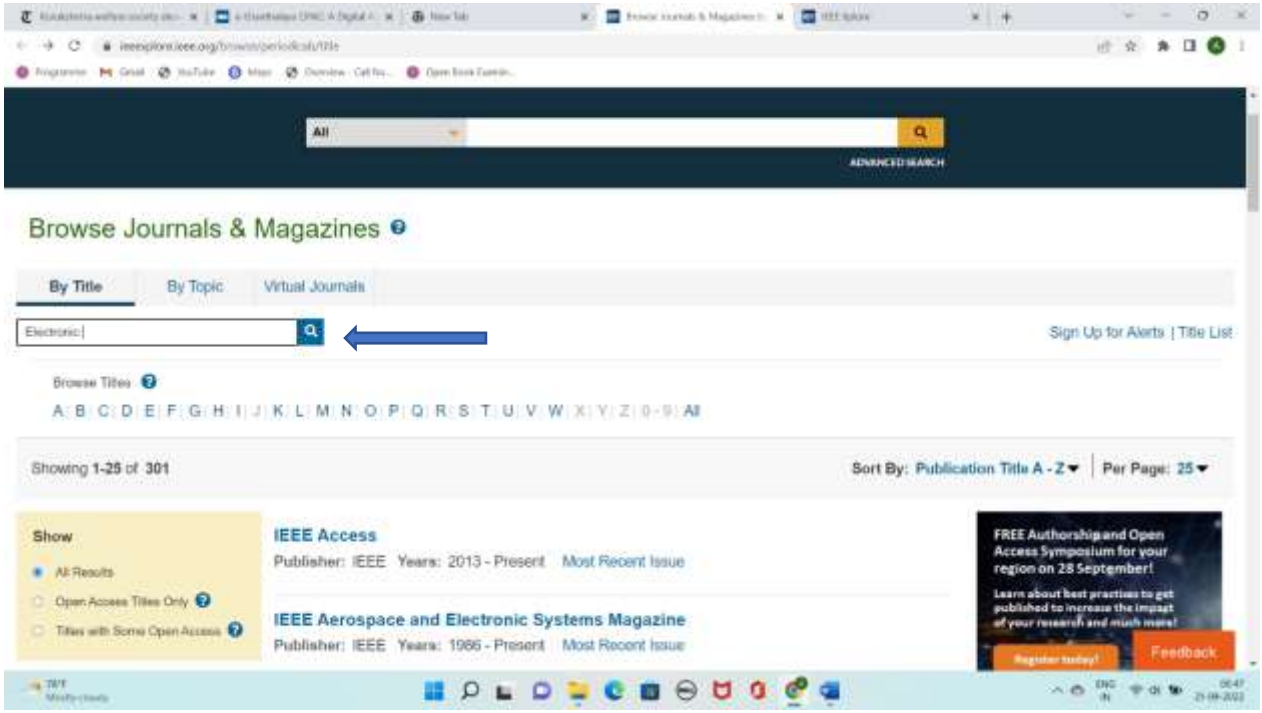
**Step1: go to IEEE Explore https://ieeexplore.ieee.org/browse/periodicals/title**


Screenshot1: Home Page of IEEE Explore

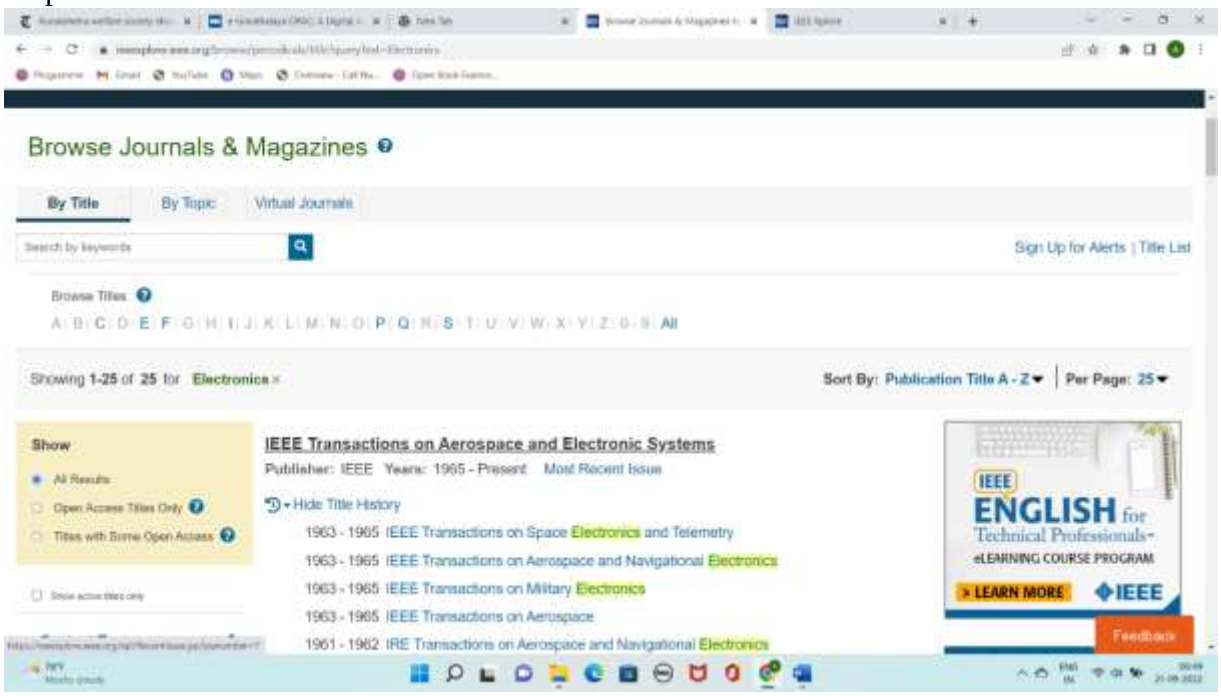
Step2: At menu select Browse, under browse select Journals & Magazines



Step3: select 'By title' & type subjects like "Electronics and Semi-conductor keywords one by one




Step4: Go to Search for results

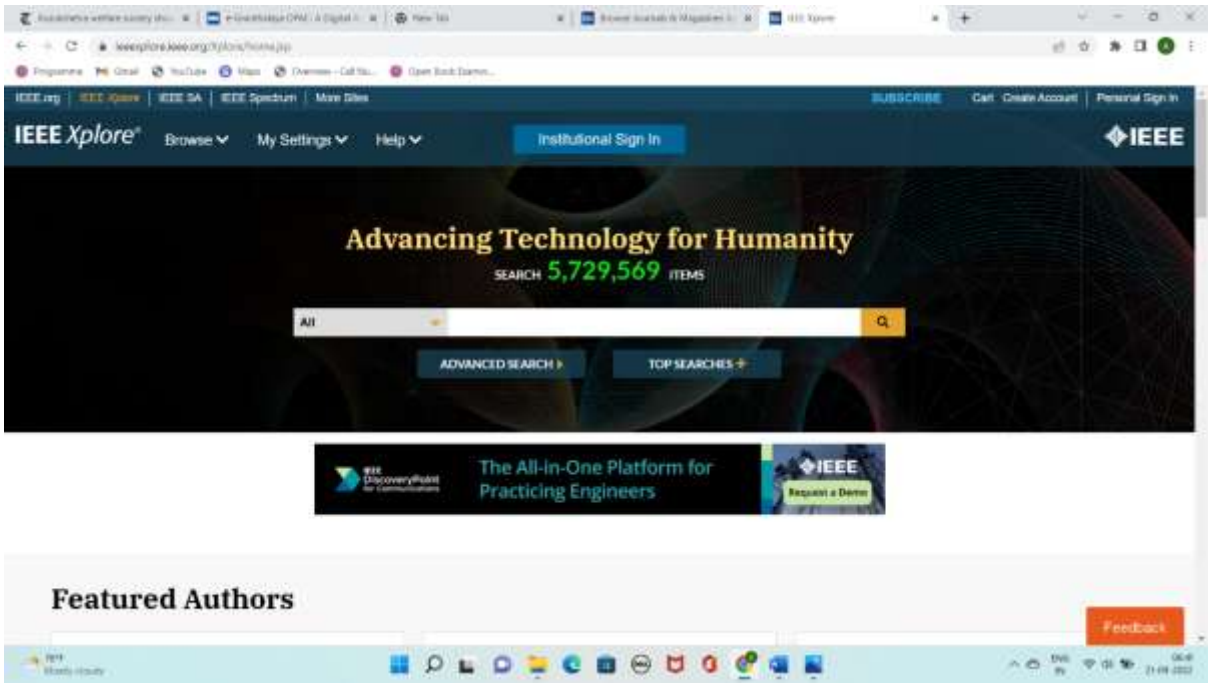



Screenshot3: showing result screen of IEEE Explore

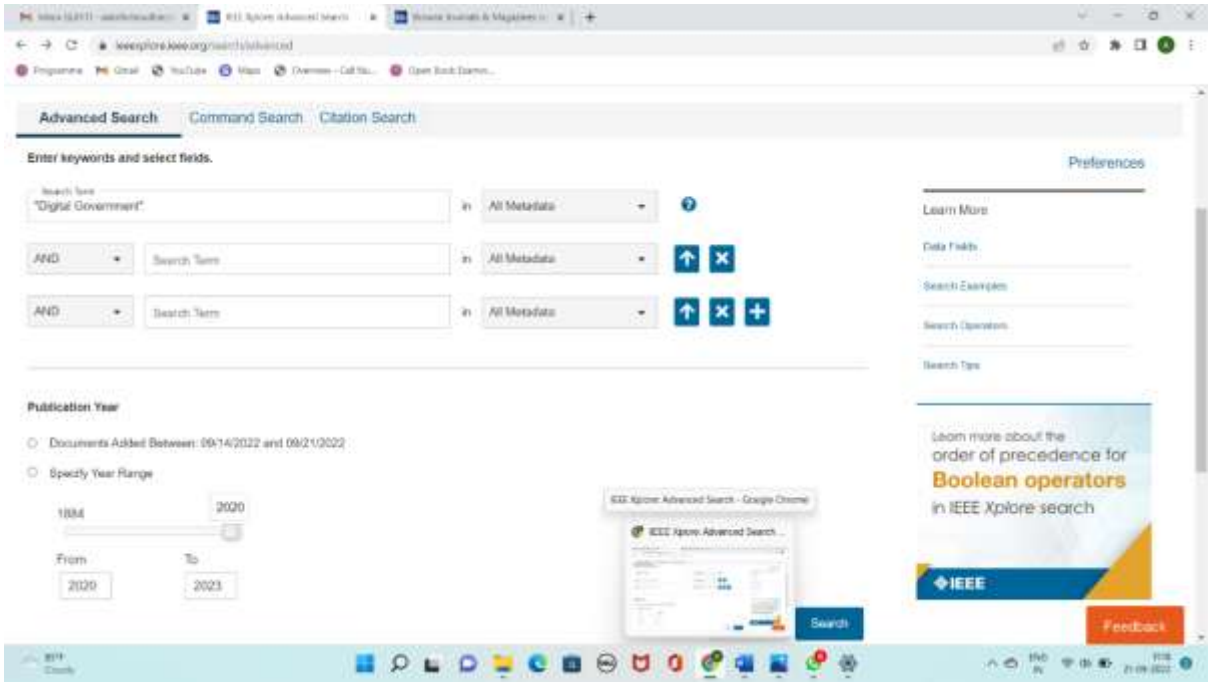
## Task -2 Articles Search on IEEE

### Methodology

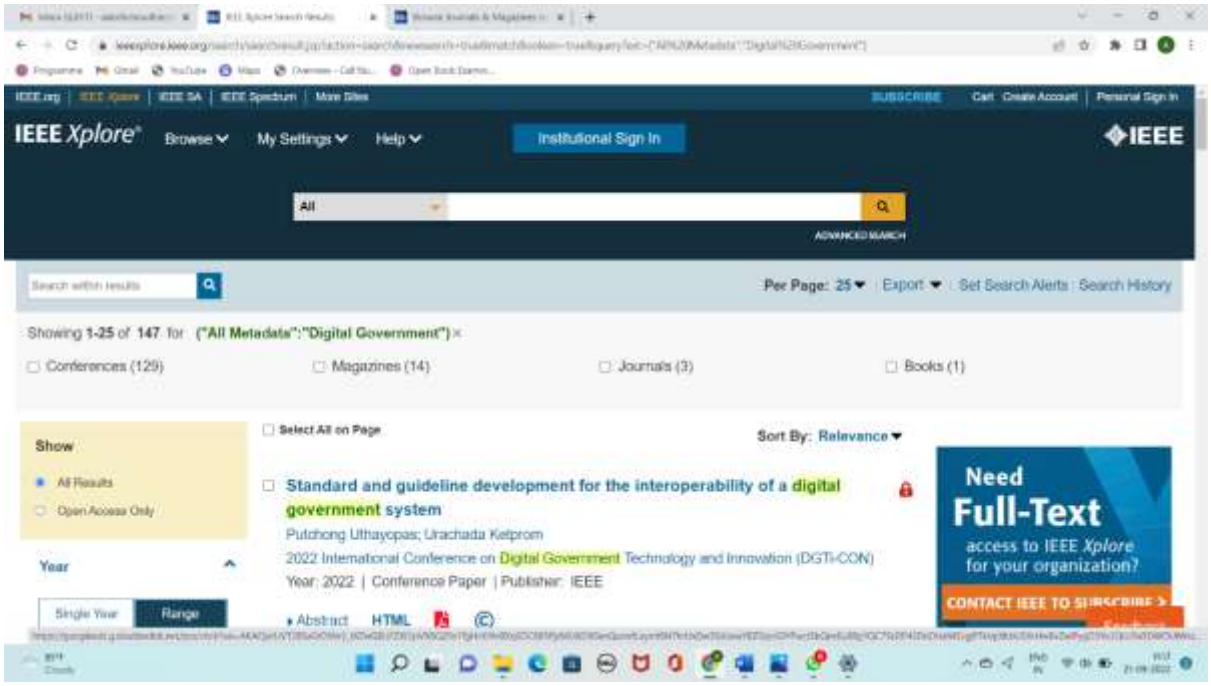
Step -1 Visit the website of IEEE- https://ieeexplore.ieee.org/browse/periodicals/title




Step -2 Click on Advance search for the articles on “Digital Government”, “Open Data Technology” and “Environmental Informatics”.




Step -3 Go to search for results



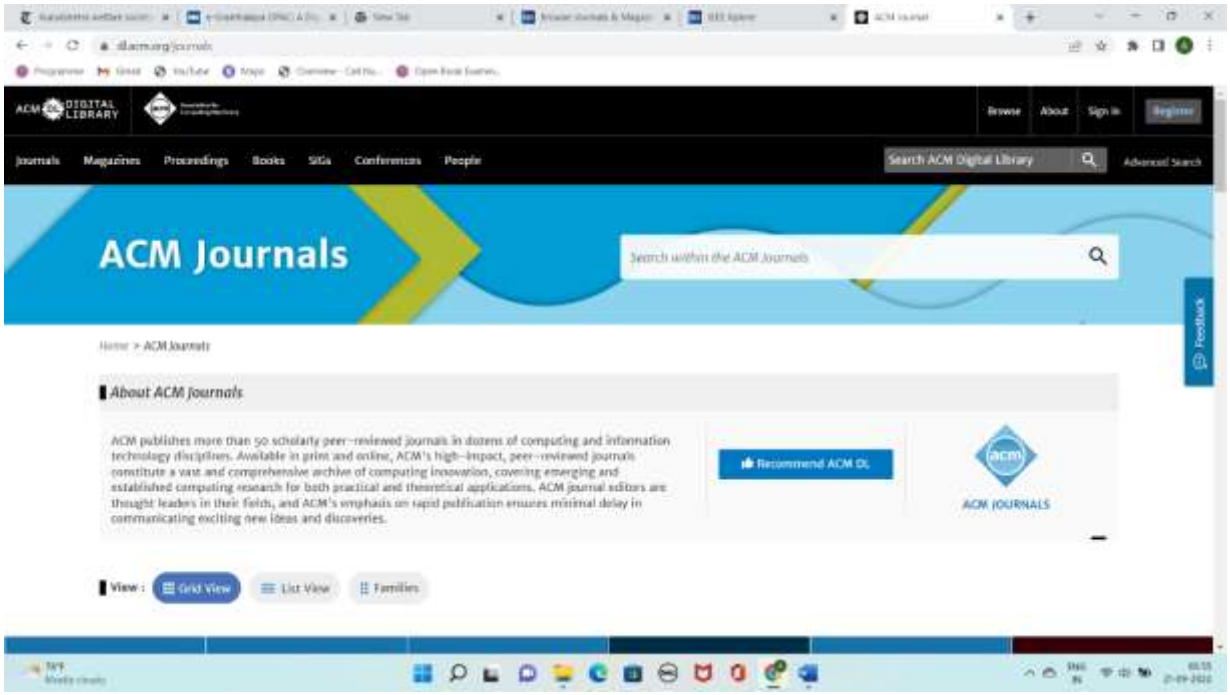

## Task3: ACM (Association for Computer Machinery)

Methodology

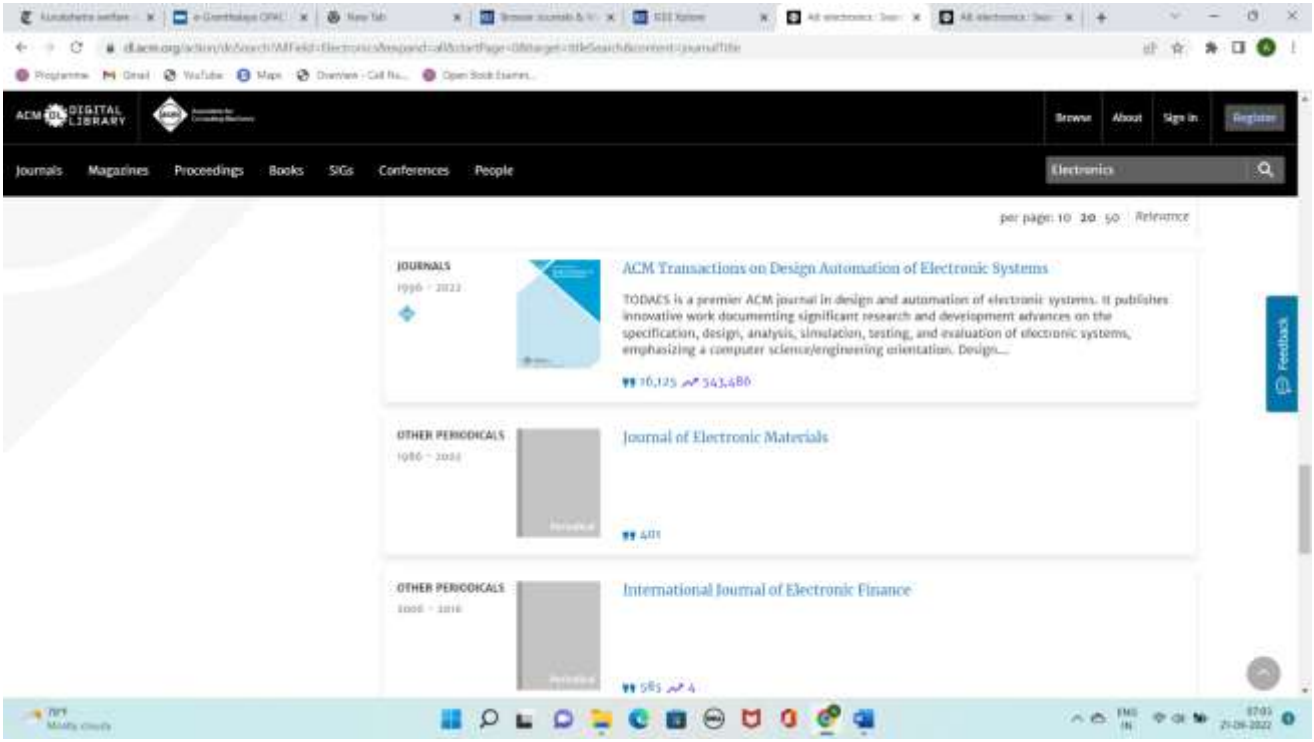
Step1: Go to website https://dl.acm.org/


