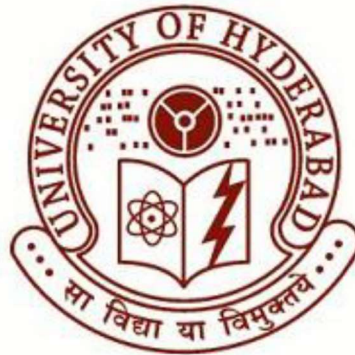


**‘Decoding the Politic of Technology and Welfare:
A Study of Aadhaar Based Services in Telangana State’**

*A thesis submitted in June 2022 to the University of Hyderabad
in partial fulfillment of the award of the degree of*

**DOCTOR OF PHILOSOPHY
in
POLITICAL SCIENCE**

**by
GURRAM ASHOK
(Reg. No. 16SPPH06)**



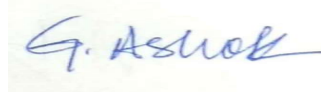
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DECLARATION

I, **Gurram Ashok**, hereby declare that this thesis entitled '**Decoding the Politics of Technology and Welfare: A Study of Aadhaar Based Services in Telangana State**' submitted by me under the guidance and supervision of **Dr. D. Veerababu**, is a bona-fide research work which is also free from plagiarism. I also declare that it has not been submitted previously in part or in full to this university or any other university or institution for the award of any degree or diploma. I hereby agree that my thesis can be deposited in Shodhganga/ INFLIBNET.

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CERTIFICATE

This is to certify that the thesis titled '**Decoding the Politics of Technology and Welfare: A Study of Aadhaar Based Services in Telangana State**' submitted by **Gurram Ashok** bearing registration number **16SPPH06** in partial fulfilment of the requirements for the award of Doctor of Philosophy in Political Science is a bona-fide work carried out by him under my supervision and guidance.

This thesis is free from plagiarism and has not been submitted previously in part or in full to this or any other university or institute for the award of any degree or diploma.

A) The research scholar has published articles in the following publications:

1) "The Biopolitics of Caste: Analysing the (Dis)honour Killings in South India".
Contemporary Voice of Dalit (2022). Sage Pub.
<https://doi.org/10.1177%2F2455328X221076657>

2) "Politics Before Elections: A Study of Welfare Governmentality in Elections in Telangana state", *Indian Journal of Political Science*, Vol. LXXXII, No.4, October-December, (2021): 573-582. Indian Political Science Association.

B) The research scholar has made presentations in the following national conferences:

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2) *“A Wealthy State with Unhealthy Indicators: A Study of Nutritional Status of Dietary Diversity and Policy Response in Telangana State”* at a Two Day National Seminar on Health Indicators in Telangana Since 2014-15, organized by Council for Social Development (CSD), During 25-26, November (2021) Hyderabad.

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	Research Methodology- Quantitative (PS702)	4	PASS
	Individual Course (PS703)	4	PASS

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Dedicated to
My beloved Parents
Gurram Lingaiah & (Late) Gurram Rajamma

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Acronyms and Abbreviations

ABBA	Aadhaar-based biometric authentication
ABT	Awareness of Biometrics Taken
AFIS	Automated Fingerprint Identification System
AI	Artificial Intelligence
BPL	Below Poverty Line
CB	Consent for Biometrics
CBI	Central Bureau of Investigation
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CCTV	Crossed-Circuit-Television
DBT	Direct Benefit Transfer
DNA	Deoxyribonucleic Acid
ECI	Election Commission of India
E-POS	Electronic Point of Sale
EVM	Electronic Voting Machine
FLS	Fear of Losing Govt. Services
GPS	Global Positioning System
GSDP	Gross State Domestic Product
IAEA	International Atomic Energy Association
IAFIS	Integrated AFIS
IAPL	Implementing Aadhaar Project before enactment of Aadhaar Act, 2016
IB	Intelligence Bureau
ID	Identity Document
IT	Information Technology
ITC	Information Communication Technologies
ITDA	Integrated Tribal Development Agency

JAM	Jan Dhan-Aadhaar-Mobile
KCR	Kalvakuntla Chandrashekar Rao
KYC	Know Your Customer
LPG	Liquefied Petroleum Gas
MGNREGA	National Rural Employment Guarantee Act
MLR	Multinomial Logistic Regression
MRO	Mandal Revenue Officer
NATGRID	National Intelligence Grid
NATO	North Atlantic Treaty of Organization
NCCC	National Cyber Coordination Centre
NCMP	National Common Minimum Programme
NGOs	Non-Governmental Organizations
NIS	National Institute for Science
NPR	National Population Registrar
NPT	Non-Proliferation Treaty
OBC	Other Backward Classes
OECD	Organization for Economic Cooperation and Development
PC	Proof of Citizenship
PDS	Public Distribution Systems
PIL	Public Interest Litigation
PMJDY	Pradhanmantri Jan Dhan Yojana
RAW	Research and Analysis Wing
RBI	Reserve Bank of India
SC	Scheduled Castes
SDG	Sustainable Development Goals
SHGs	Self Help Groups
SNT	Since Neighbours have already Taken
SSIA	Safety and Security Issues with Aadhaar
ST	Scheduled Tribes
STS	Science and Technology Studies

TERM	Telecom Enforcement Resource and Monitoring Project
TRS	Telangana Rashtra Samithi
TRIGP	Telangana Rural Inclusive Growth Project
TSBIE	Telangana State Board of Intermediate Education
TS-PRIDE	Telangana State programme for Rapid Inclusion of Dalit Entrepreneurs
TRAI	Telecom Regulatory Authority of India
UIDAI	Unique Identification Authority of India
UK	United Kingdom
UN	United Nations
USA	United States of America
USSSN	United States Social Security Number
VVPAT	Voter Verified Paper Audit Trail
WHO	World Health Organization

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CHAPTER-I: INTRODUCTION

1.1. Introduction

The study presents a thesis on “*Decoding the Politics of Technology and Welfare: A Study of Aadhaar Based Welfare Services in Telangana state*”. It focuses on politics embedded in using the technologies in the welfare governance in India. The intersection between technology, governance, and welfare in the modern state brings new prospects and problems in the society. The politics of technology and welfare encompasses methods and ways that are applied in deploying technology in governing the people by the state. The use of mechanisms, digital tools, and electronic gadgets in welfare services such as MGNREGA, pensions, education, and health. It also includes subsequent results like social incl, exclusion, and deprivation of rights and entitlements. For this purpose, Telangana state has been selected for field study and examining the Aadhaar based services rendered to the people.

Technologies are not value-free but carry the encrypted political interests of the ruling class because citizens of the modern state obey the law of the land and enjoy the entitlements deriving from the execution of such law. Laski (1925) opines that politics is allut the “regulation of humankind”. As such, bringing technology into governance with legal backing raised the question of political interest of the ruling class. The attempt of robust governing of humankind is perceived through the profiling of the people. This profiling is achieved with the help of big data analytics which is assisted by new technologies like Global Positioning System (GPS), crossed-circuit-television (CCTV) and biometrics. In such a context, many studies have highlighted the utility and undesirable consequences of using technology in the governance and welfare services in India. This study also would like to critically examine the pros and cons of overall use of biometric technology in addressing the socio-economic problems of the governance across the globe in general and in India in particular by reviewing the existing literature. Further, the developmental experience of people is to be studied to engage with the policies and

practices of development in Telangana state. This enthruses the study to go for the field survey to understand functional aspects of Aadhaar enabled biometric governance in the welfare services. After proper reasoning, Telangana state was selected for fulfilling such research objectives that aim to examine the quality of governance based on the developmental experience of the people. The research study uses the theoretical framework of Michel Foucault's Bio-politics and the governmentality in analyzing privacy and security issues emanating from the use of technology such as 'biometrics' with Aadhaar in governance.

The legal framework and powers and functions assigned to the governments of the states and centre under Aadhaar Act, 2016 are major concerns of the study. As such, the section 50 of Aadhaar Act, 2016 empowers the government and other agencies to share the biometric information to share with any other entity (even private entities) violates the National privacy principle set forth by Justice A P Shaw committee (2012). There is no privacy law in India, unlike the UK, to compensate the loss to the individuals. The research study will also examine the very passage of the Aadhaar Bill, 2016 as a money Bill which is perceived as a subversion of Article 110 and the impact of Aadhaar on other constitutionally guaranteed rights. Further implications emanating from Aadhaar based biometric governance in welfare services would also be analysed with the help of existing literature.

1.2. Review of Literature

There have been many studies on technology and development but still there is immense scope for study the role of technology in augmenting human welfare and the problems it could create. The French Philosopher, Jean-Jacques Rousseau (1750) raises, in his *First Discourse on Arts and Sciences*, the question, whether the developments in the arts and science improve our morals in life. He emphasises that the man loses his originality with the progress in the arts and sciences and thus man becomes more artificial in his life (Rousseau, 1750, p.13). This philosophical observation intrigued the study to examine the increasing technocratization of the Indian state's governance and welfare services in the

society. Moriarty & Honnery (2014) discusses the convergence of technologies such as “biotechnology, information technology, and nano-technology” with human welfare across the globe. The advancements in these technologies aim at easing out the human labour and drudgery in daily life.

Technology and its application

The word, technology is derived from the Greek word, *techne* which means “art, skill, cunning of hand” (Liddell et al, 1996). The Oxford Advanced Learners Dictionary defines technology as “a scientific knowledge used in practical ways in industry, for example in designing new machines” (p.1576). The scientific efforts reflect in the developments of machines, software and other electronic gadgets that serve the human needs in multiple ways. The decisive engagement with technologies such as artificial intelligence, block chain technologies, internet of things and biometric footprint by the state is to transform welfare governance and reach out to the poor and marginalised sections in the society. Rainer Binder (2021), the Managing Director of Accenture, argued that the world has entered digital advancements for effective delivery of social services. Further, Organization for Economic Cooperation and Development’s (OECD, 2016) study on digital strategies observes that “digitisation will therefore play a key role to leverage this transformation of the public sector at large, given its potential to increase productivity and inclusiveness of service production and delivery in public welfare areas (p.7). This digital transformation of public services is an integral part of modernising the welfare governance in addressing the social problems in the nation states. European countries such as Sweden, Denmark and Britain started developing the digital environments under the initiatives of e-governance with the user driven approach in accessing the public services (OECD report, 2016, p.13). However, technological intervention has also brought new problems of privacy, surveillance, and techno-determinism in the governance and public policy in the welfare states across the world.

The rise of big tech companies such as Google, Microsoft, Apple and Facebook have paved the way for surveillance capitalism (Zuboff, 2009). Technology is pervading into every aspect of life and penetrating the obscure corners of the world. It is believed that technologies have played a significant role in solving the puzzle of human problems by unfolding new possibilities. Technologies are deemed to liberate the people from their suffering by ensuring effective social justice in the welfare networks (Dyson, 2009, p.1). The invention of the modern computers has led to the minimization of human labour in the world. Technology can address the needs of the millions of poor and marginalised sections in the world. The examples such as “electric light and power systems” have built the technological momentum which enabled millions of people to watch and work in the night shifts as well in Europe during the 20th century. However, these technologies are not value free but guided by human actions. Winner (2009) raises the question that “do artefacts have politics”? in his probe into power relationships between the people and artefacts. He gives an interesting example that “guns do not kill people but people kill people” (p.209). In other words, the socio-economic environment of technology plays a major role in reaping the fruits from technology.

David Lyn (2001) discusses the role of increasing technologies and potential consequences such as breach of privacy and rise of surveillance governance in the world. He further argues that “commercialization of the internet hints strongly at both the globalisation and localization of surveillance” (p.5). Johnson & Wetmore (Eds., 2009) presents “the vision of technological future” where use of technologies such as the internet, computers and electronic tools in the state’s governance. In the context of the western countries such as the USA, Britain, and Canada, technology is perceived to have the potential to set humans free from drudgery and ease our everyday life in the “sociotechnical future” (Johnson & Wetmore, 2009, p.1). Mathew Kabatoff (2005) explains the reasons such as security and criminal investigations behind introducing the “biometric technology” in the legislation of the identity cards in Britain. A similar exercise of biometric technology can be observed in the USA for security scans at airports for foreign nationals. The British government introduced biometric identity cards for its citizens following the London attacks in 2007 (Hussain, 2010). This was to ensure national security and identify the

intruders into the country. A similar mechanism was adopted for issuing national identity cards for the citizens in the USA following the 9/11 attacks. They issued social security cards that can be used for verifying the people's legal identity as well.

The global phenomena of using the internet has roots in western countries like the USA, later Asian and African continents have also started adopting the same. This trend can be observed from China which adopted its own search engine called Baidu (Chinese google), CCTV cameras and biometrics in the governance (Azis, 2021, p.147). The technological intervention in governance underwent a monumental change ever since "the biometric governance" was adopted and promoted as the global standard of governance in the world.

The state, in the era of neoliberalism, is trying to advance human well-being by reshaping the whole governance that would create "adaptable citizens" (Mezzadra & Samaddar, 2013). They further expound that "to become adaptable, in other words, is to forgo human powers of resistance" (Mezzadra & Samaddar, 2013, p.5). This new governance seems to be a potential step towards Foucault's 'governmentality' which is defined as the "conduct of conduct, where state/government attempts to shape the human conduct by calculated means...government operates it by educating desires and configuring habits, aspirations and beliefs of the people" (Li, 2007, p.275). Michel Foucault describes the state or government's attempt to produce the body of the citizen to suit its policies in retaining power over the governed. It eventually results in 'arranging of things for people to do as they (government/state) ought' (Scott, 1995).

As such, the whole practice of 'governmentality' policies amounts to 'Bio-politics' by the state to surveil against its own people. Thus, biometric technologies entail such political connotations which might not surface in the political articulation of the state in everyday life. It can be better expressed in the words of Melvin Kranzberg (1995) who said that "Technology is neither good, nor bad, nor is it neutral" (p.5) but it gives the results of

human activities associated with technological interventions. The excessive reliance on technologies for addressing welfare services might become counterproductive if the technology is misused. This is not mere apprehension but social reality from countries such as China where the state uses surveillance technologies such as CCTVs, mobile apps, state-controlled internet and genomic sequence in watching and identifying the dissents (Fry, 2016). This system of surveillance governance is more politically motivated rather than administrative necessity both in totalitarian and democratic nations. Similarly, even democratic states like the USA and Britain also made stringent efforts to use biometrics, facial recognition, and voice recognition in identifying the robust citizens for both developmental purposes and national security as well (Hussain, 2007; Fry, 2016). Thus, the technocratic solutions are perceived and promoted, by the welfare state, as the panacea for all the socio-economic problems encountered by its people. Similarly, India is also such democratic country which aims at utilising digital technologies for its welfare governance for efficient and effective functioning of the public sector.

Welfare and Aadhaar in India

Indian constitution envisages a democratic polity for its citizens. The directive Principles of State Policy placed in Part-IV of the Indian constitution puts the onus on the central and state governments to endeavour for welfare of the people. Further, Robson (1954) argues that India, like other democratic countries, has adopted “the ideal of welfare” which reflects in the part-III and part-IV of the Indian constitution. The welfare agenda is to eliminate poverty, inequalities, asymmetric divisions based on caste, class, gender, race and ethnicity through welfare programmes in the country (Robson, 1954, p.119). This welfare objective of the state gives high priority to the empowerment of the poor and marginalised sections who have been deprived of basic rights for ages. Kumar (2005) expounds that the welfare system in India emerged from the synthesis between “the idea of rights and quest for equality by three institutional principles: economic management, provision of services to all its citizens and social insurance” in the post-colonial times (p.337). Kapur & Nangia (2015) argues that the centre and state governments share the responsibility of providing social protection through welfare programmes in India. It is

observed that “the country’s basic public services, such as primary education, public health, and water and sanitation, have languished (Kapur & Nangia, 2015, p.73). Shukla & Gupta (2019) argue that welfare system works differently for “formal and informal sectors” in India. This welfare system is based on the identity-based rights framework which allows the state to reach out to the target groups. The welfare programmes such as “Mahatma Gandhi National Rural Employment Guarantee Act” (MGNREGA), Public Distribution System (PDS), Subsidies, National Health Mission, “Pradhan Mantri Awas Yojana and Indira Awas Yojana”, and Pension Schemes, Employee Provident Fund Schemes constitute the major part of the welfare services in India (Shukla & Gupta, 2019). In explaining development and poverty in India, Kohli (2012) opines that “the attempts to redistribute land to the landless, to provide education and health to the poor, and to create employment via public works type of programs, have all been largely ineffective” (p.184).

However, the question of corruption in delivery of the welfare services has been a contesting point for the executive organ of the government. The Second Administrative Reforms Commission has also called for probity and efficiency of the administration by introducing e-governance in the welfare services. In such a context, Nandan Nilekani advocated for revamping the welfare governance with technocratic intervention. Subsequently, Nilekani & Shah (2015) argue that biometric governance enabled by Aadhaar ecosystem will bring efficiency and transparency in governance, and effective delivery of the welfare services to the people.

Here in India, the Aadhaar project was launched in 2009 with the ambition of providing “the universal legal identity” to every resident in India. According to Unique Identification Authority of India (UIDAI), 1, 322, 057, 057 Aadhaar cards were generated and 66, 304, 165, 777 authentications were done in India (Aadhaar saturation Report, 2022). Government of India claims it as a grand success of Aadhaar project on voluntary basis enrolment and authentication in rendering the welfare services to the people of India. Government of India has introduced “Aadhaar-based biometric authentication (ABBA)” (EPW Engage, 2020) in the welfare services such as public distribution systems (PDS),

DBT (Direct Benefit Transfer), Pensions, Jan Dhan-Aadhaar-Mobile (JAM) trinity, banking and education sectors in the country. It amounts to say that the introduction of Aadhaar has revolutionised welfare governance as biometric authentication would eliminate the fake beneficiaries and ensure that the eligible beneficiaries get benefited (Niti Aayog, 2016).

In examining this lofty claim, an attempt was made to use biometrics in governance for various welfare programs and security concerns. The erstwhile Planning Commission initially conceived the Unique Identification/ Aadhaar Number project as an initiative to provide the legal identity for every resident in the country. This identity would be used as the robust basis for “efficient delivery of welfare services”. Aadhaar would also act as a tool for “effective monitoring” of various government’s policies and schemes. With the passage of “Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Bill, 2016” by Parliament, the use of Biometrics in Governance has got legislative support to carry on the rationalization of subsidies and elimination of bogus/fake beneficiaries of welfare schemes like MGNREGA, LPG and Direct Cash Benefits. “To obtain an Aadhaar number, an individual has to submit his/her (i) Biometric (Photograph, fingerprint, iris scan) and (ii) Demographic (name, date of birth, address) information” (UIDAI, 2020). Further, the UIDAI may specify other “Biometric and Demographic information” to be collected by regulations. As such, the Act also specifies that any Public and Private entity can accept this Aadhaar number as a proof of identity.

According to Foucault, “the modern state consists of convergence of a very particular set of techniques, rationalities and practices designed to govern or guide people’s conduct as an individual member of a population and also to organise them as a political and civil collective” (Clare, 2005, p.45). This is evident from the implementation of the Aadhaar project where the people were asked to enrol and produce their UID numbers for various government welfare schemes much before the enactment of the Aadhaar act, 2016. Foucault says “economics steals away from the juridical form of the sovereign precisely that which is emerging as the essential element of society’s life, economic processes” (Mezzadra & Samaddar, 2013, p.7). The Indian state has set the conditions for

‘governmentality’ to emerge as a state of ‘biopower’ in the long run. It must be noted that here power means, for Foucault, it “is something that produces a particular knowledge” (Clare, 2005, p.45). Here the very use of technology in governance is also due to our belief in the superiority of science and technology that enjoys the top position in the hierarchy of knowledge. We depend on science and technology for transparency in governance because “science became a privileged way of accessing the truth” (Clare, 2005, p.88). As our photographs, signature and any other identity cards, issued by the state, have not been of any help to prove our identity so accurately, now the state wants all our biological information such as fingerprints, Iris and other facial features to prove ourselves as eligible citizens to receive state aid in any form.

Government also argues that UID/Aadhaar Number will help in eliminating the false claimants of welfare programs by linking UID/Aadhaar Number to Direct Money Transfer Scheme (also known as PAHAL), MGNREGA, Jandhan Yojana, Digi Locker, Know your Customer and Scholarships. Mayank Mishra (2016) argues, “the beauty of biometrics-based authentication to the people in welfare schemes is that there is no way such a system can be manipulated to benefit anyone else other than the intended beneficiary. It also empowers the poor and deserved individuals to participate in the process of governance. As such, since the entire process will happen online, there is a trail of who gets what. It makes the process of auditing easier” (Mayank, 2016, para 3). Similarly, the former DG and Mission Director of UIDAI, R.S. Sharma argues that the aim of the biometrics in financial governance is “inclusion of the Below Poverty Level (BPL) families” (Srinivasan, 2016, p.8) those who are out of the services such as banking, LPG connections by eliminating the ghost beneficiaries. In curbing black money “...seeking of Aadhaar numbers in income tax and all other financial transactions will not only eliminate the use of multiple PANs by the same person but also enhance the scrutiny of financial fraud” (Sujay, 2015). Drèze et al (2017) and Malhotra & Somanchi (2018) highlight the sage of exclusion of beneficiaries from the welfare schemes such as pension, PDS and other social security schemes in Jharkhand. Nayak & Nehra (2017) identifies the failures of Aadhaar in delivery of PDS services to the poor under Food Security Act, 2013. The targeted approach in the delivery of public services is required because the PDS is

guaranteed to poor households as “priority households” within the “rights-based framework” (Nayak & Nehra, 2017, p.2). These priority households generally fall under the category of Below Poverty Line (BPL) families in the welfare services. With the passage of Aadhaar act, 2016 gave sanctity to the biometric governance in the country. However, the way the government of India got it passed, in the parliament, as a money bill attracted the critical response from the legal scholars.

In contrast to the above claims of the government and the proponents of the use of biometrics in governance, a law researcher, Usha Ramanathan brings out the issues and risks associated with the UID/Aadhaar number. She argues that the “UID number will only guarantee, not rights, benefits or entitlements” (Usha, 2010, p.10). In relation to elimination of bogus and ghost workers in MGNREGA, the instance of Andhra Pradesh and Telangana shows that the total number of bogus workers is 12,78,724- or 4% of the total workers (Frontline, 2016). Of these workers were bogus because they were dead, while 809,275 had migrated to other places. The biometrics do not match manual workers as the fingerprints wear away and iris will be subjected to changes to the exposure of the Sun heat. She also explains how the different agencies of the state are threatening the people, especially the poor, to get enrolled for Aadhaar Number in order to get the benefits of the welfare schemes, despite UIDAI’s saying that getting Aadhaar Number is voluntary. As such, it amounts to say that UIDAI’s Memorandum of Understandings (MoUs) with various agencies such as state governments, banks, Life Insurance of Corporation (LIC) to be their “registrars” who then essentialize UID/Aadhaar Number for their customers to receive continued services. It is also argued that people are not informed about the nature of UID Number, its usage and privacy matters in protection of databases. On July 23, 2015, the Attorney General of India told the Supreme Court that people of India are not guaranteed the Right to Privacy under the constitution of India. But the Supreme Court rulings, in cases such as *Nakheeran case (R. Rajagopal Vs. State of Tamilnadu)* 1994, *Ramjethmalani Vs Union of India* in 201, have made it clear that the ‘Right to Privacy’ is an integral part of the “Right to Privacy” under Article 21 of Indian constitution.

In practice, UIDAI arguments go contrary to the claims about privacy by the Attorney General of India. Usha Ramanathan (2010) gives an example from Goa a rape of child in the school, the police did not do proper investigation and the case was handed over to Central Bureau of Investigation (CBI). Having found a random palm print, the CBI requested for a cross-check of biometrics enrolled in Goa. But UIDAI denied it citing privacy reasons. The case went to Mumbai High court, then to Supreme Court which said Aadhaar number cannot be used other than LPG and PDS-even that voluntary. Eventually the Supreme Court mandated that UIDAI should furnish the information if a court asks for it in a criminal investigation.

For the question of National Security, Usha Ramanathan argues that the proposed National Intelligence Grid (NATGRID) by the Home Ministry will have the 21 sets of databases comprising these biometrics to achieve quick seamless and secure access to desired information which can be utilized by intelligence and enforcement agencies. This will enable the government to “detect patterns, trace sources, for money and support, track travellers and identify those who must be watched, disabled and neutralised. This idea has been backed by many intelligence agencies like RAW and IB, which do not have any legislative backing”. Similarly, the surveillance of the physical body of individuals, in the name of national security, takes place at Airports by US Transport Security Authorities which is nothing intruding into the privacy of the people (Praisely and Tara, 2011).

Apart from the above arguments, Elia Zreik (2004) argues that ‘in the name of good governance, accountability, transparency and participation, the state is trying to exercise its control in a robust way with the assistance of technology. Thus, she tries to conceptualise this practice as Foucault’s notion of governmentality in locating the power outside of the boundaries of the government and produces a body of knowledge to produce the best suitable “active citizens” to the policies of the government and continues its surveillance over the citizenry. Conversely, this mission mode project for UID Number for citizens “helps the state and the market to access an individual in unprecedented manner” (Sarkar, 2016, pp.2-3). He quotes Foucault to say that “this new form of power is bio-

power...the set of mechanisms through which basic biological features of human species became the object of political strategy, of a general strategy of power, which brings life and mechanisms into the realm of explicit calculations and (make) Knowledge-power an agent of transformation of human life” (Sarkar, 2016, p.4). As such, he further argues, the “anxiety of governance”: the presence of duplicate, fake and phantom identities makes people opaque and indeterminate while leakages, corruption and wastage make the system inefficient. Thus, he concludes the use of biometrics in governance- collection of biological information and demographic information of the individuals is a new form of governmentality where the nexus between the state and market is very much explicit in surveillance over the population of the country. The existing evidence on the use of biometrics seems to support the claim that the comparative study on success and failures of Biometrics in governance in various countries is not done to understand and analyse the Indian biometrics governance with Aadhaar Act, 2016. This study tries to look at such comparative dimensions in addition to the question of privacy and security of the people.

Welfare Services in Telangana state

As the Telangana state was formed after a prolonged socio-political movement for separate statehood. Reddy (2014) attempts at addressing the question of land alienation and other developmental aspects by providing a “road map” with provision of special autonomous councils and special funds for tribals in separate state of Telangana. However, this debate must be understood in the context of socio-economic development of marginalised sections in Telangana state. Similarly, Rao (2014) argues for inclusive and sustainable development in the new Telangana state as downtrodden communities like Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Classes (OBCs) and religious minorities (Muslim, Sikh and Buddhists) constitute majority of population in the state. He also advocates for participatory development in the new state. Telangana Social Development Report (2017) highlights the alarming livelihood, educational, health, and low levels of employment conditions of predominant rural and marginalised sections. Korra (2015) gives the evidence from Telangana state’s implementation of MGNREGA for the welfare of the poor and marginalised sections in the state. It would not bring

improvement in the living standards but also lead to empowerment of women and marginalised as they have bargaining power to raise their wages in rural Telangana. The government of Telangana state has also promised “*Bangaru Telangana*” (Golden Telangana) for the people and devised the targeted service delivery for welfare programmes in the state. Subsequently, the Government of Telangana executed the *Samagra Kutumba Survey* (an intensive household survey) to collect every aspect of information of the households in the state in 2014. Hence, the intensive household survey has the potential to infringe on the rights of the people. Shaw (2014) examines the role of the public sphere during the Telangana movement and assesses there is an insignificant space for voices of Telangana statehood movement. Similarly, it is important to note that the people’s democratic aspirations can be expressed and promoted if the public sphere is preserved against the state’s intrusion into privacy with surveillance motives. As the government of India uses Aadhaar as a tool of providing the “universal legal identity” to all the residents in the country, the states and union territories have also adopted the Aadhaar in delivering the welfare services.

In probing into politics of survey and creating the database, Maringanti (2014) raises the question of people’s privacy in welfare governance due to intensive household survey in Telangana state. He further analyses people’s anxiety to get exposed in anticipation of recognition and benefits from the state. Reddy et al (2021) tries to investigate the impact of technological development on “socio-economic rural India” with a special reference to Telangana state. It was observed that ‘the local research into technology can effectively address issues of governance and sustainable solutions’ (Reddy et al, 2021, p.2406). Further, Somanchi et al (2017) tried to critically engage with the Aadhaar enabled PDS system in Hyderabad where the exclusion of the beneficiaries taking place due to inherent errors in the Aadhaar numbering and authentication failures. This article aims at analysing the beneficiary perspective with respect to PDS only and could not discuss the privacy, surveillance and impact on governance in the Aadhaar based services in Telangana state. Bhargavi (2017) analyses the role of “E-POS in distribution of fertilizers” to farmers in Telangana state. Further, she argues that the e-governance enabled by Aadhaar eases the

logistic mechanism in the governance and people in the state. Another attempt by Charan & Sandhya (2019) to study the efficacy of e-governance in the public distribution system (PDS) in the implementation of Food Security Act, 2013 in Telangana state. Though they made an effort to discuss the role of e-governance and Aadhaar enabled system in the distribution of fertilisers and PDS but could not bring the privacy and surveillance aspects in analysing the implementation of E-POS and Aadhaar ecosystem, and Food security schemes in Telangana state. Jakimow (2014) argues, in his comparative study on Telangana of India and Desa Tengah of Indonesia, that the state's attempt for decentralisation of governance is to have the involvement of the people in the developmental process. This practice of decentralised governance aims at augmenting the people's experience in welfare governance. "Decentralised governance entails different practices and discourses from a centralised regime, and encounters with the state thereby involve different social positionings and experiences" (Jakimow, 2014, p.163). The decentralised governance is enhanced and operated through biometric governance for robust welfare services in Telangana state.

The idea of Aadhaar seeding with welfare services such as MGNREGA, Public Distribution System (PDS), pensions, and *Rythu Bandhu* (financial assistance to farmers) also gives rise to questions of privacy, profiling government beneficiaries and potential surveillance in Telangana state. In such a context, this study tries to explore the developmental experience of the people who are at the receiving end in the state. The perceptions and practice of privacy, surveillance, development, and biometric governance can be understood from the people's experience with Aadhaar based services in Telangana state. Chatterjee (2016) raises the question of women empowerment in Telangana state. It is observed that the role of Self-Help Groups (SHGs) has played a significant role in increasing the access to the institutions such as banking and market agencies. This includes not only improvement in the income but also a sense of empowerment and social recognition. Thus, the question of women's socio-economic development and their perception of privacy must also be studied after the introduction of Aadhaar in the welfare governance in Telangana state. Prathap et al (2019) highlights the issues such as poverty,

exclusion of people, unaccountable institutions, rising inequality and barriers to access the public welfare. In this context, Telangana state has been making stringent efforts to improve the digital governance for target-based approach for the socio-economic development in the state.

On the one hand, these major studies on technologies and welfare highlight the efficiency of the governance through Aadhaar and the possibilities of social change which reflect the government's policy formulation. On other hand, privacy scholars raise the concerns of privacy breach, surveillance by the state and market agencies with examples from the western experience mostly. There are a few studies by Ramanathan (2010), Khera (2018), Duggal (2012), Challa (2019) and Sarkar (2016) on biometric governance in India but these studies do not cover the developmental experience of the people.

However, the research gap can be observed from the above review of literature that there is the lack of comprehensive study on Aadhaar from people's developmental experience which includes perceptions of privacy, identity, and technology and service delivery in the welfare governance in Telangana state as Telangana is augmenting its efforts for digitalization of governance. As there are competing claims of privacy, utility of Aadhaar in the welfare services in India in general and Telangana state in particular, the current study attempts to understand the politics of technology and welfare by exploring the people's evaluation of Aadhaar based services in the Telangana state.

1.3. Significance of the Study

The idea of using biometrics in governance is considered to pose a threat to the security and privacy of the individuals, whereas it is perceived as lifelong surveillance on the citizens. In such a context, India is taking up this Biometrics project for smooth functioning of governance while developed countries such as the UK have dropped it from governance after massive opposition from the public due to privacy concerns.

It is also important to study the patterns of usage of Biometrics in governance undertaken by the government of India in comparison to that of US Social Security Number. In other words, this research study explores the possibilities of advantages and disadvantages with Aadhaar Number and US Social Security number where US uses it as a number record keeping scheme for government services to ensure the earnings and services in the social sector while India uses it as biometric authenticator and a single unique proof of identity in eliminating the false claimants of welfare schemes to reach the targeted groups. In addition, this study also tries to examine the viability of security concerns of the biometrics database by the government in the context of digital governance in sharing with the non-governmental organisations.

Telangana state of Indian union was taken for the study of Aadhaar based services in the thesis because Telangana state follows the “Identity Model Rights” (Mukesh and Craig 2013) in delivery of the welfare to the people. Moreover, the Telangana state has been spear-heading in digital governance with massive data pooling through *Samagra Kutumba Survey* and aiming for result-oriented governance in its administration to achieve *Bangaru Telangana* (Golden Telangana). Hence, examining functional aspects of Foucault’s governmentality in Aadhaar based services would be a significant study for both theoretical and empirical analysis.

1.4. Research Problem

The research problem is to study the developmental experience of the people with the Aadhaar based biometric governance in India in general and in Telangana state in particular. There are competing claims on Aadhaar based services that it would bring transparency in governance while its opponents contest that Aadhaar has potential privacy and security implications against the constitutionally guaranteed rights. Hence, the study is taken up with the following research objectives and research questions.

1.5. The objectives of the Study

1. To study and understand the theoretical debates on Michel Foucault's biopolitics and governmentality (it also examines the overall use of biometrics in governance).
2. To compare and analyse the similarities and dissimilarities in biometrics-based governance in India, China and U.K
3. To understand and conceptualise the developmental experience of people with the Aadhaar based governance of biometric authentication in Telangana state.

1.6. Research Questions

1. What are the Privacy and Security implications with the implementation of Aadhaar Act, 2016?
2. Whether the use of biometrics identity has created a sense of security to People in the governance process?
3. Whether Aadhaar based welfare services are contradictory or complimentary to the spirit of welfare development in Telangana state?

1.7. Research Methodology

This research proposal aims at deploying mixed methods; both qualitative and quantitative ones. A structured questionnaire has been executed to collect the data from the field survey and also open-ended questions on key concepts like Identity, Digital Identity, Biometrics, Digital governance, Privacy, Surveillance will be taken up for one-on-one interviews with the key informants. A research survey questionnaire was prepared based on the objectives of the study. The Survey questionnaire has two parts. The Part-I consists of closed ended questions while Part-II contains the open-ended questions about the key concepts of the study on Aadhaar. The Part-I of questionnaire was divided into three parts; Section-A which deals with the awareness levels of Aadhaar project and its issues, Section-B which deals with the acceptability levels of Aadhaar functioning and its services, and Section-C that deals with the usage and services of Aadhaar in general. The district is

taken as the unit of analysis This questionnaire has been executed in the two undivided districts: Hyderabad and Adilabad as per 2016 map of Telangana state.

These two districts have been chosen because of the following reasons:

1). Hyderabad is the urban district while Adilabad represents the rural district as per Telangana state government's *Socio Economic Outlook*, 2015. Hence, the focus of the study on these two districts can help in analyzing the rural-urban differences in analyzing the developmental experience of the people in the state.

2). More than 50, 000 units of white ration cards have been deleted and around one lakh beneficiaries have been deprived of government services in Hyderabad following Aadhaar seeding with Ration cards, pension, and other government schemes (Gautham, 2014). World bank's pilot study of Aadhaar based services in Adilabad district for assessment of efficiency of the biometric governance in the district. This study argues that digital infrastructure provided Aadhaar can ensure the "inclusion of the marginalized in the welfare services" (Banerjee, 2016). Hence, these two contrary claims from the same Telangana state paved the way for preparing a solid research proposal on the "*Aadhaar based services in Telangana state*".

As the study intends to understand whether the usage of biometrics in governance is going to do good to the people or not, it will be appropriate to have first-hand information from the people. This study used the existing literature and research by both individuals and organisations on Aadhaar with the aim of assessing and analysing the utility of Aadhaar based services and governance of social security schemes in Telangana state. This would also examine whether the Aadhaar based governance benefiting the needy and deserving while eliminating the ghost beneficiaries as per the Aadhaar enabled authentication in delivering the services to the target groups or sections in the state.

1.8. Rationale behind the selection of Telangana state

There are three major reasons for choosing Telangana state for the study. They are; 1). Telangana is the only new state that formed after the introduction of the Aadhaar project. Therefore, there is a need to study how the new administration is dealing with Aadhaar based services in Telangana state. 2). Telangana has “90% of weaker sections such as SC, ST, OBC and Minority population” (Rao, 2014, p.10) so need to study whether Aadhaar is viable for ensuring uninterrupted welfare to the people in the developmental process. 3). Telangana state’s approach to development is highly based on “Identity Rights Model” that is evident from Telangana government’s Integrated Household Survey (*Samagra Kutumba Survey*).

Telangana State has bagged “best e-governance awards” by National SKOCH Awards for Civil supplies department, IT, TSBIE, CDMA, NREGS for digitalization of governance and emerged as a leading digital according to IT, Electronics and Communication Department portal. Hence, Telangana state is suitable for the study of the research topic.

1.9. Sampling technique and Study design

The selection of Hyderabad and Adilabad for the study was based on the decadal urban growth rate from 2001 to 2011 census. Hyderabad being a complete urban district (achieved 100%) and Adilabad has recorded the lowest decadal urban growth rate at 0.98% (Socio Economic Outlook, 2014, p.96). Hence, Hyderabad and Adilabad are selected to study the awareness and utilisation of Aadhaar services among various sections of the people in the Telangana state. Further the “stratified random sampling” for selecting the districts and “systematic random sampling” technique was deployed to execute the scheduled research survey questionnaire. The sample size of 400 individual scheduled research questionnaires is divided equally between Hyderabad and Adilabad. By the end of the survey, the total valid questionnaires obtained are 340 out of 400 sample size. As per Census 2011, 15 percent of SCs, 7 percent of STs, 10 percent of Muslims and remaining 58 percent is divided among the OBCs and General, Sikh categories for the estimated total

sample size. However, 1000:932 Sex ration of Telangana state, as per Census 2011, has been the basis for choosing men and women respondents in the survey.

