

ASSESSING DIGITAL EMPOWERMENT: AN EXPLORATORY STUDY

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INDIAN INSTITUTE OF TECHNOLOGY DELHI**

OCTOBER 2022

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Assessing Digital Empowerment: An Exploratory Study

by

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Submitted

in fulfillment of the requirements of the degree of
DOCTOR OF PHILOSOPHY

to the



Indian Institute of Technology Delhi

October 2022

Certificate

This is to certify that **Swapnil Sharma (2017SMZ8012)** has carried out the research work detailed in this thesis titled “**Assessing Digital Empowerment: An Exploratory Study**” for the award of **Doctor of Philosophy** degree from the **Department of Management Studies, Indian Institute of Technology, Delhi** under our supervision. The thesis embodies the results of original work, and studies are carried out by the student himself, and the content of the thesis does not form the basis for the award of any other degree to the candidate or anyone else from this or any other institutions/university.

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Acknowledgement

I would like to acknowledge and give my warmest thanks to my supervisors, Prof. M.P. Gupta and Prof. Arpan K. Kar, whose guidance and support made this work possible. Their advice helped me carry out my research during different phases and through numerous difficulties and stages of completing this thesis. I would also like to thank my research committee members Prof. P. Vigneswara Ilavarasan (Chairperson), Prof. Sanjay Dhir (internal expert) and Prof. Upasna Sharma (External Expert) for lending their support and guidance in making this journey possible.

I would like to thank my family, especially my brother Saurabh whose continued support and understanding allowed me the freedom to undertake this journey. A very special thanks to my friends Ankur, Abhishek, Rajpal, Sohail, Vishakha, Umar, Anushruti, and Ravinder, who were my constant companions throughout this endeavour. Their love and support have sustained me through the rough patches and provided much-needed positivity from time to time. Thank you all for loving me, being there for me, and being such an amazing pillar of faith and positivity. It's because of you all that I believe in love and friendship as the most precious gifts a person can receive. You have always been there, offered me wisdom, and encouraged me to carry on and deliver.

Swapnil Sharma

Abstract

This thesis presents the findings of four connected exploratory studies undertaken with the aim of investigating the impact of digital initiatives on citizen empowerment, which is termed Digital Citizen Empowerment (DCE) in modern digital democracies. Globally, governments are replacing physical offices with supersites that expand out and span the entire administrative structure of countries. With the advent of digital commons, the nature of state-citizen engagement has changed, making it more convenient and direct. We examine the phenomena of DCE for sustained e-participation in the democratic dialogue for establishing information societies of the future. The four major studies target each dimension of the state-citizen relationship facilitated by information and communication technologies.

The first study covers a systematic review of literature attempting to uncover different strategies governments adopt to target their citizens for digital empowerment. The thesis review uncovers four primary strategies: multi-channel service delivery, digital activism, participatory budgeting, and deliberative governance.

In the second study, we approach the phenomenon of DCE from the citizen's perspective. In an attempt to understand DCE, we validated a multi-level measure with four distinct dimensions of emotional, interactional, relational, and behavioural empowerment. The analysis of data also establishes the role of digital accountability in government services for improving the overall quality of participation.

In the third study, we move ahead to explore the concept of digital accountability in the context of government websites delivering e-services. We developed a framework of digital accountability covering the dimensions of transparency, controllability, responsiveness, responsibility, liability, and security and privacy.

The fourth and final study is an outcome of the changing nature of the state-citizen interaction due to the pandemic situation and also the growing popularity of mobile devices for delivering e-services. This study explores different contextual conversion factors that can help establish an ecosystem of collaborative e-governance using smartphones.

The major contribution of the thesis could be seen as the conceptual model of digital empowerment developed to depict the government side of the e-governance triad. This model not only covers theoretical foundations but also policy action points for practitioners. We were also able to develop and validate a measurement model of DCE, and establish the importance of accountability for e-participation. Our research also uncovered the phenomenon of possible digital disenchantment in the urban population. Exploring the role of the smartphone as an enabling artefact, we explored and developed a conceptual framework for the promotion of collaborative e-governance.

सार

यह थीसिस आधुनिक डिजिटल लोकतंत्रों में डिजिटल नागरिक सशक्तिकरण (डीसीई) के सिद्धांत को बेहतर ढंग से समझने के लिए ई-गवर्नेंस क्षेत्र की जांच करती है। विश्व स्तर पर, सरकारें भौतिक कार्यालयों को सुपरसाइट्स के साथ बदल रही हैं जो देशों के संपूर्ण प्रशासनिक ढांचे का विस्तार और संग्रह करती हैं। डिजिटल कॉमन्स के आगमन के साथ, राज्य-नागरिक जुड़ाव की प्रकृति बदल गई है, जिससे यह अधिक सुविधाजनक और प्रत्यक्ष हो गया है। हम भविष्य की सूचना समाजों की स्थापना के लिए लोकतांत्रिक संवाद में निरंतर ई-भागीदारी के लिए डीसीई की अवधारणाओं की जांच करते हैं।