Screenshot4: Home Page of ACM

Step2: Click on journal option on the main search page

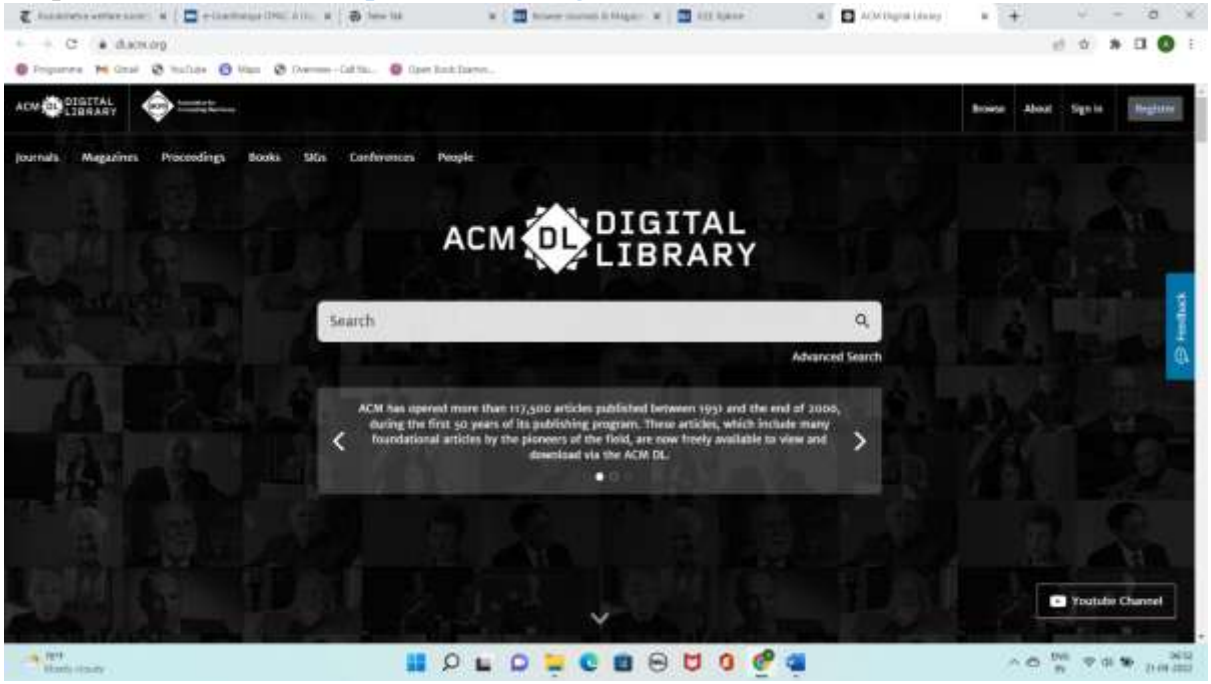



Step3: Select journal and use phrase like: “Electronics” and “Semi-conductor” one by one.

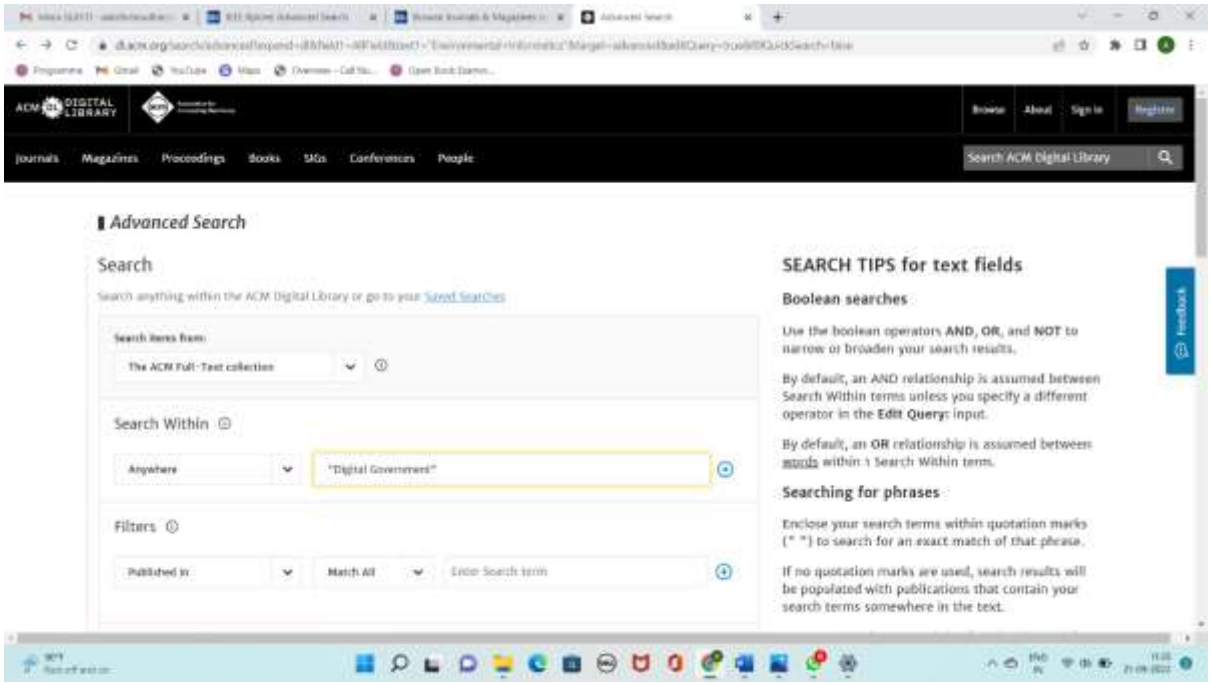



**Task -4 Search Articles on ACM**

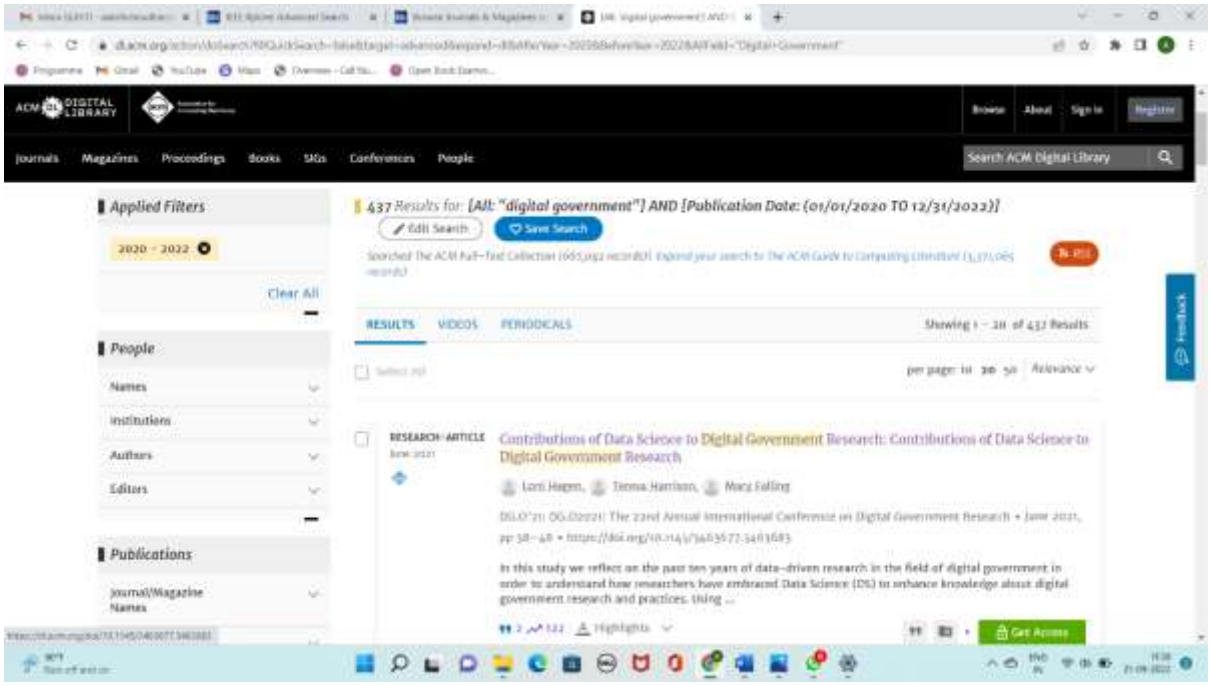
Step1: Go to website [https://dl.acm.org/](https://dl.acm.org/)




Step-2: Click on the Advance search for research articles on "Environmental Informatics", "Digital Government" and "Open Data Technology".




Step-3: Go to search for results


Journals
Magazines
Proceedings
Books
SIGs
Conferences
People
Search ACM Digital Library
Applied Filters
2020 - 2022
Clear All
People
Names
Institutions
Authors
Editors
Publications
Journal/Magazine Names
437 Results for: [All: "digital government"] AND [Publication Date: (01/01/2020 TO 12/31/2022)]
Edit Search
Save Search
RESULTS
VIDEOS
PERIODICALS
Showing 1 - 20 of 437 Results
Relevance
RESEARCH-ARTICLE
Contributions of Data Science to Digital Government Research: Contributions of Data Science to Digital Government Research
Lori Hagen, Teresa Harrison, Mary Falling
In this study we reflect on the past ten years of data-driven research in the field of digital government in order to understand how researchers have embraced Data Science (DS) to enhance knowledge about digital government research and practices. Using ...
Get Access

# Chapter:7
# ANALYSIS OF DIGITAL GOVERNMENT RESEARCH IN INDIA

## BY- WEB OF SCIENCE AND SCOPUS

## 7.1 Web of Science

Nowadays, research community has been publishing an enormous number of papers in different fields. In such an environment, it is essential to know right kind of database to search literature. It has been seen that two most extensive databases are Web of Science and Scopus. WoS from Thomson Reuters was the only citation database and publication covering all domains of science for many years. However, Elsevier Science introduced the database Scopus in 2004 and it rapidly became a good alternative. There are several scholarly papers which compared the coverage, features, and citation analysis capabilities these two major systems. Scholars have observed advantages and limitations of one database with that of other. The competition among WOS and Scopus is intense. The competition has led to improvements in the services offered by them.

**Thomson Reuter's Web of Science (WoS):** The Web of Science™ is the world's most trusted publisher-independent global citation database. Guided by the legacy of Dr Eugene Garfield, inventor of the world's first citation index, the Web of Science is the most powerful research engine, delivering your library with best-in-class publication and citation data for confident discovery, access and assessment. provides access to a network of scholarly articles linked by their references. Articles have been indexed from journals since 1960 and 12,000 journals are currently covered. WoS is the online version of the Science Citation Index with some differences. Separate annual editions covering science, social sciences, and the arts and humanities have been integrated into a multiyear multidisciplinary system. WoS covers nearly 23 million source papers from the 1940s to the present, and frequently updated.

Web of Science is updated with approximately 25,000 articles and 700,000 cited references added each week.

- Covers 12,311+ journals from 256 categories, 110,000 proceedings from conferences, symposia, seminars, colloquia worldwide
- Journal backfiles to 1900, cover-to-cover indexing, cited reference and chemical structure searches
- Science – 7100 international journals and highly cited book series in 170 categories back to 1900
- Social Sciences – 1,750 international journals and highly cited book series in 50 subject categories back to 1954

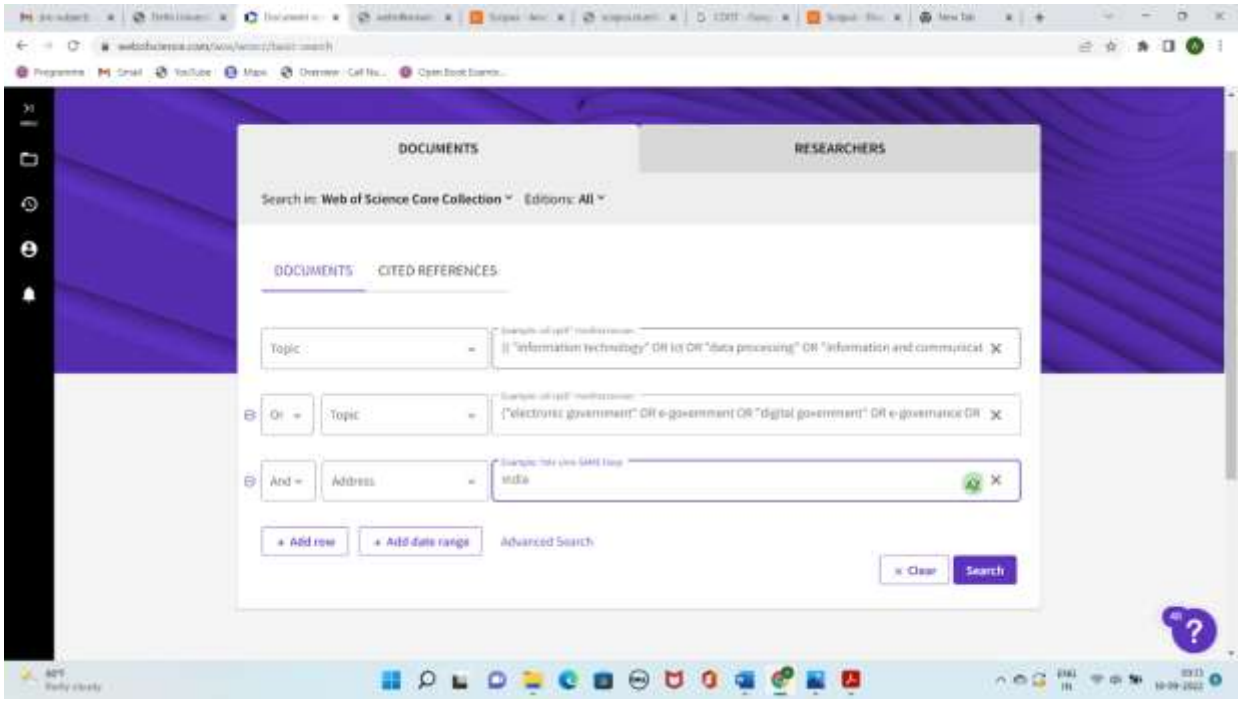
- Arts & Humanities – 1,200 international journals and highly cited book series in 25 categories back to 1975
- Complete backfiles to 1945 however put total at ~37 million records
- Cited reference and chemical structure searches
- Author identification tools
- Analysis capabilities
- Direct links to your full-text collections

## **Methodology**:

Step1: Access the web of science through Du E-library login details and Go to website of Web of Science https://www-webofscience-com

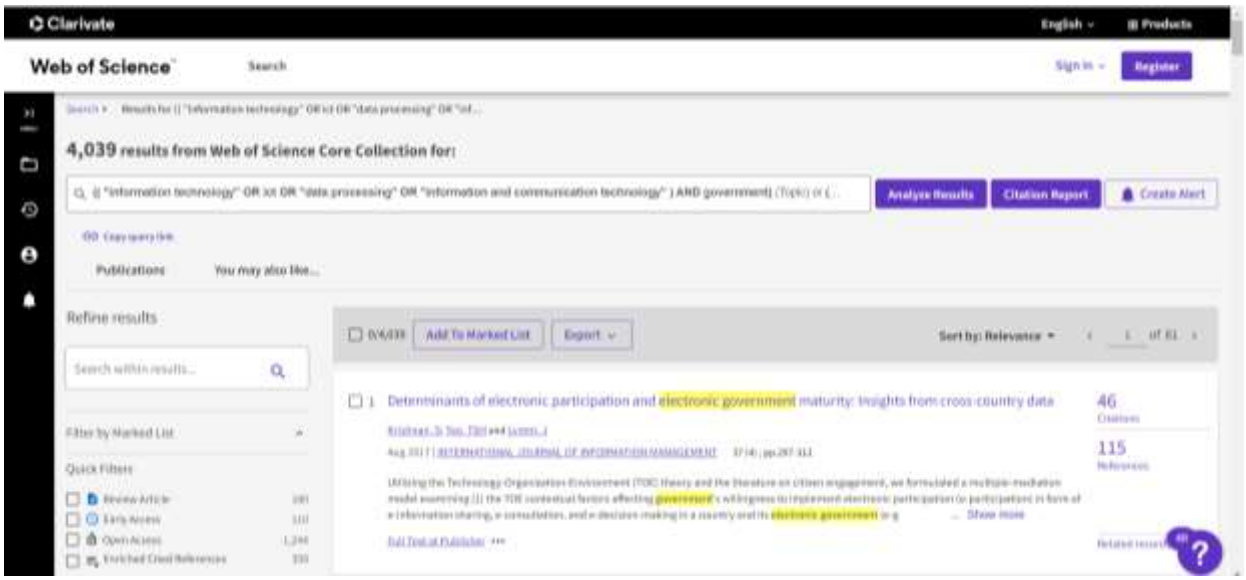
Step2: click on the document option and paste in Boolean search (("information technology" OR ict OR "data processing" OR "information and communication technology") AND government) OR TOPIC: ("electronic government" OR e-government OR "digital government" OR e-governance OR "electronic governance") AND ADDRESS: (India)

Timespan: All years. Indexes: SCI-EXPANDED, SSCI, A&HCI, ESCI.




**Screenshot1:** Search Screen of Web of Science database

Step-3: After 2nd step we got 3,528 results which are affiliated to Digital Governance




Screenshot2: showing result screen of web of science

Following query for searching 'Digital Government in India' scholarly literature was used.

## Results: 4,039

(From Web of Science Core Collection)

searched for: **TOPIC:** (("information technology" OR ict OR "data processing" OR "information and communication technology") AND government) ***OR*** **TOPIC**: ("electronic government" OR e-government OR "digital government" OR e-governance OR "electronic governance") ***AND*** **ADDRESS:** (India)

**Refined by**: COUNTRIES/TERRITORIES: (INDIA)

**Results:** 300

**Timespan:** All years**. Indexes:** SCI-EXPANDED, SSCI, A&HCI, ESCI.

But this result of 4,039 papers from WoS included papers from inside India authors even after filtering using below query:

Searched without address:(India)

## Results in 2022: 303

## 7.2 Scopus

**Scopus:** Elsevier's Scopus [11] indexes 53 million records, 21,915 titles and content from 5,000 publishers, and claims to be the *largest abstract and citation database of research literature and quality web sources*. Elsevier is the owner of Scopus and is also one of the main international publishers of scientific journals.