The valid questionnaires obtained from survey and used for analysis of the study given in the following table-1.1

Table.1.1: Demographic details of Survey data

District	General	OBCs	SCs	STs	Muslims	Sikhs	Buddhists	Total
Hyderabad	57	63	12	3	18	8	0	161
Adilabad	40	51	40	43	5	0	0	179
Total	97	114	52	46	23	8	0	340

Source: Author's Field data

In the obtained valid questionnaires of the respondents, there are 151 women and 189 men in the total of 340. 71 women and 90 men out of total 161 are from Hyderabad while 80 women and 99 men out of total 179 belong to Adilabad district of Telangana state.

1.9.1. Questionnaire Design

In depth study of Aadhaar based services, the following themes with selected indicators highlighted below:

Part-I contains the following sections:

Section-A: Getting Aadhaar

- Obtained Aadhaar or not
- Reasons for Aadhaar enrolment
- Access to the centre and getting on time
- Any error during enrolment
- Awareness of biometrics, issues like privacy and security of data associated with Aadhaar

Section-B: Acceptability levels of Aadhaar: Perceptions, trust and satisfaction

- Aadhaar guaranteed Identity to receive services

- Fear of sharing details with government or private agencies
- Aadhaar helps in improving access to banking, prevention of black money and works like USSN (US Social Security Number).
- Duplication of Aadhaar and using it for surveillance by government
- Welfare and Aadhaar seeding

Section-C: Usage and Service of Aadhaar in governance

- Is Aadhaar used for multipurpose?
- Denial of services due to Aadhaar (Ration, Caste, Income, Residence certificates, Pension, Rythu Bandu, Kalyana Lakshmi, Voter ID, NPR etc)
- Which area of governance became more accessible (Central government, State government, and Market)
- Problems with Aadhaar (authentication problem, machine failure, and internet)
- Improvement in governance

Further, the study also captured the descriptive variables of the residents/respondents:

- Gender
- Age (in years)
- Religion
- Caste
- Education
- Occupation
- Annual Income
- Type of House
- Nature of the ownership of the house
- Place of Residence

Part-II: This section contains the 14 open ended questions.

1.9.1(a). Sampling Design

Stratified random sampling

Stratified random sampling of districts Hyderabad and Adilabad was based on the decadal urban growth rate according to census 2001 to 2011. Hyderabad is chosen for its 100% urbanisation while Adilabad is selected for its slow urban growth rate at 0.98%. This would help in analysing the digital divide and services associated with Aadhaar in the Rural-Urban demographic differences.

Three stage **systematic random sampling** was adopted in choosing the Blocks (Mandals), villages and respondents for the study. This would ensure the natural degree of randomness and also gives the control.

Formula for systematic random sampling

$$k = N/n$$

K = Systematic sampling interval

N = Population size

n= sample size

In the Adilabad case, the systematic random sampling values as per the formula, $k=13$, $N=52$ Mandals and $n=4$ villages. Adilabad contains 52 Blocks/Mandals from which 4 Blocks are selected by systematic random sampling which entails regular intervals.

Each mandal was assigned the numbers in the following way:

1. Adilabad, 2. Talamadugu, 3. Tamsi, 4. Jainad, 5. Bela, 6. Boath, 7. Bazarhathnoor, 8. Ichoda, 9. Gudihathnoor, 10. Neradigonda, 11. Kubeer, 12. Kotapalle, **13. Nirmal**, 14. Jainoor, 15. Sirpur(U), 16. Tiryani, 17. Kerameri, 18. Wankdi, 19. Lokeswaram, 20. Kuntala, 21. Sarangapur, 22. Narnoor, 23. Dilawarpur, 24. Mamda, 25. Laxmanchanda, **26. Uttnoor**, 27. Bhainsa, 28. Mudhole, 29. Tanoor, 30. Khanapur, 31. Kaddam (Peddur), 32. Jannaram, 33. Dandepalle, 34. Luxettipet, 35. Mancheri, 36. Mandamarri, 37. Kasipet,

38. Kagaznagar, **39. Inderavelly**, 40. Vemanpalle, 41. Nennal, 42. Jaipur, 43. Bellampalle, 44. Asifabad, 45. Rebbana, 46. Tandur, 47. Sirpur (T), 48. Kouthala, 49. Bejjur, 50. Dahegaon, 51. Bhimini and **52. Chennur**.

There is a regular interval of 13 in selecting 4 blocks; Nirmal, Utnoor, Inderavelly and Chennur from the list of 52 mandals in the district. Similarly, one village has been chosen for each block (4 villages from 4 mandals) using the method of systematic random sampling.

Hyderabad

In the Hyderabad case, the systematic sampling values as per the above-mentioned formula, $k = 4$, $N=16$ and $n=4$. Thus, Hyderabad contains 16 mandals from which 4 mandals are chosen by systematic random sampling which entails a regular interval. These Mandals are assigned the number in the following way: 1. Amberpet, 2. Himayath nagar, 3. Nampally, **4. Shaikpet**, 5. Golconda, 6. Bahadurpura, 7. Bandlaguda, **8. Musheerabad**, 9. Saidabad, 10. Asif Nagar, 11. Ameerpet, **12. Secunderabad**, 13. Tirumalgiri, 14. Maredpally, 15. Charminar, **16. Khairatabad**.

There is a regular interval of 4 in selecting 4 blocks; Shaikpet, Musheerabad, Secunderabad and Khairatabad from the list of 16 Mandals from the old districts. Similarly, 4 wards from 4 blocks (each ward from each block) have been selected by using the same method of systematic random sampling.

The 200 questionnaires are allowed to each selected district (200 for Hyderabad and 200 for Adilabad) from the total sample size of 400¹. 50 respondents were selected from

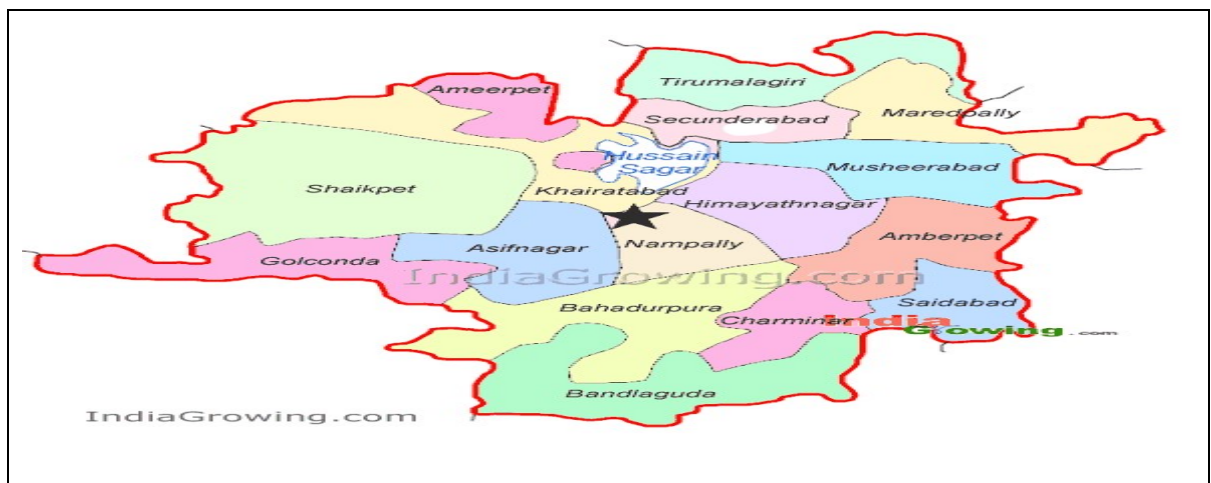
¹ Since the collection on this specific topic, Aadhaar based services is sensitive, the names of the villages and respondents are kept confidential as the author has promised in the declaration in the questionnaire itself. So that information pertaining to demography, social and economic identity will be kept confidential in order to respect and protect the identity of the respondents. Moreover, the study also used the pseudo names for the respondents while explaining responses for the open-ended questions.

p.96) in the last decade of 2001-2011. “The weaker sections of the society that include OBCs constitute nearly 85% of the population; Scheduled Castes in the State constitute 15.4% of the population. Scheduled Tribes constitute 9.3% of the population as per 2011 Census...minorities constitute another 11% as per 2001 Census” (Socio Economic Outlook, 2014, p.7).

1.9.2(a). Hyderabad District

Hyderabad is a complete urban district, located in the heart of Telangana state. According to the 2011 Census, Hyderabad District has an area of 217.00 Sq. Kms. and consists of the population with 39,43,323 people in the state. The district is Urban sprawl, exclusively surrounded by Rangareddy district and also a cosmopolitan city. The Urban agglomeration of the Hyderabad district extends to Rangareddy and Medak districts. The 2011 Census shows the density of 18172 persons per Sq Km., in the district is and Sex ratio is 954. The Scheduled castes are 16.41% while Scheduled Tribes are 7% in the Hyderabad district as per 2011 Census. Hyderabad district is also drained by River Musi which is a tributary of River Krishna. Hyderabad city is known for its monumental places like Charminar, Chowmahalla palace, Golconda fort and Qutub Shahi Tombs, and lakes and reservoirs like Hussain sagar (Tank Bund), Himayatsagar and Osmansagar serve as public refreshment places.

Fig.1.2: Hyderabad District Map



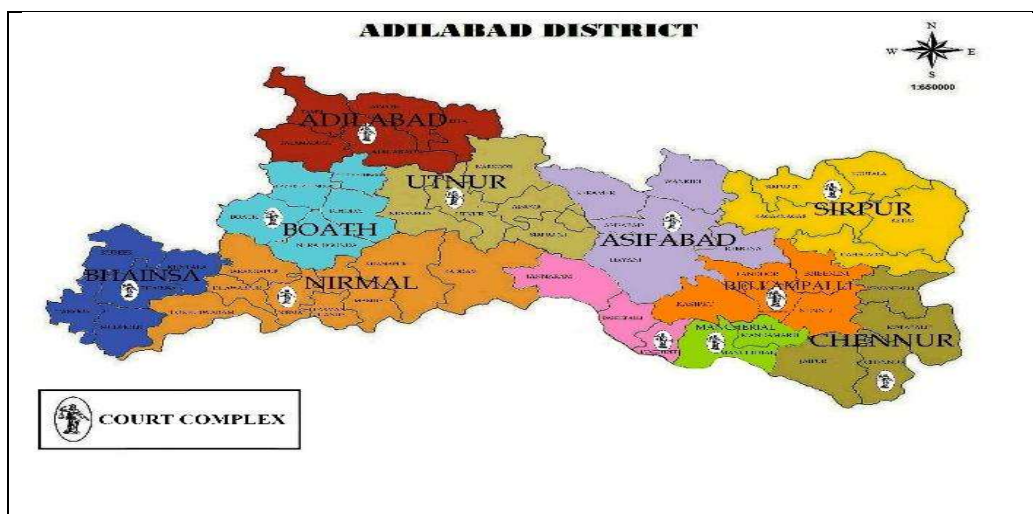
Source: India Growing.com as per Census 2011. Map of United Hyderabad District till 2016

Hyderabad being a capital city of Telangana state occupies an important place in the study of Telangana development. Aadhaar seeding with Ration cards and installation of 1,545 E-PoS (Electronic Point of Sale) for the first time on pilot basis in Hyderabad district (Civil Supplies Dept. Annual Report, 2018-19, p.13) attracts the attention of the study. Moreover, the response of residents and beneficiaries of Aadhaar services from Hyderabad district constitutes an important aspect in examining the technocratic welfare services and biometric governance. It also helps in analysing the Rural-urban differences in receiving the Aadhaar based services in the state.

1.9.2(b). Adilabad District

Undivided Adilabad district was one of the backward districts of Telangana state. Adilabad is known for its scenic beauty and Kawal Tiger reserve. Adilabad district has been located in the north-west of the Telangana state sharing the border with the state of Maharashtra. Adilabad has a geographical area of 16,105 sq.km. Adilabad is also populated with tribals and reported to have slow growth rate of urbanisation as per Telangana's Socio Economic Outlook, 2014. The district has a density of 170 persons per Sq. Km., and has 17.9% of Scheduled Caste and 18.1% of Scheduled Tribes population. Adilabad has sex ration of 1001 against state's ratio of 988.

Fig.1.3: Adilabad District



Source: Census, 2011. Map of Undivided Adilabad District (2014-2016).

Famous Nirmal Paintings are from Adilabad district (now Nirmal is a separate district) and the district is drained by River, Godavari and its tributaries; Pranhita and Penganga. Undivided Adilabad is reported to have ranked lowest in the Human Development Index bought out by Telangana government's Planning Department in 2017 (The Hindu, 11/01/2017). Another important reason for choosing Adilabad district for the study is that the world Bank Group, Social Protection Team has conducted a pilot study in united Andhra Pradesh. The study group has focused on Adilabad district which is now part of Telangana state. Hence, it is the academic interest of study to examine the functioning of Aadhaar services in Adilabad in the context of decadal implementation of the Aadhaar project in the country. World development report on "Aadhaar: Digital Inclusion and Public Services in India" has claimed to have found a 98 % authentication success rate in the district (Banerjee et al, 2016, p.10).

The study on Adilabad district will also be helpful in assessing the impact of governance on weaker sections, especially the Dalits and Adivasis in the state. Moreover, the digital divide between SCs, STs and non-tribes, Rural and Urban, and also welfare of the general public can be studied in the era of digital governance.

1.10. The chapters are organised as per the objectives of the study

This thesis contains six major chapters. These chapters are organised as per the objectives of the study. Chapter-I: *Introduction*. It deals with the general introduction, review of literature, significance of the study, the research problem, research objectives, research questions and methodology, and rationale behind selection of Telangana state for the study.

The Chapter-II: *Theoretical Understanding of Bio-politics and Governmentality*. It is dedicated to the theoretical understanding of Michel Foucault's biopolitics and governmentality. This fulfils the first objective of the study in locating the research problem of Aadhaar based biometric governance in the postmodernist theoretical framework of Michel Foucault's biopolitics and governmentality. This chapter gives an

account of genesis and development of theoretical formulations to capture human behaviour, especially political behaviour by studying human anatomy. Thus, the scholars like Somit, Lemke, Rudolf Kjellen, Liesen and Mary Barbara Walsh made attempts to elevate political science to the status of natural sciences. Even the behavioural studies also aimed at analysing and predicting human behaviour with the help of empirical observations. Foucault (1969) establishes the concept of bio-politics as an analytical category deriving from the statistical category of population. The state made use of this population aiming at perpetual control over the people with different techniques and tools. The debate over biopolitical development was analysed with the introduction Neo-liberal policies in the country in the political theory. The bio-politics explains the dynamics of changing power relations between the state and people in the political theory. The increasing use of technologies in governance has empowered the state to discipline the citizens in the postmodern era. The governmentality which is “conduct of the conduct” are integral part of the larger debate of bio-politics. Therefore, the bio-political development is advanced by the use of biometric governance and the bio-politics is observed to be a suitable theoretical framework for the study from chapter-II.

Chapter-III: *Comparative Analysis of the use of biometrics in governance between India, U.K and China.* It discusses the second objective of the study by comparative analysis of biometric governance in India, U.K and China. This chapter also tries to study/examine the first question to find out the privacy and security implications with the implementation of the Aadhaar Act, 2016. The existing literature by the leading academics and government documents has been analysed to understand the origins of biometric governance by state in the administration. The discussion on the origins of biometrics from Greek city states of 500 BC, development of palm and foot prints of children in 14th century China, Egypt and also the Henry System in British India gives the historical outline.

This chapter captures the different usage of biometrics from “criminal investigation to security purpose, to welfare services” by the state as per the changing time. The early usage of biometrics was prevalent in criminal investigations, later biometric identity cards

were introduced to prevent the security threat against the state from external forces and now in welfare services. Such a historical account of biometrics and application in various countries such as the U.K, USA, India and China was discussed. The subsequent implications of biometric governance for privacy, data safety and security in the rising tide of behavioural markets (Zuboff, 2019) of surveillance capitalism. Scholars like Usha Ramanathan, Reetika Khera and Pramod K Nair expressed their concerns about India's aim for Aadhaar integrated NATGRID and China's social credit system to bring us into the domain of biological citizenship. The question of efficacy, transparency and efficiency have been studied in the administration of welfare services.

Chapter-IV: *People's Perception and Practice of (Digital) Identity and Privacy: Empirical Observations in Telangana State*. This chapter is to serve the purpose of the third objective by capturing and analysing the people's reasons for Aadhaar enrolment, perceptions of privacy and security issues associated with Aadhaar in the governance (especially the digital governance). This would help in addressing the second research question that whether biometric identity has created a sense of security among the people. The interpretation of results obtained from regressions produced using Stata (software) are analysed to assess how people define biometrics, safety and security issues and knowledge about completion of Aadhaar being implemented before legislating the Aadhaar Act. Further, the personal interviews with key informants on the question of reasons for enrolment of Aadhaar, identity, digital identity and privacy are also explained in analysing the results from the probit-logit regression model. Such model was helpful in understanding the categorical analysis of the utility of Aadhaar number and analysing the reasons like identity, proof of citizenship and fear of losing government services among the beneficiaries of the government services, especially the weaker sections like Poor, SC, ST, OBC and Religious minorities.

Chapter-V: *Developmental Experience of People: Examining Developmental Policies Aadhaar Services in Telangana State*. It is dedicated to study the third objective and third research question by analysing the developmental experience of the people in Telangana state. This chapter takes up the governance experience by the people in the

welfare services in order to study the third research question. The statistical analysis of results from simple and multinomial logistic regressions is immensely helpful in understanding whether Aadhaar based governance is complementary or contradictory to the developmental spirit of Telangana state. The Telangana government has revamped the administrative structure by reorganising 33 new districts in 2016 and also made significant changes in the governance. The goal, *Bangaru Telangana* (Golden Telangana) of Telangana state government was expected to be achieved by implementing the welfare schemes like MGNREGA, Ration, *Aasara Pensions*, *Arogyasri*, *Arogya lakshmi*, *Kalyana Lakshmi*, *Rythu Bandu*, *Kanti velugu*, and KCR kits. These schemes are made available to the people by seeding of Aadhaar number with both central and state government schemes implemented in the state of Telangana.

Thus, this chapter also evaluates the efficacy of Aadhaar in providing unhindered services to the people. It must also be noted that the chapter examined whether the role of Aadhaar in welfare governance has led to exclusion or inclusion of the development in the Telangana state. The question of surveillance, duplication of Aadhaar and people's view on if welfare can be done without Aadhaar in contemporary India. Thus, this chapter has dealt with an important aspect of the research study.

Chapter-VI: *Conclusion*. This chapter gives the summary of the concluding remarks of the thesis. The theoretical debates on biopolitics and governmentality establish the philosophical framework for the study. The comparative analysis of claims of privacy, surveillance and data safety and security and robust identity and effective and transparent governance between the countries like U.K, USA, India and China establishes the shift in the use of biometrics in governance from criminal investigations to security to welfare services due to the changes in the capitalism from industrial to finance to surveillance capitalism. Thus, the implications of Aadhaar identity in civil governance are examined in correlation to the rising technocratic life and behavioural markets.

The study on Aadhaar based services in Telangana state provided for enough scope to understand the people's developmental experience in depth. Moreover, the probing of

acceptability by the masses in using the universal legal identity guaranteed by Aadhaar has found that Aadhaar could ensure a robust identity to the people despite they face issues like machine failure, authentication problems, and internet issues. People also believe that Aadhaar plays a pivotal role in functioning of welfare services in the state in particular and country in general.

CHAPTER-II:

Theoretical Understanding of Biopolitics and Governmentality

This chapter deals with the theoretical debates on Biopolitics and Governmentality. The emergence of biopolitics and governmentality is traced with respect to the aim of achieving scientific status in theorization of human behaviour and the utility of biopolitics in the context of biometrics, biopower and welfare state in the neoliberal era.

2.1. Introduction

The welfare demands the state to identify the deserving people and serve them appropriately. As developing countries like India have the responsibility of fulfilling the constitutional promises to its citizens, there is a great need of equipping them with able means and ways to execute the welfare programs to the benefit of the masses in the country. Governance is the central for any welfare state in devising and delivering the goods and services. As such, the transparency in governance necessitates the robust identity of the beneficiaries of the welfare schemes due to the width and size of the diversity in the country. Neoliberalism is understood as a mode of production to advance the free-market economies against the controls of the political economy. The very idea of identity underwent many changes from photographs, signatures and residence addresses to biological information such as fingerprints, iris and DNA samples in the recent past. Especially, the introduction of neoliberal policies made India adopt advanced technologies for identification of the individuals. This led to biopolitics by the states across the globe.

2.2. Genealogy of Biopolitics

Albert Somit (1972) gives an overview of the literature on the term, biopolitics in social sciences. He argues that western political thought, for a long time, believed that the idea of biological concepts can reveal the political behaviour of the individuals. Drawing the arguments from Woodrow Wilson (1908) and Lawrence Lowell (1909), “the state is

portrayed as a living organism with the various parts of the state (or government) functioning much as do the parts of the body, i.e., head, heart and arms etc...while other aspect turns to the external factors, both are rich in biologic metaphor - lebensraum, death, growth, decay, youth, age, sickness” (Somit, 1972, p.209).

The biological understanding of the state was given primacy in achieving the scientific and comprehensive view of the state by the political scientists. This is evident in the analysis of biopolitics in political science by Liesen & Walsh (2012) who argue that, according to Lemke, the first political scientist to use the term “biopolitics” was a Swedish Scholar Rudolf Kjellen, in 1920s, for his organic view of state. Rudolf Kjellen considered state as a “Life Form” that different classes and groups struggle to articulate their interests and ideas. Even Canadian scholar and self-taught biologist, Morley Roberts used the word, biopolitics to explain analogical discussion between biological phenomena and human political behaviour. He tried to conceptualise biopolitics by arguing that “the correct model for world’s states would be similar to a loose association of cell and protozoa colonies” (Liesen & Walsh, 2012, p.3). This was to ascertain the sanctity of scientific theorization of state in political science on the lines of methodology of natural sciences. But this was seen as a misnomer Liesen & Walsh (2012) also caution us by reminding the wrong usage of bio-politics by Nazis like Hans Reiter, in 1934, for biological based state for people and supremacy of the race for constituting a nation. It is also evident from the article that misuse of Darwinism and genetic identification of political subjects in the name of eugenics in evolutionary approach to politics. As Rational choice theory has also not been of great help in understanding human nature, in the 1960s political scientists started looking into the role of natural science to understand human nature. As such, in 1963, James C. Davies argued that “the improvements and insights in psychology, neurophysiology, and endocrinology could help political scientists understand human nature and political behaviour” (*Ibid.*, 3).

Taking insights from such experimental studies and analysis, it was Lynton Cladwell (1964) who reintroduced the term “biopolitics” in political science. He was particularly interested in “issues that involved environment, and individual’s physiology (i.e., drug use,

biochemical control of personality, reproduction and bioweapons)”². It is also argued that the individual is acknowledged as a complex, rational, emotional and biological creature. Liesen & Walsh (2012) quote passage from Roger’s book, *The Nature of Politics*:

“Human behaviour is the product of an integration, within the brain and central nerve system of each individual, of phylogenetically selected information transmitted by genes, historically selected information transmitted by language and cultural symbols, and individually learned information acquired during the life cycle...individuals, societies do evolve new patterns of behaviour, just as every species including our own new physical and behavioural traits” (Masters,1989, p.135 cited in Liesen & Walsh, 2012, p.4).

The mechanical understanding of human actions in the light of their organic state functioning is further strengthened. Further, Somit, & Peterson (1987) who have delineated the major streams of bio-political research emerging at that time: “essays that make the case for a more biologically oriented political science, ethological and evolutionary analyses of political behaviour, physiological and pharmacological aspects of political behaviour and Issues of public policy raised by recent advances in biology” (Liesen & Walsh, 2012, p.4). A gist of theoretical formulations of organic state is that “...the external rather than the internal life of states resulting relationships are treated as the inevitable outcome of the ‘struggle for survival’ to which all living organisms are presumably condemned cases, the language employed is rich in biologic metaphor - *lebensraum*, death, growth, decay, youth, age, sickness and health” (Somit 1972, p.209). Liesen & Walsh (2012) also argue that politics by quoting Thorson’s definition of bio-politics, that “politics understood by man evolution becomes conscious of itself” in the development of biopolitics.

² See Liesen & Walsh (2012). It was well explained how the impact of such bio-information would influence the individual’s behaviour in different regimes, p.3.

2.3. Towards a More Biologically-Oriented Political Science

The quest for achieving the scientific status in understanding and analysing the political actions and behaviour of the individuals made the political scientists enquire about the political/social phenomena on the lines of the methodology of the natural sciences. The so-called scientific methodologies were adopted and pursued more effectively in the disciplines such as Sociology after the ‘Vienna Circle’ conference. It is intriguing to read Somit (1972) argument, despite David Easton having pioneered the ‘behavioural studies’ in political science, that there is relatively slow pace of Political scientists in grasping the relevant developments in biology of post-1945 period. Political Scientists like Herald Laswell, in the early 1960s, made a very brief attempt on controlling political behaviour by using the possible chemical and biological techniques. Further, James C. Davies Hum (1963) argued, *inter alia*, “the relevance for political science of Abraham Maslow’s theory of ‘organic’ human needs; W. J. M. Mackenzie (1967) work being done in ethology might be of more than passing scientists; and Laswell (1968) urged greater attention to ‘genetic predispositions of man and their possible impact on human politics and society’” (Somit, 1972, p.211).

Somit’s observation about the indolent attitude of political scientists to grapple with the scientific adventures in political science can be answered from Arnhart (2010) article’s *Biopolitical Science* which produces evidence from writings of Aristotle to Darwinian attempts of Social Darwinism in the evolutionary studies of politics and society. He argues that “political Science can become a true science by becoming a bio political science of political animals” (Arnhart, 2010, p.24). But Somit (1972) takes Peter Corning’s paper on biopolitics as a considerable attempt because of its longevity in this regard. He says that:

“Corning's article has three main sections: a description of the modern, 'synthetic' theory of evolution; a review of the current research on behaviour from a biological and evolutionary point of view; and a discussion of some possible implications for political theory and political

research. Of the three, the first, entitled 'The Evolutionary Model of Society', is probably the most valuable for someone not familiar with the general literature, for it provides both a compact summary and an excellent bibliographic coverage" (Somit, 1972, p.212).

In addition to the above observations, Arnhart (2010) expounds the *five* factors of biopolitical science, for overcoming the deficiencies in political science that; *first*, history matters in political science because of the historical character of political life. He calls it a “big history” (Christian, 2011)—unification of natural history and human history into a grand narrative. This political history is characterised with evolutionary nature transcending three levels; “natural history, cultural history and individual history” (Arnhart, 2010, p.24). Second the morality matters, he elaborates how “some theorists have argued for going ‘beyond self-interest’ to recognize the other-regarding motives of political actors that drive political controversy as a moral debate over the common good” (Arnhart, 2010, p.25) against the assumption that political behaviour is motivated by self-interests. He also offers a supportive argument that an evolved political maturity exhibits not only selfish concern but also altruistic concern for morality in the society. This is said to be a “Homo politicus combines the traits of *Homo economicus* and *Homo moralis*” (Arnhart, 2010). He supplemented this factor with example from Abraham Lincoln’s liberation of slave in American history. The *third one*, Judgement matter in distinguishing good and bad political judgement by quoting Aristotle’s idea of “prudence or practical judgement in morals and politics”³. According to Arnhart (2010), Darwinian science advocates that brains historically evolved to assist animals in making the practical decisions to satisfy their needs and desires in response to happenings in their environments. It is only Humans as the political animals that could exercise their evolved brains in making practical judgments in the social complexity. *Fourth Emotion Matters*, rational choice played a significant role in the study of electoral politics in democracies despite the importance of emotions. But Arnhart (2010) argues the emotional aspect was unveiled by psychology in

³Aristotle gives considerable importance to practical wisdom of common people in the public affairs and argues that it is important for a stability in the state.

political animals' the practical judgements. *Fifth, religion matters* in politics. The religion factor has been ignored by many political scientists. "Following Darwin's lead, some biologists have developed an evolutionary theory of religion as a product of genetic and cultural evolution of religion as a product of genetic and cultural evolution driven by group selection" (Arnhart, 2010, p.25).

Thus, the five factors that Arnhart (2010) put forward in development of biopolitical science provide the similar theoretical exercise rendered by Somit (1972), Somit & Peterson (1987) and Liesen & Walsh (2012) in search of more biologically oriented political science.

2.4. Conceptualization of Biopolitics in Political Theory

The theorization of biopolitics as a political concept should be seen as a response to the modern theories of state in the meta narratives of liberation. This was attempted by Michel Foucault's lectures delivered at College De France. For, Foucault the project of bio-politics was began by policing the sexuality and sex of the individuals in the Middle Ages (around 17th century). He identifies 'the seventeenth century', in his book (1976), *"The History of Sexuality Volume-I"*, as the dawn for the age of repression despite the existence of bourgeois societies. He says mentioning of sex or sexuality became difficult and a punishable offence after seventeenth century onwards. Foucault diagnoses the problem with the modernity that proclaimed to bring liberation for humankind that the state not only became repressive but also started justifying its role even in the ethical domain as well with the birth of modern-nation states. Foucault says,

"As if in order to gain mastery over it in reality, it had first been necessary to subjugate it at the level of language, control its free circulation in speech, expunge it from the things that were said, and extinguish the words that rendered it too visibly present. And even these prohibitions, it seems, were

afraid to name it. Without even having to pronounce the word, modern prudishness was able to ensure that one did not speak of sex, merely through the interplay of prohibitions that referred back to one another: instances of muteness which, by dint of saying nothing, imposed silence, Censorship” (Foucault, 1976, p.7).

This was one of the techniques of the power exercised by the state as per Christian morals and values. Foucault (1976) gives an account of evolution of techniques of power in the history of sexuality. He establishes the concept of biopolitics as an analytical category deriving from the statistical category of population. The state made use of this population aiming at perpetual control over the people with different techniques and tools. He says, in his book, *The History of Sexuality*, that:

“One of the greatest innovations in the techniques of power in the eighteenth century was the emergence of “population” as an economic and political problem: population as wealth, population as manpower or labour capacity, population balanced between its own growth and the resources it commanded”. Governments perceived that they were not simply dealing with the subjects, or even with ‘people’, but with a “population,” with its specific phenomena and its peculiar variables: birth and death rates, life expectancy, fertility, state of health, frequency of illness, patterns of diet and habitation...At the heart of this economic and political problem of population was sex: it was necessary to analyse the birth rate, the age of marriage, the legitimate and illegitimate births, the precocity and frequency of sexual relations, the ways of making fertile and sterile, the effects of unmarried life or of prohibitions, the impact of contraceptive practices— of those notorious “deadly secrets” which demographers on the eve of revolution knew were already familiar to the inhabitants of the countryside” (Foucault, 1976, pp.25-26).

The above passage shows how the state looks at its population as a resource for wealth creation and hence it takes interest in regulating the human kind. The state also cares to address the other logistic issues such as health and relations including sexual ones not in the interest of the people but its own. Governments want to know the information of its people from cradle to graveyard hence it devises surveillance tools with the consent of the people. It must be noted that the idea of population has a greater implication in the theory. “The concept of ‘population’ was central to Foucault’s attempts to write an analysis of state formation adequate for contemporary politics. ‘Population,’ he argued, is the pivot on which turned the transition from rule based on sovereign authority to a ‘governmentalized’ rule which decanters the state under liberalism. It allows us to think about the shifting coalitions that constitute the new social movements and the struggles of the governed” (Curtis, 2002, p.506).

It is intriguing to read the way Foucault has established the correlation between sexuality and political economy. He argues that:

“Through the political economy of population there was formed a whole grid of observations regarding sex. There emerged the analysis of the modes of sexual conduct, their determinations and their effects, at the boundary line of the biological and economic domains. There also appeared those systematic campaigns which, going beyond the traditional means—moral and religious exhortations, fiscal measures— tried to transform the sexual conduct of the couple into a concerned economic and political behaviour...thus the state was always interested in knowing what would be happening with the citizen’s sex. In time, these new measures would become anchorage points for the different varieties of racism of the nineteenth and twentieth centuries” (Foucault, 1976, p.26).

The state also devised the techniques of power to control body polity of citizens. The role of religion has also aided the state in controlling the conduct of the people. The

morality sanctioned by religion has shaped the aspirations and virtues of the people, especially sexuality.

The Work of Michel Foucault: Bio-politics as a historical phenomenon, where Foucault's usage of biopower indicates the organic conception of political society. Here, it amounts to "a new expression of the historical confluence of power and knowledge. It points to the polymorphous techniques of power or deployments of power and knowledge, which permeate modern society" (Liesen & Walsh, 2012, p.5). Curtis (2002) argues that Foucault's biopolitics has two dimensions namely; "Population" and "anotomo-politics". Foucault used archeology as a method to decipher the relationship between power and knowledge in history. This "anotomo-politics" gave rise to biopower that:

"Biopower operates in two domains: it seeks power over the human body and power over the human population as a whole. Biopower aimed at politics that Michel Foucault calls 'anotomo-politics'. This anotomo-politics is centered on the body as a machine: its disciplining, the optimization of its capabilities, the extortion of its forces...its integration into systems of efficient and economic controls. Biopower aimed at the species, aimed at altering demographics of populations in terms of propagation, births, and morality, the level of health, life expectancy and longevity, with all the conditions that can cause these to vary" (Liesen & Walsh, 2012, p.6).

Curtis (2002) observes that the concept of population, with due importance, has escaped the critical scrutiny in Foucauldian literature. But it was Dean (1991), in his book, *"The Constitution of Poverty: Toward a Genealogy of Liberal Governance"* that finds a problem with Foucault's reading of modernity in political discourse. Further, "the concept of population in eighteenth- century thought on government...entails neither the formulation of policies and political action by reference to an explicitly economic rationality which is the characteristic of liberal governance, nor the welfarist focus on the

enhancement of the life of ‘individuals’ (Curtis, 2002, p.507). However, he argues, the ‘population’ has the gravity in “the development of political theory and political administration in the west over the last several hundred years might be read in terms of a progressive displacement of ‘patulousness’ by ‘population.’ The displacement affects how the collective body is thought in political theory and addressed in practice” (*Ibid.*, 509).

Here, Foucault’s biopower tries to explain how the state can manipulate and control the existence of population at both levels of individual and society. It achieves such aim by defining the relationships between mother and child and prohibiting the sexual conduct of the people. Thus, Foucault says that “persons are both formed and forming, created and creating whereas human nature both produces and produced by forces which he calls biopolitics” (Liesen & Walsh, 2012, p.6). Foucault also expresses his apprehension that bio-power’s attempt to control, to squash resistance at both level of thought and behaviour. As such bio-power is capable of reaching the obscure places, where modern juridical power can’t reach, through various power relations in the name of family, school, hospital, religion, caste, gender and class. This biopower exposed the population for demographic variation and death through various mechanisms of control and discipline. Foucault also further explains that “power creates the truth and truth reflects the power, the self both generates and is generated by power and truth”. This paradox is said to be integral to the human condition. As such the idea of understanding human behaviour with the assistance of life sciences played a vital role in an attempt to achieve control over the bodies of the people.

Curtis (2002) explains the circumstances that led Foucault to study and conceptualise biopolitics. He says that attempts to study the history of hospitals led Foucault to study institutional architecture and thus to Bentham and the panopticon. Similarly, the study of medical questions led to the study of social questions resulting in “a first engagement with bio-politics and population...there were three sequential, nationally-specific developments: the appearance of state medicine in Germany, urban medicine in France,

and, after these two historically, what we would now call occupational medicine in England” (Curtis, 2002, pp.511-512).

Biopolitics has got prominence in theories of sovereignty of state with Agamben’s concept of state of exception. Marc Botha has argued that “Much of the theoretical groundwork for *state of exception* was undertaken in *Homo Sacer*, including an initial exposition of the exception as ‘the extreme form of relation by which something is included solely through its exclusion’, a logic he traces through the work of jurist Carl Schmitt as being all-pervasive yet largely unrecognised in contemporary politics. *State of Exception* marks a decisive and systematic reversal of the near-indiscernible interpretation of ‘law and living being” (Botha, 2009, p.256). This has to be read as an attempt to discover the sovereign power of the state in disciplining and controlling the people with their due consent.

Parfitt (2009) delineates the Agamben’s theoretical scheme so meticulously that:

“It has been made particularly fashionable by the Italian philosopher, Giorgio Agamben, for whom biopolitics is intrinsic to the analysis of sovereignty and its role in ruling on what constitutes a state of exception....A state of exception enables sovereign power to enforce its role by the most draconian means, including murder of those whom it wishes to eliminate, while remaining nominally within the law. Those who are subjected to state of exception are reduced to a situation that Agamben terms ‘bare life’ in which any rights they may have had are rendered null, and their lives can be taken with impunity. Agamben uses the term coined in ancient Rome, homo sacer (homines sacri in the plural) to identify those reduced to a state of bare life” (Parfitt, 2009, p.42).

The *homo sacer* is not only deprived of legal protection by the state but also stripped of his/her human identity in the political community as well. This poses a grave threat to his/her existence.

Trevor analyses Agamben's perspective in applying to the groups such as “refugees, aboriginal groups, and the third world poor. It can be seen how refugees such as those in camps at Darfur or in Central Africa are being placed in a situation where the law does not afford them protection and they are reduced to a state of bare life” (*Ibid.*, 42). This was also proved to be potential enough in examining the “increasing marginalisation of already impoverished aboriginal groups in Australia due the advent of neoliberalism”⁴, says Elizabeth Povinelli.