इस थीसिस में सूचना और संचार प्रौद्योगिकियों द्वारा सुगम इस राज्य-नागरिक संबंध के प्रत्येक आयाम को लक्षित करने वाले चार प्रमुख अध्ययन शामिल हैं। पहला अध्ययन डिजिटल सशक्तिकरण के लिए अपने नागरिकों को लक्षित करने के लिए सरकारों द्वारा अपनाई गई विभिन्न रणनीतियों को उजागर करने के प्रयास में साहित्य की एक व्यवस्थित समीक्षा को शामिल करता है। थीसिस समीक्षा चार प्राथमिक रणनीतियों को उजागर करती है: मल्टी-चैनल सेवा वितरण, डिजिटल सक्रियता, भागीदारी बजट, और सहयोगात्मक शासन। दूसरे अध्ययन में, हम नागरिक के दृष्टिकोण से डीसीई की घटना को देखते हैं। डीसीई को समझने के प्रयास में हमने भावनात्मक, अंतःक्रियात्मक, संबंधपरक और व्यवहारिक सशक्तिकरण के चार अलग-अलग आयामों के साथ एक बहु-स्तरीय पैमाने को मान्य किया। डेटा का विश्लेषण भागीदारी की समग्र गुणवत्ता में सुधार के लिए सरकारी सेवाओं में डिजिटल जवाबदेही की भूमिका भी स्थापित करता है। तीसरे अध्ययन में, हम ई-सेवाएं प्रदान करने वाली सरकारी वेबसाइट के संदर्भ में डिजिटल जवाबदेही की अवधारणा का पता लगाने के लिए आगे बढ़ते हैं। हमने पारदर्शिता, नियंत्रणीयता, जवाबदेही, जिम्मेदारी, दायित्व और सुरक्षा और गोपनीयता के आयामों को शामिल करते हुए डिजिटल जवाबदेही का एक ढांचा विकसित किया है। चौथा और अंतिम अध्ययन महामारी की स्थिति के कारण राज्य-नागरिक बातचीत की बदलती प्रकृति और ई-सेवाओं को वितरित करने के लिए मोबाइल उपकरणों की बढ़ती लोकप्रियता का परिणाम है। यह अध्ययन विभिन्न प्रासंगिक रूपांतरण कारकों की पड़ताल करता है जो स्मार्टफोन का उपयोग करके सहयोगी ई-गवर्नेंस का एक पारिस्थितिकी तंत्र स्थापित करने में मदद कर सकते हैं।

थीसिस के प्रमुख योगदान को ई-गवर्नेंस ट्रायड के विभिन्न पक्ष को चित्रित करने के लिए विकसित डिजिटल सशक्तिकरण के वैचारिक मॉडल के रूप में देखा जा सकता है। यह मॉडल न केवल सैद्धांतिक नींव को शामिल करता है बल्कि चिकित्सकों के लिए नीतिगत कार्रवाई बिंदु भी शामिल करता है। हम डीसीई के एक मापन मॉडल को विकसित और मान्य करने में भी सक्षम थे, और ई-भागीदारी के

लिए जवाबदेही के महत्व को स्थापित किया। हमारे शोध ने शहरी आबादी में संभावित डिजिटल मोहभंग की घटना को भी उजागर किया। एक डिजिटल कलाकृति के रूप में स्मार्टफोन की भूमिका की खोज करते हुए हमने सहयोगी ई-गवर्नेंस को बढ़ावा देने के लिए एक वैचारिक ढांचे का पता लगाया और विकसित किया।

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List of Abbreviations

Acronyms	Expansions
AEPS	Aadhaar enabled payment system
AI	Artificial intelligence
AVE	Average variance explained
BE	Behavioural empowerment
BWM	Best-worst method
CFA	Confirmatory factor analysis
CG	Collaborative governance
CSC	customer service centre
CSO	Civil society organisations
DA	Digital Accountability
DA	Digital activism
DBTL	Direct benefit transfer for LPG
DCE	Digital citizen empowerment
DEG	Digital era governance
DG	Deliberative governance
EE	Emotional empowerment
EGDI	E-government development index
ESRC	Economic and social research council
FGD	Focus group discussion
HTMT	Heterotrait-Monotrait
IBPS	India BPO Promotion scheme
ICT	Information and communication technology
ICT4D	Information and communication technology for development
IE	Interactional empowerment
IoT	Internet of things
IS	Information Systems
MCDM	Multi-criteria decision making
MCSD	multi-channel service delivery
MICMAC	Matrix of Cross Impact Multiplications Applied to Classification
ML	Machine learning
MSDE	Ministry of Skill Development & Entrepreneurship
NA	Not applicable
NEBPS	North-east BPO promotion scheme
NMEICT	National mission on education using ICT
NPM	New Public Management
NREGA	National rural employment guarantee act
OECD	Organisation for economic co-operation and development
PA	Public Accountability
PB	Participatory Budgeting
PCSD	Policy coherent sustainable development
PMJDY	Pradhan Mantri Jan-Dhan Yojana

PMKVY	Pradhan Mantri Kaushal Vikas Yojana
QPE	Quality of participation experience
RE	Relational Empowerment
SA	Social Accountability
SDG	Sustainable development goals
SEM	Structural equation modelling
TISM	Total interpretive structural modelling
TPDS	Targeted Public Distribution System
UN	United Nations
VIF	Variance inflation factor
WoS	Web of science