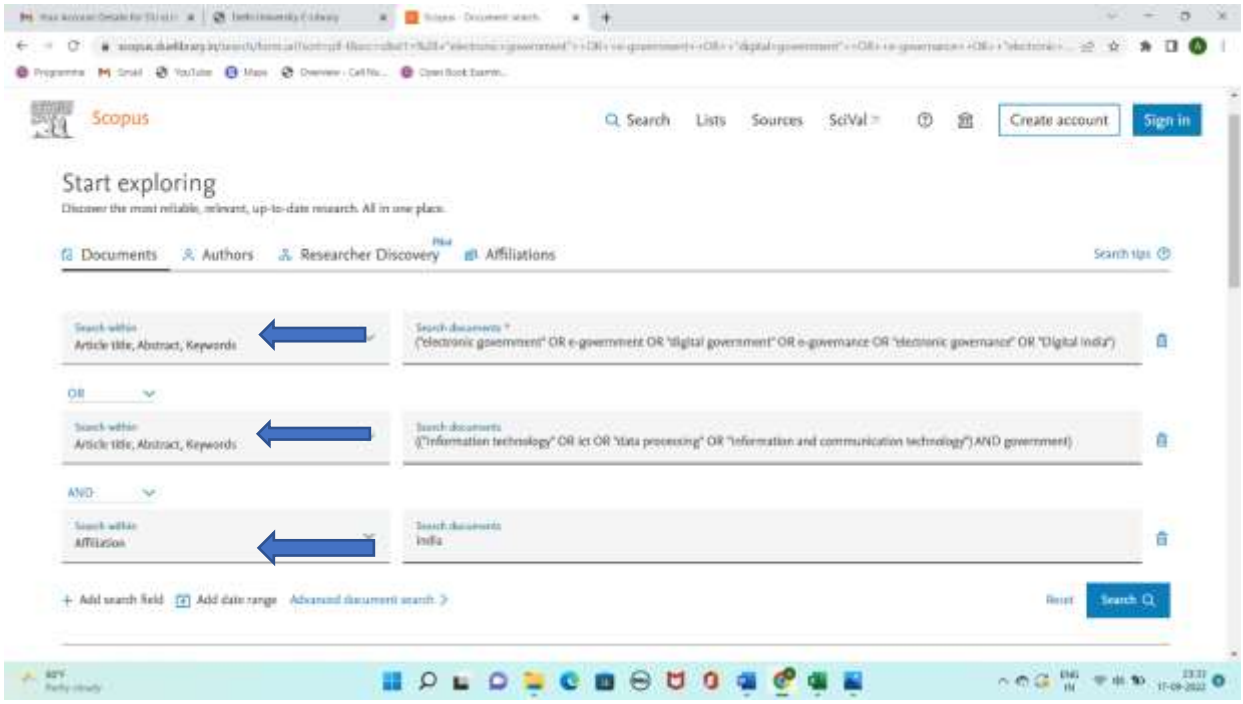
- Scopus contains 53 million records, 70% with abstracts
- Nearly 22,000 titles from 5,000 publishers worldwide
- 4.9 million conference proceedings, 1,200 Open Access journals
- 100% Medline coverage
- 20+ million records back to 1996 with references
- 20+ million pre-1996 records go back as far as 1869
- 40,000 monographs or books
- 386 million scientific web pages
- 22 million patent records from 5 patent offices
- Links to full-text & other library resources
- Innovative tools to review results and refine to relevant hits

**Methodology**

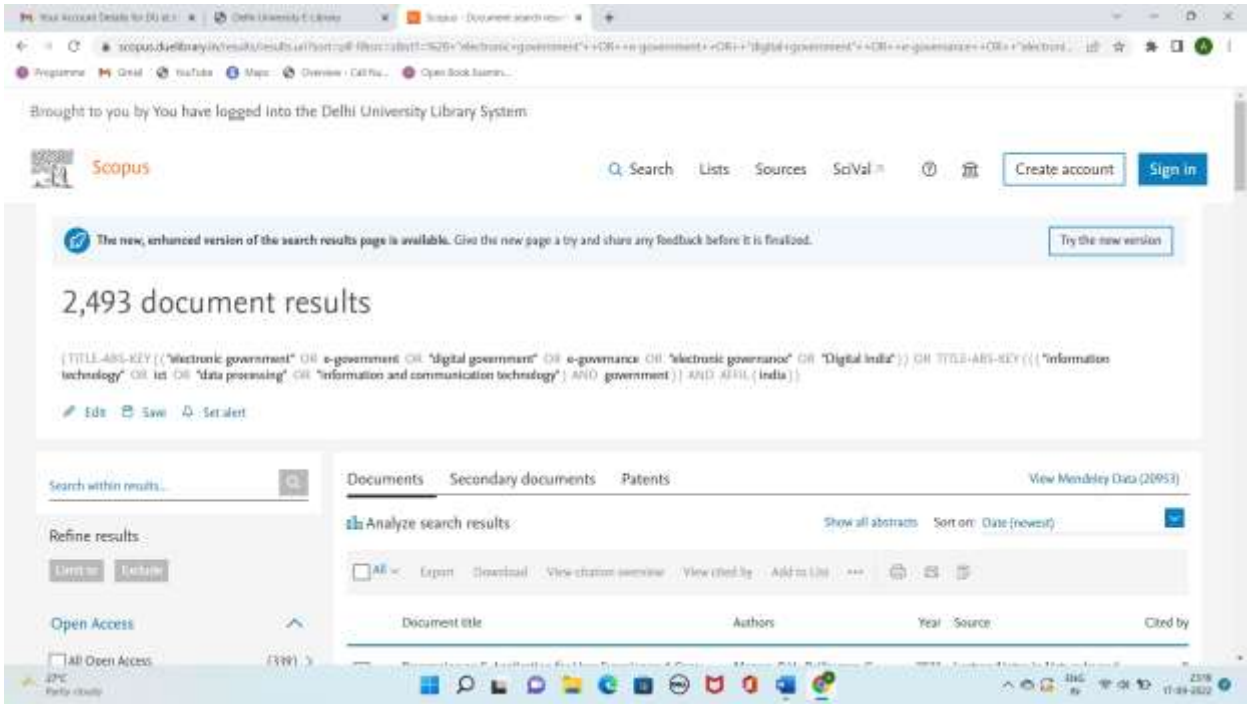
Step-1: Access the Scopus through Du E-library login details Go to Scopus search for article searching
https://www.scopus.com/search/form.uri?display=basic#basic

Step-2: Click on the document option and paste in Boolean search **TITLE-ABS-KEY** ("electronic government" OR e-government OR "digital government" OR e-governance OR "electronic governance" OR "Digital India" ) **OR TITLE-ABS-KEY**( ( "information technology" OR ict OR "data processing" OR "information and communication technology" ) AND government ).

Step-3: Click on Add Search field and type India. Select affiliation option




Step-4: After 3nd step we got 2,493 results which are affiliated to Digital Governance




**Results: 2,493**

Following query for searching ‘e-Governance in India’ scholarly literature in Scopus database was used ("electronic government" OR e-government OR "digital government" OR e-governance OR

"electronic governance" OR "Digital India") OR TITLE-ABS-KEY (("information technology" OR ict OR "data processing" OR "information and communication technology") AND government) AND AFFILIATION (India)

**Results in 2022 of Digital Government: 137**

# ANNEXURE- I

## NEWS CLIPS SEARCH QUERY AND WEBSITES SAMPLE NEWS CLIP

News clipping of NIC

| NIC NEWS |
| --- |
| 07 -09-2022 |

N1- Chander Shekhar, Haryana IAS officer who introduced night ...

The Indian Express- September 01, 2022

*National Informatics Centre (NIC) senior technical director M P Kulsreshtha said as many as 8,000 files of the divisional office have also been digitised.*

IAS officer Chander Shekhar, who had introduced the initiative of night stays at villages, retired from the service after over 33 years Wednesday. Chander Shekhar had joined the Haryana Civil Services (HCS) in 1989 and was promoted as an IAS officer in 2011. He was the commissioner of the Hisar division before retiring.

As deputy commissioner of Kaithal, Chander Shekhar in 2012 had started the concept of night stays in villages. Under this initiative, Chander Shekhar, along with all district-level officers, used to stay in a village periodically to gain first-hand experience of the problems being faced by villagers. Under this initiative, the officers used to resolve the problems faced by villagers on the spot.

Later as the director general of the school education department too, Chander Shekhar continued his initiative by spending a night at a school almost every Friday to interact with teachers. The next day, he used to interact with students of the same school to resolve their problems.

As Faridabad DC in 2016, Chander Shekhar had allotted a village to one officer to ensure its all-around development. On November 1, 2021, the Haryana government too launched a similar scheme for “adoption” of the villages by officers in the entire state.

Most recently, during his tenure as the commissioner of the Hisar division, over 30,000 files related to the judgements of the division’s revenue court were digitised which will facilitate their easy access to the people of the four districts of Hisar, Fatehabad, Sirsa and Jind.

Chander Shekhar told The Indian Express that the exercise was being carried out for the past nearly one and a half years. Chander Shekhar said: “The Hisar division came into existence in 1973. Since then, the appeals related to village common land and other land disputes were being heard in the divisional court. In the absence of digitisation, it was difficult to locate files of a specific case. Realising this problem, I ordered to weed out the unnecessary files and digitise the remaining documents. This exercise will provide documents to the people in response to the RTI applications too.”

National Informatics Centre (NIC) senior technical director M P Kulsreshtha said as many as 8,000 files of the divisional office have also been digitised. As part of the exercise, a modern record room has been set up in Hisar’s divisional office.

Meanwhile, on Monday, additional chief secretary (revenue) P K Das launched the first divisional commissioner (Hisar) website of the state which has the details of all four districts of the Hisar division. The website https://commhsr.haryana.gov.in will have historical information on the districts under the division as well as information related to citizen charter, tourist places, and wildlife.

Das, who also retired on Wednesday, suggested that copies of important records of the four districts should also be made available on this website so that the common man can know their history.

News Source- https://indianexpress.com/article/cities/chandigarh/chander-shekhar-haryana-ias-officer-who-introduced-night-stay-initiative-at-villages-retires-8124150/

**N2- Maharashtra: Biometric Attendance Mandatory At Government Offices In Nagpur**

Outlook India- September 02, 2022

*The collector has asked the National Informatics Centre (NIC) and e-district project manager (Maha-IT) to present biometric attendance at 10.30 am every day...*

The district collectorate in Maharashtra's Nagpur has made biometric attendance system mandatory government offices in the region, an official said on Friday.

As per a release issued by the district information office (DIO), collector Vipin Itankar has made biometric attendance mandatory in all collectorate offices from Thursday.

All officers and workers will have to register their attendance in the biometric format and their salary will be released based on their attendance, the official said. The collector has asked the National Informatics Centre (NIC) and e-district project manager (Maha-IT) to present biometric attendance at 10.30 am every day, he added.

News Source- https://www.outlookindia.com/national/maharashtra-biometric-attendance-mandatory-at-government-offices-in-nagpur-news-220649

**MeitY News**
07 September, 2022

**M1-IT Ministry releases security guidelines for mobile devices and.**

MediaNama- September 06, 2022

*The Ministry of Electronics and Information Technology (MeitY) on July 20 released draft security guidelines for mobile devices open for public consultation...*

MeitY has taken down the draft MSG guidelines from its website. It's not clear if the guidelines are still open for consultation or/and if MeitY will reupload the draft.

The Ministry of Electronics and Information Technology (MeitY) on July 20 released draft security guidelines for mobile devices open for public consultation until September 21, 2022. Called the Mobile Security Guidelines (MSG), the document outlines various voluntary measures that participants in the mobile ecosystem can adopt to ensure the security of mobile devices, applications, networks, and services and the privacy of users.

"Mobile application-based services in every domain including education, health and social media have become integral part of daily life of Mobile Users of all age groups and genders. The exposure risk of Mobile Phone Users gives rise to security threats of sensitive information loss and misuse of personal data by adversaries. Therefore, privacy and personal data protection of mobile user are of utmost importance. […] The central objective of MSG is to ensure privacy, protect sensitive data and provide security of transactions of every mobile

device user, by following the mobile security control measures prescribed for various stakeholders involved in the mobile service ecosystem." — MSG Draft

Who prepared the draft: The draft has been prepared by the Working Group on Mobile Device Security (WG-MDS), which was set up by MeitY, in coordination with the Centre for Development of Advanced Computing (C-DAC) and Standardisation Testing and Quality Certification (STQC).

How to participate? Interested stakeholders can submit their feedback to Pallavi D, Joint Director, CDAC Pune and Member Convener of the Working Group at the email-id: pallavid[at]cdac[dot]in and cc to headits[at]stqc[dot]gov[dot]in.

Who are these guidelines for?

- Manufacturers of mobile phones, hardware components, peripheral equipment, etc.
- Developers of mobile software services like applications, APIs, operating systems, browsers, etc.
- Service providers of software, applications, app stores, government and non-government bodies providing m-Governance and mobile services, social media services, etc.
- Network providers such as mobile network operators, providers of internet, satellite, and Wi-Fi services, etc.
- Regulatory bodies such as regulators, standardisation bodies, and enforcement agencies.
- Testing agencies such as mobile security testing labs and forensics organisations, quality assurance bodies, etc.
- Academia and researchers
- Mobile users and subscribers

What's the goal of MSG?

Mobile Security Guidelines (MSG) are prescribed to ensure the achievement of "mobile security goals" and protect the "data privacy of mobile users ":

Mobile security goals

- Confidentiality: Ensuring confidentiality means ensuring the secrecy of information such as login credentials, passwords, personal files or photos, transaction information of payment details, location data of MD etc. Techniques based on information hiding, coding, encryption and decryption can be used to achieve confidentiality.
- Integrity: Ensuring integrity means maintaining the original data, message or information, accurate and intact without any change, modification, tampering or alteration at the stored, transit or transmission state. "For example, if a customer sends mobile payment instruction of Rs.50 and Rs.500 is debited from his account, it is

integrity violation," the draft states. Standard Hash Functions and checksums can be used for integrity checks.

- Availability: Ensuring availability means making the services or resources available for access to users from anywhere and anytime without any disruption. It can be ensured by maintaining all hardware bug-free, performing hardware repairs immediately when needed and applying system and security upgrades periodically.
- Authentication, authorisation and access control: This refers to the verification process to check whether a claiming entity is genuine or not before granting permission to access entitled resources. Subsequent to authentication, an authenticated entity is stopped access from using any other resource, to which it is not, entitled to or authorised to use. For example, a rogue mobile app trying to collect mobile users' data should be stopped. On the other hand, a genuine entity should not be denied access to a privileged service. This is achieved by access and permission controls, monitoring state changes, movement of the entity and detecting misbehaviour.
- Non-repudiation: It means that an entity cannot deny if it has actually done a transaction or genuinely did an action. This can be achieved by using Public Key Infrastructure (PKI) with digital certificates & digital signatures issued to mobile users.
- Traceability: It means that the actual path traversed for the completion of a transaction from source to destination is traceable. This is feasible using position, time, and status logs.
- Accountability: It means that an entity involved in the mobile ecosystem is responsible for the actions that it has performed as per its role, rules of service and prescribed guidelines.
- Trust and reliability: It ensure that the participating entity is or publicly evolves to be trustworthy. An entity's past actions of adherence to rules and positive traits count in declaring an entity as trustworthy. An entity is considered reliable provided it is trustworthy. An entity may be assigned trust and reliability scores of low, medium, and high based on various past factors.

Data privacy

The MSG draft state that the personal data of a mobile user is to remain private to the mobile user and protected as per the Personal Data Protection (PDP) Act 2019. Interestingly, the PDP Bill was withdrawn from the parliament a few days after these guidelines were published. Nevertheless, the MSG draft adopts many of the data security and privacy measures proposed in the PDP Bill including rules around consent, purpose limitation, transfer of sensitive personal data, transfer of data to third parties, etc. A few of the privacy measures include:

- No personal data of a mobile user shall be processed by any person, except for any specific, clear and lawful purpose.

- The consent of the data principal should be explicitly obtained in a clear, informed, specific, and free manner.
- The personal data should be collected only to the extent that is necessary for the purpose of processing such personal data and should be deleted at the end of the processing.
- Every data fiduciary should inform the data principal or mobile user information on the purposes for which the personal data is to be processed, the nature and categories of personal data being collected, information of the right to consent, and the individuals or entities with whom such personal data may be shared, etc.
- The data fiduciary should take necessary steps to ensure that the personal data of mobile users processed is complete, accurate, not misleading, and updated.

What are the types of mobile security risks?

- Device-based: Mobile devices store a significant amount of sensitive data, which can get compromised due to vulnerabilities in insecurely designed devices that lead to unauthorised access to data.
- Network-based: Mobile devices are constantly connected to the internet. The end-users might use untrusted public networks enabling malicious parties to access and intercept transmitted data through rogue access points, Wi-Fi sniffing, eavesdropping, skimming, and sophisticated Man-in-the-Middle (MitM) attacks.
- User-behaviour related: End-users might indulge in risky behaviours primarily due to a lack of awareness that could compromise data. Risky behaviours include jailbreaking/rooting devices to bypass security controls, using unapproved cloud-based apps to share and sync data, using unapproved productivity apps that maintain copies of corporate data, using malicious apps from unapproved app stores, etc.
- Third-party apps related: Malicious apps and mobile malware can steal sensitive data and collect user data.

What are the types of mobile security threats and vulnerabilities?

Threat actors, which includes adversaries, attackers, hackers, intruders, interceptors, impersonators, eavesdroppers, malware, spyware, virus etc. intend to identify vulnerabilities in the mobile ecosystem and exploit them to gain unauthorised entry into mobile devices. Vulnerabilities are weaknesses, gaps or loopholes in protective systems or mechanisms or interfaces, which can be exploited by threat actors. The MSG draft classifies mobile device security vulnerabilities as:

- Device-based vulnerabilities such as the use of a mobile device without any or with weak password protection may provide a way for an adversary to easily enter into and steal secret information and do identity theft.
- Communication-based vulnerabilities such as weak transport level security, rogue Wi-Fi devices, untrusted Bluetooth devices, and misuse of specific electromagnetic waveforms of mobile antennas to spoof and inject commands via the audio interface.

- Mobile service-based vulnerabilities such as security vulnerabilities present in old versions of mobile web browsers, operating systems, applications, APIs and mobile interfaces, and unencrypted data storage.

What are the prescribed mobile security control measures?