Analysis of Biopolitics has been more useful in even the politics of international relations as well. The asymmetrical relationship between the developed and under-developed countries where the so called first world countries treat the underlapped countries as mere customers to serve the interest of the developed. It must be noted that “Agamben's approach properly be applied to those generally thought of as the third world poor, for example the billion or so people who subsist on less than a dollar a day. Agamben makes it clear that today's democratic-capitalist project of eliminating the poor classes through development not only reproduces within itself the people that is excluded but also transforms the entire population of the Third World into bare life” (*Ibid.*, 43) This is the offshoot of the neoliberal devices produced and perpetuated by the economic world order where the western countries have edge over the eastern countries. This has further pushed the developing countries to adopt such measures even in the policies of the governments. Consequently, biopolitics has been taken seriously by academics as well. Somit & Peterson (1987) elucidate the grand attempt that the idea of biopolitical approach to political science by proponents using the concepts and research techniques from biological sciences to understand and analyse political behaviour. This initiative launched in the late 1960s and

⁴ quoted by Trevor to elucidate the efficacy of Agamben's concept of 'bare life' in the state of exception.

received formal disciplinary identity, as biopolitics in 1973, with the establishment of the “International Political Science Association's Research Committee on Biology and Politics”. Subsequently, it was followed by the organisation in the USA, the “Association for Politics and the Life Sciences” in 1980 and the launching, two years later, of its “journal, Politics and the Life Sciences”. This Association now has gained around 300 members and is still dominated by Americans ranging from political and social scientists to biologists, across some 15 countries” (Somit, & Peterson, 1987, p.107).

According to Somit & Peterson (1987), it is evident that the practitioners of biopolitics have a consensus on three major proposition: (1) species’ biological system and genetic legacy influence the political behaviour to the significant extent; (2) the socio-political behaviour is subjected to the changes brought in biological functioning due to malnutrition, drugs, pain, illness and stress; (3) the “physiological metrics (e.g., heartbeat rate, eye blink, body posture, and blood pressure) can be utilised to assess, directly or indirectly, emotional states and/or behavioural potential. The biopolitics has drawn most heavily from ethology (more recently, sociobiology), developmental biology, physiology, neurology, ecology, and genetics” (*Ibid.*, 108). Frost (2010) gives a comparative analysis of Michel Foucault and Giorgio Agamben that Agamben’s book, “*Homo Sacer: Sovereign Power and Bare Life*” begins the major theoretical engagement with the works of Michel Foucault. Here, Agamben states that he aims at nothing less than to correct, or at least complete Michel Foucault's hypothesis of biopower that Foucault postulated in a series of lectures at the Collège de France in 1975 and 1976, published as *Society Must Be Defended?* and in the first volume of *The History of Sexuality* published in 1976” (Frost, 2010, p.546). Biopower has been used as an analytical tool of power in examining the sovereign population which is a central source of power within the social body. Instead, Foucault’s focus was on disciplinarian power mechanisms to influence the humans where life enters politics which becomes biopolitics later.

It must be observed that the economic development of the people is projected as a goal in enforcing the biopolitics by the state. Though such attempts raise privacy concerns, but

people have been managed to compromise for the development promised in return. This gave enormous opportunities not only to the state but also market forces as well. This is discussed by Faubion (2002), in his edited book, *“Power: The Essential Works of Michel Foucault 1954-1984”*, argues that Liberalism advocates that:

“An economic government- a government, in other words, that economizes on the use of resources and effort to achieve its ends, and, more particularly, accepts that to govern well is to govern less. It makes a kind of Copernican revolution in political knowledge: the state ceases to be either the natural subject or natural object of political knowledge; the knowledge necessary to guide its actions to be imparted to it (from however close range) by the discipline of political economy will concern the intrinsic regularities and processes of an objectives, social, and economic reality distinct from and independent of that state” (Foucault, 2002, p.xxviii).

The domain of power relations is seen operating in the economic governance of the state. It is the government which interacts with the people for distribution of goods and services that David Easton calls “authoritative allocation of values”. Faubion (2002) says that the governing of a state means applying “economy” at the state level and exercising such economic power towards wealth and behaviour of the inhabitants. This invokes a form of surveillance and control of the people of the state in the similar manner that head of a family attempts the power over his household and goods. These etymological origins can be well explained in the expression of Francois Quesnay’s good government, in the 18th century, as an “economic government” (Foucault, 2002). He contextualises Foucault’s governmentality in the domain of economy and argues, “the word economy, which in the sixteenth century signified a form of government, comes in the eighteenth century to designate a level of reality, a field of intervention, through a series of complex processes that I regard as absolutely fundamental to our history” (Foucault, 2002, p.208). Birch (2017) in his article, *“The problem of bio-concepts: biopolitics, bio-economy and the*

political economy of nothing”, contests the authenticity of Foucault’s conceptualization of bio-concepts. He critically reviews the bio concepts:

“Bioeconomy’—or, my preference, ‘bio-economy’—is a contested and contestable concept, one that has emerged as a key term to describe the relationship between capitalism and the life sciences, especially medical biosciences... A number of broader, yet conceptually linked and sometimes derivative concepts, circle around these bio-concepts, including: vital politics (Rose2001), life as surplus (Cooper 2008), lively capital (Sunder Rajan 2012), and clinical labour (Cooper and Waldby 2014). I come back to the last of these in the next section. For now, it is important to emphasize that they have the same starting point as bio-concepts; namely, life has become a phenomena open to problematization, reinterpretation and reconfiguration as a result of modern bioscience and, in the specific context of the bio-economy, modern capitalism...Raman and Tutton (2010) argue, it might not actually be analytically useful to rethink biopolitics in light of modern biotechnology and biosciences—or ‘molecular biopolitics’, as exemplified by Rabinow and Rose (2006)” (Birch, 2017, p.916).

The above passage amounts to say that modern capitalism produces different forms of structures, in the economy, that govern the population but bio-concepts need to be addressed with appropriate methodology instead of establishing the relationship between two variables.

But Foucauldian scholars like Faubion (2002) focuses on sovereignty of the state in the governance process. He quotes La Perriere’s statement: “government is the right disposition of things, arranged so as to lead to a convenient end. Government, that is to say, has a finality of its own, and in this respect again, I believe, it can be clearly distinguished from sovereignty” (Foucault, 2002, p.210). Like Michel Senellart, Faubion also discusses Foucault’s enquiry into ‘the rationality behind the art of governance’ and

concludes that “the state, like nature, has its own proper form of rationality, albeit of a different sort. Conversely, the art of government, instead of seeking to found itself in transcendental rules, a cosmological model, or a philosophico-moral ideal, must find the principles of its rationality in that which constitutes the specific reality of the state” (*Ibid.*, 215).

Faubion, (2002) taking the debates from “Biopolitics” to “political economy” to “Governmentality”, Foucault’s “governmentality” by three things in the history:

“i) The ensemble formed by the institutions, procedures, analyses, and reflections, the calculations and tactics that allow the exercise of this very specific albeit complex form of power, which has as its target population, as its principal form of knowledge political economy, and as its essential technical means apparatuses of security. ii) The tendency that, over a long period and throughout the West, has steadily led toward the preeminence over all other forms (sovereignty, discipline, and so on) of this type of power-which may be termed ‘government’-resulting, on the one hand, in the formation of a whole series of specific governmental apparatuses, and, on the other, in the development of a whole complex of knowledges (savants). iii) The process or, rather, the result of the process through which the state of justice of the Middle Ages transformed into the administrative state during the fifteenth and sixteenth centuries and gradually becomes governmentalized” (Foucault, 2002, pp.219-220).

He sums up by arguing that we exist in the era of neoliberalism pervaded by eighteenth century governmentality. The state is being governmentalized where the problems of governmentality and techniques of government have occupied the political space. The existence of the state is permitted and reinforced by governmentality alone in the neoliberal era.

2.5. Development as Biopolitics

The idea of development is, with the advent of neoliberalism, conceived as reducing the number of poor. It amounts to say that the state not only attempts to empower them but also aims to eliminate the poor. The “numerous development interventions have left the poor worse off, if not condemned to bare life. For example, dam projects are notorious for displacing people who often lose their livelihoods when their land is flooded” (Parfitt, 2009, p.47). He gives examples such as Narmada Dam that triggered massive opposition from the people and civil society. The aboriginals have protested against the Dam due to the displacement issues. “...there has been a marked increase in the public policy component of biopolitical literature. We thought it appropriate, therefore, to include an item from this genre: the article by Andrea Bonnicksen, who examines, from a feminist perspective, the ethical as well as legal issues involved in legislation which deals with an ever more sensitive question-in vitro fertilization” (Somit & Peterson, 1987, p.109). The development discourse revolves around the human agency of today's public policy. This is often equated with the theories of emancipatory and liberating framings in political theory.

Agamben's idea of “bare life” is seen in the operational levels of governmentality that are located within the framework of economic governance. Many international organisations have developed anti-poverty strategies that reflect a new way of “thinking that differs from the structural agencies of the Washington Consensus period. Recent theoretical debates have tried to address the nature of this shift, raising the matter of the degree to which the old neoliberal policies have changed and whether the post-Washington Consensus represents a continuation of these policies or a break from the past” (Joseph, 2010, p.29). This gives us an opportunity to study the neoliberal regime in the context of changing the nature of welfare approaches by the state. “Focusing here on poverty reduction allows us to examine in detail the current thinking of organisations like the World Bank and IMF and to see how they work through new themes like partnership, ownership, civil society, empowerment, responsibility, benchmarking, and monitoring/ evaluation” (*Ibid.*, 31).

State makes efforts to bring suitable body politic to its policies by shaping the conduct of the people. Thus, biopolitical development involves that “building resilient subjects involves the deliberate disabling of the political habits, tendencies and capacities of people and replacing with adaptive ones” (Mezzadra et al, 2013, p.5). Further, they argue that the Resilient subjects are the ones who have adapted and accept the imperative of not resisting the obstacles they face instead adapt the enabling circumstances due to neoliberalism. Resisting the present neo-liberalism amounts to rejecting the luring claims of an alternative future offered by contradictory theories of sustainable development and the resilient political promises, says Mezzadra et al (2013). It must be noted here that the state is making use of governance to influence the people’s behaviour and aspirations to accommodate the interests of neoliberalism. This has further taken the turn of the development agenda. They argue that “contesting the bio politicization of development achieved by the liberal projects requires a counter developmental imaginary. And that imaginary requires property of political subjectivity. To quote Foucault again, the task is to construct another political thought, another political imagination, and teach anew the vision of a future” (Mezzadra et al, 2013, p.13).

Foucauldian Scholar, Chandler (2013) makes the critical assessment of Amartya Sen’s *“Development As Freedom”*. He raises the question of the efficacy of human development in balancing the human capabilities and potential usefulness of the same and consequently it lacks the centrality of human agency in Amartya Sen’s liberal object. He tries to show the transmitting hindrances of liberation from liberalism to neoliberalism by analysing Foucault’s *The Birth of Biopolitics*,

“Foucault drew out the implication of post-liberalism, in his terminology, ‘neoliberalism’, or biopolitical governmentality. He was very keen to draw out the limitation of the left or Marxist thinking of his day, which saw in neoliberalism merely the rolling back of the state and the expansion of market forces, with the increased emphasis on the self-reliance and responsabilization of the subject (Foucault 2008: 129-50). Foucault focus is

upon why it would be problematic to see these discourses as purely an economic discourse which assumed that only affects were economics ones and that its contestation could be easily understood in terms of left versus right /state versus market. He argued that the discourses of biopolitical governmentality reflected a major shift in how politics could be understood or contested and that this shift was entirely missed in traditional left /right polemics” (Chandler, 2013, p.70).

He also discusses the major shifts and transformations that Foucault emphasised within liberal discourse and the subsequent impact on the relationship between subject and the state. Foucault’s fundamental argument is to explain the biopolitical approaches that led to dissolution of binaries of liberal thought as neoliberalism limits the understanding of human subjectivity by eroding the bedrock of rational autonomy. This has led to obsolete conceptual distinction between public and private, between subject and object, formal spheres of politics and law and the informal sphere of socio-economic relations. This cannot simply be seen as dismantling of boundaries but also heralding a new era of discourse marked by new power structures, namely biopower.

Chandler (2013) engages with the Kantian Enlightenment discourse that attracted the philosophical response from Foucault. He observes that in “*The governance of the Self and others*” Foucault similarly addresses the Kantian question of emancipation. He says, Kant’s “*What is Enlightenment*”, approach was ambiguous to internal agency which expedite and legitimise the need for an external or an outside agency in freeing the subject, in spite of the framework of self-emancipation. This external agency is to be understood as Enlightened Monarch or French Revolution that act to free the subject. It must be kept in mind that those who lack their own potential agency in emancipating themselves are incapable of choosing their own freedom but require the external help to enable them to make their choices. Foucault stresses that Kantian external agency, in a call for self-emancipation, doesn’t remove mere external barriers to freedom but also implies internal development of the subject as well.

In assessing Amartya Sen's argument, the individual should be liberated from the clutches of both material and non-material or ideological forms. "Freedom here is not articulated in a classical liberal framing of the constitution of an autonomous subject. where Sen goes beyond the framings of liberal modernity is that development and freedom can only be understood in relation to the inner world of the individuals" (Chandler, 2013, p.77). He observes that individual freedom becomes the means and ends in itself for Amartya Sen's theory. He also points out that Sen takes social struggle out of liberal modernity and framework of socio-economic framework. It can be well said in his words of Chandler that:

"If people are not exercising 'reasoned choice making then there is something wrong with the institution of society and the inner world of opinions and beliefs. If choices making is limited or unreasoned, then people lack of freedom and development is necessary to act on the institutions which are blocking this process of free and reasoned choice making" (Chandler, 2013, p.78).

Chandler (2013) concludes by arguing that the task of governance, for Amartya Sen, is to facilitate the political process of "inversion of subject" which can be understood as ideological discourse of power that Foucault is disinterested in. He argues, according to Sen, 'Development as Freedom' is directed towards an impossible future by asserting our limited free choices constrained by our incapacities. Sen's theory is modelled on the transformation of the inner life of the subject in order to facilitate robust choice making. Constraints of our social relations have taken away our autonomy to decide freedom and render the strength to the internal impediments of our mind. "Capitalism is naturalized and normalized at the same time as human rationality is degraded and denied. The problem is the human rather than the social relations in which the human is embedded" (Chandler, 2013, p.84). Reid (2013) takes this debate to next level by examining the rationality of sustainable development aiming at decoding the resilience nexus between neoliberal biopolitics and sustainable development agenda. "Theories and analysis of biopolitics of development have long since established and revealed the way in which development has functioned historically as a technique of liberal governance...to create a globally racialized

and militarized division between developed and underdeveloped populations (Duffield, 2007, p.16) ...viewing their development as an issue merely of their economic improvement” (Shani, 2012 quoted in Reid, 2013, p.107). As human development is not able to prepare willing subjects by the state for changing needs of the market economy. The discourse turned to sustainable development which can address not only the poor but also the middle class in fostering the interests of the state by appealing to the people to withdraw from their engagement with the environment in order to save the resources for future. It must be noted that the capitalist forces have been devising the means to convince people to conserve the natural resources and leave for eco-friendly technology. This would, eventually, in turn give an opportunity to capitalist forces to monopolise the production of goods and services.

Rein also reflects upon Foucault’s ideas taking substantial clues from Agamben. He tries to show how Agamben filled the gaps, with economy’ in Foucault’s inadequate theoretical formulation of biopolitics saying that:

“It is not incidental that the stoics deployed the concept of economy to express the idea of the force that regulate and governs the whole from the inside and that it was thus that the verb oiknomein acquired the meaning of providing for the needs of life, nourishing (Agamben 2011: 19). Notoriously, of course, Agamben situates his analysis of relations between economy and life as a completion of Michel Foucault’s failed attempt to understand the reason why power in the west has assumed the form of an oiknomein (Agamben: xi). And yet he argues his case without any reference to Foucault historical analysis of biopolitics of modern political economy to be found in the order of things. There Foucault argued that it was with the birth of modern discipline of political economy that nature lost its foundational status as the major correlate of economy and that life began to play that role” (Foucault, 1997 cited in Reid, 2013, p.112).

Reid (2013) is fascinated by Agamben's analysis of theological origins of economy and provides for establishment in the chronological dissection of theoretical propositions that neoliberalism breaks away from liberalism and earlier traditions of political economy because its legitimacy depends on its potentialities to correlate practices for increasing economic profitability. It is not "just with practices for the securing of the human species but the life of the biospheric life in and among neoliberal regimes of practices and representations comprise" (Reid, 2013, p.113). The biopolitical analysis of neoliberalism gives us a perspective to understand why "ecological reasoning" is capable of enabling the growth of strategies for promoting market based entrepreneurial capitalism among the developing countries. Consequently, the neoliberal states have altered their security deployment through correlation with ecological reasons. Reid (2013) intends to argue that Agamben's concept of theological economy supplements Foucault's biopolitics in the changing order of world economy. Referring back to debate on the political economy, it is quintessential to mention of Rousseau that "in Rousseau's "Political Economy...can only properly be used to signify the wise government of the family for the common welfare of all, and this is its actual original use; the problem, writes Rousseau, is how to introduce it, *mutatis mutandis*, and with all the discontinuities that we will observe below, into the general running of the state" (Foucault, 2002, p.207) which is also called as an Art of governing.

Neoliberalism calls for the necessity of becoming resilient in the effect with the entrepreneurial spirit which enables the "practices of self and subjectivity" which is a self-reliance" says Duffield. Reid (2013) taking cues from Duffield argues, 'resilient people do not depend on states or other institutions to secure and enhance their well-being because they were disciplined to believe in the self-resilience to improve it for themselves. With the adoption of sustainable development, the rise of discourses of resilience within the framework of neoliberalism owes to the power of ecological reason in influencing and constructing the very rationality of security. The neoliberal rationalities that function in shaping the grand goal of sustainable development necessitate us to examine the

constitutive role of ecological reason in shaping the resilience debate in both sustainable development and neoliberal spheres.

The sustainable development discourse emphasises on “Life, not economy”. It means the prosperity of the people in terms of improvement in health and life expectancy would bring real development unlike accumulation of wealth alone. The exponents of neoliberalism provide the rationalities that make people volunteer to give information of their biological information in response to the call for a robust sustainable development that provides security- food security, environmental security and socio economic security. Thus, the life of the biosphere is given primacy over the state and population in the political economy. Interestingly this has been relegated to the market sphere. This intern has led to rise of “legitimation crisis”, refers to a decline in the confidence of administrative functions, institutions, or leadership”⁵, argued by Jürgen Habermas, a German sociologist and philosopher. This also echoes that the people are entitled to improving their prosperity but the facilitation by state or market is provided not in the way that people want to receive but to the benefit of the market forces.

In efforts to overcome the “legitimacy crisis”, the modern states have resorted to the bio politics by deploying the “ecological reasoning” to gain the secure biosphere under the exegeses of neoliberalism. But neoliberalism plays a vital role in determining the means of that security. Reid (2013) observes that the “economic reasoning” has been subverted and treated as a servant of ‘ecological reasoning’ to secure “the life from economy” by promoting the capacities of life for economy. In achieving such objectives of economic reasoning, the state has started investing its resources to shape ‘the conduct of the people’ that suit the requirements of neoliberal framework of sustainability of life in the nexus between imperative relations of people and government.

⁵ Habermas expanded upon the concept, claiming that with a legitimation crisis, an institution or organization does not have the administrative capabilities to maintain or establish structures effective in achieving their end goals.

Thus, the art of governing has been embedded with rationality, known as “governmentality” in serving the welfare of the people in the political economy. “The economic question is always to be posed within the field of governmental practice, not in terms of what may be found it by right, but in terms of its effects...within the governmental practice and reason established in the previous epoch” (Senellart et al, 2008, p.15).

2.6. Governmentality

It is important to understand how both biopolitics and governmentality are interrelated and studied in the research. Muller (2011) establishes such a relationship between the said two concepts of governmentality and biopolitics in managing the population. Foucault describes the development of bureaucratic state in modern times, its excessive dependency on statistical accounts of birth, death, health, and economy for the management of the population. Muller (2011) explains that Foucault’s biopolitics that:

“Through his genealogies of various institutions of the modern bureaucratic state, such as the school, prison, hospital, and asylum, Foucault describes the construction of the population as a collection of ‘docile bodies’, who are disciplined and managed vis-à-vis the range of ‘correctional’ institutions that deal with various articulations of ‘delinquency’ and ‘abnormality’. Fundamental to his argument is the extent to which coercion is relatively subtle and indeed contributes to and works with forms of self-government, such as Foucault’s other work on the care of the self” (Burchell 1996; Foucault 1988, 1998, 2006 cited in Muller, 2011, para 4).

Muller (2011) also explains how the “statistical data collected and managed” by the modern state can aim at bringing the “self-disciplined homogeneity” in the body polity. This is exercised in the disguise of welfare governance by the popular democratic governments in the era of neoliberal era. Foucault (2008) takes interest in not mere

governance but the ‘art of governance’ because of its reasoning involved in it. Foucault’s analysis of governance is debated in the contexts of European liberalism, especially that of d’Argenson, Adam Smith, Bentham. Senellart et al (2008) analyses that Foucault aimed at studying “the art of governing”, that is to say, the reasoned “way of governing best” and, reflection on “the best possible way of governing”. That is to say, Foucault has tried to grapple with the level of reflection in the practice of government and on the practice of government. In a sense, he wanted to study the consciousness of government itself, if you like, although he does not like the term “self-awareness (*conscience de soi*) and will not use it, because he has tried, and would like to try again this year to grasp the way in which this practice that consists in governing was conceptualised both within and outside government, and anyway as close as possible to governmental practice” (Senellart et al, 2008, p.2). Further, Foucault (2008) clarifies that his motive was to dissect “the domain of practice of government” for framing “general rules” and methods in exercising political sovereignty by the state. This can be better explained in the words of Foucauldian scholar, O’Farrell (2005) argues that “the modern state, for Foucault, consists of the convergence of a very particular set of techniques, rationalities and practices designed to govern or guide people’s conduct as individual members of a population and also to organise them as a political and civil collective” (O’Farrell, 2005, p.46).

This initiative by the state, amounts to “Governmentality”. This term, originally conceived by Michel Foucault, “refers to a technology of power that operates not from a hierarchical position of authority, but by regulating or controlling behaviour from a distance. More specifically, governmentality describes the complex form of power exercised through an ensemble of institutions, procedures, strategies, and tactics, allowing the conduct of a population to be controlled without force” (Foucault, 1977, p.4). In effect, people behave, regulate, or change their behaviour in response to distant and unseen influences eventually becoming-in the absence of resistance-self-governing participants in that system of regulation. Tania Murray Li defines the concept of governmentality as a “conduct of conduct” where the government tries to shape human conduct by calculated means” (Li, 2007, p.275). Translated from French as the “conduct of conduct,”

governmentality is understood as “a form of activity aiming to shape, guide or affect the conduct of some person or persons” (Burchell et al, 1991, p.2). It must be noted that Foucault’s ‘governmentality’ is considered to be the principal form of knowledge in political economy where intervention of state is required to acquire and distribute resources.

Here, Li (2007) barrows the language of Michel Foucault to explain what governmentality means that it is different from discipline that aims at reforming designated groups by supervision in “confined quarters (prisons, asylums and schools)”, the government’s concern is all about the wellbeing of the people. “To achieve the welfare of the population, the government needs distinct means. At the level of population, it is not possible to coerce every individual and regulate their actions in minute detail. Rather, the government operates by educating desires and configuring hobbits, aspirations and beliefs. It sets conditions, arranging things so that people, following only their own self-interest, will do as they ought” (Li, 2007, p.275). This is an expansive idea, in the name of beneficiaries, to persuade the people to do things desired by the government. It can also be termed to be governmental rationality because it “operates on population in aggregate or subgroups divided by gender, location, age, income or race each with characteristic beneficiaries that would serve as entry points for corrective interventions” (*Ibid.*, 276). The tacit calculation of using technology to bring improved state into being would “comprise of institutions, procedures, analyses and reflections, and tactics, through which governmental interventions are devised, and conduct conducted” (*Ibid.*, 276).

Further, Li (2007) comes up with the four axes to explain the limits of government; the *first one* is power of the state rather than force of the state. Here, this power of the state acts on the actions, says Foucault. This power acts as the source of dynamism in social life. The *second one* is the population who target governmental power. It amounts to say that “men in their relation with wealth, resources, means of subsistence...are somehow governmentalized and made the targets of technologies to secure optimal arrangements. The *third one* is “available forms of knowledge and techniques. The *fourth one* is ‘the tense

frontier between governmental rationality and practice of critique. This institutionalization of planning, regulation and law-making to transform the contestation to the advantage of government” (*Ibid.*, 277). In materialising this objective, the idea of statistics, ledgers and information of the masses for the government would help in pursuit of governmental rationality to have desired behaviour and results from the governed.

Joseph (2010) quotes Foucault’s work, *Security, Territory, Population* to explain the neoliberal functioning that “however, looking at neoliberal governmentality takes us away from a purely economic understanding of what neoliberalism is in that it is not just about encouraging free markets, but is a particular way of constructing social life through the introduction of political economy into our social practices” (Joseph, 2010, p.31). He further elucidates that “neoliberalism works as a form of social regulation that introduces a particular rationality derived from individual enterprise and a belief that things work best when governance encourages free conduct. Neoliberalism works through the encouragement of freedom and by the belief in the need to limit the role of the state by letting things govern their own actions” (Joseph, 2010, p.31). Foucault hints that the roots of governmentality lie in the rise of liberalism. Michel Senellart (2008) quotes Foucault’s lecture, in 1751, on “an anonymous article appeared in the *Journal économique*. marquis d’ Argenson requested for ‘*Laissez-nous faire*’ (Leave us alone) when asked what he wanted the merchant Le Gendre to do for him. Foucault argues that d’ Argenson believes all governments must respect and follow in the essential principle of “*laissez-nous faire*,” economic matters. Because it works as the principle of the self-limitation of governmental reason. This has laid down the popular liberal market economy for the modern nation states where liberty is given primacy against the *raison d’État* (Senellart et. al 2008, p.2). Thus, the governmentality has become a parasitic on liberalism in the functioning of the state not because of the necessity of governmentality but the inability of liberalism in disposing the governmentality in governance. This connectivity has further transcended into the neoliberal polity as well.

The features of a neoliberal form of governmentality are shaped by the plan to devolve regulation away from centralised state power in favour of working through a network of private and quasi-private bodies that is based on the belief in the superiority of market forces over government regulation, but that works through the introduction of an artificially constructed form of competition. This “enterprise society” is regulative, as Foucault's discussion of neoliberal thinking shows, insofar as conduct is “subject to the dynamic of competition” and “regulated by reference to the market” it should be noted that. “neoliberal governance is thus not just about the promotion of free markets, but is a form of rule that emphasises particular forms of social regulation. In particular, it emphasizes reflexive self-conduct that places importance on individual responsibility as an alternative, for example, to Keynesian state regulation and the welfare solutions of the postwar period” (Joseph, 2010, p.32). The idea of governmentality is defined as by Foucault that “this complex ensemble of institutions, procedures, analyses, and tactics has the population as its target and political economy as its main form of knowledge. We have emphasized how a specifically neoliberal form of rule takes place from a distance, working through various intermediaries to responsabilise conduct at the micro level” (Joseph, 2010, p.34). The neoliberal structures have relegated the technology to the sphere of welfare for accessing the individual's biological information since “data is seen as a new oil” in the market economy. This technology has been given indiscriminate access to individuals' life, with tacit consent for welfare schemes, where biometrics are extracted as a primary step towards the advancement of surveillance with the help of digital algorithm on the one hand and the consumerist culture has compelled the individuals to participate in the digital economy.

Apart from the above arguments, Zureik & Hindle (2004) in their article, “*Governance, Security and Technology: The Case of Biometrics*” argue that ‘in the name of good governance, accountability, transparency and participation, the state is trying to exercise its control in robust way with the assistance of technology. Thus, they try to conceptualize this practice as Foucault's notion of governmentality in locating the power outside of the boundaries of the government and produces body of knowledge to produce the best suitable “active citizens” to the policies of the government and continues its surveillance over the citizenry (Zureik, & Hindle, 2004, p.118).

The “anxiety of governance”: the presence of duplicate, fake and phantom identities make people opaque and indeterminate while leakages, corruption and wastage make the system inefficient. Such flaws in the state machinery gave an opportunity for the state to legislate Aadhaar (Targeted Delivery of Financial and other Subsidies, benefits and services) Act, 2016.

Though governmentality has left a large imprint on academia in understanding and conceptualising the power and continuing inequalities in the society. It also attracted considerable criticism for its approach and theoretical limitations as well. The governmentality is seen as “zone of research, not fully formed product, by writers like Gordon, Miller and Rose, calling for “engagement between Neo-Marxists and Foucauldian literature on changing forms of governance” (Kerr,1999, p.174). Further, Kerr offers an alternative view to governmentality by identifying its inherent theoretical limitations and acknowledging its emancipatory potential. He says that “Foucault’s governmentality is developed out of his analysis of power aiming at ‘cut off the king’s head in political theory’. According to Foucault, political theory had not kept pace with social change and still wanted to be wedded to power grounded in the state and royal sovereignty but the liberal democracy has disposed the king long ago” (*Ibid.*, 175). He also calls Foucault’s approach as “top-down” conceptualization of power. This limitation of Foucault’s conception of power and governmentality not only beheads the king but also social subjectivity giving rise to a pessimistic notion that humanity is capable of escaping from the systems of power and governmentality. It is because of its reproductive nature rather than transcendental one of Foucault’s concepts of power and self-correcting capacity of governmentality. Similarly, McKee (2009) also evaluates Foucault’s governmentality in his article, “*Post-Foucauldian Governmentality: what does it offer critical social policy analysis?*” that Foucault’s perspective has “disregard for empirical reality”. He quotes Stenson’s argument, “the dominant approach within post-Foucauldian governmentality studies is ‘discursive governmentality’, discursive, as opposed to material practice, for its evidence base, thereby concentrating on the rationales of

governing as manifest in key (government) documents, rather than the more specific and concrete “art of governing”. Further, the result is a “disconnection between the study of specific mentalities of rule and the social relations in which they are embedded” (O’Malley et al 1997; Stenson 1998; Clarke 2005). This is in direct contrast to “Foucault’s own writings, which although textually-based and historical, are nonetheless firmly empirical and consider discourses as material instruments strategically deployed” (McKee, 2009, pp.11-12). Foucault’s works have “the tendency to promote an overly abstract view of governing in which politics is reduced to rationality, also contributes to a representation of power that is omnipresent and totalizing: thereby precluding the possibility of meaningful individual freedom and human agency” (McKee, 2009, p.13).

Kerr (1999) also comes with the deep criticism of Foucault’s works and Foucauldian scholars. He discovers the strategy of co-existence of “many interactive Foucault’s” in responding to Hunt and Wickham’s claim, their book (1984), *“Foucault and Law: Towards a Sociology of Law as Governance”* that there is “no single point of beginning” for Foucault’s thought. He reviews Gary Gutting’s book (1989), *“Michel Foucault’s Archaeology of Scientific Reason”* and examined his claim that there is a ‘guiding thread’ or ‘intellectual *métier*’ in Foucault’s philosophy, literature and politics but agrees with Peter Dews (1987) who argues, his book, *“Logics of disintegration: Post-Structuralist Thought and the Claims of Critical theory”* points out, “this history is of a particular type, one that uncovers the emergence, expansion and consolidation of apparatuses of administrative intervention in, and control over the social world” (Kerr, 1999, p.176). He further justifies this charge against Foucault, though Foucault himself denied of being a structuralist in his approach, by identifying “the internal structuralist administrative apparatus” in Foucault’s works such as *“Madness and Civilisations (1961)”*, *“The Birth of Clinic (1963)”*, *“The Order of things (1966)”* and it became explicit in *“The Archaeology of Knowledge (1969)”*.

Leshem (2015), in his article, *“Embedding Agamben's Critique of Foucault: The Theological and Pastoral Origins of Governmentality”* quotes Giorgio Agamben’s methodological inquiry into Foucault’s works that Foucault was prevented from “articulating his genealogy of governmentality all the way to the end and in a convincing way” (p.2Alissa). According to Leshem (2015), Foucault could not account for the implications that the “very secularization of the world” becomes the symbol which identifies it in association with “divine oikonomia”. Methodologically, he argues that Foucault could not subscribe to “his own rule” and, as a result, his “archeology of government”⁶ does not ‘follow the signature that displaces the concepts and orient their interpretation towards different fields’ Based on this critique, “Agamben labors on a corrective genealogy of theological economy, arguing that Foucault’s historical situation of the original appearance of the distinction between being and acting should be moved back in time from the 16th to the 2nd century” (Leshem, 2015, p.2). He also further explains Agamben’s analysis of ‘state of exception’ as observed in a state accommodating civil society that works within the framework of law.

Derek Kerr not only criticises the methodological issues but also maintains that “genealogy does not replace archaeology but subsumes and goes beyond it. Archaeology is still needed to uncover the discursive rules that constitute bodies of knowledge. But unlike archaeology, genealogy attempts to explain changes in the history of discourse through making connections with non-discursive factors” (Kerr, 1999, p.176). In analyzing the power also, Kerr (1999) finds issues with Foucault’s understanding of power. He points out that Foucault argument that:

“Power was born from something else and permits the development from something else...the disciplining of bodies and regulation of population becomes possible only through the development of knowledge about humans...this conceptualization suggesting that knowledge and power

⁶ Leshem, D. (2015) is referring to Michel Foucault’s celebrated work titled as *“History of Sexuality Volume-I”* where Foucault adopted philological analysis of archives of the Catholic church.

become moments of a self-reinforcing system... Foucault marks a veritable technological take-off in the productivity of power and comprises complex institutional nodes such as the prison, the school and the clinic” (Kerr, 1999, p.181).

This is addressed by Clare O’Farrell in analyzing Foucault’s discourse on power. The most important to note about Foucault’s theories on power is that for him “power is *not* a ‘thing’ or a ‘capacity’ which can be owned either by state, social class or particular individuals. Instead, it is a *relation* between different individuals and groups and only exists when it is being exercised...it is a mechanism that produces different types of knowledge aimed at investigating and collecting information on people’s activities and existence” (O’Farrell, 2005, pp.98, 101).

2.7. From Governance to Governmentality: A Step Towards Surveillance?

Jacques-Alain Miller’s article, *Jeremy Bentham’s Panoptic Device*, translated by Richard Miller reviews the very idea of “panopticon Eye” by Bentham. “The Panopticon is not a prison. It is a general principle of construction, the polyvalent apparatus of surveillance, the universal optical machine of human groupings”. The idea of panopticon configuration, by Jeremy Bentham, has no particular unique application. It could be used for prisons, schools, factories, asylums, hospitals and workhouses. Here, “from the central point the whole of the enclosed space is totally visible; nothing is hidden, everything is totally transparent, unlike the circumambient cells, from which it is impossible to see out, impossible to communicate with any adjacent cells, and impossible to see the central point” (Miller & Miller, 1987, p.4). The panopticon eye is invisible while it has the privilege to watch over the target individuals. Here, the surveillance amounts to controlling the individuals by knowing their plans and methods, says Alain Miller.

This also makes panopticon an omnipresent inspector in the society. It can elevate the surveillance to the level of emulating the fabricated god against inhabitants. It is intriguing to know what Bentham’s utilitarian idea behind envisioning for the panopticon

device, for Miller, is that “Every circumstance act upon man. For him, nothing is without its effect. Everything is, therefore, the cause. Whoever wishes to master causes in order to reign over effects must therefore engage in an in depth-analysis, which is why Bentham never abandoned his work on Panopticon. Every element, every group of elements, every act, every gesture had to be dealt expressly and separately” (Miller & Miller, 1987, p.5).

Miller & Miller (1987) unveil not only the utilitarian dimension of Panopticon but also gives analytical reasoning to it by calling Panopticon as a temple of reason. They also argue, taking inputs from Bentham’s utilitarian concept, that everything has a purpose to serve something in nature. Nothing exists alone but in relation to another in nature. Further arguing, nothing exists for its own sake. No object is merely itself. No activity is an end in itself because everything has an effect. When it comes to results, all the causes must be evaluated and measured properly. Miller & Miller (1987) try to show how accurate results we can arrive at by using a device like Panopticon. He gives an example such as getting total power over a student, a madman, a sick person and the entire population to count on their activities to direct into desirable results. Thus, “logical calculation reigns over its empire, which is reclusive” (Miller & Miller, 1987, p.6). Panopticon as a temple of reason is transparent in every sense. It also excludes all forms of irrationalities as well. Bentham saw this “Panopticon to achieve the integral ideal to subjection of nature to the useful. Some way must be found to fit even most basic needs the profit system” (Miller & Miller, 1987, p.7). Going by the Utilitarian dictum of “everything must be usable and more so everything must be usable several times”, Miller argues that the utility of everything must be multiplied or maximised to its optimum level. They use the Benthamic words to express the significance of the Panopticon device, that “when all the solutions are available an individual should choose the one that yields greatest number of advantages. Panopticon is such a tool with multiple utilities” (Miller & Miller, 1987, p.8).