Mobile Security Control Measures (MSCM) are countermeasures to prevent mobile security threats from adversaries and to avoid exploitation of mobile security vulnerabilities. These measures are classified into three categories

1. Policy-based measures: This includes regulatory guidelines, security policies, and mobile security standards.
2. Technology-based measures: These include measures to fulfil the "mobile security goals" outlined above using technological solutions.
3. User-oriented measures: These include measures to increase user awareness of mobile device security.

Technology-based measures

The MSG draft predominantly focuses on technology-based measures, which are further classified as:

Mobile Device Security: These measures apply to mobile hardware, firmware, operating system, and pre-installed apps. The measures especially focus on threats applicable to the operating system and SIM. "As Mobile Operating System and Subscriber Identity Module (SIM) are significant, so their security threats, vulnerabilities and control measures are presented in separate sections. SIM is a gateway for a mobile device connected world and a potential target by adversaries to steal mobile user identity and commit frauds, so it needs to be properly protected," the draft states. Some of the prescribed measures include:

- Sharing of data with apps: Mobile app permissions should take into consideration data minimisation, control, and transparency and apps should be isolated from each other so as to prevent data leakage between apps. Apps must seek explicit permission to access resources like location, camera, and microphone. Apps being installed on a mobile device must come from a valid and trusted source and this should be verified by the OS.
- Support for VPN: There should be built-in support for Virtual Private Network (VPN) clients which in turn support different profiles such as personal and work. "This helps the business-related applications to secure their assets and data on a mobile device. This also helps in addressing the privacy-related concerns of mobile users. Even though it is possible for some mobile users to misuse the VPNs to access banned content and hide their identity, use cases of the VPNs outnumber the misuse cases and hence need to be supported by the Mobile operating system with care," the draft states.
- Remote wipe features: If a mobile device is lost, users must be able to remote wipe the device.

- Kernel level measures: The guidelines also prescribe various steps that can be adopted at the hardware level to ensure secure boot loaders, robust security at the kernel levels, enabling secure device drivers, full-disk encryption, etc.
- SIM security measures: The guidelines prescribe various measures to secure SIMs and eSIMs including measures to ensure safety in the production and supply chain of SIMs.

Mobile Communication Security: These measures aim to address mobile communication-based vulnerabilities. “In general, mobile devices are constantly connected to the internet. The end-users might use untrusted public networks, which may enable malicious parties to access and intercept transmitted data through rogue access points,” the draft states. Communications security involves defence against the interception of communication transmissions through means like crypto security (encryption or decryption), transmission security, emission security, and physical security.

The guidelines state that the evolving and latest standards issued by standard-setting bodies like the ITU, IMT, 3GPP, ETSI, TSDSI, IEEE, NIST, LORA, NFC Forum, and Global Platform need to be followed for the various aspects of mobile and wireless communication such as WIFI, Near Field Communication (NFC), Radio-Frequency Identification (RFID), Bluetooth, QR code, GPS, GSM (3G/4G/5G), SMS, Voice over Internet Protocol (VoIP), etc.

Mobile Services Security: Mobile service-based vulnerabilities include security vulnerabilities present in old versions of mobile web browsers, operating systems, applications, APIs and mobile interfaces, unencrypted data storage, etc. Measures to address these include:

- Regular updating of apps to fix vulnerabilities
- For cloud-related services, the guidelines prescribe that cloud service providers store data of Indian users in the country.
- For app-related security concerns, the guidelines prescribe better restrictions by OS on what apps can and cannot be installed, and more accountability from app stories, including by registering in India, as a legal entity with the appointment of a nodal officer and grievance management facility.
- Following recommended security settings by browsers and OS
- Not clicking on suspicious links
- The guidelines also outline best practices in cryptography, which is used in a variety of security functions.
- For app developers, the guidelines prescribe secure coding practices such as reviewing source code before using them in an app, ensuring the APIs used are safe, secure sharing of data across apps, providing regular updates, etc.

Framework for mobile device security testing

The draft guidelines outline requirements and operating procedures for mobile device security testing and mobile device forensics. These are primarily targeted at mobile device security testing organizations and labs. “Mobile Security Testing is necessary to gain the

confidence that the mobile device, Firmware, OS, mobile communication and mobile apps within the mobile device are able to counter the various threats and vulnerabilities highlighted in MSG," the draft states.

In addition to outlining how to carry out testing and the various methods and tools, the guidelines also discuss how to carry out mobile forensics for data recovery for cybercrime purposes and cryptanalysis, which is the study of cryptographic security systems to gain access to encrypted messages, even if the cryptographic key is not known.

Checklists

The MSG draft guidelines conclude by providing comprehensive checklists (based on measured outlines throughout the MSG) for all the various affected stakeholders such as device manufacturers, mobile users, app developers, network providers, regulators, testers, etc. "The adoption of the prescribed guidelines with checklists provided for each category of entities would ultimately ensure enrichment of mobile user's experience towards secure and trust-worthy mobile services with privacy protection," the draft states.

News Source- https://www.medianama.com/2022/09/223-mobile-security-guidelines-draft-consultation/

**M2- Draft on data anonymisation missing from website week after release**

Business Standard – September 6, 2022

*The Ministry of Electronics and Information Technology (MeitY) has not said why the document, 'Guidelines for Anonymisation of Data (AoD) and Mobile...*

Two draft documents listing guidelines on data anonymisation and mobile security were on Tuesday missing from a government website, a week after being put up for public consultation.

Anonymisation is a technique that removes or modifies personally identifiable information, resulting in data that cannot be associated with any one individual. The Ministry of Electronics and Information Technology (MeitY) has not said why the document, 'Guidelines for Anonymisation of Data (AoD) and Mobile Security Guidelines (MSG), was removed from the official portal for e-governance standards after being put up there on August 30. Details shared with the documents had said public comments about them will be accepted till September 21.

The document included guidelines for all stakeholders involved in processing personal data and its subtypes through e-governance projects. It aimed to lay down recommended practices for processing data gathered by e-governance portals such as Cowin vaccination, Aarogya Setu, National Health Mission, etc. A second document on Mobile Security Guidelines included measures to help protect privacy, sensitive data, and the security of transactions.

Civil society organisations and advocacy groups said the documents' removal showed the lack of clarity and accountability in the consultation process.

“This is the third such instance that a public consultation process has been interrupted without any notice or acknowledgment this year,” said Prateek Waghre, director--policy at Internet Freedom Foundation.

The draft India Data Accessibility & Use Policy, 2022 was updated without any notification, and similarly the draft amendment to the IT Rules, 2021 was taken down during public consultations. “The broader concern is that this has become a kind of a trend. It is affecting how the people would view the public consultation process,” he said.

Advocacy groups said they were also surprised that the documents were released on a new website, instead of the official website of MeitY.

“It was hard enough to determine that this document was open for public feedback in the first place. No press release accompanied these documents. The draft was not made available on the MeitY’s website. It was difficult to find the draft that was said to be open for public review,” Waghre said.

A spokesperson of a global trade organisation, who does not wish to be named, said: “We predicted this to happen after seeing the way in which the documents were introduced. It is concerning that this has become the pattern in public consultation processes now.”
News Source- https://www.business-standard.com/article/current-affairs/draft-on-data-anonymisation-missing-from-website-week-after-release-122090601003_1.html

| Other IT News |
| --- |
| 07 -09-2022 |

**O1- Ancient DNA brings us closer to unlocking secrets of how modern humans evolved**

Modern Diplomacy- September, 05 2022

*In 2021, India's Défense Institute of Advanced Technology (DIAT) and the Centre for Development of Advanced Computing (C-DAC) collaborated on QC tech.*

**O2 The Beautiful Game Theory – using mathematics to resolve human conflicts**

Modern Diplomacy- September, 03 2022

*In 2021, India's Défense Institute of Advanced Technology (DIAT) and the Centre for Development of Advanced Computing (C-DAC) collaborated on QC tech.*

**O3 Summits eye to churn out unicorns in India**
Times of India- September 07, 2022

*Director, STPI, Devesh Tyagi, said that the value of software exports from the Software Technology Parks of India units crossed ₹5 lakh crore mark in the...*

**O4 Trai, DoT tussle over licence to access network providers**
ET Telecom- September 07, 2022

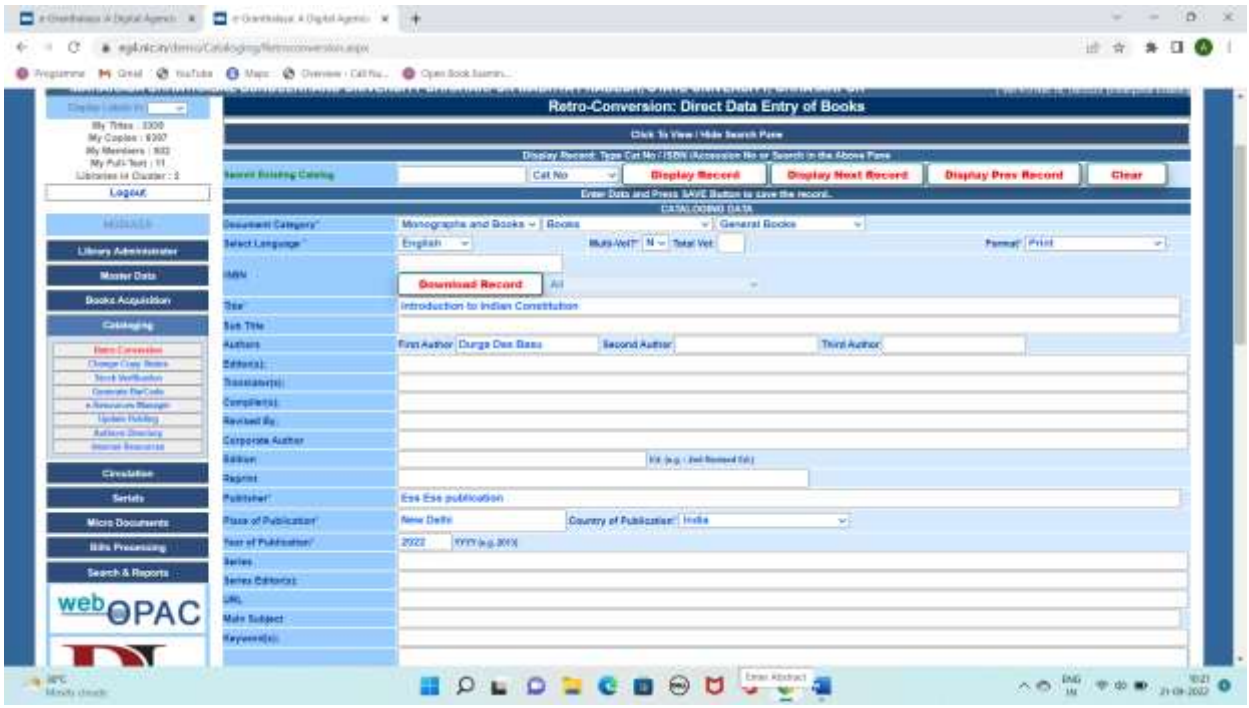
*New Delhi: The Telecom Regulatory Authority of India (Trai) has shot back at the government for rejecting its recommendation on the creation of a separate...*