Here ‘Panopticon is thought to be a Public Eye’ by Bentham as he envisioned a world without wastes. Miller explains what Bentham really thought about this panopticon was to give access to the public view to the functioning of schools, hospitals and prisons

etc. such access dissuades the masses from crime and creates a deterrent in the field of economy, polity and all other civic activities in the society. Another usage by Miller & Miller (1987) added that “watching the guards”. It amounts to saying that the “eye of the public will watch over the inner eye”. Here, the inspection of the people over public institutions is attributed to the panoptic eye. Bentham also advocates for opening up of prisons, through panopticon devices, to the public access will create a sense of shame in the inmates and a deterrent in the masses as it is a theatre of punishments. As such, the prevention yields the reduction of crime, which is a utility in itself, says Bentham. Thus, punishment is made to be seen as a part of the trade and exchange network of pain and pleasure by calculation based on the Utilitarian Golden Rule: Everything has its price. In the neoliberal era, the market forces try to make use of every space, including the human body as a source of entrepreneurship at the cost of privacy. It can be best expressed in the words of Alissa Bohling (2012) “because gender has become one of the first markers in the technology- centric race for body-based data – known as ‘Biometrics’ in surveillance speak – transgender and gender non-conforming people have been some of the first and most directly affected” (Quinan, 2017, p.154).

Apart from prison analogy, Bentham turns to explain how Panopticon residence can be a place of co-existence. It is to understand how an individual behaves and treats his fellow being can be understood and emulated the benefit of mutual co-existence. This can be replicated, this logic would help improving the management in applying to the classes, at large where communities have to dwell together in peace in the society, says Miller. The Identity Police: Bentham demanded for different identities for different people in order to extract utilities out of such identities. For example, Prisoners with a different uniform from soldiers would help preventing their escape. He even enquired the possibility of tattooing the entire population based on their identities as paupers, rich, criminals and peasants for proper recognition, accurate calculation and robust regulation of mankind. “Once identities are assured, the great book keeping of utilities become possible”, says Bentham. Thus, he advocates for institutionalisation of Panopticon and Bookkeeping as a practice of science, facilitated by omnipresence of surveillance and concomitant of transparency. Bentham also

tried to explain how pain and pleasure play a very significant role in increasing the utility of goods and services in the society. Indeed, it is a moral philosophy he engaged with in analysing the purpose of the entities and their identities. His proposition for panopticon is to have “all-directing” and “all-comprehensive” devices in achieving the multiple utilities of objects several times (Miller & Miller, 1987).

The Bentham’s Panopticon works more effectively to detect and deter the production of nuclear weapons and usage against any other country in the world. This will help in ensuring the peace and world order among world politics. Debrix (1999) in his article titled as “*Space Quest: Surveillance, Governance and the Panopticon eye of the United Nations*” introduces the concept, Panopticon as “an omnivoyant eye, power from above, capable of encompassing by its penetrating gaze all life on earth and of simultaneously controlling and regulating with most a most detailed perfection the existence of individuals, animals, plants, mechanisms and institutions placed under its inspection”⁷. Debrix (1999) argues that panopticon society, which has been conceptualised by Michel Foucault, is governed by “three basic principles: Clarity, docility, and utility”. The surveillance aspect is also well explained by Francois Debrix (1999) that “the central eye of such a control mechanism sees all and everything at once. Privacy, selfishness, and individualist preferences are eliminated by the mere fact that the omnipresence of controlling eye is a constant reminder that punishment is always possible” (p.267). Here Debrix (1999) also quotes Michel Foucault to explain how ‘this perpetual control and ubiquitous deterrence help disciplining the bodies to achieve extreme social utility’. The panopticon mode of governance is a marvellously efficient “system of certainty” as argued by Foucault. Indeed, this “Panopticon eye allows the dominant political system (Foucault’s regime or power of knowledge) to reproduce its control and domination without having to constantly to prove its hegemonic status” (Debrix, 1999, p.269).

⁷ Debrix, Fancois (1999): *Space Quest: Surveillance, Governance and the panopticon Eye of the United Nations*, Alternatives, Global, Local, Political, Vol.24, No.3. p.269.

Jeremy Bentham's Panopticon is "the utilitarian idea of well managed and self-perpetuating socio-economic infrastructure" (Debrix, 1999 and Miller & Miller, 1987). More generally, as Foucault has tried to show, "it is also a dream of efficient and functional dream of governance for societies that have placed their organizing principle under the sign of an all-ordering eye of power (God, the modern state, or more recently international institutions) that 'governs' by means of refined disciplinary tactics" (Debrix, 1999, p.270). This article also aims at discussing the two major illustrations of panopticon eye; exercise of docile and utile visual surveillance. "One, Cardinal Nicholas de Cusa's Vision of God" (*De Visione Dei*), is a classic of fifteenth century Christian theology. The other, The United Nation's (UN's) panoptic 'eye' in recent cases of global monitoring of weapons of mass destruction, is exemplary of the recent deployment of global surveillance disciplinary tactics in international relations" (Debrix, 1999, p.270). Here in case of de Cusa's vision of God, they are willing subjects for such disciplinary mechanisms in the name of God while United Nation's panopticon works on the obligated member states. This system under the United Nations may benefit some unduly while others find intrusive and contest the utility of surveillance against their national interests. But it is argued that the UN's panopticon system amounts to global governance which will yield good and efficient social use by "discipline-mechanisms".

Debrix explains the theological reasons for de Cusa's vision of god that "human sight has a limited as well as conceptual field. It cannot even come close to what it means to have an "absolute sight which, god alone can possess" (*Ibid.*, 273). Hence the functional and social utility is very less and perfection is needed. "Human subjects cannot be omnivoyant. They cannot know all and, as such, will never be able to reach the perfection and universality of eternal life" (*Ibid.*, 273) elucidates de Cusa's theological philosophy. Subsequently, the god is needed to direct those imperfect subjects by absolute sight of the Single Eye. 'People believe that we exist because God is looking at us otherwise, we cease to exist'. Thus, it produces the uniform mode of subjugation and social control that is referred as normalisation for use-value in the society. Debrix (1999) is of the opinion that

de Cusa's Vision of God opened for experimentation of Panoptic discipline-mechanisms in the socio-political realm of life.

But in the case of the UN, there is no need for voluntary subjugation from the member states such as Iraq, Iran and North Korea for surveillance to produce panopticon. It is Space Technology which facilitates the Panoptic eye to watch over the member states. Debrix, (1999) gives an example from North Korean experience that it, in 1993, run off all the cameras installed on the suspected sites of nuclear activity since North Korea withdrew from NPT (Non-Proliferation Treaty). This obstructed the inspections by IAEA (International Atomic Energy Association) as per NPT norms. It became difficult for IAEA to conduct on site inspections as well. Then IAEA had to turn to the USA for space-spy-technology to inspect the suspected test-sites with the help of satellite images. The principles of openness and transparency are the guiding force behind this space technology enabled surveillance over the nuclear test-sites. It is expected that such a panopticon eye of the UN would bring an order, peace and harmony to the international community. The satellite supported surveillance was able to identify North Korea's nuclear operations and also produce pressure on the international system to impose economic sanctions to yield desired social goods. Even in the case of Iraq also, Resolution 687 of UN Security Council, it officially provides "for inspection and removal destruction or rendering harmless of all weapons of mass destruction in Iraq, and of all materials and facilities which can be used for mass destruction, including means of delivery apt for their use" (Debrix, 1999, p.279). Debrix (1999) quotes Milhollin that "the Iraqis (were) watched by satellite, U-2 spy planes, and by UN helicopters flying out of Baghdad"; space-scanning (from high in sky or lower in the sky) allowed UN to get images and photos that are prevented by direct access to ground" (Debrix, 1999, p.282) Thus, UN panopticon was used as tool to ensure transparency through secretive surveillance on the countries.

Panopticon Disciplinarily and International Governance: for Foucault, "Discipline had to solve a number of problems, for which old economy of power was not sufficiently equipped. It could reduce the inefficiency of mass phenomena: reduce what, in a multi-

policy, makes it much less manageable than a unity; reduce what is opposed to the use of each of its elements, and of their sum; reduce everything that may counter the advantages of number. That is why discipline fixes; it arrests, or regulates movements; it clears up confusion; it dissipates compact groupings of individuals wandering about the country in unpredictable ways; it establishes calculated distributions” (*Ibid.*, 284).

With the above passage of Foucault, Debrix (1999) brings in Oran Young’s definition of governance that “governance can be understood as establishment and operation of social institutions” where decisions are made according to a set of rules to guide the participants’ behaviour. It is also argued that there can be governance without government but there cannot be governance without discipline. Here, governmentality is produced out of these discipline methods that “an order of knowledgeable practices, norms of conduct, and elaborate protocols of behaviour, (whose) object is to produce calculable subjects operating in calculable spaces, formidably empowered by their very inscription to, indeed inscription into force, by technologies of calculation” (*Ibid.*, 285). It must also be noted that the direct monitoring of peace and order, in Somalia, by peacekeeping forces by the UN have left it as disorderly as it used to be before UN intervention due to lack of discipline mechanism. Debrix (1999) also argues that “the critical perspective on disciplinarity regimes and panopticon governance have not only challenged what have scholars thought about governance in a post-cold war perspective. Governance is not simply achieved through regimes of cooperation and interdependence or mutual aggression of non-state actors but with the role of power of discipline mechanisms” (*Ibid.*, 288).

After acquiring the power to do surveillance against people for security reasons, the state can make use of it against the individuals or institutions that question the legitimacy of the state. But the security of the modern nation states empowers the governments to enforce surveillance mechanisms at the cost of privacy and modesty of the people. This has given further repercussions that Quinan (2017) in his chapter, “*Gender (in) securities: surveillance and transgender bodies in a post 9/11 era of Neoliberalism*” that the influence of 9/11 globally which led to the exclusion of non- conforming identities according to the

superior white standards of America which in turn restricted their mobility in the state. A Trans or gender-nonconforming body is the site of anxiety which creates a feeling of distress among the authorities which then lead them to keep a surveillance over them constantly. This is similar to exclusion which is based upon race, gender, and religion especially related to Islamic identity. With the introduction of 'biometrics' the process of documenting bodies has eased out the process of separating nonconforming bodies from the conforming ones⁸ (Quinan, 2017, pp.153-154). With post 9/11 the neoliberal policies propagated the idea of gender non-conforming bodies which in turn created anxiety among authorities for a stricter structure to marginalize the identities with strict surveillance and governance over them.

The neoliberal age is marked with the advancement of technology which facilitates various nation state projects. In the last two to three decades the expansion of options in various categories and levels is observed. Out of them gender is one of them where now people can choose from more than two options i.e., male and female. While this has helped the state to maintain different policies for different people but at the same time its adverse effects are observed upon non-conforming population which are now segregated easily with the help of 'biometrics. Quinan (2017) questions the nature of this project: is this system really a progressive step or merely a representation of progress under which different agendas of surveillance are fulfilled? Further, Feinberg (2006) understands the trend and mechanism of surveillance post 9/11 particularly with the gender non-conforming bodies in public spaces such as airport security check, police stations, etc. The writer of the novel possesses various problems related to the problem of surveillance and the status of citizenship for these people. At the same time the role of nationalistic discourse which categorically exclude these people and portray them with suspicion. Also, neoliberalism and capitalism are seen as central reasons for the exclusions of such groups along with the power systems which have control over them. All this is kept in the U.S where these policies have consistently endorsed inequality and humiliation against them.

⁸ Wittendorp, Steff and Leese, Matthias (2017): "*Security/Mobility: Politics of Movement*", Christine Quinan's Chapter Title: "*Gender (in)securities: surveillance and transgender bodies in a post-9/11 era of neoliberalism*", Manchester University Press. pp.153-154.

In this context the writer of the novel questions the idea of progress in which the state is endorsing (Quinan, 2017, p.155).

This critiques the idea of neoliberal policies which set up institutions and bodies such as WTO, World Bank, etc. which instead of working for the people, works for the state who decides where and to whom the resources will be distributed i.e., they maintain their power through system like these which are discriminatory to the marginalized (*Ibid.*, 156). While the writer's notion of citizenship is embedded historically, socially, and culturally, the western's notion binds individuals together which helps in the distribution of resources and as political members along with a social identity. While its intention is to promote inclusion but it to be an exclusionary for people particularly coming from marginalised or weaker sections. It punishes the identities with a deviation from societal norms. In 'Surveillance and biological citizenship' Nayar (2012) lays down the 'cultures of surveillance' centred on the body, which is on upraise with the introduction of a unique identification i.e., Aadhaar which will facilitate the outreach of various government schemes and policies to the poor. The state's constant attempt to assure that biometrics is the means through with honest identification will be done in order ease out the process of claiming the benefits. It is the body of citizens or to say the 'biological citizenship' which is the terrain of contestation regarding Aadhaar grants. The author distinguishes between identity and identification. The culture of surveillance is concerned with the identification of the identity which a person claims (Nayar, 2012, p.17). This is further exemplified by Currah & Mulqueen (2011) in their article "*Securitizing Gender: Identity, Biometrics, and Transgender bodies at the airport*" studying how gender specified on official documents by individuals is different when verified during airport security checks. The study conducted by authors looks into the experiences of Trans genders who face problems when the gender mentioned on their passports is different from the way they present themselves at airports. One of the reasons is the bureaucratic glitch i.e. some officials change as per their preference but some do not and continue with whatever is mentioned in their official document. The document which is produced in front of the security ensures that whatever identity an individual claim to be is true and the document is a proof of that. The fact that a body will remain the same or at least some features such as eyes, fingerprints etc. makes

biometric a reliable technology for the state to ensure security checks (Currah & Mulqueen 2011).

Quinan (2017) exposes the hypocrisy of the state in the age of governmentality that however, the neoliberal policies claim to have an inclusive policy but it fails to facilitates the idea of transgender or non-conforming gender citizenship which is based upon the binary model of male and female citizens where trans people do not associates themselves which automatically marginalizes them from the society. “This gender binary is not limited to gender itself, but also connected to the themes of race, ethnicity, and religion where individuals from particular group become the target of hate, humiliation, homophobia, racism, etc.” (Quinan, 2017, p.156). He further problematizes the idea of citizenship drawing from the character Max who hates to categorize its body, lives in solitary without any identification proofs, and works at a queer bar at night, escaping the day which he fears might worsen his experiences of identity discrimination. He is not alone facing all these subjections but his friends are also leading the same kind of lives. The writer of the novel exposes several critical questions related to policies and the status of citizenship in the neoliberal era. The invisibility of Max’s body is what according to the writer is resistance against state. The author sees that the undocumented ghost is of no harm to the state, but if this ghost is documented for example a Muslim immigrant, then it’ll create a problem for the state. The author points out over the usage of space the writer is used. It is the different spaces which creates distress among characters. For example, even using public washrooms becomes a decision-making task for them.

It must be noted that Quinan (2017) investigates the categories of mobility, citizenship, and gender together to study the role of government which tries to regulate the functioning of all the three. It is no doubt the nation is careful of the movements across borders, it also aims to regulate the movements by regulating who will enter or not. This is specifically related to the immigrants who migrate to different countries with an immigrant status by the nation which in turn leads to surveillance over them.

The utility of surveillance with the help of biometrics, including DNA samples, has inculcated the ‘governmentality’ in the administrative structures and shaped the thinking of the people that it would reduce crime if used in investigations. It is evident from “*Surveillance Technologies and State of Security*” by Guzik (2016) analysis of the development in security of Mexico City. Here he points out that although the rates of crimes such as robberies etc. have come down but issues related to delinquency, violence are the same rather on a rise. In the last twenty years’ technology has influenced almost every part of human life. There is hardly any area which is not influenced by the use of technology. Similarly, national security of the nation has become of utmost relevance to the state today. Biometric technologies and DNA have enhanced the working of screening out and in criminals who are convicted. In developing countries like India, it serves the purpose of providing accessibility to government schemes and programs for poor and marginalised sections.

Nayar (2012) argues, surveillance, therefore, is a process of identification which requires to identify an individual externally. He lays down ten propositions on contemporary biometric cultures of surveillance. These propositions are:

- a) *Rematerialized bodies*: “The Rematerialization of bodies is an amalgamation and representative of cultures of surveillance and technology”.
- b) *Mathematisation*: “With technology and biometric processes the human body is perceived into data and numbers. The body is ‘mathematicised’ and no different from mere numbers”.
- c) *Somatically Legible Subject*: “The biological features combined with social and technological features produces culturally legitimate characteristics of a poor body which allows accessibility to state sponsored resources”.
- d) *Body Privacy*: “The distinction between private and public body dissolves with biometric surveillance”.

- e) *The culture of Eversion*: “With technology the biometric identification has gone deeper into a body. It is no more about the face but other similar biological features which distinguish bodies”.
- f) *Biometric Borders*: “These borders tend to divide the biometric bodies at stations, airports security checks, etc. While the purposes of this division vary from racial, gender, and legal”.
- g) *Mobile borders*: “Every movement of the body is marked by the surveillance now”.
- h) *Epidermalisation*: “It is not new phenomenon that a body is recognized through numbers rather the forms is changed with technology and is now legitimized by the state and people”.
- i) *Roots and Revelations*: “Further it also facilitates tracing of ancestors and lost individuals especially children who are separated due to wars, natural disasters, etc”.
- j) *A New Convergence Culture*: “With the coming of biometric, the status of citizenship has changed from ‘biological citizenship’”. (Nayar, 2012, p.18,19).

He concludes discussion about the trends and consequences of biometric technology. It grants a status of ‘biological citizenship’, keeps surveillance, and is a tool for providing benefits to the poor in countries like India. While Aadhaar has been successful in bridging the gap between the state policies and poor, at the same time it had raised questions related to privacy and discrimination. The value of the body is an emerging phenomenon since it is the way out to access any kind of facility from the state. Moreover, it is the new character certificate provided by the state.

2.8. Conclusion

This chapter has dealt with the theoretical understanding of Biopolitics and Governmentality advanced by Michel Foucault. The relationship between biopolitics and governmentality has been analysed in the light of neoliberalism. Many scholars such as Somit (1972) provided the historical attempts for deploying the methodological tools of biological science, begun by Rudolf Kjellen in 1920s, to introduce the concept of

'Biopolitics'. It was aimed at accurately understanding the political behaviour of the individuals in the society. In doing so, Larry (2010) tried to develop a new discipline called 'Biopolitical Science' using the analysis of technicalities of functioning of different body parts such brain, heart, blood circulation etc. but this hasn't been successful in the political science studies as the research, after world war-II, political scientists have turned towards 'behaviourist approach' in devising the public policy and predict the human behaviour. With Foucault's research on German medicine, biopolitics has again surfaced in the political philosophy, literature and social thought in academia. It has not only questioned the modernity practised in the clinics, jails and schools but also exposed the Benthamic panopticon practices involved in exercising the control over the people. Thus, the power relations have been best analysed and exposed by biopolitics scholars later. The urge for controlling the people has been achieved by the state controlling over the sexuality of the people and political economy.

Liberalism tried to minimise the intervention of the state by facilitating the role of the market in the political economy of the society. This has given an opportunity to private forces to step into the shoes of the state in acquiring and exercising the power over 'the population'. This is advanced by the developments in technology and the modern state. Technology accelerated the empowerment of the state and market against the individual in geometric proportion. This has been in consonance with Foucault's governmentality (a rationality behind an art of governance) in nurturing and shaping aspirations and conduct of the people suitable to its policies. It can also be said that neoliberal state is, as Mezzadra et al (2013) argue, aiming at creating "the resilient citizens" for future programmes. The idea of 'welfare', 'reduction of crimes', and 'order of the society' has been a great excuse in the deployment of surveillance technologies such as CCTV cameras or satellite technologies and biometric based Aadhaar numbers. Thus, both biopolitics and governmentality speak of collecting data and management of the individuals for exercising the control over the population.

Foucault's biopolitics and governmentality have been criticised on the grounds of imperfect methodology, that is of structuralist approach, by Kerr (1999), McKee (2009), and Birch (2017). Indeed, Giorgio Agamben tries to enrich Foucault's biopolitics and governmentality with critical conceptual engagement. Miller & Miller (1987) have shown the utility of technologies and surveillance in controlling the production of mass destructive weapons like nuclear and chemical weapons. The far-reaching implications of technologies such as biometrics, DNA samples and body scanning are found to be discriminatory in analysis of application to gender, health, security, privacy and surveillance by scholars such as Quinan (2017), Guzik, (2016), and Currah & Mulqueen (2011). However, there is a common ground for scholars that the use of technologies is leading us to "biological citizenship" of suitable body polity against the neoliberal proclamation "inclusive development" with a participatory approach. The anxiety of identity, anti-corruption and security measures has generated the scope for 'governmentality' that permits the state's exercise of the power. This has not only altered the power relations between the state and individuals, rich and poor but strengthened the existing inequalities where the helpless has to prove his identity on demand by the state and market forces. Thus, Foucault's theoretical framework is of great help in studying the operational aspects of biopolitics and governmentality in the neoliberal state policies.

CHAPTER-III:

Comparative Analysis of the use of biometrics in governance between the UK, India and China.

This chapter deals with comparative analysis of biometrics governance in India and China mainly but also looks at the biometric administration in western countries like UK (United Kingdom) and USA. The genesis, development and use of biometrics in governance by the modern nation states in the Neo-liberal era. It also examines whether biometric technologies empowered the state or people in general and subsequent impact on welfare. The rationale behind choosing these states is to understand and analyse the similarities and dissimilarities of governance in developing Asian countries and developed countries.

3.1. Introduction

This chapter attempted at understanding and analysing the operational aspects of Foucault's biopolitics in India and China. The objective of the study is to examine how India and China, being different political systems, could adopt a similar method of governance, that is biometric governance due to the "legitimacy crisis" in the Neo-liberal era. The changing nature of capitalism from "Industrial to Financial to surveillance capitalism" led to the convergence of governance techniques such as "Aadhaar project", "DNA profiling" and "Social Credit System", "Genomic Surveillance" and "Government mobile apps" in democratic India and totalitarian China respectively. Thus, this paper argues that the biometric governance coupled with surveillance technologies is leading India towards "tyranny of technology" that is visible in China's "digital authoritarianism".

This Chapter traces the changing role of biometric identity from criminal investigations to national security to welfare services in identifying legitimate citizens in democracies such as India. The looming 'legitimacy crisis', resulting from the failure of the welfare state in India and obsolete ideological imposition in China, required them to adopt "surveillance technologies" coupled with "biometric governance". Thus, the excessive dependence on technocratic solutions to socio-political problems resulted in surveillance governance in liberal democratic India and totalitarian China. With the

digitalization of the economy and society, “the surveillance practices growing at an accelerating rate whenever information infrastructure and knowledge-based economies are established” (Lyond, 2002, p.5). In such a context of politics of technology, this paper examines the different ideological regimes to assess the converging patterns of governance of biopolitics in UK, India and China.

The Chapter provides a detailed account of the origins and development of biometrics in general and how these biometrics are used for different purposes as per the changing needs of the various states. A special attention is given to changing the nature of capitalism from “industrial to finance to surveillance capitalism” and the idea of ‘good governance’ in times of globalisation. The nexus between the theory of legitimacy crisis and Neo-liberal practices, in India, UK and China, is examined on eve of rising technological innovations to address socio-political issues.

In analysing the governance practices, there is a considerable debate on Foucault’s theoretical underpinnings of bio-politics and ‘surveillance capitalism’ by the high-tech companies such as Google, YouTube, Facebook and Microsoft in accessing and extracting the “behavioural data”. The bio-political development aimed at creating a “resilient subject” by deploying the techniques of technocratic governance. The practices such as “genomic surveillance”, social credit system, internet sovereignty, the role of CCTVs in China and the Aadhaar project, DNA profiling, and Pegasus snooping in India tend to empower the state as a surveillance force rather than agent of welfare. The fourth part is the final one that concludes the argument of how India became a bio-political state, like China, paving the way for “tyranny of technology” without regard for “ethical governance” with the adoption of biometric governance in welfare services and snooping against political dissents.

Biometrics based identity has become a potential tool for governance at both local and global levels. It must be noted that the efforts for creating a unique and robust identity in digital aim at addressing the security threats for nations and individual citizens as well. Thus, this chapter deals with the history and usage of biometrics in governance for identity

and development of administration in the modern nation states such as the USA, UK and India. This chapter also discusses, compares and analyses the use of increasing convergence of biometrics in governance between democratic countries like UK, India and China.

3.2. Historical evolution of Biometrics: Genesis and Development

The use of biometrics was traced back to the Babylonian empire of 500 BC but the first historic record of a biometric identification was found in Paris, France in the 1800s (Amanda, 2020, Bioconnect.com). The 14th century “Chinese merchants used children’s palms and footprints to distinguish them” while Egyptians differentiated traders by their physical characteristics (Jessica Mulholland, GovTech.com). However, the modern biometrics include the scanning of fingerprints, Iris and facial recognition. Such biometric was conceptualised as the “physiognomy of modernity” by Walter Benjamin in governance of the Nineteenth century (Lebovic, 2015). Even the Colonial states like Britain have introduced “Henry classification system of fingerprinting” (Maguire, 2009, p.13) in Bengal of British India that superseded the “Bertillon system” or “anthropometrics” (Amanda, 2020) of measuring height, hands, legs and physical characteristics of the human body in the criminology. This has rapidly been developed by “voice recognition technology” and “DNA algorithm” with the rise of computer propelled ICT (information and communication technology) aiming for better security and vigilant administration.

The growth of biometric and forensic technologies has been used in post-crime investigations by police in countries like Britain, USA, France, Germany and India. Thus, the post colonial era, the countries encountered the security threats from external (non-state) forces that led to adoption of preventive measures for better national security. Subsequently, the use of biometrics shifted from criminal investigation to the war on terror by introducing national identity cards for the national security. Hosein (2012) argues that the 7/7 London bombings gave rise to the idea of having a robust biometric ID proof for citizens to distinguish from the external anti-social elements. Similarly, Kargil war experience made India realize the need for fool-proof ID cards based on biometric identity

for Indian citizens with the aim of preventing the infiltrations from neighbouring countries into India (Ramkumar, 2010). 9/11 attacks made the federal government to introduce the “National Identification Cards Scheme” based on biometric data in the USA (Andrew Clement et al, 2002, p.198).

The security oriented biometric governance found its place in the civil administration because of the quest for transparency and accountability in the public sector and the governance of welfare services in India. Thus, the corruption was treated on par with enemies of the state but unfortunately the focus was more on the fake/ghost beneficiaries. Hence, Unique Identification Authority of India (UIDAI) was set up under the chairmanship of Nandan Nilekani in 2009. The state has diagnosed the problem of corruption with beneficiaries and inefficient officers in the public administration. Thus, the biometric governance was seen as a potential solution to the existing inefficient and ineffective governance but resulted in the “dilemmas of governance”⁹ (Sarkar, 2014) in liberal democracies like India, U.K. and USA. The similar practice of biometric governance has been practised in totalitarian China. Hvistendahl (2012) says that China’s attempts to procure and use modern biometric technologies such as fingerprinting, facial recognition and image scanning dates back to the 1980s in both security and governance. China also adopted biometrics in civil administration also and “it is integrated into bus and rail transit entries to scan passengers’ faces instead of physical tickets or digital ticket codes” (Richardson, 2021, p.3).

Amanda (2020) gives the brief outline of the biometric boom within 1900s:

- 1). In the 1960s, a semi-automated method, more manual in nature, were developed for facial recognition that would require administrators to analyse and extract useful facial feature points in the image.
- 2). “Fingerprint and facial recognition” became a potential source for the law enforcement by 1969, the FBI sponsored funding towards developing automated processes. This worked

⁹ Sarkar, Swagato (2014) terms the intersection of surveillance technologies with security and citizen services as dilemmas of governance. P.518.

as a catalyst for the improvement of more sophisticated sensors for capturing biometrics and extraction of data.

3). In the 1980s, speech recognition technology was developed by the National Institute of Standards and Technology by dividing people into different groups. Thus, the “voice command and recognition system” emerged today.

4). In 1985, the concept of irises, like fingerprints, were unique to every individual was proposed. “Iris recognition algorithm” patent was obtained for the first time by 1994. In addition, it was found that “the blood vessels patterns in eyes were unique to everyone and were used for authentication as well”.

5). In 1991, facial detection technology was developed making real time recognition possible. While these processes had many faults, it skyrocketed interest in face recognition development.

6). By the 2000s, hundreds of biometric authentication recognition algorithms were functional and patented within the USA. Biometrics were no longer being implemented in just large corporations or a government setting. They were sold in commercial products and were implemented at large scale events like the 2001 Super Bowl.

This was further used in governance extensively in the USA. The use of biometrics snowballed from there. U.S. Marshal Services sources reveal that the FBI was able to manage a library of 100 million fingerprints by 1946. The agency developed the “Automated Fingerprint Identification System (AFIS)” in the 1970s to manage the massive and still-growing collection more effectively. AFIS became “Integrated AFIS” (IAFIS) in 1999 to help law enforcement agencies share fingerprint data over state lines. After the events of 9/11, fingerprint identification in the U.S. migrated from law enforcement into border protection and VISA screening¹⁰. Today, modern nation states across the globe use biometrics for multi purposes such prevention of terror attacks, border management, defense, individual identity for welfare schemes, employment, healthcare, security, and more. Many countries across the globe have started adopting biometric ID cards in administration of security matters. Over the last 50 years’ identity cards have been

¹⁰ <https://www.aware.com/resource/download-biometrics-in-government-enhanced-security/> Accessed from [aware.com](https://www.aware.com) and visited on 10/12/2020.

proposed and developed in, for example, “Belgium, Hong Kong, Singapore, Spain, Germany and Portugal. They have also been proposed and not developed in, for example, the USA, Canada and (for the moment) the UK. In the latter countries the likelihood of a national, biometric identity card scheme appears to shift in and out of favour” (Neyland, 2009, p.137).

3.3. Biometrics in Governance: The Lessons from the West

Maguire (2009) quotes British Assistant Joint Magistrate, William Herschel’s article from *Nature* that traced the origins of modern fingerprinting in India in 1858. He observed the dissimilar pattern of fingerprints from apes to humans and found them to be useful for not only identifying criminals but also using them as “native-signature” in the civil administration such as road construction. The U.K. modelled a policy for biometric based identity for its citizens in early 2000s. Martin & Donovan (2015) examined the people’s reaction to the introduction of new biometric technology for human identification and the relationship between public understanding and acceptance of new technology. In addition to investigating political parties’ role behind introduction of novel technology for identification. And also exhibit the benefits and losses with this new technology. The U.K Government introduced the ID card system in the name of Biometric for identification. This process started in the U.K in 2002, and has continued since 2010. During this time period the U.K had been facing many problems while implementing this new scheme.

Hosein (2012) explains the reasons behind the introduction of such biometric identity in the UK. The 7/7 London bombings gave rise to the idea of having a robust ID proof to prevent such attacks by anti-social elements at Brussels extraordinary meeting at Council of Europe in 2005. “The policies included calls for additional communications surveillance, fingerprints in ID cards, monitoring of financial transactions, increased information sharing and even a ‘name and shame’ system for countries that refused to increase surveillance while reducing safeguards against abuse”¹¹. It must be noted that such

¹¹ Hosein Gus (2012): “Walking on the Dark side”, Index on Censorship 3 2005, Sage publications. p.28.

a biometric project is a politics free one. Hence this question was addressed by Daniel Neyland who examined the socio-political aspect of biometrics in governance in the UK. Neyland (2009) studied the politics led technological development biometric of human identification that did not show accurate results dealing with various issues: exclusion, inclusion, technology loopholes. In addition, investigate the role of social sciences in politics of identification. The empirical study taken from the UK based biometric identification.

Neyland (2009) further discusses how the U.K introduced biometric processes by using technology for identifying people: lens, eyes, iris and fingers. The objectives of biometric identification reduce terrorism, anti-social actives and protecting people privacy. They introduced ID cards for identification through biometric. This ID card made for necessity, reasonableness, and feasibility. Simultaneously, juxtaposed to ID cards, No2Id card web community formed and their arguments are; this ID cards reduce liberty and freedom, no privacy, access of services limited to the certain targeted group of people, certain specific categories of people would be targeted. Along with misidentification, problems with conforming identification and manipulating identity information could lead to problems in future. This author utilises three STS (Science and Technology Studies) sensibilities for orienting understanding of the politics of identity and the biometric of future: first, Technology does not cause or create single, straight forward outcomes. Second, producing and mobilising forms of information and retaining the integrity of that information is always complex. Third, technology congealed social and political relations¹².

He also further raises the questions such as STS engage with biometric future; what technology might do? How might it work? And what would constitute? After interviewing airport officers came to the conclusion that technology might not do what it claims, production of identity is complex and that information might not be understood in the same way in each location and specific politics of technology remained a matter of discussion

¹² Neyland, Daniel (2009): *Who's who? The Biometric Future and the Politics of Identity*, European Journal of Criminology, Sage Publications.

with UK residents and many non-UK residents did not support the identification. Moreover, the UK based biometric identified more problems such as disable participant information, problem with fingerprints, and biometric takes eight minutes for each person and also it is revised every ten years. Day to day information is not necessary for the biometric of politics.

Social science can understand biometric identification in three ways: first, act as a social technical archivist or historian. Second, politics of identity is an anti-ID card lobby and third, issues arising in relation to technical details, politics and everyday use of biometric ID cards. Finally, the politics identity ignores the practicalities of the proposed biometric future. History tells that a large scale of technological development has unanticipated outcomes.

Hosein (2012) discusses the conditions such as 7/7 London bombings and 9/11 attacks that necessitated the UK to introduce the ID cards with biometric information and international support from international organizations like NATO, Council of Europe, Gulf Cooperation Council, OECD, G5, G8 countries and Asia-Pacific Community. All this amounts to say that the enhanced fool-proof identity was mooted to counter the terrorism across the globe. Thus, the terrorism became a global issue to combat by having internationally accepted surveillance system at both levels; domestic and international levels. The UK is such “a country that has not had an identity card since the war-time card that was abandoned in 1952. But the government is now claiming that the US, the EU and international standards are forcing it to collect the fingerprints, iris scans and facial images of all Briton”¹³. This might be attributed to the process of globalisation and security of international trade but “in our globalized world we have yet to generate global accountability structures” (Hosein, 2012, p.31). It must be noted that our communication system underwent revolutionary changes in the era of internet, so internet-surveillance is more required to track the sources of the radicalization of the youth. This might go against the spirit of open society but “Tony Bunyan and Barry Steinhardt note that the ‘surveillance

¹³ Hosein Gus (2012): “Walking on the Dark side”, Index on Censorship 3 2005, Sage publications, p.30.

society' is changing all that. Bunyan notes that governments are pushing for the retention of 'traffic data' at communications service providers"¹⁴. The use of data can be useful in investigations against the criminals but the state forces like police or other agencies should also be responsible in operating technologies. The incident from the UK During 2001, U.K. police arrested a person on a charge of attempting robbery. Later, with investigations the person was acquitted of the charge and released. But with his release police refused to delete or destroy his private information such as fingerprints and other samples citing Criminal Justice and Police Act 2001. Later, again a similar case happened where police refused to destroy the information citing the act. Both the cases went to the House of lord and the Lord cited the act which states that after the trial is over the information can be retained only for the purpose of detention or prevention of crime, investigations or persecution (Challa, 2017, pp.21-22).

In surveillance against people their internet usage is infringing on the rights for which Hossein (2012) proposes alternative that "we need to find ways to generate, sustain, and cultivate the culture of human rights. This will always remain the strongest defence against policies that threaten tTo diminish our individual or collective rights. Civil society also needs to cooperate internationally to find ways to do this; after all, so the logic goes, the world is going global and so must we" (*Ibid.*, 37). Even the conventions on human rights also speak of the privacy and liberty to be safeguarded. But at the same time the Criminal Justice and Police Act, 2001 compatibility with European convention for the protection of Human Rights Act 1998 was the concern before the lord. Retention, storing, compiling, of private information such as fingerprints, DNA, etc. is an intrusion to the privacy and fundamental rights of an individual under Art.8 (1) of the European Convention for the Protection of Human Rights and Fundamental Freedoms 1950 (Challa, 2017, pp.22-23). The Government was careful to promote "A scheme that works for everyone" but in reality, is not. Government conducted a longitude survey to implement this scheme. In fact, the survey skips the main questions and asked open ended questions to support the scheme. Finally, researchers estimate that huge resources are needed than

¹⁴ *Ibid.*, p.31.

government estimates (Morten and Devon, 2014). While the purpose of storing and retaining an individual's information could be prevention and detection of crime but this also directly allows the state to intrude in a person's private life and respect. This is also referred to informational privacy (Challa, 2017, p.23).

3.3.1: Empirical Study of the utility of Biometrics in governance

There has been a significant social history of branding the body or constituting features of the body as a means to categorise, specify and segregate populations along lines of claimed identity (Neyland, 2009). Tattooing, scarring and hair-cutting as embodied branding (Schildkrout 2004), fingerprinting (Cole, 1998) and phrenology (Allen, 1846) as evidence of categorical membership, form a few examples of constituted bodily identifications. In the recent years, technological developments and advances in the techniques of biometrics (see, for example, the work of van der Ploeg 2003) have led to claims regarding the increasing ease of identity constitution, identity corroboration and identity mobilisation (UK Home Office 2005). These technologies of identity have attained a pervasive resonance across Europe (in biometric passport developments) and beyond (for example, with biometric entry/exit points to the USA).

Martin & Donovan (2015) says that the NIS (National Identity Card System) had taken over this project to implement biometric identification technology. U.K people had scepticism about the biometric technology; how it works, its benefits and other operational things. NIS followed the Society and critique method of PUS (Public Understanding Science and Technology), which depicts technology introduced to people to understand and accept it. Through this method, the U.K government widely advertised about biometric technology before introduction.

Scholars, NGOs and web-based communities raised concerns against the biometric technology of identification against implementation of this scheme. The discourse divides into biometric public and counter public: the first one is supporting the biometric implementation and the former one against it. Public-in-particular rise some doubts

arguments for implementation of this scheme. Their arguments are; how “biometrically challenged people” access this technology than “abled people”, what kind of awareness created by the government about the novel technology? What are the benefits of this technology? The extensive fieldwork conducted by NIS for implementation of biometric technology of identification. Results show that people did not know what biometric and less awareness of this technology is. Biometric proved to be confusing, stymieing public discussion and acceptance. It did not take care of the complex lives— physically challenged persons, homeless people and others.