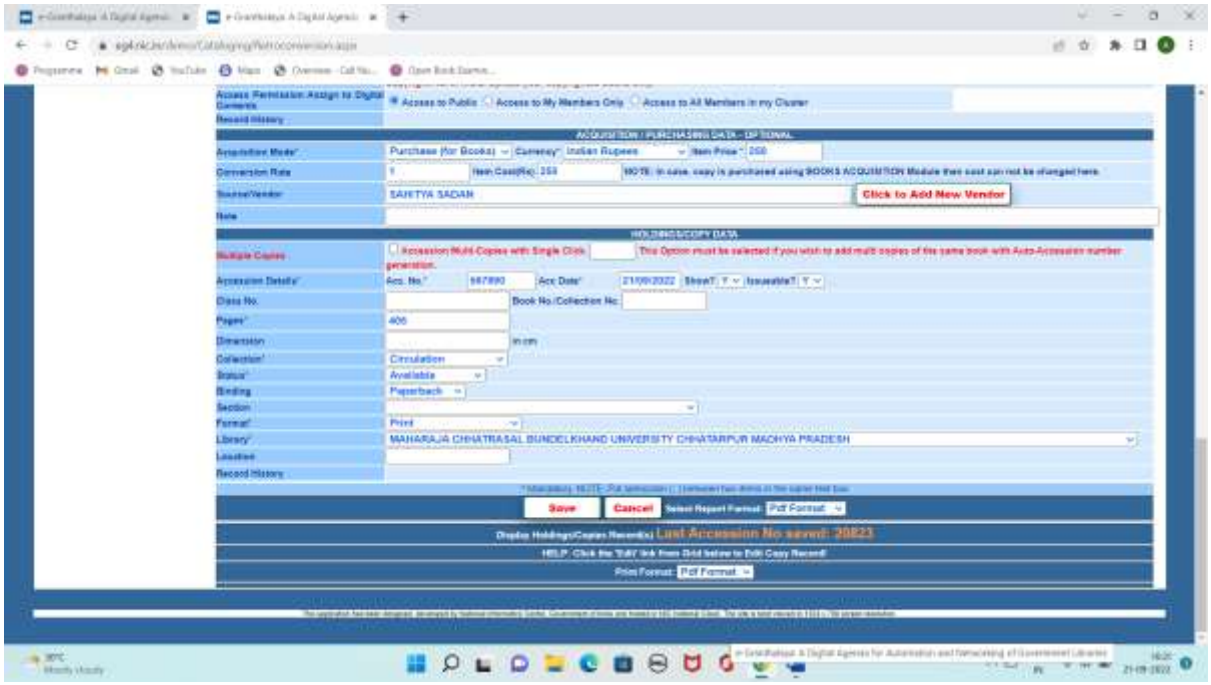
# ANNEXURE II

## E-GRANTHALAYA: ENTRY & SEARCH OF BOOKS

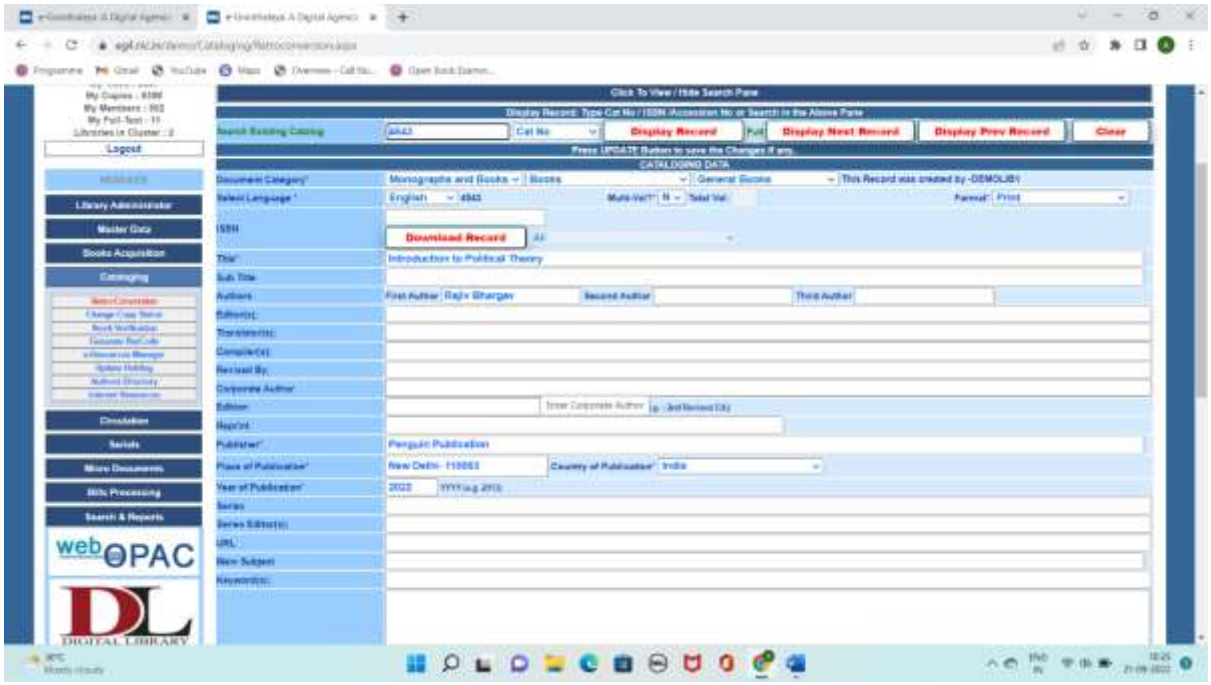
**Entry Of 2 Books with Screen Shots:**

***Book Entry-1***



Book Entry -2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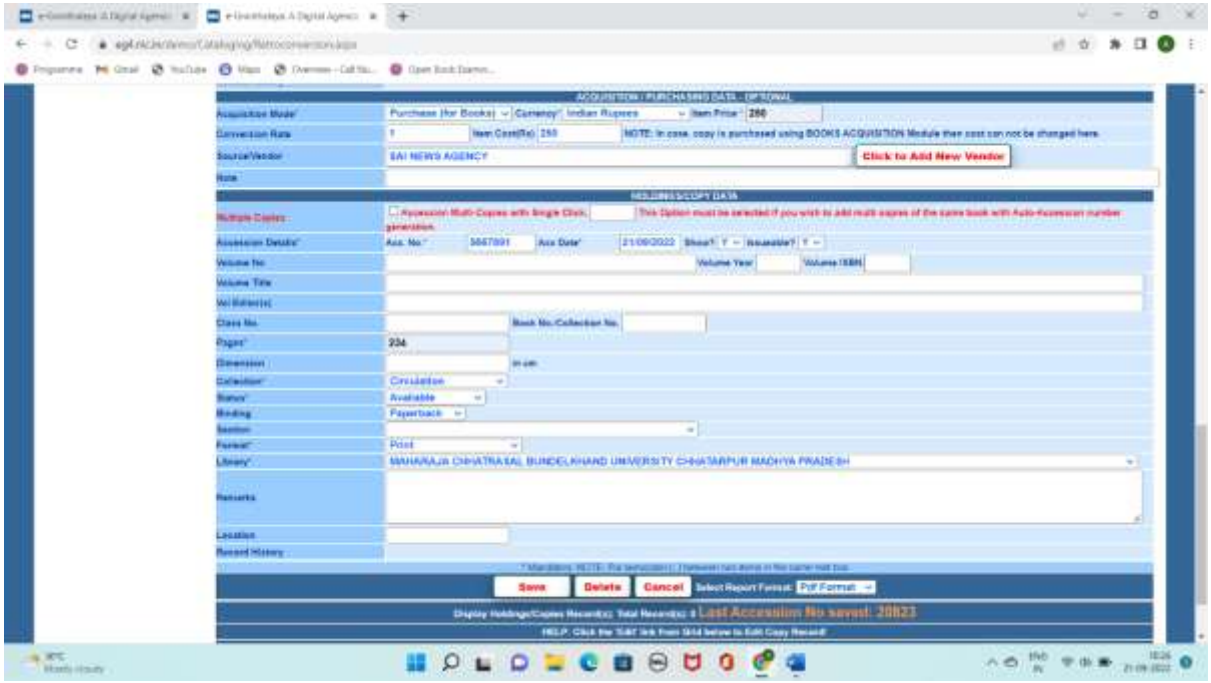
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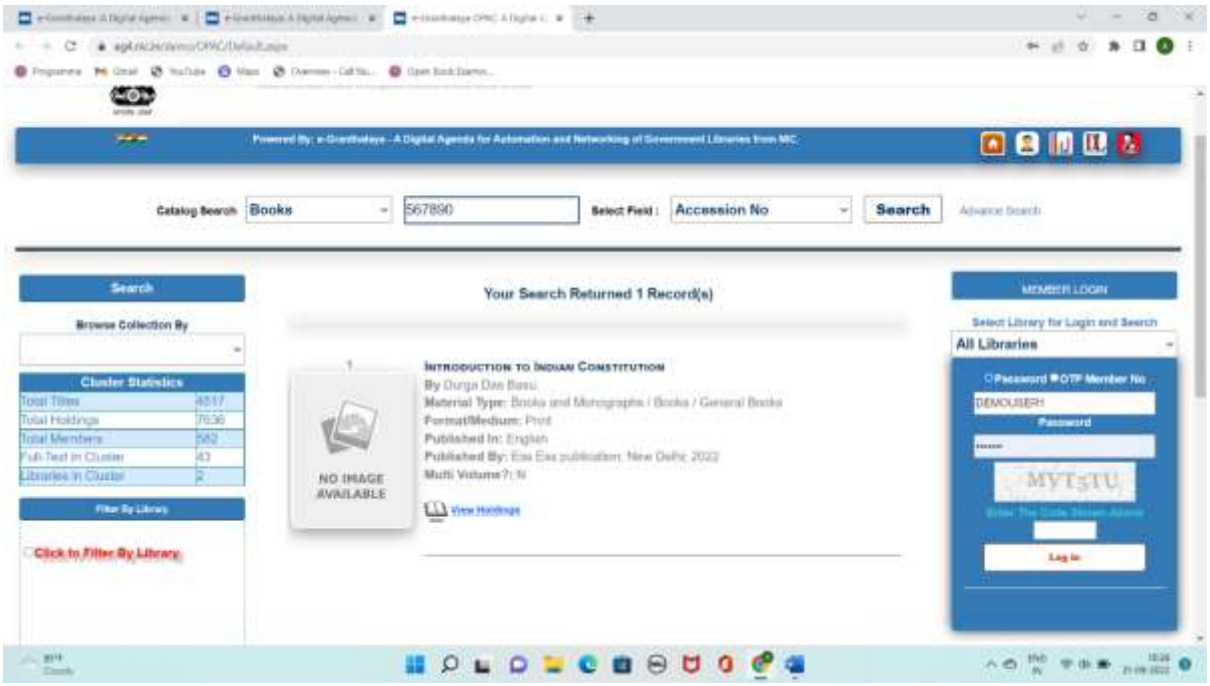
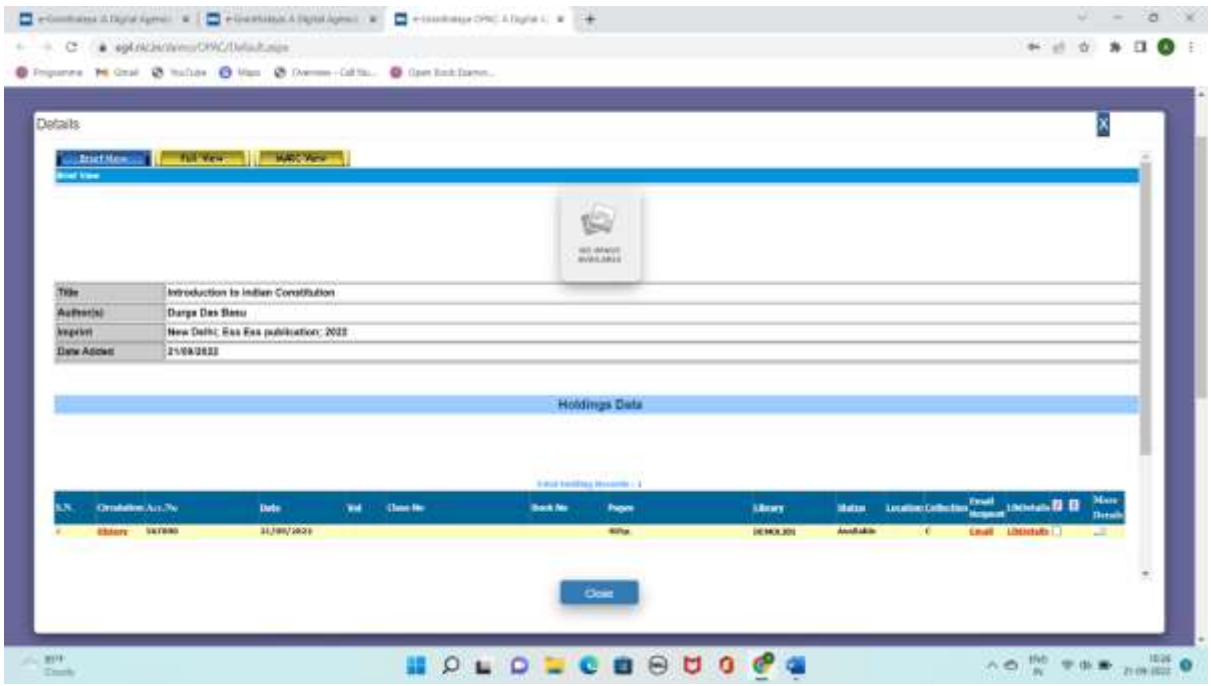
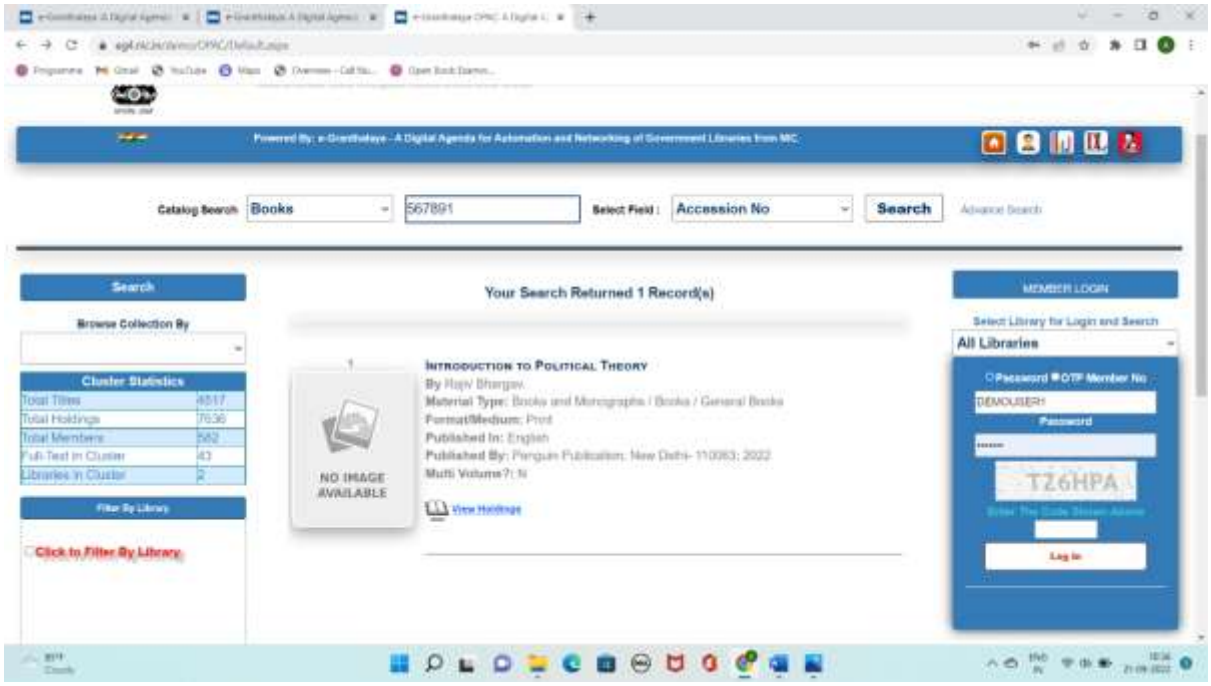
## OPAC Search of 2 Books:

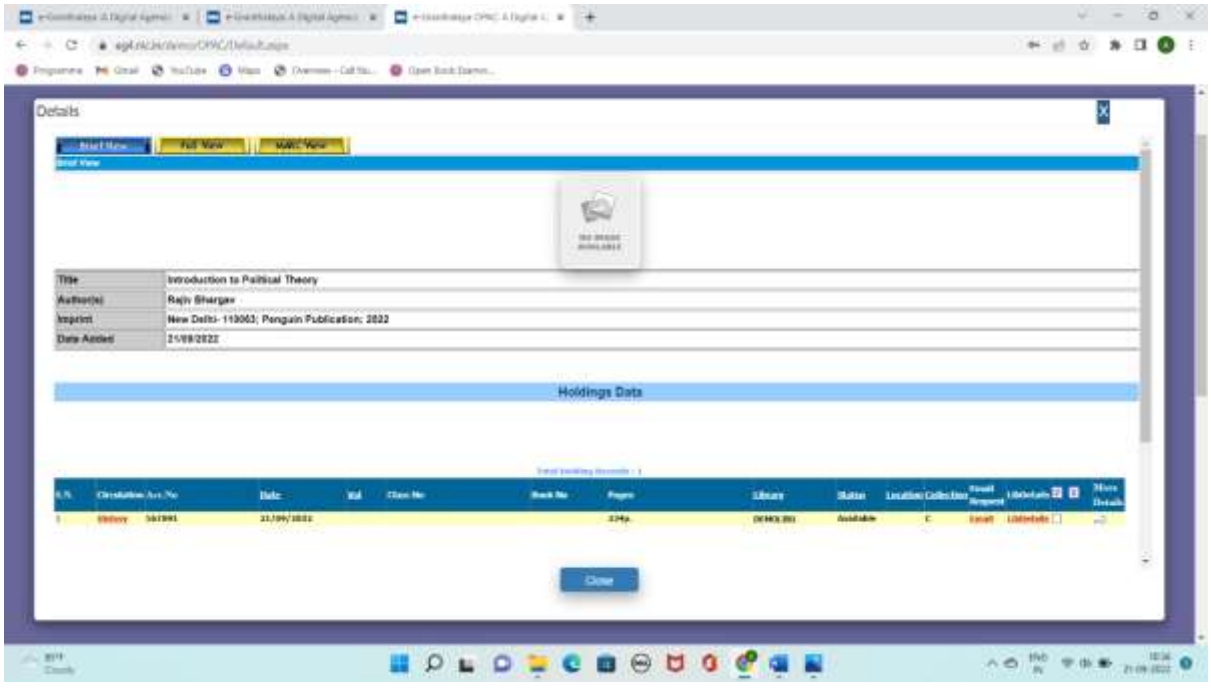
### *Book Search-1*



## Book Search- 2



## ANNEXURE III

## CURRENT ARTICLES FROM IEEE AND ACM

- **IEEE**

### Subject: "Open Data Technology"

**1. Systematic Mapping of Open Data Studies: Classification and Trends from a Technological Perspective**

Robert Enriquez-Reyes; Susana Cadena-Vela; Andrés Fuster-Guilló; Jose-Norberto Mazón; Luis Daniel Ibáñez; Elena Simperl

IEEE Access, Vol.9, pp. 12968 – 12988, 18 January 2021

**DIO:** 10.1109/ACCESS.2021.3052025

**Abstract:**

The objective of this paper is to classify and analyse all research on open data performed in the scientific community from a technological viewpoint, providing a detailed exploration based on six key facets: publication venue, impact, subject, domain, life-cycle phases and type of research. This paper therefore provides a consolidated overview of the open data arena that allows readers to identify well-established topics, trends, and open research issues. Additionally, we provide an extensive qualitative discussion of the most interesting findings to pave the way for future research. Our first identification phase resulted in 893 relevant peer-reviewed articles, published between 2006 and 2019 in a wide variety of venues. Analysis of the results shows that open data research grew slowly from 2006 but increased significantly as from 2009. In 2019, research interest in open data from a technological perspective overall decreased. This fact could indicate that research is beginning to stabilise, i.e., the open data research hype is over, and the research field is reaching maturity. Main findings are (i) increasing effort in researching on Semantic Web technologies as a mechanism to publish and reuse linked open data, (ii) software systems are proposed to solve open data technical problems; and (iii) considering technological aspects of legislation and standardization is needed to widely introduce open data in society. Finally, we provide complementary insights regarding open data innovation projects, with special emphasis on publication (e.g., open data portals) and consumption (e.g., open data as business enabler) of open data.

https://ieeexplore.ieee.org/document/9326343

**2. Quality of Metadata in Open Data Portals**

Javier Nogueras-Iso; Javier Lacasta; Manuel Antonio Ureña-Cámara; Francisco Javier Ariza-López

IEEE Access, Vol. 9, pp. 60364 – 60382, 15 April 2021

**DOI** - 10.1109/ACCESS.2021.3073455

**Abstract**:

During the last decade, numerous governmental, educational or cultural institutions have launched Open Data initiatives that have facilitated the access to large volumes of datasets on

the web. The main way to disseminate this availability of data has been the deployment of Open Data catalogs exposing metadata of these datasets, which are easily indexed by web search engines. Open-Source platforms have facilitated enormously the labour of institutions involved in Open Data initiatives, making the setup of Open Data portals almost a trivial task. However, few approaches have analysed how precisely metadata describes the associated datasets. Taking into account the existing approaches for analysing the quality of metadata in the Open Data context and other related domains, this work contributes to the state of the art by extending an ISO 19157 based method for checking the quality of geographic metadata to the context of Open Data metadata. Focusing on metadata models compliant with the Data Catalog Vocabulary proposed by W3C, the proposed extended method has been applied for the evaluation of the Open Data catalog of the Spanish Government. The results have been also compared with those obtained by the Metadata Quality Assessment methodology proposed at the European Data Portal.
https://ieeexplore.ieee.org/document/9405650

3. **Collaborative Aspects of Open Data in Software Engineering**
Johan Linåker; Per Runeson; Anneke Zuiderwijk; Amanda Brock
IEEE Software, Vol.39, no. 1, pp. 31-35, 23 December 2021
**DOI**: 10.1109/MS.2021.3118123
**Abstract:**
Engineers require high-quality data for the design and implementation of today's software, especially in the context of machine learning (ML). This puts an emphasis on the need for the publication and sharing of data from and between organizations, public as well as private. Following the paradigm of open innovation, open data provide a mechanism to increase the availability of information, offering utility and improving innovation and user choice through the inevitable interoperability this enables.
https://ieeexplore.ieee.org/document/9662416

**4. A Research Agenda on Open Data Impact Process for Open Innovation**
Diego Corrales-Garay; Marta Ortiz-De-Urbina-Criado; Eva-María Mora-Valentín
IEEE Access, Vol. 8, pp. 34696 – 34705, 17 February 2020
**DIO**: 10.1109/ACCESS.2020.2974378
**Abstract:**
Open data and open innovation are two topics currently attracting the attention of academics. But no previous studies consider these fields in combination while using a bibliometric approach. Thus, the aim of this paper is to understand the relationship between open innovation and open data. Two research questions have been formulated: 1) What are the main topics studied in the literature that combine both lines of research? and 2) How can the open innovation paradigm be integrated in the open data impact process? To address the first question, a co-word analysis is used to identify the main topics investigated in the open innovation and open data literature. Based on our results, to answer the second research question, the topics are grouped and analyzed considering a model of the open data impact process. Finally, some future research lines to analyze the open data impact process for open innovation are presented. For example, future research could focus on questions such as (1)

What kind of applications can be created through the reuse of open data?; and (2) How do open innovation processes influence the reuse of open data?
https://ieeexplore.ieee.org/document/9000605

**5. Open Data Consumption Through the Generation of Disposable Web APIs**
IEEE Access, Vol.9, pp. 76354 – 76363, 20 May 2021
**DOI:** 10.1109/ACCESS.2021.3082182
**Abstract:**
The ever-growing amount of information in today's world has led to the publication of more and more open data, i.e., that which is available in a free and reusable manner, on the Web. Open data is considered highly valuable in situational scenarios, in which thematic data is required for a short life cycle by a small group of consumers with specific needs. In this context, data consumers (developers or data scientists) need mechanisms with which to easily assess whether the data is adequate for their purpose. SPARQL endpoints have become very useful for the consumption of open data, but we argue that its steep learning curve hampers open data reuse in situational scenarios. In order to overcome this pitfall, in this paper, we coin the term disposable Web APIs as an alternative mechanism for the consumption of open data in situational scenarios. Disposable Web APIs are created on-the-fly to be used temporarily by a user to consume open data. In this paper we specifically describe an approach with which to leverage semantic information from data sources so as to automatically generate easy-to-use disposable Web APIs that can be used to access open data in a situational scenario, thus avoiding the complexity and learning curve of SPARQL and the effort of manually processing the data. We have conducted several experiments to discover whether non-experienced users find it easier to use our disposable Web API or a SPARQL endpoint to access open data. The results of the experiments led us to conclude that, in a situational scenario, it is easier and faster to use the Web API than the corresponding SPARQL endpoint in order to consume open data.
https://ieeexplore.ieee.org/document/9437179

## SUBJECT- "Digital Government"

**1. Standard and guideline development for the interoperability of a digital government system**
Putchong Uthayopas; Urachada Ketprom
2022 International Conference on Digital Government Technology and Innovation (DGTi-CON)
**Date of Conference:** 24-25 March 2022
**DOI:** 10.1109/DGTi-CON53875.2022.9849199
**Abstract:**
In the time of crisis with Covid-19, the digital government has become a necessity for all countries. To continuously provide services to citizens staying at home, government adapts and creates ways to reach out to citizens digitally. Many new applications emerged, and these new applications accessible via mobile phone and through website and platforms must be standardized for citizens' convenient usage. There must exist a series of standards to ensure

interoperability among the government digital service systems. This paper describes the standard and guideline development process invented and adopted at the Digital Government Development Agency (public organization) or DGA. It further summarizes the work that needs to be done for a complete solution and the groups such as standard committees involved in achieving this goal. The focus of the paper is on the standard development for interoperable digital government systems in Thailand. The development of the data catalog standard is presented as an example of applying the proposed approach. Standard and guideline development are a necessity for aligning digital government systems together.
https://ieeexplore.ieee.org/document/9849199

**2.Collective Data Governance for Development of Digital Government**

D. R. Mukhametov

2021 International Conference on Engineering Management of Communication and Technology (EMCTECH)

**Date of Conference:** 20-22 October 2021

**DOI:** 10.1109/EMCTECH53459.2021.9619164

**Abstract:**

The article analyzes the role of collective data governance for development of digital government. Digital government is characterized by the introduction of new data-driven services and tools. These tools improve the quality and convenience of services, but their implementation requires that the data governance system adequately reflects the complexity of the management object. In this context, digital government is considered as the regulation of the virtual space for the value extraction and the rationalization of social structures. Collective data governance is necessary for the development of digital government as a flexible management system with extensive communication networks and mutual control circuits. There are three main formats for collective data governance. 1) Data commons correspond to the function of decentralized management, increasing collective value and reducing transaction costs, 2) data trusts are necessary for representing interests and fiduciary data management, 3) data marketplaces are in demand for increasing individual value and creating the legal data market. The introduction of collective data governance requires legal regulation of data access, use and dissemination. In addition, the formats of collective data governance can be tested in pilot projects, including smart cities, projects in fintech, biotech, govtech, adtech etc. The paper provides definition of digital government, formats of collective data governance and their functions, decisions for scaling and testing of collective data governance.
https://ieeexplore.ieee.org/document/9619164

**3. The Impact of IT on Changing Business Models in Government Services: A Case Study of The Investment Board and One Stop Service in Jakarta**

AM Sjarif Hidayatullah; Muhammad Rifki Shihab

2021 International Conference on Information Management and Technology (ICIMTech)

**Date of Conference:** 19-20 August 2021

**DOI:** 10.1109/ICIMTech53080.2021.9535094

**Abstract:**

Digital government is imperative to public service in this era. Having digital services is now inherent in government forward facing offering to citizen. The use of website and mobile application in providing service to citizens have impact to business model/mission model of the government agency. This paper elaborates the impact of IT to mission model in The Investment Board and One Stop Service (DPMPTSP) DKI Jakarta to give better service to its citizens and business owners. The use of the principles of public service in industry 4.0 and IT-enabled services has brought the use of website and mobile application to manage citizen's personal and business permits/non-permits to be evaluated against DPMPTSP's strategy. DPMPTSP business model/mission model has changed from manual process to process redesign enabled using IT, namely Service Website and JakEVO. The research methodology to be adopted for this research will be a qualitative method accordance with the information and data from sources, and the evidence related to change that have been made. The result of this research is DPMPTSP services has become simpler, faster, and streamlined because of the use of IT-enable services, increases the number of applicants applying for permits and non-permits, and increase tax revenues collected from retribution fees permits and non-permits.

**4. Smart Government using Digital Twin in Japan**

Toshio Obi; Naoko Iwasaki

2021 International Conference on ICT for Smart Society (ICISS)

**Date of Conference:** 02-04 August 2021

**DOI:** 10.1109/ICISS53185.2021.9533190

**Abstract:**

This paper summarizes the lessons learned from the case studies of Digital Twin in Japan on building an AI government and smarter city for a resilient society. This paper suggests that Indonesia had better work with Japan toward the establishing smarter AI digital government utilizing DX technology such as AI. As for the aging society issues that Japan is facing with, similar issues will occur in Indonesia in the future. As for digital strategy in Indonesia, it is meaningful to introduce Digital Twin based upon our research on successful case studies.

**5. Hindrances for e-Government adoption by government officials in small-sized local governments in Thailand**

Narong Kiettikunwong

2022 International Conference on Digital Government Technology and Innovation (DGTi-CON) 24-25 March 2022

**DOI:** 10.1109/DGTi-CON53875.2022.9849195

**Abstract:**

The objectives of this paper are to unveil the factors that slow down the adoption of e-Government by Thai officials in small-sized local governments and then to propose a model for e-Government adoption. To address this problem, a qualitative exploratory research

approach was employed to identify the difficulties and obstacles that have been experienced by government officials in small-sized local governments in Thailand. The results indicate that the three key barriers to adoption are: 1) failure to realize the purpose for the existence of the organization of local government, 2) lack of awareness of how digital technology will significantly increase the value of the work assigned to them, and 3) lack of knowledge about the existing electronic service (e-service) or digital technology and how these will increase the productivity of the assigned tasks. The model proposed in this paper to improve the adoption rate is based on understanding and recognizing the organization's culture, revitalization of business processes, and identifying technology tools and the competitive advantage to be gained from the adoption of e-Government.
https://ieeexplore.ieee.org/document/9849195

**SUBJECT- "Environmental Informatics"**

**1. Accident & Emergency Informatics: Terminologies and Standards are needed for Digital Health in the Early Rescue Chain**

Thomas M. Deserno; Robert Jakob
2020 IEEE 14th International Conference on Application of Information and Communication Technologies (AICT) 07-09 October 2020
**DOI:** 10.1109/AICT50176.2020.9368745
**Abstract:**
Recently, the World Health Organization (WHO) has released a draft of its Global Strategy on Digital Health 2020-2024. Accident & emergency informatics (A&EI) addresses these targets providing fully automatic and specific rescue calls, which are generated by smart implants, smart clothes, smart wearables, smart vehicles, smart homes, or the Internet of Things (IoT). These smart environments monitor unobtrusively and continuously environmental, behavioural, physiological, or psychological parameters. In near future, they will autonomously generate specific alerts on adverse (health) events. A&EI interconnects the information and communication technology (ICT) systems in the early rescue chain. It enables semantically interoperable information exchange by the International Standard Accident Number (ISAN). In this paper, we describe key ICT components of the early rescue chain: alarming, responding, and curing instances. We suggest a minimum dataset that contains an event identifier, time and location, the type of event, and the number of victims including - if available - their identity. Concerning location, we address navigation on static as well as dynamic sites, within buildings, and brute-force getting into vehicles. Here, there is a lack of international classifications, terminologies, and standards to support semantically interoperable information exchange in the early rescue chain without any humans in the loop.
https://ieeexplore.ieee.org/abstract/document/9368745

**2. Improved Remaining Useful Life Estimation of Wind Turbine Drivetrain Bearings Under Varying**

Taufik Hidayat; D Sianturi Tigor Franky; Rahutomo Mahardiko
IEEE Transactions on Industrial Informatics, Vol.17, no.3, pp. 1742-1752, March 2021
**DOI:** 10.1109/TII.2020.2993074
**Abstract:**

The failure progression of wind turbine bearings comprises of multiple degraded health states due to applied load by varying operating conditions (VOC). Therefore, determining the VOC impact on the failure dynamics severity is an essential task for bearing failure prognostics. This article introduces a hybrid prognosis method using real-time supervisory control and data acquisition (SCADA) and vibration signals to predict remaining useful life (RUL) for wind turbine bearings. The SCADA data are utilized to define the role of environmental conditions such as wind speed and ambient temperature in bearing failure dynamics. Afterward, for each environmental condition, failure dynamics are identified by the vibration signal. Finally, RUL of the faulty bearings is forecast via an adaptive Bayesian algorithm using the failure dynamics, conditional to the VOC. The efficacy of the method is validated using experimental data, and test results indicate a higher RUL accuracy compared to the Bayesian algorithm.
https://ieeexplore.ieee.org/abstract/document/9089196

**3. Data Architecture for Digital Twin of Commercial Greenhouse Production**
Daniel Anthony Howard; Zheng Ma; Jesper Mazanti Aaslyng; Bo Nørregaard Jørgensen
2020 RIVF International Conference on Computing and Communication Technologies (RIVF) 14-15 October 2020
**DOI:** 10.1109/RIVF48685.2020.9140726
**Abstract:**
There is an increasing demand for industry-specific solutions for optimizing production processes with the transitions towards Industry 4.0. The commercial greenhouse sector relies heavily on optimal use of energy with multiple new concepts introduced in recent years e.g. vertical farming and urban agriculture. Digital twins allow utilizing the Internet of Things and big data to simulate the alternative operation strategies without compromising current operation. This paper aims to present the development of a digital twin of the commercial greenhouse production process as a part of the recently launched EUDP funded project Greenhouse Industry 4.0 in Denmark. This digital twin allows using big data and the Internet of Things to optimize the greenhouse production process and communicate with other digital twins representing essential areas in the greenhouse (climate and energy). This digital twin can estimate future states of the greenhouse by using past and real-time data inputs from databases, sensors, and spot markets. This paper also introduces a Smart Industry Architecture Model Framework for the discussion of the required data architecture of the digital twin for the greenhouse production flow which ensures a correct data architecture for the data exchange across all entities in the system.
https://ieeexplore.ieee.org/abstract/document/9140726

**4. Xception Architecture Transfer Learning for Garbage Classification**
Rismiyati; Sukmawati Nur Endah; Khadijah; Ilman Nabil Shiddiq

2020 4th International Conference on Informatics and Computational Sciences (ICICoS)10-11 November 2020
**DOI:** 10.1109/ICICoS51170.2020.9299017
**Abstract:**
Solid waste management issue is main problem especially in developing countries, including Indonesia. Several efforts are made to solve waste management problem. Indonesia government has launched movement to sort different type of garbage on September 2019. Automatic garbage sortation is able to help this program. In order to be able to perform this task, the computer needs to differentiate each type of garbage. This process can be done by using machine learning method to differentiate garbage type. In this research, Transfer learning is used to perform classification task on TrashNet dataset. The models used in this research are ImageNet pretrained VGG16, ResNet-50 and Xception. The experiment result shows that Xception model is able to achieve highest accuracy of 88%, average precision of 84%, and average recall of 84%

https://ieeexplore.ieee.org/abstract/document/9299017

**5. ICT Enabling Technologies for Smart Cities**
Dzung Van Dinh; Byeong-Nam Yoon; Hung Ngoc Le; Uy Quoc Nguyen; Khoa Dang Phan; Lam Dinh Pham2020 22nd International Conference on Advanced Communication Technology (ICACT)16-19 February 2020
**DOI:** 10.23919/ICACT48636.2020.9061541
**Abstract:**
A smart city adjusts its social, business, and natural needs, improving the assets it has accessible. Information and Communications Technology (ICT) for shrewd urban areas is to give city answers for encourage an improvement and manageability of a city for the advantage of its population, its economy, and the greater ecosystem in the city. It is to gauge a keen city as far as the enhancements in personal satisfaction and monetary prosperity that are accomplished through applying ICT innovations to design, outline, fabricate, and work the city foundation. In smart city applications, the initial phase in the information's voyage through the application is its gathering by the diverse advancements conveyed all through the city. This paper surveys data acquisition technologies such as Sensor Networks, MANETs, Unmanned Aerial Vehicles (UAVs), Vehicular Ad hoc Networks (VANETs), Internet of Things (IoT), Software-Defined Networking (SDN), Network Functions Virtualization (NFV), 5G. Next, it demonstrates information processing technologies, for example, Cloud Platform, IoT Platform, Big Data Platform, Machine Learning, Deep Learning, and IoT Analytics. Encouraging data spread between various nodes is vital to savvy city acknowledgment. Last, because of the presence of various types of end users (e.g., residents, organizations, government offices, and so forth.) requiring distinctive levels of nature of management, the paper exhibits a proposed testbed solution and recent associated experiments.
https://ieeexplore.ieee.org/abstract/document/9061541

# ACM

## SUBJECT- "Digital Government"

### 1. Conceptualizing Smart Government: Interrelations and Reciprocities with Smart City

Leonidas Anthopoulos, Kleanthis Sirakoulis, Christopher G. Reddick
Digital Government: Research and Practice, Vol.2, no. 4, Article no. 33, pp. 1–28, October 2021
**DOI:** https://doi.org/10.1145/3465061
**Abstract:**
Smart government (SG) is an emerging topic, which increasingly attracts attention from scholars who work in public administration, political, and information sciences. Smart city (SC) on the other hand, is an emerging and multidisciplinary domain of study. It is not clear whether the two terms SG and SC co-exist or concern different domains that interrelate and interact. The aim of this paper is to investigate the term SG; to conceptualize it with components; to define the importance of these components to the SG with their relative strengths; and to clarify its relationship with the SC term. In this respect, this paper follows a multi-method approach: a comprehensive literature review to define and conceptualize the SG, and determine its components, and a Delphi study for validating the literature findings and for calculating the relative components' strengths. The SG definitions that are in literature have several weaknesses and the authors proposed a definition to the SG that overcomes them, while a model with three rings, three dimensions and 13 components conceptualizes it. The Delphi study showed that all the SG conceptual entities are useful, and highlighted that Citizens Engagement, Economic Growth, and Accountability are more important compared to the others, but it is hard to decide about the less important component. Third, the ICT Innovation entity appears to be the most important compared to emerging technologies and data. Finally, SC and SG are indeed related but, SC is proved to be a complimentary part of the broader SG term.
https://dl.acm.org/doi/10.1145/3465061

### 2. Regional E-governance Development Index for Developing Nations

Rajan Gupta, Sunil Kumar Muttoo, Saibal Kumar Pal
Digital Government: Research and Practice, Vol.1, no. 3, Article no. 20, pp. 1–26, July 2020
**DOI:** https://doi.org/10.1145/3386163
**Abstract:**
E-governance has proven to be instrumental in the expansion and evolution of how governments interact with and deliver services to their citizens. The United Nations (UN) E-Governance Development Index (EGDI) is the most widely used metric for assessment of e-governance development; however, this metric is not appropriate for assessment at the

regional level, especially for developing nations. Therefore, the authors have studied various factors in the context of developing nations, such as the Online Availability and Performance Index, Telecommunications Index, Human Capital Index, E-governance-related Infrastructure Index, and E-governance Performance Index, with the aim of analysing the success and implementation rate of e-governance activities across the different regions of a developing nation like India. The results showed that the UN's EGDI is not suitable for assessment at a regional level and that adding new components to the model helps to achieve better results for around 30% of the regions under study. The rankings, which were calculated through the new model and compared against other standard indices, obtained good correlations, proving the validity of the new model. India, as a developing nation, was the region selected for the experimental work. Central governments, state governments, investors, stakeholders, and government consultants can obtain benefits through this research.
https://doi.org/10.1145/3386163

**3. Contributions of Data Science to Digital Government Research: Contributions of Data Science to Digital Government Research**

Loni Hagen, Teresa Harrison, Mary Falling

The 22nd Annual International Conference on Digital Government Research June 2021, pp 38–48

**DOI-** https://doi.org/10.1145/3463677.3463683

**Abstract:**

In this study we reflect on the past ten years of data-driven research in the field of digital government in order to understand how researchers have embraced Data Science (DS) to enhance knowledge about digital government research and practices. Using a total of 248 unique articles, we conducted a systematic literature review. We found that applications of DS methods have been increasing and the ways in which DS methods are applied have been evolving. Some DS methods were more frequently used to accomplish specific types of outcomes. Although description is the major purpose of using DS methods, we found active efforts to engage in predictive modeling and tool development. We conclude the paper by discussing how DS contributes to digital government research and practices.
https://doi.org/10.1145/3463677.3463683

**4.Why Real Citizens Would Turn to Artificial Leaders**

Nicolas Spatola, Karl F. Macdorman

Digital Government: Research and PracticeVolume 2Issue 3July 2021 Article No.: 26pp 1–24

**DOI:** https://doi.org/10.1145/3447954

**Abstract:**

Governments are increasingly using artificial intelligence to improve workflows and services. Applications range from predicting climate change, crime, and earthquakes to flu outbreaks, low air quality, and tax fraud. Artificial agents are already having an impact on eldercare, education, and open government, enabling users to complete procedures through a conversational interface. Whether replacing humans or assisting them, they are the technological fix of our times. In two experiments and a follow-up study, we investigate factors that influence the acceptance of artificial agents in positions of power, using

attachment theory and disappointment theory as explanatory models. We found that when the state of the world provokes anxiety, citizens perceive artificial agents as a reliable proxy to replace human leaders. Moreover, people accept artificial agents as decision-makers in politics and security more willingly when they deem their leaders or government to be untrustworthy, disappointing, or immoral. Finally, we discuss these results with respect to theories of technology acceptance and the delegation of duties and prerogatives.
https://doi.org/10.1145/3447954

**5. How the Accuracy and Confidence of Sensitivity Classification Affects Digital Sensitivity Review**

Graham Mcdonald, Craig Macdonald, Iadh Ounis
ACM Transactions on Information Systems Vol. 39, no.1, Article-4, pp. 1-34 January 2021
**DOI:** https://doi.org/10.1145/3417334
**Abstract:**
Government documents must be manually reviewed to identify any sensitive information, e.g., confidential information, before being publicly archived. However, human-only sensitivity review is not practical for born-digital documents due to, for example, the volume of documents that are to be reviewed. In this work, we conduct a user study to evaluate the effectiveness of sensitivity classification for assisting human sensitivity reviewers. We evaluate how the accuracy and confidence levels of sensitivity classification affects the number of documents that are correctly judged as being sensitive (reviewer accuracy) and the time that it takes to sensitivity review a document (reviewing speed). In our within-subject study, the participants review government documents to identify real sensitivities while being assisted by three sensitivity classification treatments, namely None (no classification predictions), Medium (sensitivity predictions from a simulated classifier with a balanced accuracy (BAC) of 0.7), and Perfect (sensitivity predictions from a classifier with an accuracy of 1.0). Our results show that sensitivity classification leads to significant improvements (ANOVA, $p < 0.05$) in reviewer accuracy in terms of BAC (+37.9% Medium, +60.0% Perfect) and also in terms of F2 (+40.8% Medium, +44.9% Perfect). Moreover, we show that assisting reviewers with sensitivity classification predictions leads to significantly increased (ANOVA, $p < 0.05$) mean reviewing speeds (+72.2% Medium, +61.6% Perfect). We find that reviewers do not agree with the classifier significantly more as the classifier's confidence increases. However, reviewing speed is significantly increased when the reviewers agree with the classifier (ANOVA, $p < 0.05$). Our in-depth analysis shows that when the reviewers are not assisted with sensitivity predictions, mean reviewing speeds are 40.5% slower for sensitive judgements compared to not-sensitive judgements. However, when the reviewers are assisted with sensitivity predictions, the difference in reviewing speeds between sensitive and not-sensitive judgements is reduced by ˜10%, from 40.5% to 30.8%. We also find that, for sensitive judgements, sensitivity classification predictions significantly increase mean reviewing speeds by 37.7% when the reviewers agree with the classifier's predictions (t-test, $p < 0.05$). Overall, our findings demonstrate that sensitivity classification is a viable technology for assisting human reviewers with the sensitivity review of digital documents.
https://doi.org/10.1145/3417334

# SUBJECT- "Open Data Technology"

**1. Empowering Cities through Open Data - Open Government Data Initiatives in India**
Gayatri Doctor Prajakta Joshi
ICEGOV 2021:14th International Conference on Theory and Practice of Electronic Governance, pp.352-361, October 2021
**DOI:** https://doi.org/10.1145/3494193.3494241
**Abstract:**
Open Data is data that can be freely used, re-used, and redistributed by anyone. Open Governmental Data (OGD) can be defined as "all stored data of the public sector which could be made accessible by the government in the public interest without any restrictions on usage and distribution". This paper explores the journey and evolution of OGD. It covers various initiatives done worldwide comparing them with the rating systems of Open Data. The research further focuses on understanding the Open Data and accessibility status in India. Though there are several challenges, India has developed plans for democratizing public data at varying scales. An analysis is done on an Indian scenario where a series of country, state, city level and Smart Cities Open Data portals are studied, through live case studies and interviews. Additionally, a user-based survey is conducted; to understand the need and efficiency of having such platforms in place, thus clearly help identify challenges and areas requiring improvements that can ease the efficiency of the data approach.
https://doi.org/10.1145/3494193.3494241