Morosan (2018) empirically examined, in his article the use of biometric e-gates technology to detect individual body identification to enter security places. Along with, this paper focuses on human response and emotional behaviour while using and willing to disclose their information to e-gates. E-gates are information detected instruments of human body by using biometric technology. E- Gates technology deployed prominently at airports for travellers to detect information and gather for future use. The study conducted on 510 U.S air travellers experience by using e-gates biometric technology and willing to disclose information. The respondents said that they are not using biometric technology (70 percent) and they travel yearly twice for leisure purposes. On the other hand, rest of the respondents said that biometric e-gates are useful and benefit to them willing to disclose their biometric. It reduces congestion at the airports and also time saving process. E-gates help easily access to the unrestricted areas. According to the U.S Customs and Border Protection argued that, passengers respond satisfactorily towards using e-gates and also reducing congestion at airports. In addition to, travellers’ percentage increasing day by day and it would be difficult to control without using technology. E-gates are playing key role to speed up traveller’s information and reduced traffic at the airports.

This survey helps the management to enhance technology related to the passengers. To attract the passengers emotionally and create awareness towards using e-gates, government advertising about the e-gates and biometric technology.

3.4. Bridging the gap?

Jain & Ross (2015) say that “not surprisingly, the advent of biometric recognition systems coincided with advancements in other closely related areas such as artificial intelligence, pattern recognition, and image processing in the 1960s, which helped analysis and recognition of biometric patterns” (p.2). It must be noted that the objectives of biometrics, according to the U.K’s Home Office, in administration aimed at identifying criminals, especially habitual criminals and tracing them effectively in a transparent way of investigation. The use of existing technologies like “forensic” in investigation was aided by the advent of biometrics in enhancing the speedy and accurate results in criminology. Fingerprinting biometric was accepted as an evidence in the law enforcement in 1905 in U.K though it was attempted in Scotland Yard in 1900s itself (Jain & Ross, 2015, p.3) It is a common knowledge to note that an individual where he/she touches consciously or unconsciously he leaves his/her fingerprints that will be the silent witness against him/her in the investigation of any case. Even countries like the USA, after 9/11 made efforts to develop and use biometrics for security purposes. Meuwly and Veldhuis (2012) explains how forensic biometrics developed as a new discipline in the law enforcement agencies. They argue that:

“Methods like forensic anthropometry [Be86], forensic dactyloscopy [Ga92] and le portrait parlé [Re05] exist from the end of the 19th century. They exploit physical and behavioural traits for the individualization of perpetrators of criminal infringements...In the 1980’s the discovery of forensic DNA profiling led to the development and implementation of similar tools and applications: the identity verification on basis of DNA reference material using a computerized DNA database, the selection of subsets of individuals and the individualization of persons from biological traces” (Meuwly & Veldhuis, 2012, p.v).

In addition, the extensive use of CCTV cameras and tracking the telecommunications through use of various apps meant for security of the nation enhanced the possibilities of prevention and tracing of the criminals in the society. Moreover, technologies such as DNA

profiling and study of the blood samples aim at providing security to the society and tracking down the culprits effectively. It amounts to say that the use of biometrics/forensic biometrics and DNA profiling in criminal investigations could bridge the gaps left by manual practices.

3.5. From Withdrawal to Limited Usage to Dilemmas of governance

The western countries especially, UK and USA did not withdraw biometrics in governance but confined to limited use in limited aspects of administration. UK Parliament Post (2019) gives the reasons (as debated in the Parliament of UK) that the science on the fingerprints is less developed and cannot go for unilateral application of biometrics in administration. Moreover, the robust assessment of technologies should also be done before taking for governance. Issue of exchange of information, body data and privacy are to be addressed¹⁵.

“Data storage at the Home Office was discussed. The ‘common front door’ instigated by the Home Office Biometrics programme does not mean databases are merged, it just provides a single access point to multiple databases. Who is given permission to search those databases in a matter for legislators and policy makers, subject to appropriate oversight, to decide? There is a wider discussion ongoing in the Home Office on how to handle removal of facial recognition data from databases, currently legislation only regulates police use of fingerprint and DNA data. For example, it is an active consideration of the Home Office to ensure it is easier (or automatic) to delete images from the custody image database of innocent people” (UK Parliament Post, 2019).

¹⁵ https://www.parliament.uk/globalassets/documents/post/Future-of-Biometrics_notes-from-briefing-event_final.pdf.

Unlike Aadhaar in India, the Social Security Number is issued based on biometric identity by guarding the services to its citizens in the USA. Their use of biometrics in governance aims at external threats despite the surveillance being done through various means. The UK applies biometrics for passports for immigration services and other classified services alone. Moreover, the people have the right to request for withdrawal or deleting their “body data” from the database.

The inception of UID came into being when Congress came into power in 2004 led by UPA. The government agreed for National Common Minimum Programme (NCMP) which aimed at providing subsidies to the poor, farmers, labourer. For the same ninety days were given to prepare a blueprint of the proposed. In 2006, a committee was formed under the Planning Commission to look into what all was required to take ahead the plan of developing UID¹⁶. In 2007, after seven meetings of the processes committee it was concluded that UID authority should be formed. To decide who will be the part of the committee the matter went to the prime minister to be up in the cabinet which consisted of members from different departments and political parties¹⁷. “This scheme is expected to enhance the expectation to move towards national e-governance and enables an entire ‘digital ecosystem’ that includes state and market initiatives such as direct transfers of state subsidies, employment guarantee schemes, banking, insurance and financial sectors” (Pati et al, 2015, p.126). The eGoM recognized the need for an institution for maintaining the database of the residents. In 2008, the EGoM decided to form the Unique Identification Authority of India (UIDAI) under Planning Commission and that the “data collation of data would be jointly done by the National Population Register and UID” (Aiyar, 2017, p.16). The entire process of formation of UIDAI happened under the Planning Commission and EGoM monitored the progress of UIDAI. Finally, on 28th January the notification for UIDAI was released and notified the responsibilities and organisational structure.

¹⁶ Refer to page 12- 16 in the book, Aiyar, *Aadhaar: A Biometric History of India's 12 digit Revolution*, to know the detailed trajectory of the events year by year till 2009. After that in March 2009 15th Lok Sabha elections was announced and UID Project was kept on hold till elections happened.

¹⁷ It consisted of IT minister from DMK, Home minister who was from congress, Chairman of Planning Commission who was a technocrat. On PM Manmohan Singh's recommendation a Empowered Group of Ministers (EGoM) was formed which included the IT and communication, Law and Justice, Panchayati Raj Ministers, and Vice Chairman of Planning Commission.

Soon after the project was approved, while the role of institutions in the development of the state is crucial, Nilekani had to choose people within the government who could give a strong foundation to the project. For this task three officials from the bureaucracy were picked up: Ram Sewak Sharma Chief Executive Officer (CEO), M.S. Sirkar as Personal Secretary (PS), and Ganga K. as the Chief Financial Officer (CFO)¹⁸. The structure of UIDAI was similar to that of Planning Commission in that it was to have thirty-five secretaries over all.

3.5.1. Aadhaar for revolutionising the governance in India

The global trends in the business such as Marc Andreessen, the co-founder of Netscape claimed that the software is eating the world. For example, Indian mobile users jumped to 900 million users soon and 190 million people started using smartphones bypassing the computers as per 2011 data. according to Nilekani & Shah (2015), Online services have been successful with introduction of “BookMyShow” for movie tickets and events, “IRCTC (Indian Railway Catering and Tourism Corporation)”, look up flights on “MakeMyTrip or Yatra”, and “Red Bus” and “Ola” and “Uber” for travelling with GPS connection, in addition, the Kirana store services are addressed by “Big Basket” and (“Zomato”, Food Panda”, “Swiggy” and “Ubereats” for mobile apps) to order food online and get home delivered. Communication has been materialised through “virtual world” enabled by WhatsApp, Skype and “Duo” while online education has created platforms through “Coursera”, “Udacity” and “edX”. Nilekani & Shah (2015) also discuss the digital gap between dreams and reality “... despite all the advances in technology—the dotcom revolution that India embraced so enthusiastically, the new business models that are springing up every day, the way India’s online footprint keeps growing in the fields such as pension, government subsidy or affordable food from a ration shop...” (Nilekani & Shah, 2015, p.xii). Here this gap is an opportunity to transform India into a new avenue of entrepreneurship to serve the deserved averting the heavy financial toll on the poor.

¹⁸ Refer to Chapter 2 Pg. 23-29 for detailed information on how and why the officers were selected. After selecting the officers, UIDAI and Nilekani received several applications and offers across professions to work with the project. The author writes that Nilekani described this project no less than a start Up.

Thus, Aadhaar was conceived to bring revolutionary changes that ‘one size fits all’ in the governance. The problems faced by rural Indians; example taken from Jharkhand where the tribal people do not have access to banking but travel at least 20 to 50 km to take their pension money from the banks. This drains their money and energy hitting their wage on that particular day. With the 12-digit number Aadhaar enabled him to take his pension from Bank-mitra or micro-ATM without much toil and trouble. The UIDAI has come with the “citizen -first” in the administration that eventually redefines “the relationship between the citizen and the state” (Nilekani & Shah, 2015, p.x). It seems to be a well-researched idea to introduce UIDAI in governance because the authors speak about the impact of software on day-to-day life of the people in the world. Reethika Khera (2013) quotes NIPFP reports that the use of Aadhaar covers the following: “the Public distribution System (PDS)”, “Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA, or simply NREGA)”, “School Education (including teacher salaries, Mid-day meals, textbooks and uniforms)”, fertilizer subsidy, ‘liquefied petroleum gas (LPG) subsidy’, ‘Indira Awaas Yojana (IAY)’, and ‘payments in other schemes (pensions, Janani Suraksha Yojana, accredited social health activists and the Integrated Child Development Services)’. It estimates that linking these programmes to Aadhaar will lead to a “saving of Rs 1 lakh crore over 10 years and that after accounting for the costs of integration with Aadhaar the internal rate of return of the project will be over 50%” (Mathew 2012).

The use of Aadhaar aimed at elimination of “ghost-beneficiaries”, “identity fraud”, “financial fraud” especially “money laundering” and preventing “the leakages” in goods and services in the implementation of the welfare schemes. Interestingly, Chatterjee (2008), opines that India as a developmental state has increasingly made its spatial and social margins penetrate through many governmental techniques and welfare schemes. Jacobsen (2012) quotes Corbridge and Harris on governance and global market that “through the liberalisation reforms of the 1990s, the Indian economy opened up to the global market, which led to a visible transformation both in internal governance and in the country’s relationship with the global marketplace”. This can further be understood from Chatterjee’s (2011) explanation of Indian market integration with global ones that “one of

the effects of the integration of the market has been the way in which increasing numbers of small-scale farmers and businesses, and people at the ‘margins’ of the state have been brought under the sway of capital” (p.14). This inclusion of margins of the state into the state’s formal economy and mechanisms of the market. The current regime’s ambitious technological ‘révolution’ in India is fuelled by a desire to expand and deepen further this reach.

As such “Aadhaar was created to guarantee only identity, not benefits or entitlements, yet the UIDAI team did push for one particular application—that is, to tie Aadhaar to the creation of bank accounts,” Raina explains. “It is envisaged that Aadhaar will be used in a variety of other ways to reduce criminal diversion of government subsidies, lessen the burden on taxpayers, and open up food and other services to the people who are entitled to receive them”¹⁹. Khanna, Tarun (2012) says that “you are denied almost everything if you can’t prove why you are”. It must be noted that the Aadhaar has become a “Killer Application”, as Usha Ramanathan calls it, in providing identity certificates to access the government benefits. This has been observed more after the Parliamentary general elections in 2014.

BJP in the UPA regime opposed the Aadhaar on the grounds of National security, but when BJP came in power in May 2014 with Modi as the Prime Minister Aadhaar was Modified and carried forward Aadhaar with few modifications. The Modi government even built a plan to expand Aadhaar to other services and to people for whom Aadhaar was not initially planned. The BJP government under the leadership of PM Modi proclaimed its belief in minimum government and maximum governance policy. As a part of inducting technology with governance and benefiting the poor Pradhanmantri Jan Dhan Yojna (PMJDY) was launched where bank accounts for the poor were opened using Aadhaar as identity proofs and KYC. Under Direct Benefit Transfer (DBT), Direct Benefit Transfer of LPG (DBTL) was introduced. Through this “consumers could link their Aadhaar number

¹⁹ In an interview with Anjali Raina (HBS AMP 174, 2008), executive director of the HBS India Research Center in Mumbai. Available at <https://hbswk.hbs.edu/item/indias-ambitious-national-identification-program> accessed on 28/01/2021.

to a bank account and the seventeen-digit LPG consumer number. They would pay the market price for the LPG cylinder and receive the subsidy directly in their bank account” observe Ayer (Ayer, 2017. p. 173). With the success of this programme the government decided to expand it further under as a part of Digital India initiative. It must be noted here that Silvia Masiero (2015) argues that not necessarily the JAM and Aadhaar based GPS tracking technology can prevent the lineages by tracking the PDS or other goods and services (including) and it can happen in the reverse way also. He makes this observation based on the experience in South India.

But several unaddressed questions were hanging around and in the Supreme court in the form of petitions. One of the few and crucial questions which had come up since the announcement of Aadhaar was related to the ‘right of privacy’ of individuals. The question was whether citizens are entitled to the right to privacy under the Indian Constitution. Looking at the sensitivity of the issue it was proposed to transfer the issue to a larger bench. This was opposed by Mukul Rohatgi Attorney General on the grounds that Aadhaar ensured effective implementation of welfare schemes like MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act), distribution of food, ration, and kerosene through the PDS system and grant of subsidies in the distribution of LPG. He also ensured the court that the union government will issue the Aadhaar card on a consensual basis. In order to provide a statutory cover, the BJP government introduced the “Targeted Delivery of Financial and other Subsidies, Benefits, and Services” bill 2016. The bill aimed at providing a “good governance, efficient, transparent, and targeted delivery of subsidies, benefits and services, the expenditure for which is incurred from consolidated Fund of India, to individuals residing in India through assigning unique identity number to such individuals and for matters connected therewith or incidental thereto” (Aiyer, 2017, p.182).

The bill was passed as the Aadhaar Act in 2016. With demonetization in November 2016 a boom in digital transactions and Aadhaar enabled account transactions took a rise. The government brought together Aadhaar registration, mobile users and network, and

payment gateways into the play. With all these three coming together the digital payment system was expanded throughout the country. Also, as part of the Finance bill, an amendment to Income Tax Act 1961 was passed which made it mandatory for Aadhaar for filing tax returns. By 2017 Aadhaar enrollments reached the number of 1, 150, 000, 000 making it the largest in the world. The author says while a statutory status has been granted to Aadhaar, the idea of unique identity still awaits the legitimacy of law. A law on privacy will help to achieve the uniqueness of personhood. Many scholars and organisations have expressed their displeasure over the clauses that neglect the privacy aspects of the Aadhaar act and possibility for surveillance with the help of Aadhaar technologies. Thus, the excessive dependency on technocratic governance resulted in the widening gap between the rich and poor, and educated and uneducated because of affordability and digital divide in the Indian society.

A study on people's trust in elections and polity was carried out by "Centre for Research into Elections and Social Trends" (CREST) in Britain also indicates the "legitimacy crisis" in its political system. "Levels of trust in government and confidence in the political system are lower than they were little more than a decade ago...the introduction of new political institutions since 1997, designed in part to restore people's trust and confidence, appears to have had little impact" (Catherine, John & Ben, 2004;22). The similar observation, "gaps have emerged between its values as expressed and its values as experienced. According to Dijkstra, Poelman and Rodríguez-Pose's paper *The Geography of EU Discontent* (2018), in 2004, 28% of the EU population over the age of 15 did not trust the EU; this had grown to 39% by 2018" (Painter, 2019, p.10). Friedrichs (1980) discussed the "legitimacy crisis" in America arguing that the incompatibility between societal aspirations and government's practices/policies. This 'legitimacy crisis' was created because of symptoms of declining "political efficacy" (Catherine et al, 2004) in the liberal democracies. As such, those states explore the ways and means to overcome the persisting crisis in their politics.

This crisis has been observed even in developing countries due to Neo-liberal policies. Naomi Klein (2007) in her book, *The Shock Doctrine: The Rise of Disaster Capitalism*, examines the tactics of the Neo-liberal market in addressing the “crisis” either internal or external. Milton Friedman’s free-market idea aims at privatisation of the public institution to overcome the crisis, chaos and even natural disasters. Such Friedman’s capitalism core tactical nostrum works as a “shock doctrine” (Klein, 2007) which means “economic shock therapy” is similar to that of shocks given to the body to cure illness. Many crisis ridden-economies were given “shock therapy” meaning that “only a crisis—actual or perceived—produces real change. When that crisis occurs...basic function: to develop alternatives to existing policies, to keep them alive and available until the politically impossible becomes politically inevitable” (Klein, 2007, p.6). Such ways and means of profiting from “catastrophic events, combined with the treatment of disasters as exciting market opportunities, disaster capitalism.” (Kleian, 2007, p.6). Thus, the “disaster capitalism” under the guise of neoliberal free-market has spread by the intervention in the internal affairs of countries such as Latin American, the Middle East, Afro-Asian Countries-Chile, Iraq, and East European countries. “It is a central plank in the American ideology that freedom and democracy can only be brought about across the globe if other nations and cultures are first occupied and dominated through brute technological superiority and then systematically destroyed, cleansed, and started afresh” (Williamson, 2009, p.108).

It was observed in the Neo-liberal globalisation that “for more than three decades, Friedman and his powerful followers had been perfecting this very strategy: waiting for a major crisis, then selling off pieces of the state to private players while citizens were still reeling from the shock, then quickly making the reforms permanent” (Klein, 2007, p.6). Thus, the reproduction of crises across the world is taking place due to the changing nature of capitalism. This aspect of the crisis can be examined from the experience of India and China which are two different political systems but adopt the similar governance patterns in following the Neo-liberal policies.

3.6. Neo-liberalism and the Crisis of legitimacy in India and China

“Neoliberalism is defined as a social, political, and economic regime that is based on a set of original ideas, a discourse with roots in intellectual and popular cultures and a set of policies and political measures that support free-market capitalism and global corporate actors” (Bonanno, 2017, p.ix) India like other liberal democracies such as USA and U.K, had to introduce biometric governance in welfare services because “late capitalism”²⁰ has created a crisis in the system. Thus, “in liberal capitalism, crises appear in the form of unresolved economic steering problems” (Habermas, 1992, p.24). Sanjeev Kumar (2020) better explains the looming crisis in the Indian sub-continent that “...post-colonial states begin to inherit the imported narrative of neoliberal economic reforms, causing a precariousness that can be designated in the words of Jurgen Habermas as a ‘legitimation crisis’, which occurs when people begin to lose confidence in the functional capacity of the political leadership and the mechanisms of policy formulation, execution and adjudication” (Kumar, 2020, p.2).

Haragopal diagnoses that “the crisis phase starting in 1977 only threatens to worsen the legitimacy crisis of the Indian State. He holds the brutal path of development adopted by the State responsible for the present crisis” (Singh, 1999, p.835). The jobless growth led development brew the seeds of crisis of legitimacy in Indian political economy because of the Neo-liberal policies such as “disinvestment”, “financing fiscal deficit”, “deregulation of capital markets” and “eliminating control of petrol price” under the umbrella of “economic reforms” since 1991 onwards.

This crisis has further ramifications for the “social integration” envisaged by the welfare agenda of developing countries like India. This phenomenon was predominant in India due to the changing role of the Indian state from ‘service provider’ to ‘service facilitator’ in Neo-liberal era. This resulted in the withdrawal/reduction of government’s

²⁰ Habermas (1992) introduces Ernest Mande’s “late capitalism” to “even in state-regulated capitalism, social developments involve “contradictions” or crises”. p.1.

investment in the entitlement programmes. Apparently, the Indian state was to suffer from a legitimacy crisis. Bhargava (2017): argues that the crisis of legitimacy in Indian democracy manifested itself, when people feel victimised by their elected political system, in the forms of popular protests such as “Anti-corruption movement” led by Anna Hazare. Parekh (2011) opines that the representative institutions have failed to command the trust of the bulk of the Indian electorate. “The fruits of growth, however, have not been equitably shared. The poor have borne the burden and paid the price of growth, but benefited only marginally” (Parekh, 2011, p.7). The Indian state resorted to the technocratic solution to address the problem of governing the welfare services. Thus, the biometric governance necessitated by the legitimization crisis of neo-liberal policies.

China, unlike India, as a totalitarian state devised and deployed its ideological monopoly to avert the legitimacy crisis ever since the “People’s Republic of China” foundation laid down by the Communist Party of China under Mao’s leadership. The post-Mao China had to deal with two legitimacy crises.

“The first crisis occurred in mid 1970s in the aftermath of cultural revolution and death of Mao. To salvage its crisis CCP shifted its legitimacy mode from Marxist ideology to economic socialism and leaders’ charismatic appeal to political and economic rationalization and legalization. This new legitimacy basis, ironically, led to second crisis in the late 1980s epitomized in Tiananmen Square Democracy movement. In saving its legitimacy, CCP has modified and shifted to economic nationalism, traditional Chinese political conservatism, and eudaemonism...” (Zhong, 2007, p.202).

The Chinese state was able to retain its legitimacy through oppressive means since the Tiananmen Square crackdown at the cost of criticism by international society. But, the third crisis has still been immanent in its polity ever since China opened its doors for globalisation. According to X.L. Ding, the internal struggle among the political elite about

economic liberalisation in new China gave rise to a crisis of legitimacy in China (Hood, 1996, p.130). Subsequently, the Chinese central government aimed at adopting “policy outcome approach” for “transformation, consolidation, and modernization” (Hood, 1996, p.132) of its governance in order to eradicate corruption and legitimacy of its economic reforms. Thus, the LPG (Liberalisation, Privatization and Globalization) reforms coupled with the rise of ICT brought the new tools of governance for a totalitarian China to regulate and control its people effectively.

The legitimacy crisis in liberal democratic India and totalitarian China must be understood in the context of growing Neo-liberal policies. In addressing the “great depression” of classical liberal economies, the Neo-liberalism emerged as an alternative by proposing for “rolling back of state”, “disappearance of public spaces” and “reversal of social controls” (Klein, Chahn, & Kleian, 2008) to pave the way for private players. The Neo-liberal agenda was furthered by transition of capitalism in overcoming the crisis in the following way:

“The breakup of family capitalism began, roughly, around the turn of the century, when American industry, having overextended itself, underwent a succession of crises. At this point, the bankers, with control of the money and credit market, stepped in and reorganized and took control of many countries lending enterprises. The great mergers at the turn of the century, typified by the formation of United States Steel, marked the emergence of ‘finance capitalism’ in this country” (Bell, 1988, p.42-43).

Thus, changes in capitalism from “industrial to finance” advanced the “Americanization of welfare”²¹ (Fisher, 2006) and to access the “closed economies” of the non-west, especially the Afro-Asian countries in the Neo-liberal era. Such the theoretical

²¹ Americanisation of welfare is defined as “the discourse constructs a false dichotomy between “active” (positive) and “passive” (negative) forms of welfare. Active welfare-citizens that desire to move from “welfare to work” are constructed against workless, passive welfare-citizens/dependents”. (Fisher, 2006, p.56).

foundations for Neo-liberal policies laid the down by Daniel Bell's "End of Ideology" and Fukuyama's "End of history" to export "American liberty" and "American governance" to the rest of the world through globalisation of the word economies. Globalization has developed the narrative that "good governance and democracy are not simply desirable but essential conditions for development in all societies" (Leftwich, 1993, p.605). Good governance is equated with "ideology of humanity" where "depoliticization" (Salter, 2012) of governance was normalised by the market forces in advancing the Neo-liberal agenda. Thus, "the good governance implies a state enjoying both legitimacy and authority, derived from a democratic mandate" (Leftwich, 1993, p.611) and such liberal democratic state is entitled and expected to adopt the global standards of governance that is determined by the World Bank. China being a totalitarian communist state was cautious and could allow only limited economic reforms as per Chinese interests. India, unlike China, had to accept the International Monetary Fund's (IMF) terms and conditions to draw loans and promote liberalisation of the economy in 1991.

In overcoming the legitimization crisis, the post-modern/colonial states have started resorting to digital governance and technological tools of Neo-liberal market. Bloom and Sancino (2019) attributes the rise of "techno-populism"²² to the crisis of socio-economic uncertainty. "New 'smart' technologies such as AI, robotics, social media and automation are threatening to fundamentally disrupt our politics, economy and society" (Bloom and Sancino, 2019, p.5). Because those technologies are expected to influence the interaction between the state and people. "Together, infotech and biotech will create unprecedented upheavals in human society, eroding human agency and, possibly, subverting human desires. Under such conditions, liberal democracy and free-market economics might become obsolete". (Harari, 2018: The Atlanta web magazine). Thus, the high-tech innovations are leading to "Techno-Politics that refers to the techniques and technologies

²² Techno-populism refers to "the growing strategic use of populism to reinforce an increasingly technologically sophisticated form of corporate rule both economically and politically" (Bloom, P., & Sancino, A., 2019: pp4-5).

that shape how individuals and groups seek to take power and enact change within and against a dominant social order” (Bloom and Sancino, 2019, p.16).

3.7. The Rise of Surveillance Governance

The French term, “surveillance can be deconstructed in its etymological parts ‘sur’ (from above), and ‘veillance’ (to watch)” (Galič et al, 2017, p.10). However, Surveillance is not new to India. It has been practised by Monarchies in the ancient times. Ancient Kautilya suggested the King to keep the vigilance against external and internal enemies. Even the British India officers employed the techniques of censor by surveillance against the print and electronic media during the independence movement. With the rise of IT (Information Technology), the forms of surveillance have undergone significant changes in the post-colonial states. IT Act 2008 and cyber regulations, Aadhaar Act, 2016 are also accused of serving the surveillance purpose.

The stock of surveillance technologies is a new arsenal for governance mechanisms envisioned by the modern states. It is observed that “a range of digital surveillance tools are available to and developed by states. Many of these tools can be purchased on the private surveillance market – an industry valued at US\$5 billion in 2011 (Coalition Against Unlawful Surveillance Exports 2015) – whereas the most advanced intelligence agencies invest in in-house technology development” (Nyst, 2018, p.13). The surveillance technologies are doubled swords in the governance. The state can ensure the safety and security of its people and also watch their activities, especially the dissenting voices. The banality of surveillance is a “double-edged sword. As we have shown, not only has CCTV become an indispensable part of the United Kingdom's crime-control arrangements, it has also become unnoticed and unremarkable in ways that are integral to its capacity to generate a sense of security” (Goold et al, 2013, p.987). Gradually, surveillance is becoming a part of governance. This is termed as “surveillance culture” (Monahan, 2011) in the administration and society. This surveillance is also embedded with the power relations. “After all, surveillance is about exercises of power and the performance of power

relationships, most of which are more evident when status and other hierarchies are pronounced. Some of the originary and most influential works in the field started with a critique of institutional power or of the activities of institutional actors” (Monahan, 2011, p.495). This idea of using surveillance technologies in governance is justified on the grounds of following the global standards of governance in ensuring the safety and security of the people in the country.

Along with global standards of governance the issue of protecting rights, privacy, data security is also of great importance in liberal democracies such as the UK, USA, and Germany in the West. After World War 1 parliamentarians from twelve-member states of the council of Europe gathered and prepared a draft of Human Rights and was enforced by the European court. Article 8 ensures that every individual has a “right to one’s private life and family life, his home, his correspondence” (Challa, 2017, p.19). India was also a part of the International covenant on civil and political rights and the international covenant of economic, social and cultural rights. It had accepted and ensured that law framed in the nation would not violate the individual privacy and rights. Dann (2005) argues that the chances of individual development are proportional to his/her ability to act and participate in the free democratic communities. It can be deciphered from the western experience that in 1998 the Data Protection Act was enacted in the European Union in order to protect fundamental rights and freedom, particularly privacy. The Act replaced the Data protection act 1984 and Files act 1987 to ensure the protection of Data files of individuals in both manual and computerised format. The British Parliament in 2006 passed an Act called Identity Card Act which was responsible for registering individuals and issuing cards used for identifying individuals. In 2010 the same act was scrapped by the conservative/ liberal democratic coalition and passed a new act called Identity Documents Act 2010 and validated all the cards issued by Identity Card Act citing the reason that new act would save several million pounds (Challa, 2017, p.19-21).

On the contrary of violation of rights, Nilekani & Shah (2015) argues that technology can strengthen democracy. The lifeline of Indian democracy, electoral system.

India being the biggest democracy in the world, it needs to attune the democratic practices to have a stable and sustainable polity in the country. The long pending electoral reforms need the total cleanup of the election process in India. To bring transparency and efficiency in the electoral system, the Election Commission of India (ECI) decided to give up the ballot (paper voting) system in favour of electronic voting...subsequently introduced the Electronic Voting Machines (EVMs). This modernization of the voting system has been adopted to eliminate the electoral frauds such as rigging, booth capturing and errors in counting. While the financial and operational benefits of EVMs are undeniable, they do come with their own set of concerns, particularly when it comes to data security and tampering. To overcome these issues, “the ECI has introduced a new system, the Voter Verified Paper Audit Trail (VVPAT), which gives every voter a paper receipt...to check for electoral fraud as well as to audit to the results from EVMs” (Nilekani & Shah, 2015, p.179). Thus, Nilekani aims at linking voter ID with Aadhaar number to strengthen Indian democracy for cross-checking and weeding out the duplicates in the electoral rolls.

David Lyn (2019) is of the view that data plays a significant role in state’s day-to-day governance and argues that:

“state activities cannot be considered without noting the role of data flows between private corporations and government agencies, and of the part played by new technologies themselves that are often permitted a leading role, especially as artificial intelligence (AI) is promoted...externally, surveillance relates to geopolitical and military purposes or commercial advantage. Internally, surveillance might be pursued for the pacification and administration of the population. This includes the collection and use of data for everything from electoral rolls to health care and welfare provision” (Lyn, 2019, p.21).

This view is significant even in case of India also. The recent challenge brought possibility of hacking the data into lime-light. The TRAI chairman, RS Sharma’s

challenge to hackers in 2018 exposed the vulnerabilities of data security provided for Aadhaar. As it was in the public domain was:

*“It all began on Saturday afternoon, when Sharma tweeted his Aadhaar number and challenged people to dig up harmful information about him. My Aadhaar number is 76***** **40. Now I give this challenge to you: Show me one concrete example where you can do any harm to me!” he tweeted. Sharma, who was earlier with the UIDAI and was closely associated with the setting up of Aadhaar, was reacting to a dare from Twitter user @kingslyj: Publish your Aadhaar details to the public if you have so much trust in this 13ft wall secured system.” The banter turned serious after some hackers, including Elliot Alderson (@fs0c131y), who claims to be a French security expert, put out personal information related to Sharma, including his mobile number, PAN number, email ID and a photograph claimed to have been accessed based on the Aadhaar number. “I stop here, I hope you will understand why make your #Aadhaar number public is not a good idea,” said @fs0c131y. (The Hindu Businessline, 29th July, 2018).*

However, the UIDAI came to address this debate on Twitter saying that it was a malicious attempt to defame UIDAI, the world’s largest data depository and its capability of protecting its citizens’ data from hacking and all sorts of cyber-attacks. Some argued that it could erode the trust of people in UIDAI if challenges like TRAI chairman does keeping his public domain. Some also opined on twitter, the social media that it is safe not to disclose one’s own Aadhaar number in the public domains.

In addition, a Vodafone sales executive forged around 6000 fingerprints through Aadhaar biometrics to boost his sim cards in Peddapalli district of Telangana state in 2018. It is said that the culprit was able to breach into the Aadhaar database through Telangana

state government's registration and stamps department (Times of India, 27/06/2018). This act also exposed the vulnerability of data safety and security of the Aadhaar database in India.

Apart from the external threats to Aadhaar database, Duggal (2016) analyses the act and its disclosure norms in India that in the public domain it is perceived that information collected under Aadhaar would be safe and cannot be shared with anyone without the permission of the individual. However, this is not true. Section 33 empowers the authority to share the identity information and authentication records to be disclosed under two broad conditions or circumstances. These are: when the disclosure can take place pursuant to the orders made by the court of competent jurisdiction. Second, when it is made in the interests of national security. According to section 33(1) of the Aadhaar Act, 2016 nothing contained in the other provisions of the act are applicable for the disclosure of the information including identity information and authentication records (132). Section 33(1) mentions that provisions provided in section 28(2) which provides for responsibility to UIDAI maintain the confidentiality of identity information and authentication of records, 28(5) ensures UIDAI that there officers will maintain the confidentiality of Central identities Data Repository, 29(2) stipulates that the identity information other than core biometric information collected or created under Aadhaar Act, 2016 may be shared only in accordance with the provisions of the Act and the way it is specified by regulations. will not be applicable to section 33(1).

Under section 33(1) of the Aadhaar act, 2016, the court cannot pass an order relating to the disclosure of information while listening to the UIDAI (133). It is only after UIDAI is heard that the court can pass an order for the disclosure of the information. Another pertinent question related to who all can apply for the disclosure of information. But the option to be heard is not available for the individual whose information is disclosed.

Therefore, the provision to UIDAI and not the individual is in “violation of principles of natural justice, good conscience, and equality”²³ (UIDAI website).

The Aadhaar enabled surveillance has created a gotcha “Big Brother watching” (Orwell, 2014) in Indian state. The Big brother watching people in the Orwellian state was for “enforcing not only complete obedience to the will of the State, but complete uniformity of opinion on all subjects, now existed for the first time” (Orwell, 2014, p.97). The sinister “big brother” is a potential threat to values such as individual freedom of speech and creates a “dystopia” in India. Because, “surveillance has a psychologically ‘chilling effect’ in suppressing individual actions through intimidation and feelings of powerlessness, above and beyond the objective facts of the surveillance itself” (Gleason, Goldsmith, & Nussbaum, (Eds.), 2010, p.133). For Michel Foucault, surveillance governance is a technique of enforcing disciplinary power. “When everybody can potentially be under surveillance, people will internalise control, morals and values—discipline is thus a type of power, a strategy and a kind of technology” (Galič et al, 2017, p.16). Disciplining technique by surveillance technologies aims at regulating and retaining the power by creating in the society. “Thus, discipline produces subjected and practised bodies, ‘docile’ bodies. Discipline increases the forces of the body (in economic terms of utility) and diminishes these same forces (in political terms of obedience)” (Foucault, 2012, p.138).

In addition, the Indian state is said to have been using surveillance tools such as “DRDO Netra”, “LIM (Lawful Intercept And Monitoring)”, “NCCC (National Cyber Coordination Centre)”, NATGRID (National Intelligence Grid), “TERM (Telecom Enforcement Resource and Monitoring Project)” and “Central Monitoring System Project”. But these surveillance tools have certain limitations and often justified by the legitimate state agencies such as IB (Intelligence Bureau) that they use those tools for (both internal and external) security purposes and never focused on “targeted surveillance against

²³ <https://uidai.gov.in/about-uidai/right-to-information.html>

the individuals of political interests”²⁴. The EPW Engage’s “reading list of India’s surveillance laws” ranging from The Telegraph Act, 1885 to IT Act amendment in 2018, points out that “Even before the internet had arrived, the Indian government was intercepting communications under colonial era laws that had been retained post-independence” (EPW Engage, 2019, para 2).

Unlike India, China as a totalitarian system uses Artificial Intelligence in monitoring the masses. “On the darker side of China’s AI ambitions are efforts to harness AI for public security. The Chinese government has not been shy about experimenting with AI for authoritarian ends. This is starkly evident in Xinjiang province, where the government’s Strike Hard Campaign is turning Xinjiang into a testing ground for the use of innovative technologies for social control” (Shen, 2020, p.144).

Similarly, Qiang (2019) makes an observation about promises and prospects of technologies. He explains the irony of rising technologies in everyday governance that:

“Yet as the technologies that once promised to enable a free flow of information have spread, authorities have intensified their efforts to bend these systems to their own purposes. The Chinese government has set up a series of mechanisms aimed at asserting its dominance in cyberspace. It has also increasingly combined an extensive physical infrastructure of surveillance and coercion with cutting-edge digital technologies” (Qiang, 2019, para.3).

The above passage shows how the government of China is making inroads directly into surveillance governance in the country. Most of the surveillance attempts by the Chinese government take place with legal backing. In the case of India, the mass surveillance is not lawful except for national security and law and order under special circumstances. But the indirect method of surveillance with the help of Aadhaar data and

²⁴ Some news reports carried by Indian News Papers such as The Hindu in 2013, The Diplomat in 2013 and Hindustan Times in 2014.

the proposed DNA data bank, argues Ramanathan (2019). Further, this has been stoked by the free flow of data and rise of internet technologies.

3.7.1. Big Data in Surveillance Capitalism

The big tech companies such as Google and Facebook have propelled history in a new direction with advances in communication technologies. “Technology makes possible the limitless accumulation of wealth, and thus the satisfaction of an ever-expanding set of human desires. This process guarantees an increasing homogenization of all human societies, regardless of their historical origins or cultural inheritances” (Fukuyama, 1992, p.xiv). Interestingly, the rise of new capitalism questions the predilections of Fukuyama’s ‘end of history’ debate that “there is no end of history; each generation must assert its will and imagination as new threats require us to retry the case in every age” (Zuboff, 2019, p.10). It is because one-dimensional understanding of technology made Fukuyama to proclaim the pro-market liberalist success over the rest of the world. In contrast, the historian of technology, Melvin Kranzberg says that “technology is neither good nor bad; nor is neutral...technology’s interaction with the social ecology and subsequent human consequences that go far beyond the immediate purposes of technological devices and practices themselves” (Ficker, 2014, p.52). Once again notion of “value free technology” and Fukuyama’s sanctity of liberal democracy was questioned by Turner:

“In fact, the progress of western capitalist societies towards Fukuyama’s ‘end of history’ often appeared extremely unlikely, as the same technological change and growth which helped stimulate changing political and cultural attitudes also produced, from the 19th century onwards, enormous dislocations. These dislocations drove the development of both Marxism and Fascism, which radically rejected different elements of Fukuyama’s package of modernity” (Turner, 2002, p.37).