**2. Characterizing Disinformation Risk to Open Data in the Post-Truth Era**
Adrienne Colborne, Michael Smit
Journal of Data and Information Quality, Vol.12, no. 3, Article no.13, pp. 1–13, September 2020
**DOI:** https://doi.org/10.1145/3328747
**Abstract:**
Curated, labelled, high-quality data is a valuable commodity for tasks such as business analytics and machine learning. Open data is a common source of such data—for example, retail analytics draws on open demographic data, and weather forecast systems draw on open atmospheric and ocean data. Open data is released openly by governments to achieve various objectives, such as transparency, informing citizen engagement, or supporting private enterprise. Critical examination of ongoing social changes, including the post-truth phenomenon, suggests the quality, integrity, and authenticity of open data may be at risk. We introduce this risk through various lenses, describe some of the types of risk we expect using a threat model approach, identify approaches to mitigate each risk, and present real-world examples of cases where the risk has already caused harm. As an initial assessment of awareness of this disinformation risk, we compare our analysis to perspectives captured during open data stakeholder consultations in Canada.
https://doi.org/10.1145/3328747

**3. The role of open data in enabling fiscal transparency and accountability in municipalities in Africa: South Africa and Nigeria case studies**

Paul Kariuki, Jude A. Adeleke, Lizzy Oluwatoyin Ofusori

ICEGOV 2020: Proceedings of the 13th International Conference on Theory and Practice of Electronic Governance, pp. 410–418, September 2020

**DOI:** https://doi.org/10.1145/3428502.3428558

**Abstract:**

This article explores the role of open data in the monitoring of budgets as a citizen-centered accountability mechanism that could benefit budget allocation and spending by municipalities in Africa. Annually, municipalities allocate significant amounts of financial resources towards better provision of basic services. However, often these budgets are drawn-up with minimal citizen engagement and limited scrutiny of how the budget is being spent. This study used a mixed-methods approach to collect its data. It found that there are limited citizen-oversight and weak fiscal accountability by local governments in both countries. The article premises that open data has the potential to increase citizen scrutiny of municipal budgets thereby improving fiscal transparency. Effective use of open data has the potential to enhance credible participatory governance at the local government level. This requires significant political will to make all important data accessible to the public, so they can use it in holding the local government accountable.

https://doi.org/10.1145/3328747

**4. The Open Data Canvas–Analyzing Value Creation from Open Data**

Yingying Gao, Marijn Janssen

Digital Government: Research and Practice, Vol. 3, no. 1, Article no. 5pp 1-15 January 2022

**DOI:** https://doi.org/10.1145/3511102

**Abstract:**

Expectations to derive value from open data are high. However, how value is created from open data is still largely unknown. Open data value is usually generated in constellation of actors in which each player has different capabilities and roles. To understand the open data value creation process, the business model canvas is introduced in this article. The typical components of the business model canvas and open data value creation are derived from the literature. By combining these two research streams, the open data value model canvas is created. The case of Coronavirus disease 2019 (COVID-19) worldwide dashboard developed by the Johns Hopkins University is used to evaluate the model's utility. Key components of the open data value model are creating an overview of various data sources from public and private organizations, having capabilities to combine heterogeneous data, and connecting data and needs. In this way, the open data canvas helps to grasp the value creation logic.

https://doi.org/10.1145/3511102

**5. Metadata Harvesting and Quality Assurance within Open Urban Platforms**

Philipp Lämmel, Benjamin Dittwald, Lina Bruns, Nikolay Tcholtchev, Yuri Glikman, Silke Cuno Mathias Flügge, Ina Schieferdecker

Journal of Data and Information Quality, Vol. 12 no. 4, Article no. 22, pp. 1–20
**DOI:** https://doi.org/10.1145/3409795
**Abstract:**
During the past years, various activities and concepts have shaped and prepared the path for the development of urban environments toward smart cities across the world. One of the initial activities was relating to the opening of vast amounts of data from various public administrations and utility companies within a city in order to create a viable eco-system of urban services and applications. Thereby, the harvested metadata needed to be verified in terms of correctness and a corresponding level of quality had to be assured. In addition, the concept of an Open Urban Platform emerged as an overall solution for smart cities Information Communication Technology (ICT) in the sense that an abstract reference model was established and standardized, providing an overall picture of the ICT structures within a city. Within this article, we use the Open Urban Platform concept as the basics to describe and map our activities within the Open Data domain, focusing mainly on the Open Data prototype for German Open Governmental Data—namely GovData.DE. Thereby, we describe our metadata harvesting and metadata quality assurance approach and discuss on lessons learned, which flow into the definition of metadata quality metrics and have the potential to lead to a corresponding standard within the Deutsches Institut für Normung e.V. (DIN) German national standardization.
https://doi.org/10.1145/3409795

## Current Journals List on Electronics and Semi- Conductor

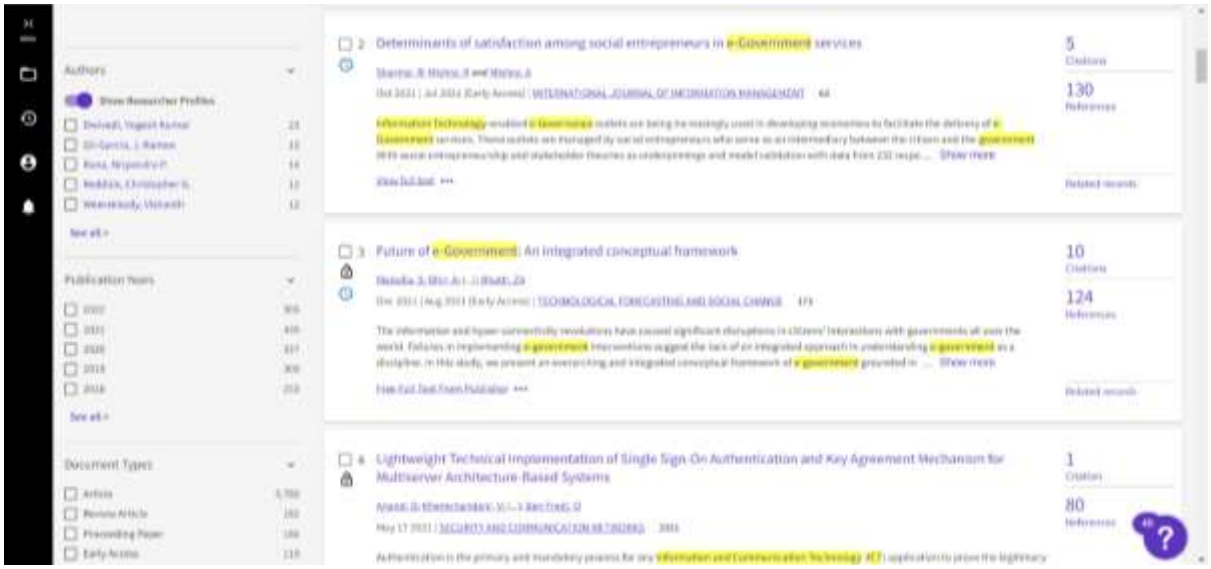
| S.No. | Journal Name | Publisher Name | Date | Source |
|---|---|---|---|---|
| 1. | IEEE Journal on Flexible Electronics | IEEE | 2022 - Present | IEEE Xplore |
| 2. | IEEE Open Journal of Power Electronics | IEEE | 2020 - Present | IEEE Xplore |
| 3. | IEEE Consumer Electronics Magazine | IEEE | 2013- Present | IEEE Xplore |
| 4. | IEEE Journal of Emerging and Selected Topics in Industrial Electronics | IEEE | 2020-Present | IEEE Xplore |
| 5. | IEEE Open Journal of the Industrial Electronics Society | IEEE | 2020- Present | IEEE Xplore |

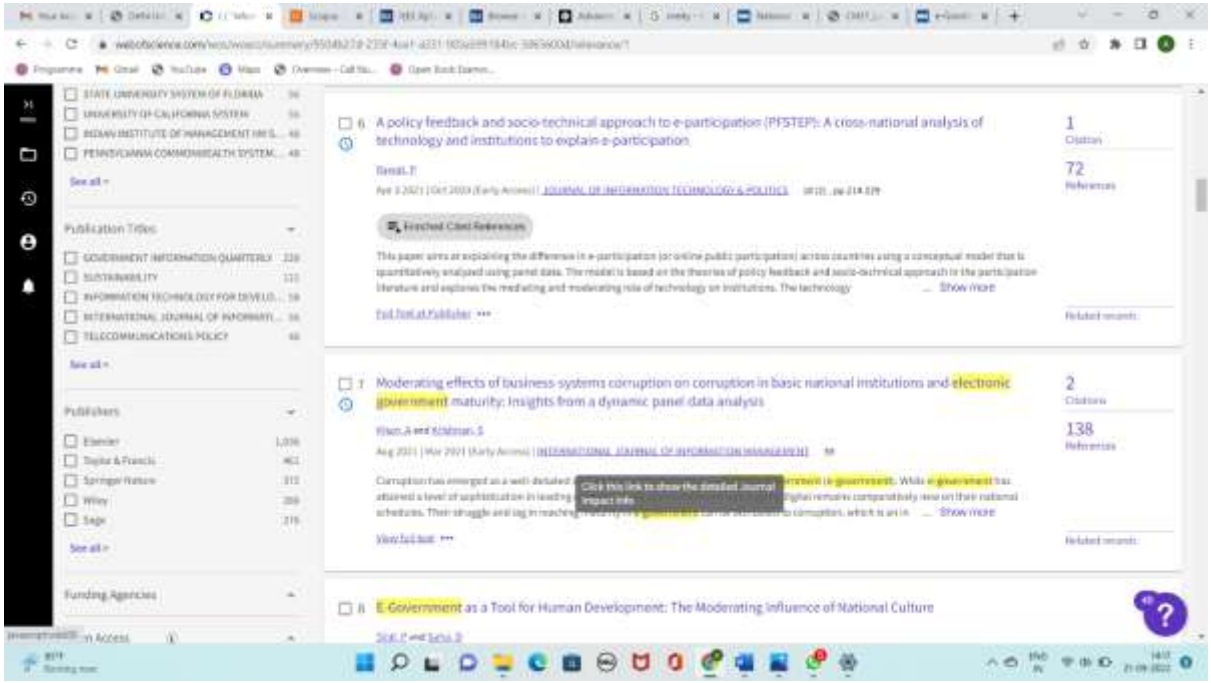
| | | | | |
|---|---|---|---|---|
| 6. | IEEE Journal of Quantum Electronics | IEEE | 1965-Present | IEEE Xplore |
| 7. | IEEE Transactions on Industrial Electronics | IEEE | 1982 -Present | IEEE Xplore |
| 8. | Microelectronics International | Emerald Group Publishing | 1982- present | Scopus |
| 9. | IEEE Aerospace and Electronic Systems Magazine | IEEE | 1986-present | IEEE Xplore |
| 10. | ACM Transactions on Design Automation of Electronic Systems | ACM | 2021-present | IEEE Xplore |
| 11. | International Journal of High-Speed Electronics and Systems | World Scientific (Singapore) | 1990-present | Scopus |
| 12. | Journal of Systems Engineering and Electronics | IEEE | 1990 - Present | IEEE Xplore |
| 13. | IEEE Transactions on Aerospace and Electronic Systems | IEEE | 1965 - Present | IEEE Xplore |
| 14. | ACM Transactions on Information Systems | ACM | 1983-present | ACM |
| 15. | IEEE Transactions on Semiconductor Manufacturing | IEEE | 1989-Present | IEEE Xplore |

## ANNEXURE IV

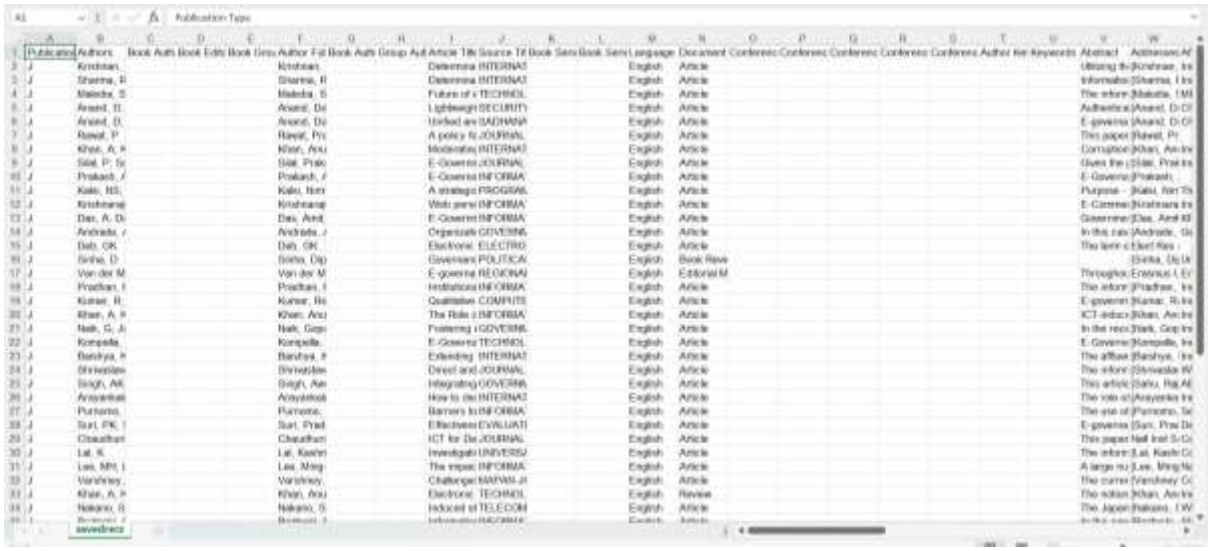
# 4,039 WEB OF SCIENCE ARTICLES ON DIGITAL GOVERNMENT RESEARCH IN INDIA

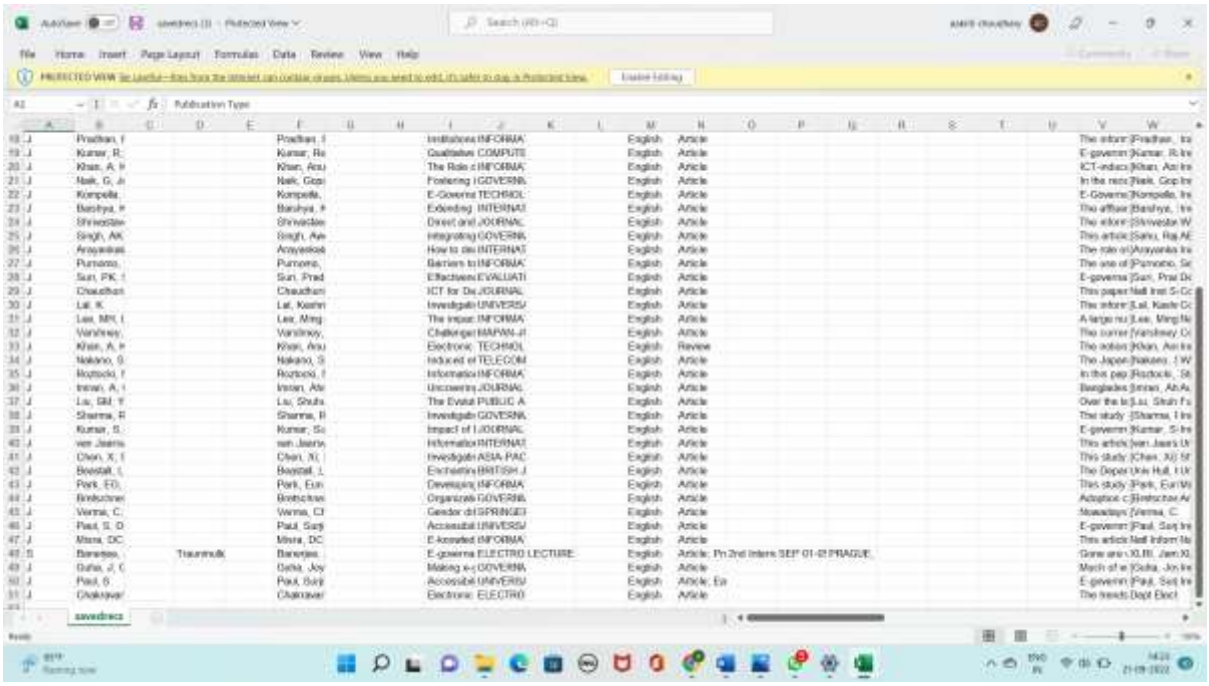
Sample of some of the 4,039 web of science titles



Sample of 4,039 Web of science results in Excel sheet





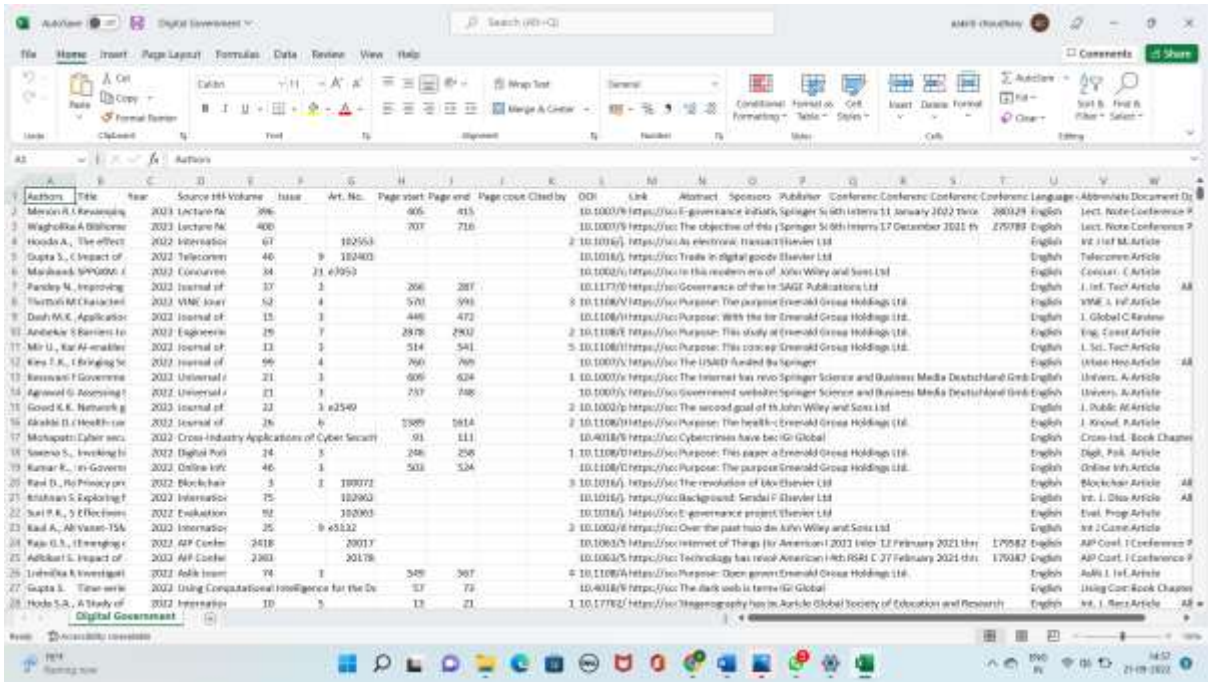
[4,039 Results of web of science]