The above view infers us that the technology driven governance empowers the state more than people in any country irrespective of the nature of political economy, either

liberal or authoritarian. Even the totalitarian state like China, since mid-1980s, started moving towards technocratic leadership “dominated by party technocrats with little revolutionary experience, Shanghai leadership reflects the shift to a market-oriented reform and opening-up and a more pluralistic form of socioeconomic development” (Chen, 1997, p.i). The “information civilization” (Zuboff, 2019), enabled by internet technologies, aims to “automate us” (John Naughton, 2019). The lofty goal of American political scientists, to achieve ‘end of ideology’ and ‘end of history’ by internet technologies, seems to be uncertain because “some contemporary advocates of technological development suggest that there will be some changes but existing ideologies and systems will continue” (Chen, 1997, p.3). But the advent of internet /disruptive technologies has posed a threat to “Industrial capitalism” and gave rise to “Surveillance capitalism” (Zuboff, 2019). This has pushed the digital world into the domain of commercialisation of human behaviour in the form of big data that:

“Surveillance capitalism unilaterally claims human experience as free raw material for translation into behavioral data. Although some of these data are applied to product or service improvement, the rest are declared as a proprietary behavioral surplus, fed into advanced manufacturing processes known as ‘machine intelligence’, and fabricated into prediction products that anticipate what you will do now, soon, and later.” (Zuboff, 2019, p.14).

The commodification of human experience, human behaviour is quantified and analysed with the help of digital algorithms by internet MNCs such as Google, Facebook, other Apps-social and gaming. The Neo-liberal market has invented the new language of political economy such as “smart-cities”, “smart-houses” and “smart-governance” in the era of digital governing life. Such digitization of every aspect of human life has re-defined even ‘market-customer’ relations. Moreover, there is no exchange value for goods and services rendered by surveillance capitalism. “They do not establish constructive producer-consumer reciprocities. Instead, they are the ‘hooks’ that lure users into their extractive operations in which our personal experiences are scraped and packaged as the means to others’ ends.” (Zuboff, 2019, p.17). The new consumerism of online content has trivialised

the “use value” of the products in the digital market. “Surveillance capitalism” thrives on micro-level monitoring of the internet browsing by individuals for big data analysis. “Each time you click on a link, or even hover your mouse over one, your behaviour is being tracked and analysed to understand your preferences and needs and being sold to companies to enable “targeted advertising...Mistargeting is not always accidental but predatory lending” thrives on it” (Kkera, 2019). There were recurring cases of school going students committing suicides as part of “PUBG games in the year of 2020 in India. This was due to internet addiction where data is becoming toxic” (Khera, 2019).

Thus, “behavioural surplus” (Zuboff, 2019) does not satisfy the urges of surveillance capitalism but further the market and state agencies made efforts to access the biological information of the individuals on the pretext of issuing biometric ID cards -Social Security Number cards in USA, Biometric ID cards in UK and Aadhaar card in India in order to avert the threats to national security. The biometric ID cards have influenced governance at large scale. The idea of governance has undergone a significant change with the introduction of “biometric authentication” in the welfare administration across the world. This new form of governance is called “biometric governance” which is efficient, transparent and effective in administration. Consequently, the value of human beings is reduced to numbers and quantified their identity to curb the potential misuse of state’s welfare in the liberal democracies. It amounts to say that the liberal states, like totalitarian ones, are violating the “possessive individualism”²⁵ (Macpherson, 1962) where the individual is the sovereign owner of his/her body. Thus, the sovereign right over one’s own body was surrendered by the citizens of democracies the way citizens of totalitarian regimes do. Even Hayek also warned the need for “not merely nineteenth- and eighteenth-century liberalism, but the basic individualism inherited by us from Erasmus and Montaigne, from Cicero and Tacitus, Pericles and Thucydides is progressively relinquished” (Hayek, 2006, p.14).

²⁵ C.B. Macpherson’s “Possessive individualism is a conception of the individual as essentially the proprietor of his own person or capacities, owing nothing to society for them...” (Taylor L, 1965: 240).

The civil laws such as Aadhaar Act, 2016 and privacy right guaranteed under Article 21 of Indian constitution cannot safeguard the individual rights of liberty and equality but impede the socio-economic growth of the people. The technocratic-biometric governance on the account of “low levels of tech-digital and legal literacy combined with pre-existing social inequalities which directly bear upon power relations between us (as citizens/consumers) and them (government/corporations)” (Khera, 2019). It is because “we are not surveillance capitalism’s ‘customers’...but sources of surveillance capitalism’s crucial surplus: the objects of a technologically advanced and increasingly inescapable raw-material-extraction operation. Surveillance capitalism’s actual customers are the enterprises that trade in its markets for future behaviour” (Zuboff, 2019, p.17). Thus, the logic of liberal market, where customers are served with dignity and honour, does not operate in surveillance capitalism. It is feared that the advent of biometric governance in the digital networks may lead to “digital kleptocracy” which is a “means by which rich tech companies mine poor people’s data, in fact, steal; in most cases the person is unaware of their data being harvested and used for profit” (Khera, 2019). It must be noted that the birth of biometric governance is rooted in the liberal democratic state’s “distrust” in their citizens which is not different from a totalitarian state like China who suspects and engages in the continuous surveillance on its citizens. Thus, the concept of efficient governance, conceived under the pretext of good governance or smart governance through biometric governance, failed to imagine an “ethical governance”.

Ilana Gershon (2011) argues that Neo-liberal agency’s goal is to “transforming liberalism’s possessive individualism into corporate individualism” in the globalisation process. As a response to such “borderless flow of data”, China proposed “internet sovereignty and respect for all countries cyberspace” (Goldkorn, 2015). It goes without saying that Chinese restrictions on foreign direct investment in Chinese internet company and Indian demand for “data localization/data residency” was nothing but Asian perspective of “surveillance capitalism”. Chinese internet being an “unshared destiny” (Goldkorn, 2015) doesn’t stop aspiring to become “super power in cyberspace”. However, the rise of internet globalisation has reduced the distance between the two countries to “two

clicks away”. This has raised the concerns for privacy and data safety of the people. Moreover, China has been a bio-political state by governing its population on the lines of race, gender and class in the Neo-liberal globalisation (Zhang, 2014, p.176). China, along with India, emerged as “Asian Biotech power” (Wahlberg, 2012) to capitalise the ongoing nation-building programme in the country.

3.7.2. DNA profiling, an attempt for the “Tyranny of Technology?”

The China’s Ministry of Public Security began, in 2003, collecting DNA samples of people to establish a “national Y-Star DNA database”.

“The Chinese Government is building the world’s largest police-run DNA database in close cooperation with key industry partners across the globe. Yet, unlike the managers of other forensic databases, Chinese authorities are deliberately enrolling tens of millions of people who have no history of serious criminal activity. Those individuals (including preschool-age children) have no control over how their samples are collected, stored and used. Nor do they have a clear understanding of the potential implications of DNA collection for them and their extended families” (Dirks & Leibold, 2020, p.03).

The collection and storage of DNA samples of people belonging to Tibet and Xinjiang regions is to track and trace the cultural background of political dissents, cultural and ethnic minorities. The creation of DNA dragnets comprising “multimodal biometric profiles of individual citizens” (Dirks & Leibold, 2020) for governing the criminal investigations is an attempt for genomic surveillance by the biometric governance. Such attempts for genomic surveillance violate the privacy and other human rights ratified at international conventions. The “Chinese dream” professed by Xi Jinping is to inculcate Chinese culture among the religious and ethnic minorities. In this regard, Xi urged intellectuals to “provide guidance to the people so that they can establish and uphold correct views about history, the nation and culture” (Lam, 2019, p.55). So, the Chinese government can use smart

technologies such as ICT (Information Communication Technologies), CCTVs, biometrics, genetic information and AI (Artificial Intelligence) and other digital algorithms for identification of the targeted groups and effective surveillance. This surveillance governance amounts to Foucault's bio-power that refers to "regulatory power of states over populations (including practices that produce subpopulations such as racial groups) and the 'capillary' and 'disciplinary power' that produces 'docile bodies' in the everyday life of institutions" (Farquhar and Zhang, 2005, p.304). Thus, the Chinese state attempts to gain maximum control over the fertility, birth, health, sexuality and death of its citizens. "Foucault states, bio-politics is addressed to the securing of an optimal biological stability in populations to compensate for variations within this general population and its aleatory field . . . to optimize a state of life" (Foucault, 2003, p.246 quoted in Salter & Waldby, 2011, p.287). Roth and Wang (2019) argue that the Chinese government introduced surveillance technologies such as facial recognition, QR scan codes, biometric data and DNA connected to Integrated Joint Operations Platform (IJOP) aimed at reverse engineering of the people from Xinjiang and Tibet provinces.

Similarly, the Human Genome Project in India has been perceived as the beginning of the era of "Homo economicus" which means "Human genetic material is increasingly becoming an object of commerce" (Singh, 2008, p.68). Despite the ethical concerns about the gene editing, privacy and legal issues some scholars like Ramesh Maheswari (2014) argues that the extension of the genome project would identify and nurture "the geniuses" on the lines of the Chinese model of "breed of genius". But he also expresses his concerns about "the inclusion of the digitized data in an Aadhar because man and mouse genomes are identical" (Maheswari, 2014, p.800). So, this would lead to further complications if governance is run on the genome surveillance provided non-state actors/ anti-social elements misuse the UIDAI data. Hickok (2012) gives the account of the Indian government's efforts to introduce a DNA profiling bill for effective criminal investigations and the need for the establishment of DNA data banks in the country since 2003. Verma & Goswami (2014) caution us that DNA based evidence should not be treated as a "truth machine" because of issues like "DNA theft" and possibility of misleading the cases and

despite use of DNA samples has been immensely useful in civil and criminal investigations. Mehta (2015) raises the concerns of surveillance with the implementation of DNA profiling bill 2015. However, India has introduced and passed a DNA profiling Bill, 2019 by Lok Sabha in the Parliament with the aim of establishing the identity of certain persons. Puneeth & Dhillon (2021) points out the centralising tendencies in the DNA Regulatory Board and the clause 10 of the proposed bill, that delegates the functions of the board to one member, can be detrimental to the spirit of DNA profiling itself.

The passage of the DNA profiling bill 2019, in Lok Sabha, without much parliamentary scrutiny resembles the Chinese Genome/genetic surveillance laws/regulations in the governance. These laws will enable the use of FRT (Facial Recognition Technologies) in identifying the ‘suspects’ or culprits acting against the law and order and national security. The language of national security and criminal investigations is the same for both totalitarian and democratic states. Here, it must be noted that the liberal democratic states also violate its promise of liberty by intruding into “biological information” that go against the “possessive individualism” which eventually exacerbates the privacy of the individuals. This not only clearly exposes the false notion of existence of free individuals in liberal democracies but also establishes the fact that liberal democratic states are also becoming “bio-political/bio-power states” on par with totalitarian ones. The reasons for such change in liberal democracies like India are rooted in the Neo-liberal policies. These policies aimed at strengthening market access by eroding the people’s faith in the government institutions known as the “crisis of legitimacy” and developing a narrative of ‘inefficient, ineffective and corrupt government system’ in third world countries/developing countries like India. Thus, the aim of efficient governance in the developing countries was prioritised over ethical governance modelling on corporate governance. It was also evident in the developing countries’ attempt to adopt the standards of global governance.

Since the biometric governance has given the states access to biological information of the individuals, the surveillance technologies disdained privacy. The modern states

irrespective of ideologies are deploying surveillance softwares. These “Spyware programs can read, write, and delete files, install or uninstall other software, change the default homepage, and even format your hard drive. The information obtained by a spyware program can be used by the Spyware author for marketing purposes or can be sold to other companies for a profit” (Sipes, 2004, p.72). Thus, the snooping softwares materialised “Jeremy Bentham’s panopticon device”²⁶. Malik & Basu (2017) term the Aadhaar project as a “dodgy mass surveillance project” covering the range of events such as birth, death, health, school admissions, booking tickets for movies and travelling and banking services in India. In addition to Aadhaar, the allegedly direct use of spyware called Pegasus by the Indian government raises the question of data protection and surveillance in the country. “The desire of the government of the day to control the narrative and block 'offending' points of view and the use of snoopware like Pegasus has given rise to fears that we may indeed be living out an Orwellian nightmare” (Kulkarni, 2019, p.32). The opposition parties have raised it in the parliament but “the Government of India’s response in Parliament on its use of Pegasus spyware was evasive, and its defence rested entirely on national security” (EPW Editorial, 2019, p.8).

China has tightened its grip in the form of “digital authoritarianism-also known as tech-enabled authoritarianism...is the use of technology by authoritarian governments not only to control, but also to shape, the behaviour of its citizens via surveillance, repression, manipulation, censorship, and the provision of services in order to retain and expand political control” (Khalil, 2020, p.6). In disciplining the people of China, techniques of governmentality, “include state disinformation campaigns aimed at manipulating citizens, while at the same time punishing and censoring dissenting speech on internet platforms and elsewhere under ‘fake news’ laws. China’s Cyber Superpower Strategy” (Khalil, 2020, p.6), that strengthened by “the primary function of Central Television (CCTV), is defined as propagating the Party line” (Zhang, 2014, 168). This phenomenon of “digital authoritarianism” are not only for propaganda but also China, alike any surveillance

²⁶ Bentham’s “panopticon is not a prison. It is a general principle of consortium, the polyvalent apparatus of surveillance, the universal optical machine of human groupings” (Miller & Miller, 1987:3).

capitalist country, engages in the mass surveillance of its Chinese internet users. “In 2016 Chinese search engine Baidu, often referred to as the Google of China, announced that its ‘Big Data Lab’ uses location data from its 600 million users to track and predict the dynamics of the Chinese economy” (Zuboff, 2019, p.234). Chinese attempts to create “‘social credit system’ (*shehui xinyong tixi*) aiming at rating the trustworthiness of individuals and companies” (Loubere & Brehm, 2018, pp.142-143). In the process of “engineering such trustworthy society” (Loubere & Brehm, 2018), the achievements of Baidu include “collection of speeches of all the dialects” in China, “mind control capabilities”, from “de-patterning” and “rewiring an individual to shaping an entire country’s attitudes and actions” (Zuboff, 2019, p.249). This was termed as “digital dictatorship” by *The Economist* in 2016. Thus, in reality, China emerged to be a functioning “panopticon-bio-political state” which means state exercising political “power over life” (Senellart, 2009, p.369) by surveillance of every aspect of life. This was operated at a massive level by disciplining and managing the population of the country. As such, in bio-political state, “one of the greatest innovations in the techniques of power in the eighteenth century was the emergence of ‘population’ as an economic and political problem: population as wealth, population as manpower or labour capacity, population balanced between its own growth and the resources it commanded” (Foucault, 1977, p.25).

India as a developmental state made inroads into “spatial and social margins through governmental techniques and welfare services...further opening of Indian economy to global market has led to a visible transformation both in internal governance and in the country’s relationship with the global marketplace” (Jacobsen, 2012, p.461). India being a liberal democratic country, unlike China, also invents a “bio-political state” with the launch of UIDAI project, also known as Aadhaar project, as “...the collection of sensitive biometric and demographic data would lead to unnecessary profiling and the creation of a surveillance state, which would, in turn, violate the fundamental right to privacy” (Khera, 2019, p.15). This is due to Neo-liberal policies driven governance in India. Usha Ramanathan (2010) argues that the proposed National Intelligence Grid (NATGRID) by the Home Ministry will have the 21 sets of databases comprising the biometrics to achieve quick, seamless and secure access to desired information for intelligence and enforcement

agencies. Aadhaar project was envisaged to build a New India which is technocratic and automatic in operations of governance. Taking cue from “digital money” (David Wom, 2011), Nilekani & Shah (2015) identify the technology as the only “major unifying and effective tool” in governing the highly diversified new India. Aadhaar being a tool of biometric identity and governance, “where a postcolonial country, India is directing the course of biometric technological innovation for the purpose of both welfare and security governance” (Jacobsen, 2012, p.468) But, Sunil Abraham (2019) criticises the legislation of Aadhaar Act, 2016, mockingly that “we are going to collect data to non-consensually identify all Indians and we are going to store it in a central repository. Come and get it!” (Khera, 2019, p.111). In Aadhaar enabled biometric governance, there is always a problem of “functionality creep”, where data collected serves a purpose other than its original intent. Khera (2019) argues that Aadhaar was never meant for welfare but opens the doors for surveillance by the government and mining the commercial data. In this mission mode, the project for UID Number for citizens “helps the state and the market to access an individual in unprecedented manner” (Sarkar, 2016, pp.2-3).

Foucault’s “governmentality is understood as a form of activity aiming to shape, guide or affect the conduct of some person or persons” (Murray, 2002, p.275). The rise of “surveillance capitalism” (Zuboff, 2019) superseding “Industrial capitalism” (Bell, 1988) and “Disaster capitalism” (Naomi, 2010) aim at the “behavioural future markets” (Zuboff, 2019) paves the way for “Neo-liberal governmentality that takes us away from a purely economic understanding of what neoliberalism is in that it is not just about encouraging free markets, but is a particular way of constructing social life through the introduction of political economy into our social practices” (Joseph, 2010; 31). Thus the “biometric governance” qualifies India’s emergence as a bio-politics, for Foucault, “persons are both formed and forming, created and create” (Downing, 2008 cited in Liesen & Walsh, 2012, p.6). The disruptive technologies, precisely “the advent of biometric recognition systems coincided with advancements in other closely related areas such as artificial intelligence (AI), pattern recognition, and image processing in the 1960s, which helped analysis and recognition of biometric patterns” (Jain & Ross, 2015, p.2). Zureik and Hindle (2004) argue

that ‘in the name of good governance, accountability, transparency and participation, the state is trying to exercise its control in a robust way with the assistance of technology. The purpose of storing and retaining an individual’s information could be prevention and detection of crime but this also directly allows the state to intrude in a person’s private life and respect.

The surveillance issue on the eve of rising surveillance capitalism is not confined to third world countries but also a successful democracy USA, like China, also does biometric classification of its people based on their ethnicity or race or nationality is found in USA’s governance. The US Military approaches the populations that it confronts according to a conceptual grid of “Blue” “Grey” and “Red” people (Bell, 2013, p.466). Here in such a classification, “Blue” is considered to be friendly and “Red” is assumed to be a hostile insurgent while “Grey” is considered to be uncertain. Given that fingerprint matching is not error-free, such policing may further exacerbate fundamental rights violations. Currah and Tara (2011) gives us an account of how the surveillance of the physical body of individuals, in the name of national security, takes place at Airports by US Transport Security Authorities which is nothing but intruding into the privacy of the people. Thus, these liberal democracies are turning into surveillance states by constituting “bio-political technologies of rule” (Rose 1999) in the “socio-technical nature” (Silvia & Shakthi, 2020) of the population. This reminds Hayek’s caution of the tremblings in the western democracy that “we have progressively abandoned that freedom in economic affairs without which personal and political freedom has never existed in the past” (Hayek, 2006, p.13).

The technologies of “biometric governance” are invented as a tool of governmentality to produce “active citizens” who are responsible and “self-caring” in the world of digital networks. This process of reorientation of liberal states, from “welfare to work” (Fisher, 2006) by techniques of Neo-liberal governmentality in the post-welfare regimes, indicates the birth of surveillance-bio-political states in liberal democracies that resemble China’s “digital totalitarian state” (*The Economist*, 2016). Thus, the idea of

‘legitimate state’ is redefined through “legitimizing the bodies” (Silvia & Shakthi, 2020). Now the bio-politics in liberal democracies such USA and India, like China, also aim at creating “the resilient subjects”. The “resilient subjects are subjects that have accepted the imperative not to resist or secure themselves from the difficulties they are faced with but instead adapt their enabling conditions via the embrace of neoliberalism” (Reid and Samaddar, 2013, p.5).

As such the bio-politics coupled with surveillance technologies laid down the foundation for “the tyranny of technology” (Harrari, 2018) where the voice of the dissents and civil society is under surveillance with the help of high-tech software like “Pegasus” spyware. Such a trend in the governance of democratic polities like India, USA, U.K resembles the Chinese model of “Mass surveillance”. Such “China model, in this case, is often in a shorthand way described as a combination of economic freedom and political oppression” (Bhai & Liu, 2020, p.67). Kirsty Hughes emphasises that democratic states need not do surveillance against its citizens because “when democracies do this, they undermine their own ethos and institutions” (EPW Engage, 2019, p.2).

3.8. Conclusion

The existing literature and evident practices debated above suggest the following conclusions:

The quest for an accurate and efficient system of governance has led to the technological innovations such as “biometrics” in identification of individuals from “criminal investigations to national security to welfare services”.

The Neo-liberal policies such as “rolling back the state” from the welfare system and “welfare to work” and the “quest for economic power” created the “legitimacy crisis” in India and China respectively. In overcoming such a crisis, India being liberal democracy opted for technocratic solutions such as Aadhaar authentication without prior legal sanction and data protection measures. Subsequently its indiscriminate use of Aadhaar for

elimination of ghost beneficiaries and corruption in welfare governance gave rise to potential mass surveillance. This technique resembles “the social credit system” practised in autocratic governance of China. Both these practices have scant regard for privacy concerns. Moreover, they claim that people are voluntarily participating in these projects. Thus, the convergence of governing patterns in India and China with emergence of “biometric authentication” and “social credit system” establish the panopticon bio-politics.

The recent controversy of Pegasus qualifies India as a surveillance state on par with China. The emergence of “surveillance capitalism” with big tech companies like Google, Facebook, Apple, Microsoft and Chinese Baidu aimed at commercialization of data. These tech companies use Big data analysis for understanding and predicting human behaviour. These big data analytics use the digital algorithm to keep the track of consumers’ internet browsing and customise further products and services. Thus, they exercise bio-power by accessing and controlling the life of people in the tyranny of technology. Considering the above practices of biometric governance and surveillance techniques in the Neo-liberal era, India is slowly and steadily sliding towards a benevolent surveillance state that of China.

CHAPTER-IV:

People's Perceptions and Practices of Identity and Privacy: Empirical Observations

This chapter deals with the perception and practice of identity, privacy and security of the people in Telangana state, India. In nutshell, it aims at analysing the different claims of privacy, security and data protection with respect to implementation of Aadhaar project in India in general and Telangana state in particular.

4.1. Introduction

There has been a huge response to the Aadhaar project. Some support the Indian government's claim that Aadhaar could be a game-changer in the field of service delivery while others oppose the same on the grounds of breach of privacy, data safety and surveillance in implementation. However, the existing literature on Aadhaar lacks the people's understanding and awareness of such lofty arguments made by scholars and policy makers in devising and execution of the Aadhaar project.

4.2. Legal Framework of Aadhaar

Aadhaar project was launched in 2009 and became operational ever since 2010. So far “1,292,786,003 Aadhaar numbers have been generated and 54,037,127,845” (UIDAI dashboard, 2021) authentications are done. The basic features of Aadhaar; “Firstly, it is the only universal identity available to all Indian residents, even those who do not possess any other form of identification... Secondly, Aadhaar is that rare government scheme that was not designed to address a single need. Instead, it is an open identity verification system...” (Nandan Nilekani and Viral Shah, 2015, p.2). Such multi-purpose was observed that “several initiatives are currently underway to demonstrate the power of Aadhaar on the ground - e g, as meeting KYC norms for small accounts; for e-payments in MGNREGS, Pension Schemes, and student scholarships; reining in illicit trade in LPG supply” (Rajagopal, 2012, p.5).

Usha Ramanathan (2017) has been critical of the Aadhaar Project and says that it paves the way for lawlessness in its implementation. She cautions that “consent, by the way, is the biggest sham in this project. It is the “mandatory-voluntary game” again. If the UID number has to be seeded everywhere, for any service or subsidy, what consent are we talking about? Compulsion is the only route, so I think we should stop pretending there is any choice and consent in this project” (Ramanathan, 2017; Bloomberg Quint). Despite Aadhaar’s successful inroads into governance of the welfare schemes and identity of population. It has been controversial ever since its inception, grappling with the concerns pertaining to privacy, data security and surveillance because of the large scale collection of biometrics, and the disputed legal framework abounding it. It must be noted that Aadhaar reflects “the intersection of technology, governance, power, and freedom, and thus requires a robust legal framework...any instance of malfunctioning of Aadhaar resulting in surveillance, exclusion, or theft can adversely affect the already existing power imbalance between the citizen and the State” (Bhandari, and Sane, 2019, p.74). Such an important Aadhaar project was devised and executed before creating a legal framework. The Government of India proposed “the National Identification Authority of India Bill 2010 in the Rajya Sabha”, to give the Aadhaar project a statutory basis. It lapsed due to lack of consensus among the Members of Parliament. The Project of Aadhaar thus, continued to be implemented without any legislative backing until the passage of the “Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits, and Services) Act, 2016 (‘Aadhaar Act’) in March 2016 and its publication in the Gazette of India in July and September 2016” (PRS, 2021). The passage of Aadhaar Bill, 2016 as a money bill has been subjected to immense criticism that Government of India bypassed the scrutiny by Parliament and civil society where public opinion would have been heard.

Kumar (2018) critically examines the Supreme Court’s judgement on Aadhaar Act being passed as a money bill that the Supreme Court has never interpreted Article 110 of Indian constitution prior to *Puttaswamy case*. He observed that:

“It was no one’s case that Section 7 of the Aadhaar Act did not relate to the expenditure of money by the government. The crux of the argument was that this was just one provision and the bulk of the law related to other ‘incidental matters’. In such a scenario, it was contended that the Aadhaar Act could not have been classified as a money bill. Instead of answering this point, however, the Supreme Court proceeds on a strange tangent of trying to uphold the Aadhaar Act on the basis that it is really for the poor and therefore it should be a money bill” (Kumar, 2018).

The “excessive delegation” under section 23 of Aadhaar Act, is “a central problem with the Aadhaar Act is that it delegates basic policy matters and essential legislative functions – relating to the collection, storage, and use of identity information – to be specified by the Executive i.e., the UIDAI, through Regulations” (Bhandari and Sane, 2019, p.80). Mandhavi (2021) noted that “crucially, the judgement upheld Section 7 of the Act, which made Aadhaar mandatory for availing of state subsidies, benefits and services. It, however, held that Aadhaar could not be made mandatory by educational bodies like the CBSE and the UGC, or even the NEET, as they are neither services nor benefits offered by the state”. Ragas (2017) appreciates the Aadhaar project for its design and execution and expects that Aadhaar will inspire the direction of global identification technology and policy to obtain a robust identity for people across the world.

Aleyamma (2013), EPW editorial (2017) and Ramanathan (2017) are of the opinion that the Supreme Court should not have made Aadhaar mandatory for availing services in its interim orders on Aadhaar in 2013, judicial review of Aadhaar Act in 2017 and 2019 as well. Bhandari and Sane (2019) and Emamian (2020) emphasise on the need for more accountability in the administration of Aadhaar since Aadhaar became a “de facto mandatory” application in welfare services. In the administration of Aadhaar, “Data protection is another burgeoning field of law to regulate information privacy” (Acharya, 2015, p.32).

The present regulation of Aadhaar data protection under Aadhaar Act, 2016 as follows in the table.4.1: List of Offences and Penalties.

Offences	Penalties
Data Disclosure	
Intentional dissemination of identity information collected in the course of enrolment or authentication in a manner unauthorised by the Act (or ensuing regulations)	Imprisonment of up to three years, and/or a fine up to ₹10,000 (for individuals) and ₹1,00,000 (for companies)
DATA IN THE CENTRAL IDENTITIES DATA REPOSITORY (CIDR)	
Intentional acts corresponding to: • Unauthorised Access • Disruption of authorised access • Unauthorised data extraction • Damage or destruction • Unauthorised disclosure • Theft or modification of computer source codes used by UIDAI	Imprisonment of up to three years, and a fine not less than ₹1,00,000
OTHER	
Use or tampering of data in the CIDR or a removable storage device with the intent of	Imprisonment of up to three years, and a fine up to ₹10,000

modifying or discovering information related to an Aadhaar holder	
Use of an individual's identity information by a requesting in controversial to the Act	Imprisonment of up to three years, and/or a fine up to ₹10,000 (for individuals) and ₹1,00,000 (for companies)
Enrolment agencies or requesting entities failing to comply with the requirements of the Act	Imprisonment of up to one year, and/or a fine up to 10,000 (for individuals) and ₹1,00,000 (for companies)
Offences under the Act for which no specific penalties have been provided	Imprisonment of up to one year, and/or a fine up to ₹25,000 (for individuals) and ₹ 1,00,000 (for companies)

Source: State of Aadhaar Report, 2016-17

Despite these regulations under the Aadhaar Act, the data protection law is demanded in order to ensure the right to privacy of the citizens.

4.2.1. Poverty of Privacy: A Political Sociology Perspective

Khera (2018) points out the lack of sociological study of Aadhaar to understand and analyse the impact of technologies on social behaviour of humans in towns and villages, despite many economists and policy makers have welcomed the Aadhaar based biometric

authentication in governance. The very notion that technologies can fix socio-economic problems is gaining legitimacy and in “the case of Aadhaar, ‘high modernism’ and ‘technological solutions’ have taken on the garb of an efficiency-enhancing, anti-corruption tool that may even afford an example of technological fetishism” (Khera, 2018, p.339). It must be noted that the poor were vulnerable to succumb to the state’s technocratic experiments. “The anxieties of recognition emerge as a central concern for the welfare-dependent groups who are mandatorily enrolled in Aadhaar. Because of these anxieties. Their privacy interests materially manifest as a compromise of dignity or dignified living, as affirmed by the SC in 2018” (Singh, 2019, p.3). Karan (2018) contests the government’s position on privacy that “the privacy was only an elitist concern that was not shared by the teeming masses”²⁷. Khera (2018) challenges the propaganda that “Indians do not value privacy”, that ‘there is no word for privacy in the Indian languages’ and that ‘privacy is an elitist concern’ (Khera, 2017a) and gives call for enquiring into study of how various groups view their personal privacy. This was empirically tested by an NGO, CUTS-International survey that came up with results that prove the government's stand on privacy to be wrong. Most of the respondents are not comfortable sharing their names, email IDs, mobile numbers, and views on religion and politics (Karan, 2018).

Digital governance enters “this space with the promise of healing the old problems of an unapproachable state, corruption, and distributive injustice” (Rao, 2019, p.432) Since the state could not curb the increasing inequalities in the era of globalisation. Welfare activities such as PDS, Pension and Credit helped “the Indian state inserts itself into everyday life and embeds itself in the body. The developmental governmentalization of the state also entails the corporealization of citizenship” (Thripathy, 2017, p.503). This has transformed the developmental experience of the people in India that “development now follows a bureaucratic-technocratic-entrepreneurial model according to which states act not as protectors of citizens but as service providers for customers” (Rao, 2019, p.433). Technocratic “efficiency-driven, protocol-based developmentalism” (Sarkar,

²⁷ Government of India has submitted its view on privacy to the Supreme Court stating that the masses don’t share the same privacy concerns that elite groups do believe in in 2017.

2014, p.526) gives an impression of governance without politics but Rao (2019) points out the shift that the governance treats poverty as a mere technical problem to be solved by including people in “disciplinary regimes of self-care” (Ferguson, 2006). The dilemmas of governance emerge from the surveillance technologies attempting to reconcile with the objectives of “security” and “citizen services” (Sarkar, 2014, p.518). The privacy debate over Aadhaar can be understood from three main contours; first, privacy means spatial control, second, privacy connotes the decisional autonomy and third, privacy means information control (Acharya, 2013, p.33).

Warren and Brandeis said the essence of the right to be alone was not private property but inviolate personality” which means the control over his/her individual information. Acharya (2015) describes the consequences of Aadhaar as “fruit of poisonous tree”. The increasing globalisation of the world economies has an impact on data protection as well, but “the OECD guidelines neither refer to ‘sensitive data’ nor to ‘automated processing’ specifically and the basic principles of national application under these guidelines remain unchanged” (Singh, 2017, p.79). Even in the business sector also the data breach has been a major concern. A study in 2015 by Ponemon Institute found breach of data security costs at Rs.3,396 per compromised record, translating into loss of business worth Rs.21.78 million in India. In 2020, the report on cost of data breach observed the rise of the average cost that “customers’ personally identifiable information (PII) was the most frequently compromised type of record, and the costliest, in the data breaches studied. The average cost of customer PII businesses \$150 per compromised record” (IBM Security, 2020, p. 8). The average cost of data breach in the healthcare system alone is around \$7.13 million in 2020. Thus, the need for a robust data protection mechanism for both individuals and organisations must be adhered to. Especially sensitive data like biometrics should be guarded while data localization, the demand raised by RBI should be taken for discussions at the international forums. It must be noted that data is treated as new oil in the era of digital economies.

In 1949, Harry Truman spoke of a form of development that is contingent on Human body. “Human bodies are the ultimate testing-site for development and act as texts revealing its meta-language” (Tripathy, 2017, p.500) in the post-colonial states like India in their pursuits for development. Cooper (2008) also argues that “the present neoliberal economy is actually a bio-economy which extracts value from biological life requiring that life be manipulated to maximise surplus generation” (p.120). Thus, the tech savvy led biometric governance paved the way for bio-political development in the Neo-liberal era.

4.2.2. Drifting from Governance to Governmentality

The implications of Biometric governance have Foucauldian governmentality in India. One such “India’s biometric project is a new effort to enhance the state’s ability to direct populations through personalised support and surveillance” (Rao, 2013, p.72). This is a new technique in governing the population for achieving control over every aspect of life of the people in the country. Dattani (2019) observes that “governmental policy interventions in postcolonial India also intersected with scientific efforts, which led to the country being described as a postcolonial technological society” (Abraham & Rajadhyaksha, 2014, p.68). The idea of having biometric governance in the welfare development has undesirable ramifications such as surveillance and biopolitics in the country. Sarkar (2014) points out that “anxiety of governance”: existence of ghost beneficiaries and lack of robust identity make the population opaque governing institutions while corruption and leakages bring inefficiency into the system. This made the Indian state to devise security oriented Aadhaar for implementing it in the welfare sector as well. The technocratic biometric governance based on Aadhaar will create the scope for mass surveillance at large since Aadhaar is linked to every other service as the de facto practice of welfare administration. It can be apt to say that “the goal of modern governance is to maximise such self-discipline of citizens as means to enhance the efficiency of the government” (Rao, 2019, p.72). This also amounts to creating more resilient citizens for its policies. Consequently, the state will implement the Neo-liberal policies that roll back the state from its responsibilities and encourage the individuals to take care of themselves. Thus, the state will become a mere facilitator of identity to its people rather than providing

the welfare services. It must also be noted that the technologies such as biometric governance aim at empowering the state but not the people in countries like India.

4.2.3. Analysis of Empirical observations on implementation of Aadhaar

Aadhaar is set to become ubiquitous in the country because “95% of adults have Aadhaar, and on average use it once a month. 75% of children have Aadhaar” (State of Aadhaar Report, 2019, p.V). The state of Aadhaar report, 2016-17 pays attention to the question of “privacy” and quotes the World Bank group, Identification for Development Strategic Framework highlighted the following four concerns of privacy associated with Aadhaar:

“(1) Unauthorised access, use or disclosure of information, (2) Profiling, through linking databases in illicit ways, including for surveillance objectives, (3) ‘function creep’ whereby data collected for one or more reasons is used for others to which identity holder has not consented, (4) inaccuracies in data, leading to mistaken identity or unjust treatment” (State of Aadhaar, 2016-17, p.38).

The above question of privacy was further taken up in the study by State of Aadhaar in the year of 2018 and found that “a majority of Indians value privacy, but also approve of linking Aadhaar to welfare services. 87% of rural residents approve of linking Aadhaar to government services while 77% approve of linking Aadhaar with private services” (State of Aadhaar Report, 2018, p.2). This goes to the contrary of government’s stand that privacy is elitist concept (Central govt’s response to PIL in the Supreme Court in 2018) while it is in consonance with the views of advocates of privacy like Mariganti (2014), Kumar and Hegde (2020), Khera (2018), and Rao (2019) that poor also deserve privacy and dignity. It must be noted that the Supreme Court upheld, 24th August, 2018, that the constitution of India guaranteed every citizen the right to privacy under article 21.

Hence, there is a need for in-depth study of the privacy and data security issues emanating from implementation of Aadhaar. Such competing arguments and observations by scholars made the study to map out a chapter on people's awareness about privacy, data security, surveillance and digital identity in Telangana state for micro level analysis at the individual level is expected to be carried out. This would also in turn help in examining the functional aspects of the governmentality in the Indian polity in general and Telangana state in particular.

4.3. Telangana's engagement with Aadhaar

Telangana state was carved out by the Government of India from erstwhile Andhra Pradesh in 2014. The new state, Telangana being a surplus budget state with Rs. 2,07,069 Crs, in 2013-2014 is always ambitious for socio-economic development of its people. It has proclaimed to reach out to the last man (individual) in the state in its welfare governance to create "*Bangaru Telangana*" which means Golden Telangana.

Telangana state has emerged as the first state in the country to "complete 100 % of seeding of Aadhaar, pertaining to 2.83 crore PDS (Public Distribution System) beneficiaries of the state with their ration cards data" (Annual report, 2019, p.12). The Government of Telangana also claimed to have achieved total digitisation of civil supplies. This end-to-end computerisation of TDPS resulted in the "Rightful Targeting of Food Subsidies" (Annual Report, 2019, p.13). The implementation of E-PoS and IRIS (biometric governance of beneficiaries) helped "the state government to save around Rs. 917 Crores during the last year" (Annual Report, 2019, p.14). This amounts to say that the Telangana government is able to reduce the leakages, eradication of fake beneficiaries, and corruption in the civil supplies with the help of Aadhaar based biometric governance in the state and also it could cater the genuine beneficiaries only.

This claim by Telangana government was contested because:

“According to an affidavit submitted by the civil-supplies department of Telangana to the Telangana High Court on 22 June, the state has cancelled 18,61,171 ration cards since 2014...Despite deep flaws in linking the public distribution system with the Aadhaar database, which surfaced again in recent months when families with cancelled ration cards were deprived of subsidised grain during a pandemic, the Indian government hopes to implement Telangana’s model across the country.” (Dhara, 2020, para.4).

However, the state government’s efforts to regulate the welfare services through Aadhaar based biometric governance result in deletion of the beneficiaries. But the civil supplies department has defended its actions by citing the reasons such inactive ration cards were not linked with Aadhaar and hence led to deletion from the beneficiary list.

As a welfare state, Telangana government has launched the following welfare schemes: Aadhaar linking with the welfare schemes is a de facto mandatory. Some of the schemes require Aadhaar linkage are PDS, Drinking water (20-litre free water), Dharani, Kanti Velugu, Rythu Bandhu, KCR Kit, Mission Kakatiya, Mission Bhagiratha, Haritha Haram, Kalyana Lakshmi/ Shaadi Mubarak, Arogya Lakshmi, Aasara pensions, Housing for the poor, Land distribution to Dalits, Rice distribution, Sheep distribution, Society for Telangana Network, T-Fiber, and WE Hub - Women Entrepreneurs Hub.

4.3.1. A Brief history of Telangana model of development

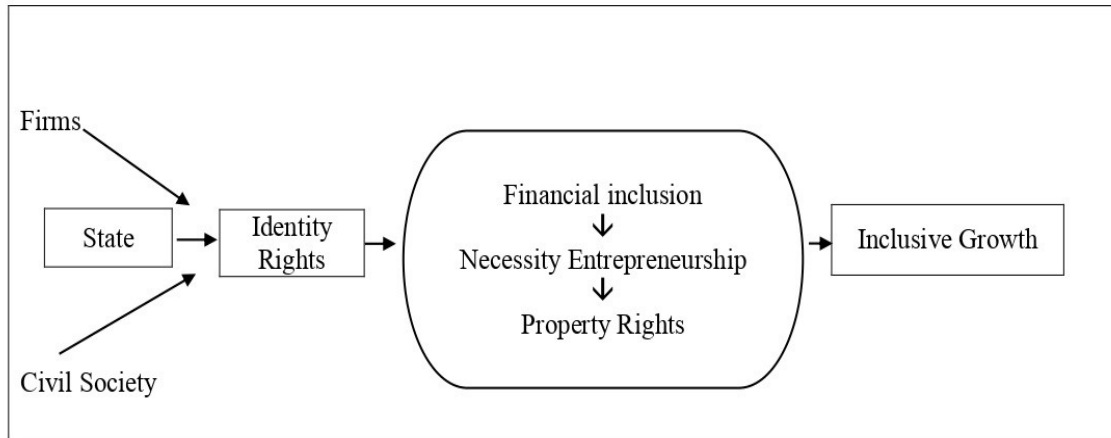
Telangana region, before attaining statehood, has been subjected to all kinds of exploitations in terms of allocation of water, funds and employment in the united Andhra Pradesh. The demand for a separate state of Telangana promised an exploitation free and development with self-respect to its people. There was a discussion of the model of

development of people after achieving Telangana statehood. Reddy (2014) professes that the lives of the tribals will be better in Telangana state than united Andhra Pradesh. He suggests legal aid to the tribals to protect their land and “inclusive growth by social inclusion and providing better administration at their door steps” (Reddy, 2014, p.77). It is contingent on the academics to examine the governance in Telangana state to decipher the dichotomies of developmental experience of the people.

Subsequently, creation of Telangana state has raised the hopes of the common people for economic betterment and participation in shaping their destinies in the new state. It was difficult to achieve “inclusiveness in the bigger state like Andhra Pradesh because the voice of the disadvantaged was fragmented” (Rao, 2014, p.10). It is also believed that Telangana, being a smaller state like Kerala, is expected to provide governance accessible to different sections of people. Socio-Economic outlook (2014) of Telangana state proclaims its vision that “We are committed to ensure that every paisa spent on welfare programmes reaches the deserving beneficiaries” (Socio Economic Outlook, 2014, p.6).

Mukesh and Craig (2015) argue that because of a lack of formal identity, people are often denied access to services, like opening a bank account, welfare benefits, employment opportunities and purchases in the market. Now the UIDAI guarantees the unique identity to empower those individuals without permanent address and place or date of birth to be recognized legally. Nilekani (2009) asserts the importance of Aadhaar based identity is that Aadhaar is creating a unique identity as important as a road that connects every individual to the state in some way or the other. This legal identity is expected to work as a potential channel for people to participate in the governance and developmental process.

Fig.4.1: Identity Rights Model



Source: Mukesh and Craig (2013): Identity Rights: A Structural Void in Inclusive Growth.

Mariganti (2014) observes that the Telangana state has tried to mobilise the legitimacy by conducting Intensive Household Survey which is also known as Integrated Household Survey in a single day in 2014. “...People of developing economies who seek to be seen by the state, in fact hankering to be visible to the state and market to become eligible for benefits of various kinds” (Mariganti, 2014, p.15). This is in turn, the choice of the privacy that the poor could exercise but denied by the state. Hence, it is pertinent to study and understand the awareness about concepts like identity, privacy, surveillance, digital identity, biometrics and digital governance in Telangana and issues and services rendered by Aadhaar identity as well.

In addition, Though Government of Telangana has learnt a praise by Economic Survey of India for integrated data management, the data security in Telangana state has raised the apprehensions of privacy as the study “titled AI Observatory noted that it was the data collected through the Samagra Kutumba survey that was being used for the Samagra Vedika database, which gives a ‘360-degree profile’ of citizens” (The New Indian Express, 28/12/2020). In this context, it is important to study the consciousness levels of privacy, data security, safety and misuse of data among the people of Telangana state.

4.3.2. Methodology and data description

This study estimated the number of Binary logistic regression models to capture the effect of all the ten predictor variables on utilisation of Aadhaar services. The reason behind using logistic regression models is that this technique is considered as one of the best approaches to handle the categorical variables, as in my study the dependent variables are categorical and dichotomous (Alison, 1984; Hosmer & Lemeshow, 2000). By applying this method, we can easily interpret the effects of covariates on utilisation. The estimated odds ratio of 1 infers that the utilisation of Aadhaar services is equal to the reference category; hence we can't differentiate these two. If the estimated odd ratio is greater than one, it indicates that the likelihood of awareness and utilisation of Aadhaar services is higher than the reference category and if it is less than 1, the probability of awareness of Aadhaar services is lower than the reference category.

4.3.3. Measures

To examine how the awareness and utilisation of Aadhaar services are influenced by individuals. The eight indicators are selected to assess the awareness and utilisation of Aadhaar services based on past literature.

All these eight indicators are the dependent variables in my analysis which are also called the outcome variables and these are categories 1) Identity (ID); it defines women receiving periodic health check-up during the first trimester of her pregnancy (WHO, 2016). 2) Fear of Losing Govt. Services (FLS) as per UIDAI it is essential for obtaining both state and central governments welfare and non-welfare services. 3) Proof of Citizenship (PC); Some scholars and PILs argued that Aadhaar being treated as a proof of citizenship. 4) Since Neighbours have already Taken (SNT); it helps awareness levels of the people for the reasons to enrol for Aadhaar number. 5) Awareness of Biometrics Taken (ABT); this indicator is another significant factor determining informed consent for taking biometrics (fingerprints and Iris) for obtaining Aadhaar number. 6) Safety and Security Issues with Aadhaar (SSIA); this indicator will be useful in examining the people's

awareness levels of risk associated with Aadhaar based biometric governance. 7) Consent for Biometrics (CB); This is another potential indicator which helps in analysing the reasons for consenting to give biometrics despite knowing the safety and security issues associated with Aadhaar. 8) Implementing Aadhaar Project before enactment of Aadhaar Act, 2016 (IAPL); this indicator will be useful in analysing the awareness of the way Aadhaar project devised and delivered to the people despite the lack of legal framework in the country.

All the outcome variables have been treated as binary i.e., if 'yes' then 1 and if 'no' then 0 for the proper depiction of the result.

4.3.4. Explanatory variables

The main explanatory variables that are used in the model are categorised into individual level characteristics consist of; 1) Gender, 2), Age in years,3), Religion, 4) Caste, 5), Education, 6), Occupation, 7), Annual Income in lakhs, 8), Type of House, 9), Nature of Ownership of the House, 10), Place of Residence. Every variable mentioned above is expected to influence each and every selected outcome variable.

4.3.5. Sampling technique and Study design

The study was based on primary data, collected from the Telangana (TS) state of India. The survey adopted a "Simple random stratified sampling design". In which two districts (erstwhile Hyderabad and Adilabad) of Telangana state are selected. This is to understand and analyse the rural-urban differences with respect to awareness and utilisation of Aadhaar services. The study aimed at 500 sample size but was able to execute 340 due to practical reasons such as half-filled or respondents' request to withdraw from the scheduled interviews and other confidential/personal reasons. The sampling followed a research methodology technique of Population to proportionate size in administering the research survey questionnaire in order to cover the various sections of the people; religious groups, caste groups, age groups and income and occupational groups in the selected districts.

4.3.6. Empirical Framework of the Logit Regression Model

To examine and analyze the effect of various religious, rural-urban, socio-economic, demographic, class and community variables on Aadhaar services, the relationship is estimated by employing “logistic regression model” which is considered to be one of the best statistical tool that deals with categorical variables and these models are commensurable for this study because dependent variable is dichotomous.

The binary logistic models estimated the probability which represent $y = 1$, as the function of the independent variable:

$$\rho = pr(y = 1/x) = F(x'\beta) \dots \dots \dots (1)$$

$$\text{For the logit model, } F(x'\beta) = \Lambda(x'\beta) = \frac{e^{x'\beta}}{1+e^{x'\beta}} = \frac{\exp(x'\beta)}{1+e^{(x'\beta)}} \dots \dots \dots (2)$$

The predicted probabilities are limited between 0 and 1

The binary logistic regression model represents that log odds of reasons for Aadhaar service fellows,

$$\text{Log} \frac{P_i}{1-P_i} = \beta_o + \sum(\beta_i X_i) \quad [\text{where } n=10] \dots \dots \dots (3)$$

Where,

$\text{Ln} [p_i/1 - p_i]$ represents the conditional odds of using Aadhaar services;

X_i , in the model represents the number of explanatory variables that we included in the equation, here 10 variables are used. The parameter β_i , indicates the effects of the explanatory variable on dependent variable, and β_o is the constant of the equation.

Here, STATA 15 software was used to estimate the effect of predictor variables on outcome variables. This study applied eight binary logistic regression models with each one as dependent variable such as; Identity (ID), Fear of losing govt services (FLS), Proof of Citizenship (PC), Since Neighbours have already taken, Awareness of Biometrics,

Awareness of Safety and Security issues with Aadhaar, Consent for Biometrics, and Implementation of Aadhaar project before enacting the law.

The first equation starts with identity (ID) purpose as a proxy for utilization of Aadhaar services and (*id*) it follows:

$$\text{Ln} [P_i/1 - P_i]_{id} = \beta_0(id) + \beta_1 X_{1(gender)} + \beta_2 X_{2(age)} + \dots \beta_{10} X_{10(resid)} \dots (4)$$

Where

X_1 = Gender

X_2 = Age in years

X_3 = Religion

X_4 = Caste/community

X_5 = Education

X_6 = Occupation

X_7 = Annual Income in Lakhs

X_8 = Type of House

X_9 = Nature of Ownership of the house

X_{10} = Place of Residence

The second equation represents for the Fear of losing govt's services for enrolling for Aadhaar number (*fls*) is

$$\text{Ln} [P_i/1 - P_i]_{fls} = \beta_0(fl_s) = \beta_1 X_{1(gender)} + \beta_2 X_{2(age)} + \dots \beta_{10} X_{10(resid)} \dots (5)$$

Where,

$X_1, X_2, X_3, \dots, X_{14}$ are the set of independent variables
equation.....(6)

The third equation is taken for Proof of Citizenship, PC as the dependent (*pc*) is

$$\text{Ln} [P_i/1 - P_i]_{pc} = \beta_0(pc) + \beta_1 X_{1(gender)} + \beta_2 X_{2(age)} + \dots \beta_{10} X_{10(resid)} \dots (7)$$

And fourth equation represents the Since Neighbours have already taken (*snt*) is

$$\text{Ln} [P_i/1 - P_i]_{snt} = \beta_0(snt) + \beta_1 X_{1(gender)} + \beta_2 X_{2(age)} + \dots \beta_{10} X_{10(resid)} \dots (8)$$

The fifth equation for taking awareness about biometrics taken for Aadhaar enrolment (*abt*) is

$$\text{Ln } [P_i/1 - P_i]_{(abt)} = \beta_{0(abt)} + \beta_1 X_{1(gender)} + \beta_2 X_{2(age)} + \dots \beta_{10} X_{10(resid)} \dots (9)$$

The sixth equation for Awareness of Safety and Security Issues with Aadhaar (*ssai*) is

$$\text{Ln } [P_i/1 - P_i]_{(ssai)} = \beta_{0(ssai)} + \beta_1 X_{1(gender)} + \beta_2 X_{2(age)} + \dots \beta_{10} X_{10(resid)} \dots (10)$$

The seventh equation for giving Consent for taking Biometrics (*cb*) is

$$\text{Ln } [P_i/1 - P_i]_{(cb)} = \beta_{0(cb)} + \beta_1 X_{1(gender)} + \beta_2 X_{2(age)} + \dots \beta_{10} X_{10(resid)} \dots (11)$$

The eighth equation for implementation of Aadhaar before Law (*ial*) is

$$\text{Ln } [P_i/1 - P_i]_{(ial)} = \beta_{0(ial)} + \beta_1 X_{1(gender)} + \beta_2 X_{2(age)} + \dots \beta_{10} X_{10(resid)}$$

$X_1, X_2, X_3, \dots, X_{10}$ are the explanatory variables..... (12)

4.4. Bivariate regression results

The estimates represent bivariate relationship between the reasons of individual level with Aadhaar services. Table- 4.2 presents the reasons for various individuals (like Identity Purpose, Fear of losing Government Services, Proof of Citizenship and Since Neighbours Taken) to enroll for Aadhaar number/services. According to the individual characteristics, the result shows a highly significant (p value <0.000) relationship between individuals age groups and identity purpose. The individuals with age groups of 18-24, 25-34, 35-44, 45-54 and 55 and above, account for 18 (0.05%), 21 (0.06%), 23 (0.06%), 14 (0.04%), 72 (0.21%) respectively out of 340 sample, enrolled for Aadhaar number for identity reasons. Similarly, there is a highly significant (p value <0.009) association between age groups and fear of losing services for enrolling of Aadhaar number. The above-mentioned same age groups, accounting for 38 (0.11%), 65 (0.19%), 48 (0.14%), 34 (0.1%), 102 (0.3%), said to have enrolled for Aadhaar number due to fear of losing services. A highly significant relationship (p value 0.000) between age groups and Proof of citizenship in the table-2. The same age groups accounting for 26 (0.08%), 56 (0.16%), 34 (0.14%), 23 (0.07%), 35 (0.10%) have enrolled for Aadhaar number with the consideration of it as a proof of citizenship. There is a significant relationship (p value <0.002) between age groups and since neighbours taken. The same age groups mentioned above accounting for 21 (0.06%),

49 (0.14%), 31 (0.09%), 25 (0.07%), and 31 (0.09%) out of 340 sample have enrolled for Aadhaar number since neighbours have already taken. But the results indicate that there is no strong relationship between the gender and reasons; identity purpose, fear of losing services, proof of citizen and since neighbours taken for enrolling for Aadhaar.

Table: 4.2
Bivariate Relationship between Individual reasons and Demographic Characteristics
For obtaining Aadhaar Services.

Independent Variables	Dependent Variables							
	Identity Purpose		Fear of losing Services		Proof of Citizenship		Since Neighbours taken	
Individual Characteristics								
GENDER	%	N	%	N	%	N	%	N
Male	0.28	96	0.53	183	0.32	109	0.28	96
Female	0.15	52	0.30	104	0.19	65	0.17	61
<i>p-value</i>	0.5200		0.4667		0.9076		0.5269	
AGE								
18-24	0.05	18	0.11	38	0.08	26	0.06	21
25-34	0.06	21	0.19	65	0.16	56	0.14	49
35-44	0.06	23	0.14	48	0.10	34	0.09	31
45-54	0.04	14	0.1	34	0.07	23	0.07	25
55 and above	0.21	72	0.3	102	0.10	35	0.09	31
<i>p-value</i>	0.0000***		0.009***		0.0000***		0.0002***	
RELIGION								
Hindu	0.37	287	0.71	242	0.42	142	0.37	129
Agnostic	0.00	02	0.01	2	0.01	2	0.00	2
Atheist	0.02	02	0.01	2	0.00	1	0.00	1
Christain	0.26	15	0.04	13	0.01	5	0.01	5
Muslim	0.23	26	0.06	21	0.06	19	0.04	14
Sikh	0.05	08	0.02	7	0.01	5	0.01	6
<i>p-value</i>	0.02**		0.9		0.08*		0.02**	
CASTE								

General	0.11	39	0.26	90	0.18	62	0.16	56
OBC	0.16	56	0.32	110	0.22	74	0.17	60
SC	0.07	27	0.14	47	0.06	22	0.06	23
ST	0.05	26	0.12	40	0.05	16	0.05	18
<i>p-value</i>	0.07*		0.04**		0.02**		0.37	
EDUCATION								
Graduation	0.09	31	0.23	80	0.18	62	0.15	52
Post-Graduate	0.02	05	0.07	25	0.07	24	0.06	31
Doctorate	0.18	01	0.05	02	0.00	01	0.00	02
Professional,Law,MBBS	0.00	00	0.02	07	0.02	09	0.01	13
Other	0.01	03	0.00	01	0.00	01	0.00	01
Up to class 12	0.08	44	0.26	89	0.16	56	0.16	110
Illiterate	0.12	64	0.24	83	0.06	21	0.06	87
<i>p-value</i>	0.0000***		0.003***		0.0000***		0.0001***	
OCCUPATION								
Housewife/Home Maker	0.07	23	0.15	51	0.10	33	0.09	31
Agriculture	0.06	19	0.07	25	0.02	7	0.02	7
Big Business	0.00	0	0.01	3	0.01	3	0.00	3
Carpenter/halwai	0.01	2	0.01	5	0.01	4	0.00	3
Others	0.09	32	0.12	42	0.04	14	0.04	14
Petty Business	0.03	11	0.08	26	0.06	19	0.04	16
Service	0.09	30	0.19	66	0.14	46	0.11	40
Student	0.04	15	0.12	42	0.10	34	0.08	29
Unemployment	0.05	16	0.08	27	0.04	14	0.04	14
<i>p-value</i>	0.001***		0.95		0.0002***		0.01**	
INCOME								

0-1 Lakh	0.30	103	0.50	172	0.23	80	0.22	77
1-5 Lakh	0.11	40	0.29	100	0.23	80	0.20	69
5-10 Lakh	0.01	05	0.02	08	0.02	07	0.00	12
10-15 Lakh	00	00	0.14	05	0.01	05	0.01	05
15 and above	00	00	0.00	02	0.00	02	0.00	03
<i>p-value</i>	0.0001***		0.008***		0.001***		0.002***	
TYPEOFHOUSE								
Gated Community	0.02	07	0.04	15	0.03	11	0.02	09
Independent/Pucca house	0.25	86	0.54	185	0.37	126	0.32	111
Kachcha House	0.13	45	0.22	76	0.10	36	0.10	36
Hut	0.02	10	0.03	11	0.00	01	0.00	01
<i>p-value</i>	0.001***		0.25		0.004***		0.05**	
OWNERSHIP								
Own	0.16	57	0.37	129	0.27	94	0.24	82
Rented	0.05	20	0.37	126	0.19	65	0.17	60
House on Public Land	0.20	71	0.09	32	0.04	15	0.04	15
<i>p-value</i>	0.01**				0.03**		0.02**	
RESIDENCE								
Urban	0.18	64	0.41	140	0.26	91	0.24	82
Rural	0.24	84	0.43	147	0.24	83	0.22	75
<i>p-value</i>	0.18		0.02**		0.06*		0.09*	

Source: Author's calculations from the field study. "The characters "*" "****" "*****" indicates "10',"5','1' percent level of significance".

The results also establish a significant relationship between religious groups and identity, proof of citizenship, since neighbours have taken with (p value <0.02), (p value <0.08) and (p value <0.02) respectively. The religious groups, out of 340, Hindu, Agnostic, Atheistic, Christian, Muslim and Sikh, 287 (0.37%), 02 (0.00%), 02 (0.02%), 15 (0.26%), 26 (0.23%), 8 (0.05%) for identity purpose while 142 (0.42%), 2 (0.01%), 1 (0.00%), 5 (0.015), 19 (0.06%), 5 90.01%) for proof of citizenship and 129 (0.37%), 2 (0.00%), 1 (0.00%), 5 (0.01%), 14 (0.04%), 6 (0.01%) for since neighbours have taken, respectively enrolled for Aadhaar number. There is no association between religious groups and fear of losing government services in enrolling for Aadhaar number in Telangana state.

There is a less significant relationship (p value <0.07) between the caste groups and identity, moderate relationship (p value < 0.04) between fear of losing services, and (p value <0.02) proof of citizenship while there is no relationship (p value >0.37) between the caste groups and since neighbours taken in obtaining Aadhaar number. The results show a highly significant relationship between the education levels and the four dependent variables; (p value <0.000) identity purpose, (p value <0.003) fear of losing services, (p value <0.000), and (p value <0.001) since neighbours taken variables for enrolling for Aadhaar number. There is a highly significant relationship between the occupation and two dependent variables; (p value <0.001) indemnity purpose and (p value <0.002) proof of citizenship. A significant relationship between (p value <0.01) the occupation and since neighbours taken variables while there is no relationship (p value >0.95) the occupation and fear of losing services.

The given results establish a highly significant relationship between the income groups/different classes and all the dependent variables; (p value <0.0001) identity purpose, (p value <0.008) fear of losing services, (p value <0.001) proof of citizenship, and (p value <0.002) since neighbours taken as reasons for enrolment for Aadhaar number. There is a highly significant relationship between the type of house and two dependent variables; (p value <0.001) identity purpose and (p value <0.004) proof of citizenship while

a significant relationship (p value <0.05) between the type of house and since neighbours taken variables. No relationship between the type of house and fear of losing services variables was found for enrollment.

There is a significant relationship between the type of ownership and (p value <0.03) proof of citizenship and (p value <0.02) since neighbours taken variables while the results show a less significant relationship between the type of house and (p value <0.01) identity purpose and (p value <0.09) fear of losing services in enrolling for Aadhaar number. The results indicate no relationship (p value >0.18) between the place of residence and identity purpose, a significant relationship (p value <0.02) between the place of residence and fear of losing government services while there is a less significant relationship between the place of residence and (p value <0.06) proof of citizenship and (p value <0.09) since neighbours taken variables in enrolling for Aadhaar number.

The table- 3 represents the bivariate relationship between the individual awareness levels and Aadhaar services. According to the characteristics, there is a significant relationship (p value <0.04) between the gender and Awareness of biometrics taken while a less significant relationship (p value <0.10) between the gender and Aadhaar project implemented before enacting Aadhaar Act. The results show no relationship between the gender and Awareness of safety and security issues associated with Aadhaar, and Consent to take biometrics despite issues with Aadhaar.

Table: 4.3
Bivariate Relationship between Individual Awareness and Demographic Characteristics
With Aadhaar Services.

Independent Variables	Dependent Variables						Aadhaar project implemented before enacting Aadhaar law	
	Awareness of Biometrics taken		Awareness of Safety & security issues with Aadhaar		Consent to take Biometrics despite issues with Aadhaar			
Individual Characteristics								
GENDER	%	N	%	N	%	N	%	N
Male	0.36	123	0.28	96	0.39	135	0.13	47
Female	0.17	58	0.14	48	0.22	76	0.05	19
p-value	0.04**		0.22		0.61		0.10*	
AGE								
18-24	0.08	27	0.08	26	0.08	27	0.02	8
25-34	0.16	54	0.14	47	0.16	56	0.08	28
35-44	0.10	33	0.08	26	0.11	38	0.03	11
45-54	0.06	19	0.06	22	0.07	23	0.02	8
55 and above	0.14	48	0.07	23	0.20	67	0.03	11
p-value	0.03**		0.0000***		0.64		0.001***	
RELIGION								
Hindu	0.45	153	0.45	117	0.51	173	0.16	55
Agnostic	0.01	2	0.01	1	0.00	1	0.00	1
Atheist	0.01	2	0.01	1	0.00	1	0.00	0
Christain	0.01	4	0.01	4	0.04	13	0.00	0
Muslim	0.04	13	0.04	14	0.05	17	0.02	7
Sikh	0.02	7	0.02	7	0.51	173	0.01	3
p-value	0.04**		0.04**		0.39		0.15	

CASTE								
General	0.17	57	0.15	51	0.20	68	0.07	0.07
OBC	0.23	77	0.18	62	0.23	77	0.09	0.09
SC	0.09	29	0.06	19	0.10	33	0.02	0.02
ST	0.05	18	0.04	12	0.10	33	0.01	0.01
<i>p-value</i>	0.21		0.05**		0.28		0.06*	
EDUCATION								
Graduation	0.18	64	0.16	57	0.18	63	0.07	25
Post-Graduate	0.07	24	0.06	21	0.06	22	0.07	25
Doctorate	0.00	02	0.00	01	0.00	02	0.00	00
Professional,Law,MBBS	0.01	06	0.01	06	0.02	07	0.00	01
Other	0.00	01	0.00	01	0.00	00	0.00	00
Up to class 12	0.16	55	0.19	45	0.20	68	0.04	13
Illiterate	0.08	29	0.03	13	0.14	49	0.01	02
<i>p-value</i>	0.0000***		0.0000***		0.04**		0.0000***	
OCCUPATION								
Housewife/Home Maker	0.07	24	0.06	21	0.09	32	0.02	7
Agriculture	0.04	14	0.02	6	0.05	16	0.01	3
Big Business	0.00	1	0.01	3	0.01	2	0.00	0
Carpenter/halwai	0.01	5	0.01	2	0.01	4	0.01	3
Others	0.10	35	0.06	20	0.08	28	0.03	11
Petty Business	0.05	16	0.06	20	0.06	22	0.02	8
Service	0.14	46	0.11	37	0.15	51	0.05	18
Student	0.09	31	0.08	28	0.10	35	0.04	12
Unemployment	0.03	9	0.02	7	0.06	21	0.01	4
<i>p-value</i>	0.003***		0.001***		0.80		0.21	

INCOME								
0-1 Lakh	0.24	84	0.17	61	0.34	116	0.07	24
1-5 Lakh	0.23	81	0.19	66	0.23	81	0.10	34
5-10 Lakh	0.03	11	0.02	12	0.02	09	0.01	04
10-15 Lakh	0.00	03	0.01	04	0.00	02	0.01	02
15 and above	0.00	02	0.00	03	0.00	03	0.01	02
p-value	0.001***		0.0000***		0.42		0.002***	
TYPEOFHOUSE								
Gated Community	0.04	16	0.04	16	0.05	17	0.02	08
Independent/Pucca house	0.36	224	0.30	104	0.37	126	0.14	48
Kachcha House	0.10	86	0.06	22	0.17	60	0.03	09
Hut	0.01	11	0.00	02	0.02	08	0.00	01
p-value	0.005***		0.0000***		0.007***		0.007***	
OWNERSHIP								
Own	0.32	110	0.27	94	0.30	104	0.13	43
Rented	0.17	58	0.12	41	0.22	77	0.05	18
House on Public Land	0.03	13	0.02	9	0.08	30	0.01	05
p-value	0.0000***		0.0000***		0.003**		0.03**	
RESIDENCE								
Urban	0.25	85	0.21	73	0.27	95	0.09	29
Rural	0.28	96	0.20	71	0.34	116	0.11	37
p-value	0.08*		0.02**		0.27		0.53	

Source: Author's calculations from the field study. "The characters "***" "****" "*****" indicates "10','5','1' percent level of significance".

There is a highly significant relationship between the age groups and two variables; (p value <0.000) Awareness of security issues associated with Aadhaar and (p value <0.001) Aadhaar project implemented before enacting Aadhaar law. A significant relationship (p value <0.03) between the age groups and awareness of biometrics taken while no relationship between the age groups and consent to take biometrics despite issues associated with Aadhaar.

A significant relationship between the religious groups and two variables; (p value <0.04) awareness of biometrics taken, and (p value <0.04) awareness of safety and security issues associated with Aadhaar for enrolling for Aadhaar number. There is no relationship between the religious groups and two variables; consent to take biometrics despite issues associated with Aadhaar and Aadhaar project implemented before enacting Aadhaar law. The results show a significant relationship (p value <0.05) between the caste groups and Awareness of safety and security issues with Aadhaar while there is a less significant relationship (p value <0.06) between the caste groups and Awareness of Aadhaar project implemented before enacting Aadhaar Act. No relationship between the caste groups and the two variables; Awareness of biometrics taken and Consent to take biometrics despite issues with Aadhaar for enrolling for Aadhaar number.

The results indicate a highly significant relationship between the education levels and three variables; (p value <0.000) Awareness of biometrics taken, (p value <0.000) Awareness of Safety and security issues associated with Aadhaar, and (p value <0.000) Aadhaar project implemented before enacting the law in enrolling for Aadhaar number. A significant relationship (p value <0.04) between the education levels and Consent to take biometrics despite issues with Aadhaar. There is a highly significant relationship occupation and two variables; (p value <0.003) Awareness of biometrics taken and (p value <0.001) Awareness of Safety and Security issues associated with Aadhaar. No relationship between the occupation and the other two variables; Consent to take biometrics despite issues with Aadhaar and Aadhaar project implemented before enacting Aadhaar law.

The results show a highly significant relationship between the income levels/class and three dependent variables; (p value <0.001) Awareness of biometrics taken, (p value <0.000) Awareness of safety and security issues associated with Aadhaar, and (p value <0.000) Aadhaar project implemented before enacting Aadhaar law. No relationship between the income levels/class and Consent to take biometrics despite issues with Aadhaar. There is a highly significant relationship between the type of house and all the four dependent variables; (p value <0.005) Awareness of Biometrics taken, (p value <0.000) Awareness of safety and security issues associated with Aadhaar, (p value <0.007) Consent to take biometrics despite issues with Aadhaar, and (p value <0.007) Aadhaar project implemented before enacting Aadhaar law.

The results show a highly significant relationship between ownership of the house and two dependent variables; (p value <0.000) Awareness of biometrics taken, (p value <0.000) Awareness of safety and security issues associated with Aadhaar, and (p value <0.003) Consent to take biometrics despite issues with Aadhaar while there is a significant relationship (p value <0.03) between the ownership of the house and Aadhaar project implemented before enacting Aadhaar law. There is a significant relationship (p value <0.02) between the place of residence and Awareness of safety and security issues associated with Aadhaar while less significant relationship (p value <0.08) between place of residence and Awareness of biometrics taken in enrolling for Aadhaar number. There is no relationship between the place of relationship and two variables; Consent to take biometrics despite issues with Aadhaar and Aadhaar project implemented before enacting Aadhaar law.

4.5. Empirical Result and Interpretation

This section presents the results of binary logistic regression of the model predicting awareness/ utilisation of Aadhaar services and its relationship with individual and demographic characteristics of the various individuals. Specifically, the estimated odds ratio of binary logistic regression represents the relationship between individual and

demographic characteristics of the individuals and reasons for enrolling for Aadhaar number/services. This study is employing ten different indicators to measure/assess the relationship between the reasons for enrolment of Aadhaar number/services. This would suffice the purpose of presenting the overall picture of individual reasons for enrolling for Aadhaar number and its services. Table-4 presents the relationship between the first two reasons namely identity purpose (ID) and Fear of losing govt. services (FLS) and ten individual predictor variables. Table- 5 represents the association between the second two reasons; Proof of citizenship (PC) and Since neighbours have taken (SNT) and the individual characteristics. Table- 6 presents the relationship between the predictor individual variables and first two outcome variables; Awareness of Biometrics Taken (ABT) and Awareness of Safety and Security issues associated with Aadhaar (SSIA) while table- 7 represents the association between the predictor individual variables and second two outcome variables; Consent to take biometrics despite issues with Aadhaar (CB) and Aadhaar implemented before enacting Aadhaar Law (IAL).

Table- 4.5 describes how the covariates (gender, religion, caste, education, occupation, income/class, type of house, ownership of the house, and place of residence) stimulus the individuals to enroll for Aadhaar number. It is established from the existing literature and government documents that Aadhaar widely used as a universal legal identity of the Indians. The results of this table- 5 are to decipher the claims of government and its opponent that people volunteering for Aadhaar number enrolment and forced to get enrolled respectively.

4.5.1. Reasons for enrolling for Aadhaar number

Tables 4.4 and 4.5 are discussed in this section. The reasons such as identity purpose, fear of losing service, proof of citizenship, and since neighbors have taken are examined in fulfilling the objective of the study.

Gender

The Male is taken as a reference category. Table-4.4 descriptions of the estimated Odds ratio of 0.91 and 0.52 times females are less likely to enrol for Aadhaar number due to identity purpose (ID) and fear of losing government services (FLS) respectively. Statistically there is no significant relationship between the gender and identity purpose (ID) of Aadhar while a less significant relationship (p value <0.10) between gender and fear of losing government services (FLS) for Aadhaar enrolment. Table- 5 results show that the estimated Odds ratio of 0.86 and 0.88 times females are less likely to accept proof of citizenship (PC) and since neighbours have already taken (SNT) as reasons for enrolling for Aadhaar number. There is no statistically significant relationship between the gender and the reasons; proof of citizenship (PC) and since neighbours have already taken (SNT) for Aadhaar enrolment.

The results from the table- 4.4 and table- 4.5 infer that the role of gender is very minimal in analysing the reasons for Aadhaar enrolment. The reasons can be attributed to the fact of patriarchal society where male members of the family take the decisions with regard to entitlements of any scheme by the government. Hence, the females have played very less role in decision making of obtaining the Aadhaar number. Some female respondents like Sangeetha said that “I have taken Aadhaar card for securing benefits from government schemes. My husband has also told me to enrol since we need Aadhaar for accessing ration, LPG subsidy and Kalyana lakshmi benefits from government”. This imply that women followed their husband’s instructions in Aadhaar enrolment. Another woman, Gouramma from Adilabad also said that she got enrolled for Aadhaar for accessing pension. So, the fear of losing government services made her enrol for Aadhaar. It implies that the women did not volunteer but were forced to enrol for Aadhaar due to fear of losing government services.

Age

The average age group ranging from 18 to 24 is taken as the reference category. Table-4.4 describes that the age groups ranging from 35-45 and 55 and above with Odds ratio of 1.59 and 1.21 are more likely to enrol for Aadhaar number due to identity purpose. There is a statistically significant relationship (p value <0.03) between the age group 35-44 and identity purpose while less significant (p value <0.06) relationship between the age group 55 and above and identity purpose. The age group 55 and above with the odd ratio of 2.21 indicate that the aged people are likely to enroll for Aadhaar number due to the fear of losing the government services. Statistically, there is a significant relationship (p value <0.03) between the age group 55 and above fear of losing the government services. The other age groups 25-34, 45-54 are less likely to enroll for Aadhaar number because of identity purpose and fear of losing the government services. However, there is no significant relationship between them.

Table- 4 results show that the age groups 25-34 with Odds ratio of 1.34 are merely to accept proof of citizenship as the reason for enrolling for Aadhaar number although there is no significant relationship between them. But the age group 35-44, with Odds ratio of 1.92 are more likely to enroll for Aadhaar number due to proof of citizenship reason and statistically significant at less than 10% (p value <0.09) between them. The other age groups, 45-54 and 55 and above are less likely to enroll for Aadhaar with proof of citizenship as a reason and no significant relationship between them. The age groups 25-34, 35-44 and 45-54 with the Odds ratio of 2.27, 1.67 and 2.13 are more likely to enroll for Aadhaar number due to SNT. Statistically, there is a positive and less significant relationship at less than 10% (p value <0.10) between age group 25-34 and SNT while at less than 5% (p value <0.02) age group 45-54 and SNT but no significant relationship between 35-44 and SNT. The other age group 55 and above do not enroll for Aadhaar due to SNT and no relationship between them. The young (25-34) have enrolled for Aadhaar number because of the reasons proof of citizenship and since neighbours have already taken it (peer group pressure). The middle age groups (especially 35-44) have the identity, proof

of citizenship and neighbours already taken concerns for obtaining Aadhaar while old age have enrolled for Aadhaar due to the fear of losing government services.

The identity and proof of citizenship have been the significant reason for the age group 35-44 while identity purpose as well as the fear of losing government services influenced the old age people of 55 and above to enroll for Aadhaar number. The peer pressure was evident that the young (age group 25-34) and middle age people have agreed that they have enrolled for Aadhaar since neighbours have already taken. As the age increases the importance of identity purpose, fear of losing services and peer pressure (since neighbours have already taken) have played a vital role in influencing the people to enroll for Aadhaar number. No significant relationship between the remaining age groups and dependent variables was found.