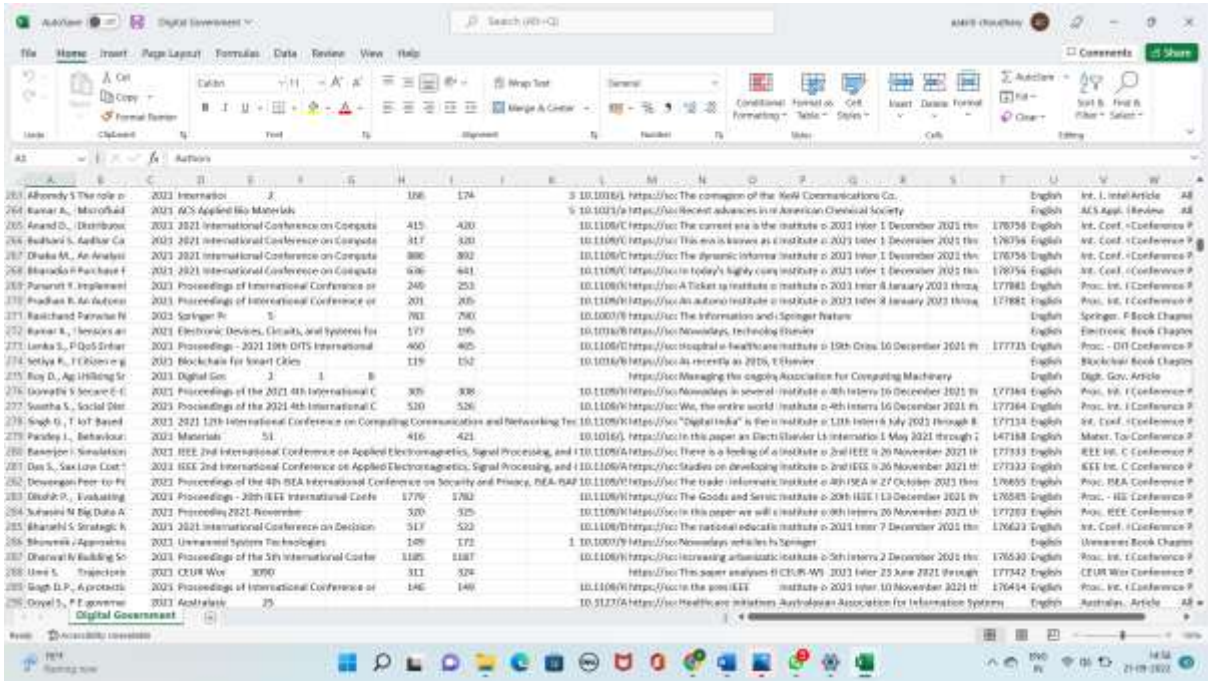
## ANNEXURE V

# 2,493 SCOPUS ARTICLES ON DIGITAL GOVERNMENT RESEARCH IN INDIA

Sample of some of the 2,493 Scopus titles


Sample of 2,493 Scopus results in Excel file





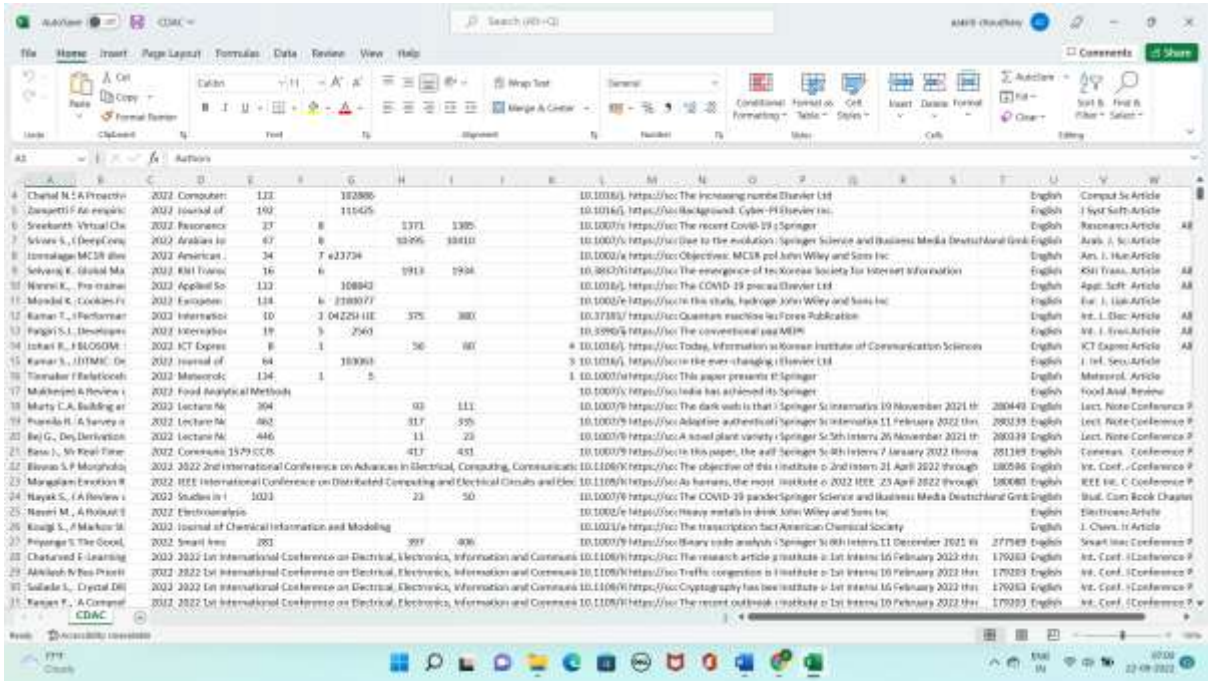
[2,493 Results of Scopus]

## ANNEXURE-VI

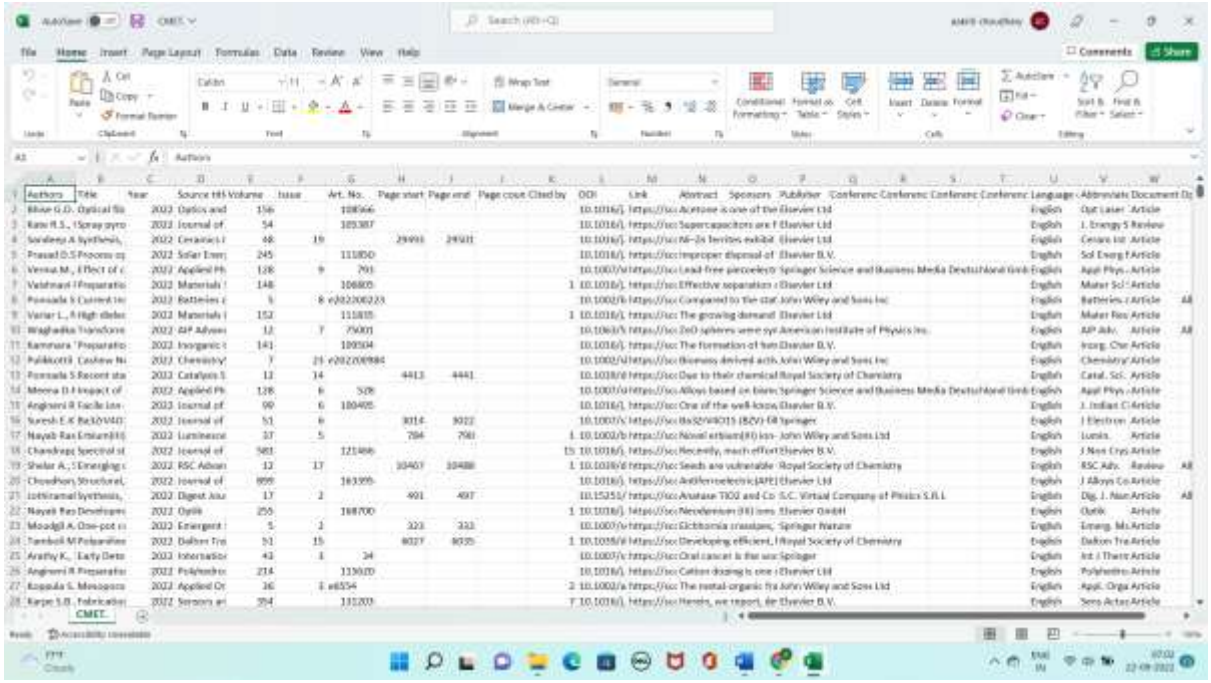
# MIETY ORGANISATIONS DATA ON WEB OF SCIENCE AND SCOPUS

| Name of the Organization's Members | No. of results in Web of Science (All Years) | No. of results in Scopus (All Years) |
|---|---|---|
| CDAC: Centre Development of Advance Computing | 501 | 1148 |
| Sameer: Society for Applied Microwave Electronics Engineering & Research | 317 | 864 |
| CMET: Centre for Materials for Electronics Technology | 1112 | 958 |
| CDOT: Centre for Development of Telematics | 50 | 187 |
| STPI: Software Technology Park of India | 4 | 9 |
| ERNET: Education and Research Network | 4 | 102 |
| STQC: Standardization Testing and Quality Certification | 117 | 28 |
| NIELIT: National Institute of Electronics and Information Technology | 68 | 130 |

## Sample 1



## Sample-2



## SCOPUS Results on Organisations:

CDAC-1148

CMET - 958

SAMEER- 864

STPI- 9

STQC- 28

CDOT- 187

NIELET- 130

ERNET- 102

## MietY Organisations Data on Web of Science and Scopus of 2022

| Name of the Organization's Members | No. of results in Web of Science (2022) | No. of results in Scopus (2022) |
|---|---|---|
| CDAC: Centre Development of Advance Computing | 35 | 47 |
| Sameer: Society for Applied Microwave Electronics Engineering & Research | 3 | 16 |
| CMET: Centre for Materials for Electronics Technology | 30 | 37 |
| CDOT: Centre for Development of Telematics | 1 | 8 |
| STPI: Software Technology Park of India | 0 | 2 |
| ERNET: Education and Research Network | 0 | 7 |
| STQC: Standardization Testing and Quality Certification | 0 | 3 |

| | | |
|---|---|---|
| NIELIT: National Institute of Electronics and Information Technology | 11 | 17 |

## ANNEXURE VII

# GRAPH AND CHART OF DIGITAL GOVERNMENT RESEARCH IN INDIA

## SCOPUS:



Scopus

### Analyze search results

Back to results

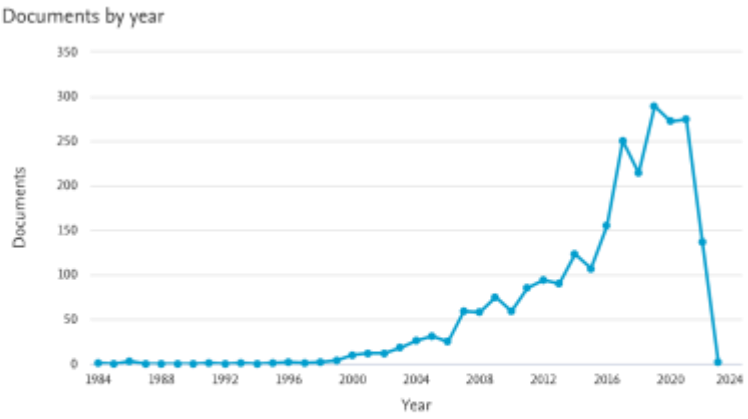
Export Print Email

( TITLE-ABS-KEY ( ( "electronic government" OR e-government OR "digital government" OR e-governance OR "electronic governance" OR "Digital India" ) ) OR TITLE-ABS-KEY ( ( ( "information technology" OR ict OR "data processing" OR "information and communication technology" ) AND government ) ) AND AFFIL ( india ) )

**2,493 document results**

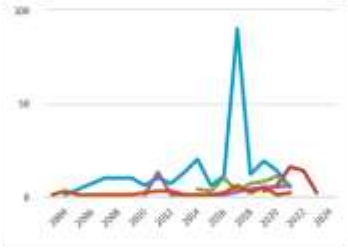
Select year range to analyze: 1984 to 2023 Analyze

| Year | Documents |
|---|---|
| 2023 | 2 |
| 2022 | 137 |
| 2021 | 274 |
| 2020 | 272 |
| 2019 | 289 |
| 2018 | 214 |
| 2017 | 250 |
| 2016 | 155 |
| 2015 | 107 |
| 2014 | 123 |



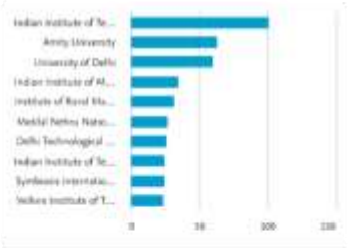
Click on cards below to see additional data.

Documents per year by source

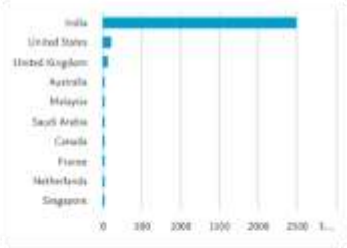


Documents by author

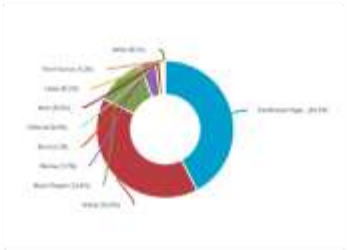

Documents by affiliation



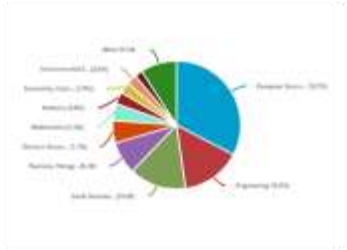
Documents by country/territory



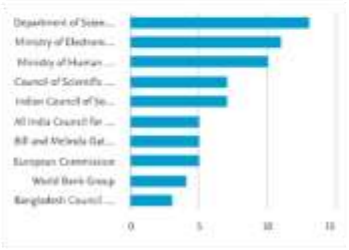

Documents by type



Documents by subject area



Documents by funding sponsor

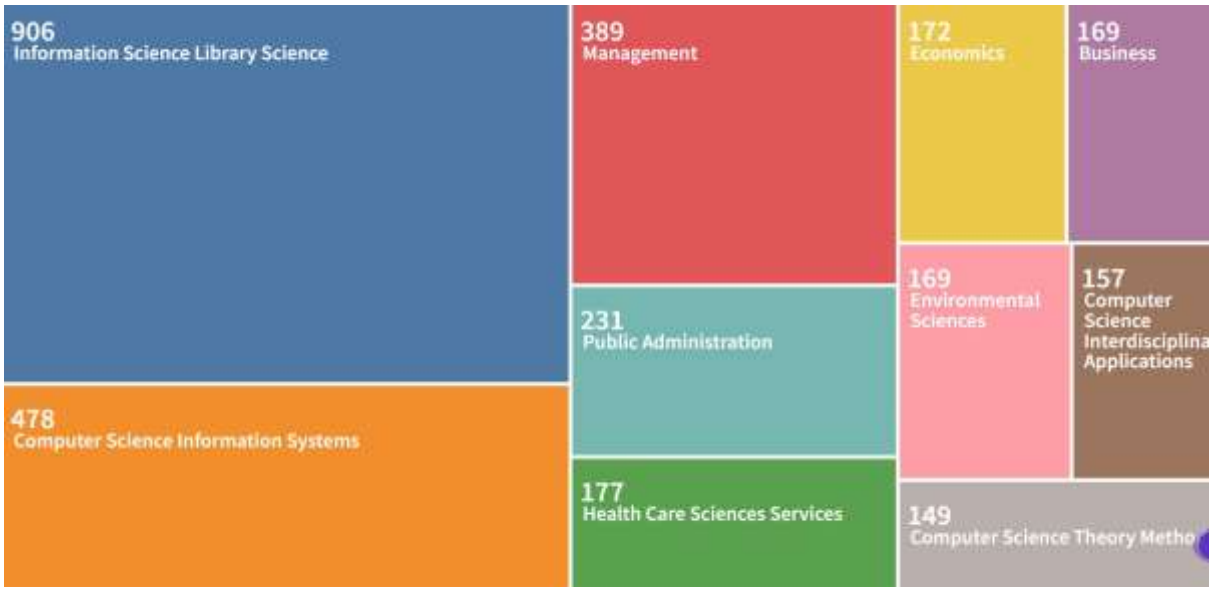


## Web of Science:

Language

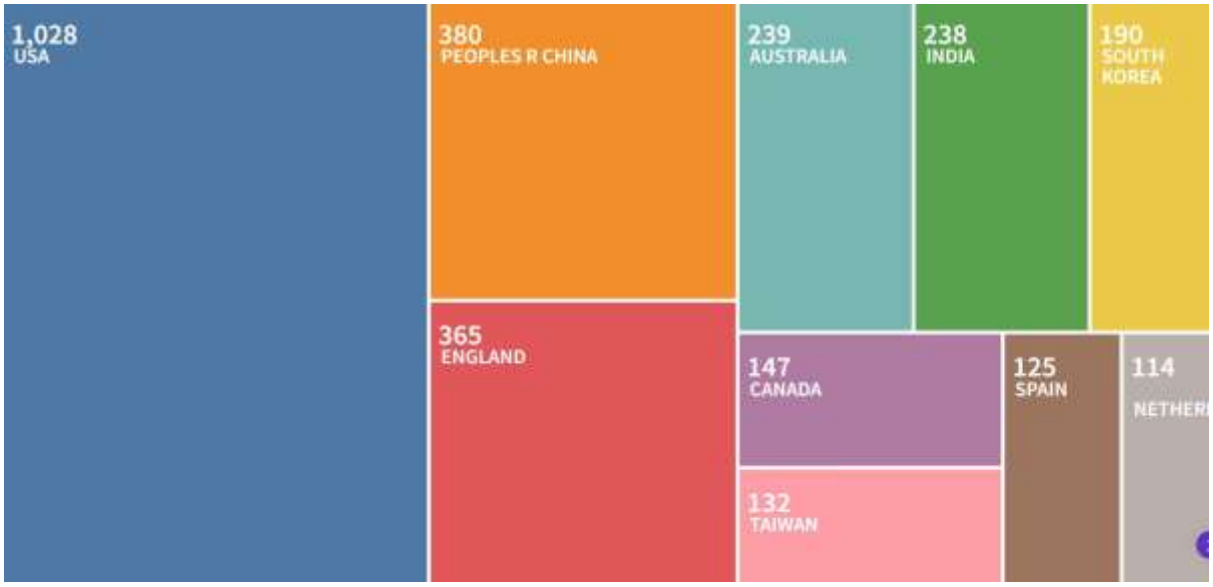

Authors

Web of science categories




Documents type

Countries/regions




Affiliations