The pensioners Gouramma and Bheembai from Dharmajipet, Lemuguda villages of Indravelli and Utnoor Mandals of Adilabad district could not understand what biometric means to them during the field study. After explaining they considered that fingerprints, Iris and photographs for Aadhaar enrolment might be useful in having a unique identity but the errors with age or name in the Aadhaar card pose a threat to their access to government beneficiaries. The respondents like Veera swamy, Mallaiah, Srinivas, Joshua and Prameela from Nirmal town said that they have enrolled due to fear of losing services and identity purpose during the field study. The fear of losing government services was found to be more among the old age people. They also don't understand biometrics while give examples like Facebook and WhatsApp for digital identity.

Religion

Hindu religion is taken as a reference category. Table- 4.4 results show that Agnostic, Christian, Muslim and Sikh with Odds ratio of 1.00, 1.54, 1.91 and 3.41 are more likely to enroll for Aadhaar due to identity purpose. But statistically there is a positive and

significant relationship at less than 10% (p value <0.08) between Muslim and identity purpose only. Though Atheist and Sikh religious groups with Odds ratio of 1.00 and 3.05 are more likely to enroll for Aadhaar due to fear of losing government services but there is no significant relationship between them. Similarly, other groups, Christians and Muslims do not accept fear of losing services (FLS) as a reason for Aadhaar enrolment. Table- 4 results indicate that Atheist and Muslim categories with Odds ratio of 1.00 and 2.49 are more likely to accept proof of citizenship (PC) as the reason for Aadhaar enrolment but there is a positive and significant relationship at less than 10% (p value <0.09) between Muslim and proof of citizenship. Agnostic and Sikh with Odds ratio of 1.12 for each are more likely to enroll for Aadhaar since neighbours have already taken but there is no relationship between those categories and SNT. The other categories, Atheist, Christian and Muslim are less likely to get enrolled for Aadhaar due to SNT.

The results from both tables (4.4 and 4.5) indicate that there is a positive and significant relationship between religious category Muslim and dependent identity and proof of citizenship. Muslims have enrolled for Aadhaar due to identity purpose and proof of citizenship. The minorities have the insecurities and issues with identity and claims of citizenship as well. No significant relationship between other religious categories and dependent variables was found.

Amina Khan, Subhani, Md. Sarvar, Unnisa, and Khaja defined religion and citizenship as their identity. They think that Aadhaar enrollment would give them a robust identity because it is issued by government agencies. Only the educated people Siraj and Tajoddin and Salma Begum would say that biometrics include fingerprints and Iris along with photographs. Digital identity is generated from computer and other internet sources like Facebook, Instagram and WhatsApp for communication and other social networking. The people from Sikh community said that digital identity is a status symbol and it is important to a certain extent. It is not duplicable, moving towards the digital world. There should be a regulator to protect my digital identity. e.g., Gmail, Facebook and WhatsApp.

Caste

General community is taken as a reference category. Table- 4.4 results show that OBC, SC and ST with Odds ratio of 1.34, 1.44 and 1.07 are more likely to enroll for Aadhaar due to identity purpose although there is a positive and statistically significant relationship at less than 5% (p value <0.04) between OBC and identity purpose (ID). SC and ST categories with 1.50 and 1.13 respectively are more likely to enroll for Aadhaar due to fear of losing government services (FLS) though there is no significant relationship between them. OBC are less likely to accept FLS as a reason for enrolling for Aadhaar number. Table-4.5 results show that OBC, SC and ST are less likely to accept proof of citizenship as the reason for Aadhaar enrolment and there is no relationship between them. OBC and SC are less likely to accept since neighbours have already taken as the reason for Aadhaar enrolment and there is no relationship between them while there is a positive and significant relationship at less than 10% (p value <0.08) between OBC and SNT. Only ST with Odds ratio of 1.03 are more likely to enrol for Aadhaar by accepting since neighbours have already taken (SNT) as the reason but no significant relationship is between them.

The results from these two tables infer that the communities- OBC, SC and STs that depend on government welfare services would like to enroll for Aadhaar because of identity purpose, fear of losing govt. services while only STs get enrolled since neighbours have already taken it. The OBC category are more likely to agree that they have enrolled for identity purpose and less due to peer pressure from the neighbours. A significance between OBC and since neighbours taken. Though the other caste groups SC/STs are more likely to agree that identity purpose and fear of losing services influenced them for Aadhaar enrolment but no significant. This could be due to the reason that the SC/STs carry a legal identity certified by Tahsildar for their caste identity to claim government benefits compared to other communities.

OBC respondents like Manasa who is working as a maid says that she doesn't understand what identity means but she said that identity is the proof of living as an

individual in the society after introductory discussion on identity with a few examples like caste, religion and gender. She also said that she doesn't know about Digital identity and she also doesn't like it because she doesn't want to be known to strangers. A young boy, Amarnath says he is not what constitutes an identity but gives a vague view that his name is his identity. Parthu, a postgraduate student says that identity is a social status inclusive of caste and religion, and good name of family. He further continues saying that caste is the biggest identity but there is no importance for caste in the towns and villages that might value caste identity. While SC respondents like Sangeeta and Nagender consider caste as their identity or family lineage is the source of their identity. A student Anil opined that he would lose more benefits if he cannot produce the caste certificate but not Aadhaar. The caste certificate issued by MRO/ Tahsildar is more important. Shaymala, Poojitha and Shilpa, who are taking coaching for government jobs, think that Aadhaar works as a supporting documentation in getting caste and income certificates from Mandal Revenue Office. This process has simply replaced the Ration card that used to be an identity proof for many things. The ST respondents Madei Manik Rao, vadai Ramu, Kodapaiyu, Athram Indru, Tekam Sakaram, from Dharmajipet, Lemguda, Yamalkunta (most of them belonging to Adavasi families) have enrolled for Aadhaar number because the officers convinced them that they would get more benefits by producing Aadhaar in accessing government benefits. This implies that tribes came forward to enrol due to fear of losing services.

However, the STs value ITDA cards as identity cards than Aadhaar card because of the health, education and ration services provided by Aadhaar. It is also because the errors in age and name printed in Aadhaar card give them trouble in using it as identity number to receive the welfare schemes. They also said that they would not either ration or pension for two to three months continuously if there is any machine failure or authentication failure with Aadhaar.

Table: 4.4
Logistic Regression Analysis to Capture the Reasons based on Demographic and
Socio-Economic factors for Enrolling for Aadhaar Number

Predictor Variables	Outcome Variables					
	Identity Purpose			Fear of losing services		
	Odds Ratio	[95 % CI]	p-value	Odds Ratio	[95 % CI]	p-value
Individual Characteristics						
GENDER						
Male	1.00 ^R			1.00		
Female	0.91	0.46-1.77	0.77	0.52	0.23 - 1.17	0.10*
AGE						
18-24	1.00 ^R			1.00		
25-34	0.49	0.16 - 1.45	0.20	0.79	0.22 - 2.84	0.72
35-44	1.59	0.18 - 1.91	0.03**	0.52	0.12 - 2.16	0.37
45-54	0.57	0.16 - 2.05	0.39	0.61	0.13 - 2.83	0.53
55 and above	1.21	0.01 - 4.01	0.06*	2.21	0.02-11.38	0.03**
RELIGION						
Hindu	1.00 ^R			1.00		
Agnostic	1.00	(empty)		1.00		
Atheist	0.81	0.03 - 23.86	0.90	1.00		
Christian	1.54	0.41 - 5.72	0.52	0.68	0.11 - 4.16	0.67
Muslim	1.91	0.30 - 3.78	0.08*	0.94	0.27 - 3.25	0.92
Sikh	3.41	0.38 - 30.76	0.27	3.05	0.24-57.14	0.43
CASTE						
General	1.00 ^R			1.00		
OBC	1.34	0.67 - 2.68	0.04**	0.83	0.34 - 2.09	0.69
SC	1.44	0.59 - 3.50	0.42	1.50	0.42 - 5.39	0.53
ST	1.07	0.38 - 3.00	0.89	1.13	0.28 - 4.72	0.86
EDUCATION						
Graduation	1.00 ^R			1.00		
Post-Graduate	0.55	0.17 - 1.82	0.33	1.10	0.33 - 3.99	0.89
Doctorate	4.86	0.13 - 184.01	0.39	1.00		
Professional, Law, MBB S	0.66	0.54 - 2.50	0.58	0.24	0.06 - 0.95	0.04**
Other	1.00			1.00		
Up to class 12	1.16	0.50 - 2.50	0.70	0.84	0.33 - 2.10	0.68

Illiterate	2.55	0.88 - 7.03	0.08*	1.75	0.38 - 8.02	0.48
OCCUPATION						
Housewife/Home Maker	1.00 ^R			1.00		
Agriculture	2.17	0.63 - 7.46	0.22	0.39	0.06 - 2.67	0.34
Big Business	1.00	---	---	1.00	---	---
Carpenter/halwai	1.44	0.17 - 11.85	0.74	0.73	0.05-10.21	0.82
Others	5.53	1.81 - 16.93	0.00** *	0.82	0.20 - 3.30	0.78
Petty Business	2.66	0.75 - 9.39	0.09*	1.03	0.21 - 5.08	0.97
Service	2.36	0.86 - 6.46	0.10*	0.90	0.26 - 3.30	0.87
Student	0.93	0.25 - 3.48	0.92	0.48	0.11 - 2.15	0.34
Unemployed	1.75	0.56 - 5.48	0.34	0.34	0.08 - 1.50	0.16
INCOME						
Middle Class	1.00 ^R			1.00		
Poor	2.79	1.40 - 5.55	0.00** *	2.33	0.18 - 1.02	0.06*
Above Middle class	1.40	0.26 - 7.64	0.07*	0.37	0.02 - 1.16	0.28
Rich	1.00	(empty)		1.00		
Richest	1.00	----		0.02	0.00 - 0.54	0.07*
TYPEOFHOUSE						
Gated Community	1.00 ^R			1.00		
Independent/Pucca house	0.39	0.09 - 1.57	0.09*	0.55	0.09 - 3.33	0.52
Kachcha House	0.22	0.05 - 1.06	0.05**	0.50	0.06 - 3.75	0.50
Hut	1.06	0.07 - 15.47	0.07*	1.00		
RESIDENCE						
Urban	1.00 ^R			1.00		
Rural	1.41	0.76 - 2.64	0.02**	0.34	0.30 - 1.51	0.34
OWNERHOUSE						
Own	1.00 ^R					
Rented	1.50	0.77 - 2.95	0.24	1.49	0.61 - 3.68	0.38
House on Public land	1.34	0.54 - 3.33	0.53	0.82	0.25 - 2.67	0.75
_cons	0.38	0.05 - 2.88	0.35	15.61	1.14 – 210.05	0.04**
<i>Log likelihood</i>	-184.45284			-122.4526		
<i>Pseudo R2</i>	0.1809			0.1421		
<i>Prob > chi2</i>	0.0000***			0.0946		
<i>Observation</i>	327			315		

Source: Author's calculations from the field study. “The characters “*”, “**”, “***” indicates “10’, ”5’, ’1’ percent level of significance”.

Table-4.5:
Logistic Regression Analysis to Capture the Reasons based on Demographic and Socio-Economic factors for Enrolling for Aadhaar Number

Predictor Variables	Outcome Variables					
	Proof of Citizenship			Since Neighbours taken		
	Odds Ratio	[95 % CI]	p-value	Odds Ratio	[95 % CI]	p-value
Individual Characteristics						
GENDER						
Male	1.00 ^R			1.00		
Female	0.86	0.45 - 1.65	0.65	0.88	0.47 - 1.66	0.70
AGE						
18-24	1.00 ^R			1.00		
25-34	1.34	0.48 - 3.76	0.58	2.27	0.84 - 6.15	0.10*
35-44	1.92	0.29 - 2.90	0.09*	1.67	0.55 - 5.04	0.36
45-54	0.85	0.25 - 2.91	0.79	2.13	0.64 - 7.11	0.02**
55 and above	0.88	0.27 - 2.83	0.82	0.85	0.27 - 2.68	0.78
RELIGION						
Hindu	1.00 ^R			1.00		
Agnostic	1.00	(empty)		1.12		
Atheist	1.73	0.06 - 50.96	0.75	0.65	0.04- 35.71	0.95
Christain	0.57	0.15 - 2.15	0.41	0.89	0.17 - 2.42	0.52
Muslim	2.49	0.78 - 7.91	0.09*	0.78	0.33 - 2.39	0.81
Sikh	0.36	0.05 - 2.73	0.32	1.12	0.08 -7.76	0.83
CASTE						
General	1.00 ^R			1.00		
OBC	0.91	0.46 - 1.79	0.78	0.55	0.29 - 1.07	0.08*
SC	0.76	0.32 - 1.84	0.55	0.86	0.37 - 2.02	0.74
ST	0.98	0.36 - 2.69	0.97	1.03	0.38 - 2.78	0.96
EDUCATION						
Graduation	1.00 ^R			1.00		
Post-Graduate	2.02	0.67 - 6.10	0.21	1.45	0.52 - 4.08	0.48

Doctorate	0.28	0.01 - 10.53	0.50	1.23	0.03 -49.7	0.91
Professional, Law, MMB S	1.25	0.32 - 4.89	0.75	0.49	0.13 - 1.83	0.29
Other	1.00			1.00		
Up to class 12	0.72	0.34 - 1.52	0.39	0.95	0.45 - 1.95	0.88
Illiterate	0.32	0.11 - 0.93	0.04**	0.54	0.19 - 1.53	0.25
OCCUPATION						
Housewife/Home Maker	1.00			1.00		
Agriculture	0.31	0.09 - 1.06	0.06*	0.41	0.12-1.39	0.10*
Big Business	1.00			1.00		
Carpenter/halwai	0.71	0.09 - 5.52	0.75	0.44	0.06-3.05	0.41
Others	0.14	0.04 - 0.41	0.00***	0.24	0.08-0.70	0.01
Petty Business	0.34	0.10 - 1.20	0.10*	0.46	0.14 - 1.52	0.20
Service	0.37	0.14 - 0.99	0.05**	0.48	0.19-1.26	0.14
Student	0.67	0.19 - 2.32	0.53	0.88	0.27-2.88	0.84
Unemployed	0.33	0.11 - 1.03	0.06*	0.53	0.18-1.60	0.26
INCOME						
1.Middle Class	1.00 ^R			1.00		
2. Poor	0.41	1.21 - 0.79	0.01**	0.59	0.31 - 1.11	0.10*
3. Above Middle class	1.09	0.22- 5.46	0.92	0.21	0.03 - 1.37	0.10*
4. Rich	1.00	(empty)		1.00		
5. Richest	1.25	0.03 - 45.31	0.90	1.00		
TYPE OF HOUSE						
Gated Community	1.00 ^R			1.00		
Independent/Pucca house	1.82	0.45 - 7.38	0.45	2.46	0.58- 10.35	0.22
Kachcha House	3.19	0.66 - 15.35	0.15	3.86	0.78- 19.06	0.10*
Hut	0.68	0.05 - 9.73	0.78	0.94	0.06- 13.75	0.97
RESIDENCE						
Urban	1.00 ^R			1.00		
Rural	0.68	0.36 - 1.25	0.01**	0.61	0.33 - 1.13	0.12
OWNER HOUSE						
Own	1.00 ^R			1.00		
Rented	0.87	0.45 - 1.67	0.67	0.73	0.38 - 1.39	0.34
House on Public land	0.59	0.23 - 1.53	0.27	0.83	0.34 - 2.05	0.69

cons	4.34	0.58 - 32.51	0.15	1.38	0.20 - 9.66	0.32
<i>Log likelihood</i>	-190.64337			-195.98582		
<i>Pseudo R2</i>	0.1640			0.1263		
<i>Prob > chi2</i>	0.0000***			0.0046***		
<i>Observation</i>	329			327		

Source: Author's calculations from the field study. "The characters "***" "****" "*****" indicates "10',"5','1' percent level of significance".

Education

Graduation is taken as a reference category. Table- 4.4 results show that the Doctorates, Up to 12th level, Others and Illiterates with Odds ratio of 4.00, 1.00, 1.16 and 2.55 are more likely to enrol for Aadhaar due to identity purpose (ID). But there is a positive and significant relationship at less than 10% (p value <0.08) between Illiterates and ID only while statistically no significant relationship between other categories and ID. Post graduates and professionals- Engineering, MBBS etc are less likely to enrol for Aadhaar for identity purpose and there is no relationship between them. Doctorates, Post graduates, Others and Illiterates with the Odds ratio of 1.10, 1.00, 1.00 and 1.75 are more likely to accept that fear of losing the govt. services (FLS) as the reason for enrolling for the Aadhaar number. But there is no significant relationship between them. Professional graduates are less likely to enrol for Aadhaar due to fear of losing services and significant at less than 5% (p value <0.04) between them. Table- 4.5 results indicate that Post graduates, Professionals and others with Odds ratio of 2.02, 1.25 and 1.00 are more likely to enrol for Aadhaar because of Proof of citizenship reason but there is no significant relationship between them. Illiterates and up to 12th level categories are less likely to enroll for Aadhaar with Proof of citizenship reason while there is significant relationship at less than 5% (p value <0.04) between illiterates and PC. Other categories are less likely to accept PC as the reason for Aadhaar enrolment. Post graduates, Doctorates and others with Odds ratio of 1.45, 1.23 and 1.00 are more likely to enrol for Aadhaar number since neighbours have already taken but there is no significant relationship between them. Other categories; Professional graduates, Up to 12th class and illiterates are less likely to enrol

for Aadhaar since neighbours have already taken. Statistically there is no relationship between them.

The illiterate and Semi-literate (people who studied up to class 12) consider their caste, religion or family as their identity. Respondents like Yadaih, Manemma, Jaya, and Saraiah opined that Aadhaar is necessary for getting ration from the fair price shop and school admissions hence they have enrolled. This implies that fear of losing and need of identity influenced them. Even the well-educated post graduates like Chandrashekhar, Dayakar, Srinivas, Raghu, Swathi, Md Tajoddin and Mamatha have also said that Aadhaar is a great identity tool in accessing their following, opening bank accounts and buying the SIM cards also. Hence, both the identity and fear of losing the series are the main reason behind their enrollment. But they define their identity as an individuality. Especially, Raghu and Swathi especially believe that their daily activities indicate that they are existing in terms of their identity.

The illiterates could not understand biometrics exactly but the discussion on fingerprints and Iris scan made them to recollect about Aadhaar enrolment. Mariamma, a christian woman from Nirmal said that it is like their Santhanam (signature) for the proof of identity while the educated people from graduation onwards can define it as capturing fingerprints, Iris and photograph of the individual.

Occupation

House wife/home maker is taken as a reference category. Table- 4.4 describes that Agriculture, Big business, Carpenter/halwai, Petty Business, Service and Unemployed with Odds ratio of 2.17, 1.00, 1.44, 5.53, 2.66, 2.36 and 1.75 are more likely to enroll for Aadhaar due to identity purpose (ID). But there is a highly significant relationship at less than 1% (p value <0.000) between Others and ID, a less significant relationship at less than 10% between ID and (p value <0.09) Petty business, and (P value <0.10) service categories

respectively. But no relationship between agriculture, Carpenter, Unemployed, Big business and ID was found. The students are less likely to accept identity purpose as the reason for Aadhaar enrolment and there is not relationship between them. Only Big business and Petty business categories with Odds ratio of 1.00 and 1.03 respectively are more likely to enroll for Aadhaar number due to the fear of losing government services (FLS). Other categories like Agriculture, carpenter/halwai, service, student, other and unemployed are less likely to enroll for Aadhaar due to FLS. Table- 4.5 results show that (except Big business) Agriculture, carpenter/halwai, others, petty business, service, student and unemployed are less likely to accept proof of citizenship (PC) as the reason for Aadhaar enrolment. But there is less significant relationship at less than 10% (p value <0.06) between agriculture and PC while a highly significant relationship at less than 1% (p value <0.000) between others and PC. A less significant relationship at less than 10% between (p value <0.10) petty business and (p value <0.06) unemployed and PC respectively. A significant relationship at less than 5% (p value 0.05) between service and PC was found. Agriculture, Big business, carpenter/halwai, petty business, service, student and unemployed are less likely to accept that since neighbours have taken (SNT) as the reason for their enrolment for Aadhaar. There is a less significant relationship at less than 10% (p value<0.10) between agriculture and SNT while no relationship between other categories and SNT.

The identity purpose was the main reason behind Aadhaar enrolment by people from the occupational categories, others, petty business, service sector and student but not other categories. Factors like proof of citizenship and neighbours have taken it influence the agriculture category while proof of citizenship alone made people from occupations petty business, service, unemployment and other to enrol for Aadhaar.

The respondents like Mallesh, Sudhakar, Devaiah and Rajamallu from agriculture category have defined identity as living a good life in the society. Similarly, Venkatesh, Sampath and Sumalatha from Petty business category have given the similar definition of

identity that having good status in the society. A young girl, Harini from the service sector defines it as “a form of recognition that a person gets from government or personal”. Shiva Shankar, Thirupathi, Archana and Sindhuja from service sector view respectful job/employment as an identity. They also opine that Digital Identity is something that can be stored in a digital form. While Harini and S Prithvi only defined Biometrics as the form of identification that is done through scanning of fingerprints, iris scan, and facial recognition, one’s bodily physiological data is stored for identification. The respondents from the agriculture category fail to understand digital identity and biometrics but the petty business category people tried to give examples like whatsapp, Facebook and other social media and apps for digital identity. They also consider the biometrics as capturing fingerprints and Iris (eye scanning in their words).

Income/Class

Middle class (5-10 Lakh) is taken as a reference category. Table-4.5 results indicate that Poor, above middle class, Rich and Richest with Odds ratio of 2.79, 1.40, 1.00 and 1.00 are more likely to enrol for Aadhaar due to identity purpose (ID). There is a highly significant relationship at less than 1% (p value <0.000) between the poor and (ID) while a less significant relationship at less than 10% (p value <0.07) between the above middle class and ID. Poor and Richest are less likely to enrol for Aadhaar due to fear of losing the government services. There is a less positive and less significant relationship at less than 10% between ID and (p value <0.06) poor and (p value <0.07) Richest. (Rich are more likely to accept fear of losing services (FLS) as the reason for Aadhaar enrolment and there is no significant relationship between them. Table- 4.5 results show that Above Middle class, Rich and Richest with odds ratio of 1.09, 1.00 and 1.25 are more likely to accept proof of citizenship (PC) as the reason for Aadhaar enrolment but there is no significant relationship between them. Poor are less likely to accept PC as the reason for Aadhaar enrolment and there is a positive and significant relationship at less than 5% (p value <0.01) between them. The Poor and Above middle class are less likely to accept since neighbours have taken (SNT) as the reason for Aadhaar enrolment. There is a positive and less significant relationship at less than 10% (p value <0.10) between both independent

categories and dependent variable SNT. (Rich and Richest are more likely to accept but no values due to less number of observations).

The poor have enrolled for Aadhaar number because of identity purpose, fear of losing government services and neighbours have already taken it. This implies the high levels of vulnerability that they have enrolled for Aadhaar to secure a better social security by ensuring their identity and aspirations for empowerment by accessing government services. It also indicates that the poor repose more trust in the government's legal identity scheme and treat it as "one size fits for all". The Aadhaar enrolment for Above middle class was influenced by identity purpose and peer pressure that neighbours have taken it.

The respondents like Nagenshwar, from Hyderabad, also say that caste is the major identity factor in the society. For a Muslim woman like Unnisa from Hyderabad says that her religion and family play a key role in formation of her social identity. Hence, their enrollment for Aadhaar is mainly because of identity and fear of losing services. People like Nikita Singh, Sujata Singh, Amina, Sampath and those from above middle class and Rich background would consider their name, gender and income and social status as their identity.

Type of House

Gated Community is taken as a reference category. Table-4.5 results show that Hut with Odds ratio of 1.06 are more likely to enrol for Aadhaar due to identity purpose (ID) and there is a positive and less significant relationship at less than 10% (p value <0.07) between them. Independent/pucca house and Kachcha house are less likely to enrol for Aadhaar due to identity purpose (ID). There is a positive and less significant relationship at less than 10% (p value <0.09) between Independent/Pucca house and ID while positive and significant at less than 5% (p value <0.05) between Kachcha house and ID. Independent/Pucca house and Kachcha are less likely to accept fear of losing services

(FLS) as the reason for Aadhaar enrolment. There is no relationship between them. The Hut category is more likely to enrol for Aadhaar due to fear of losing services (FLS) and no significant value was found.

Table- 4.4 results show that Independent/Pucca house and Kachcha house are more likely to accept Proof of Citizenship as the reason for Aadhaar enrolment but no significant relationship between them. Hut are less likely to enrol for Aadhaar due to proof of citizenship (PC) and no relationship between. Independent/Pucca house and Kachcha house with Odds ratio of 2.46 and 3.86 are more likely to accept that since neighbours taken (SNT) as the reason for Aadhaar enrolment while Hut are less likely to accept SNT as the reason for their Aadhaar enrolment. But there is no relationship between them.

People who live in the Hut have enrolled for Aadhaar due to identity while people living in the independent and Kachcha houses are less influenced by identity purpose. Peer pressure (that neighbours have taken it) was more on Kachcha house dwellers in enrolling for Aadhaar but not on dwellers of other types of houses. People who live in Hut belong to ST and SC population from Rural area, Adilabad. They could not understand identity and Digital identity compared to the Urban dwellers of independent houses who can understand identity as their social and economic identity and digital identity generated in social media like Facebook and WhatsApp. The people from Kachcha house gave vague answers on digital identity while caste being the important factor of their identity.

Place of residence

Urban is taken as a reference category. Table- 4.4 results indicate that Rural category with Odds ratio of 1.41 are more likely to enrol for Aadhaar due to identity purpose and, positive and significant relationship at less than 5% (p value <0.02) between them. Rural category is less likely to enrol for Aadhaar due to fear of losing services (FLS) and no significant relationship between them. Table- 4 data description that Rural category is less

likely to accept Proof of citizenship and since neighbours taken as the reasons for their Aadhaar enrolment and no significant relationship between them.

Identity and proof of citizenship are the main reasons for rural people to enroll for Aadhaar compared to the Urban residents. The above-mentioned Rural respondents consider their social identities like caste, family and religion are the main source of their identity. have less understanding of digital identity and biometrics compared to the urban and educated respondents. Manasa, from Adilabad, says “accessing government schemes is possible only when we have an identity card either Voter card or Ration card but Aadhaar now”. The results imply that Rural respondents have enrolled for Aadhaar due to identity and fear of losing government services.

Ownership of the House

Own house is taken as a reference category. Table-4.4 results show that rented and house in a public place with Odds ratio of 1.50 and 1.34 are more likely to enroll for Aadhaar due to identity purpose (ID) and no relationship between them. Rented with Odds ratio of 1.49 are more likely to enrol for Aadhaar due to fear of losing government services (FLS) while house on public land is less likely to enrol for Aadhaar due to FLS. There is no significant relationship between both of them and FLS. Table- 6 results indicate that Rented and House on Public land are less likely to accept proof of citizenship (PC) and since neighbours taken (SNT) as the reasons for Aadhaar enrolment and no significant relationship between them.

The residents of rented houses are influenced by identity and fear of losing services while people with houses on public land are influenced by identity only in enrolling for Aadhaar number. Most people have said that it is mandatory to produce Aadhaar to access welfare benefits offered by the government and it works as an identity card. Therefore, we have enrolled for Aadhaar despite having Ration card, Pan card, driving licence and voter

identity cards. This amounts to saying that Aadhaar is a de facto mandatory for accessing both government and market services and people from weaker sections were compelled to enrol for Aadhaar. The claims of people volunteering for the enrolment was a justification to escape the wrath of the law and public criticism.

The respondents like Nagender, Sangeeta, Amarnath, Joshua, Shilpa and Madhukar in rented houses define identity as their native place, name, caste and religion. They can define digital identity, something used in computers and mobile for Facebook and WhatsApp. The house on public land category people say that permanent house and its address would constitute the identity and could not understand what exactly the digital identity means for them except giving the example of mobile based apps they use for entertainment purpose.

4.5.2. Awareness of biometrics and issues associated with Aadhaar

Tables 4.6 and 4.7 are discussed in this section. The concepts such as Biometrics, privacy, data protection, consent to collect biometrics, and legality of Aadhaar are examined in analysing the people's awareness levels of privacy and safety issues associated with Aadhaar.

Gender:

The Male is taken as a reference category. Table-4.6 results show that females are less likely to be aware of Biometrics being taken for Aadhaar enrolment and not aware of privacy (safety) and security issues associated with Aadhaar. There is no relationship between the female category and two independent variables. Table- 4.7 data description indicates that females are less likely to give consent to biometrics despite issues associated with Aadhaar and less aware of Aadhaar project being implemented before enacting Aadhaar Law. There is no relationship between female category and consent to biometrics while less significant relationship at less than 10% (p value <0.10) between female (gender) and Aadhaar project implemented before enacting Aadhaar law.

The significant relationship between female category and IAL infer that women are not aware of the fact that the Aadhaar project was implemented before legislating an Aadhaar Act. They are less aware of biometrics being taken for Aadhaar enrolment and the privacy issues emanating from Aadhaar. Hence women are less likely to consent to take biometric information despite issues safety and security issues with Aadhaar. This was because many women consider identity as a proof of their existence in a unique way to oneself.

The educated Urban women like Kalpana Kaur defined biometrics as the proof of identification marks and can be used to authenticate my identity while Pragya, Nikita Singh defined Biometrics as Fingerprint or eye print identification, unique to each individual. Great method of determining the unique identity of a person. Sujata Singh says that Biometrics is not a fool proof method. They are not aware of Supreme Court judgements on Aadhaar but have heard from friends and relatives that the Supreme Court has raised concerns of privacy in implementing Aadhaar. The illiterate and semi literate women, from Rural areas, like Manemma, Gouramma and Kalyani are neither aware of biometrics nor followed any verdict by the Supreme Court.

Age

The average age group ranging from 18 to 24 is taken as the reference category. Table-4.6 descriptions indicate that the age groups ranging from 25-34, 35-44, 45-54 and 55 and above are less likely to be aware of biometrics taken for Aadhaar enrolment. There is a positive and significant relationship at less than 5% (p value <0.03) between the age group 55 and above and Awareness of biometrics being taken while no relationship between other age groups and awareness. The same age groups are also less likely to be aware of (privacy) safety and security issues associated with Aadhaar. There is positive and significant relationship at less than 5 % for (p value <0.03) age group 35-44 and (p value <0.02) age group 55 and above while less significant relationship at less than 10% (p value <0.10) between age group 25-34 and Awareness of Safety and Security issues with Aadhaar. But

no significant difference between age group 45-54 and the safety and security issues with Aadhaar. Table- 4.6 results show that the age groups 25-34, 35-44, 45-54 and 55 with odds ratio of 1.96, 1.71, 1.42 and 2.20 are more likely to be aware of giving consent to take biometrics despite issues associated with Aadhaar. But there is a positive and significant relationship at less than 10% (p value <0.10) between the age group 25-34 and consent to take biometrics despite issues with Aadhaar. The age groups 25-34, 45-54 and 55 and above are more likely to be aware of Aadhaar being implemented before enacting Aadhaar law while only the age group 35-44 are less aware of Aadhaar implementation before law. There is no significant relationship between the age groups and dependent variables (Aadhaar implemented before law).

The age groups ranging from 25-34 to 55 and above are less aware of biometrics being taken for Aadhaar enrolment, and the privacy safety and data security issues associated with Aadhaar. The significant relationship between the age group 55 and above and awareness of biometrics indicate the vulnerability of the old age getting enrolled for Aadhaar without any awareness of intricacies of extraction of biometrics for the Aadhaar project. Further, people of 25-34 age group are more likely to give their consent to take biometrics despite the safety and security issues with Aadhaar while other age groups are also more likely to consent for taking their biometric information despite the issues with it because of their low levels of understanding of biometrics and implementation of Aadhaar before enacting the Aadhaar law. Indeed, the legislative process has generated the debate over privacy, data security, misuse and surveillance leading to some awareness among the people of the intricacies with Aadhaar.

Religion

Hind religion is taken as a reference category. Table-4.6 results show that Agnostic, Atheist, Sikh with odds ratio of 1.00, 1.00 and 2.31 are more likely to be aware of Biometrics taken for Aadhaar enrolment and no significant relationship between them. Christian and Muslims are less likely to be aware of biometrics taken (ABT) and there is a

positive and significant relationship at less than 10% (p value <0.07) between Christian and ABT while no relationship between Muslim and ABT. Agnostic, Atheist, Muslim and Sikh categories with Odds ratio of 1.12, 2.01, 1.43 and 3.93 are more likely to be aware of (privacy) safety and security issues associated with Aadhaar while only Christian are less likely to be aware of the issues with Aadhaar. No significant relationship between them. Atheist and Christian categories with Odds ratio of 1.00 and 3.87 respectively are more likely to be aware of giving consent to take biometrics despite safety and security issues with Aadhaar and there is a positive and significant relationship at less than 10% (p value <0.10) between Christian and aware of giving consent to take biometrics despite issues with Aadhaar while no value recorded for atheist. Agnostic, Muslim and Sikh are less likely to be aware of giving consent to take biometrics for Aadhaar enrolment despite issues associated with it and no significant relationship between them. Agnostic, Atheist and Muslim categories with odds ratio of 1.00, 1.00 and 2.14 are more likely to be aware of Aadhaar being implemented before enacting law and Sikh are less likely to be aware of Aadhaar being before the law. No significant relationship between them.

Though Muslims and Christians are less aware of biometrics taken for Aadhaar enrolment but only the Christian category is less likely to give their consent to take biometrics if known the privacy and data security issues with Aadhaar. The people of Sikh community are more likely to be aware of biometrics and privacy and data security issues with Aadhaar and they decline to give consent to take biometrics despite the issues with Aadhaar and also not aware of the fact that Aadhaar was implemented before enacting Aadhaar law.

Caste

General category is taken as a reference category. Table-4.6 shows that OBC, SC and ST categories with Odds ratio of 1.44, 1.70, and 1.55 respectively are more likely to be aware of Biometrics taken for Aadhaar enrolment. The same categories with odds ratio of 1.23, 1.13 and 1.20 are more likely to be aware of (privacy) safety and security issues

with Aadhaar. However, there is no significant relationship between them. Table- 6 results indicate that STs with Odds ratio of 1.33 are more likely to be aware of giving Consent to take Biometrics despite issues with Aadhaar and OBC and SC are less likely to be aware of giving consent to take biometrics for Aadhaar despite issues. No significant relationship between SC and ST independent categories and dependent variable- awareness of consent to take biometrics while there is positive and significant relationship at less than 10% (p value <0.06) between OBC and Consent to take biometrics despite issues with Aadhaar. All the categories are less likely to be aware of Aadhaar being implemented before law and no relationship between OBC, SC and Awareness of Aadhaar implantation before law while there is a positive and significant relationship between ST and Awareness of Aadhaar implementation before law.

The significant results show that only the OBC category are less likely to give consent to take biometrics while STs are not aware that Aadhaar was implemented before enacting Aadhaar law. Though OBC, SC and STs are more likely to be aware of biometrics being taken for Aadhaar, and privacy and data security issues with Aadhaar and implementation of Aadhaar before Aadhaar law. Hence, they are reluctant to give consent to take biometrics for Aadhaar but not significantly. This indicates that people belonging to weaker sections are less aware of biometrics, issues with Aadhaar and its implementation mechanism but followed the government's instructions in enrolling themselves for Aadhaar number. The OBC respondents from both Urban have defined biometrics as fingerprints related while the Rural OBC, SC and ST respondents think of biometrics as permanent signatures taken by the government for Aadhaar enrolment. So that people won't cheat the government in accessing the welfare services.

Education

Graduation is taken as a reference category. Table-4.6 results show that Post graduates, Doctorates and Others with Odds ratio of 1.49, 1.00 and 1.00 respectively are more likely to be aware of Biometrics taken for Aadhaar enrolment. There is no

relationship between postgraduates and Awareness of biometrics taken while there is no value for Doctorates and others to establish the relationship due to less number of observations. Professional graduates, Up to 12th level and Illiterates are less likely to be aware of Biometrics taken for Aadhaar enrolment. There is a positive and highly significant relationship at less than 1% (p value <0.000) between Illiterates and Awareness of Biometrics taken (ABT) while there is positive and significant relationship at less than 5% (p value <0.04) between Up to 12th level and ABT while there is positive and less significant relationship at less than 10% (p value <0.06) between professional graduates and ABT. Again, Post graduates with an Odds ratio of 1.48 are more likely to be aware of (privacy) safety and security issues with Aadhaar but no significant relationship between them. The Illiterate, Doctorates, professional graduates, Up to 12th level categories (Illiterates with Odds ratio of 0.22) are less likely to be aware of (privacy) safety and security issues associated with Aadhaar and there is a positive and less significant relationship at less than 5% (p value <0.01) between Illiterates and Awareness of (privacy) safety and security issues with Aadhaar.

Table-5 results describe that Illiterates with Odds ratio of 0.30 are less likely to be giving consent to take biometrics despite issues associated with Aadhaar and there is a positive and significant relationship at less than 5 % (p value <0.02) between them. Post graduates, professional graduates, and Up to 12th level categories are less likely to be giving consent to take biometrics but no significant relationship between them. Doctorates and others with odds ratio of 1.00 and 1.00 are more likely to be giving consent to take biometrics despite issues with Aadhaar. And Post graduates, Doctorates, and others with Odds ratio of 25.79, 1.00 and 1.00 respectively are more likely to be aware of Aadhaar being implemented before Aadhaar Act and there is a positive and highly significant relationship at less than 1% (p value <0.000) between postgraduates and Awareness of Aadhaar implementation before Aadhaar Act while no values recorded for doctorates and others due to less number of observations. Professional graduates, up to 12th level and Illiterate are less likely to be aware of Aadhaar implemented before Aadhaar Act. There is a positive and less significant at less than 10% (p value <0.09) between professional

graduates and Aadhaar implementation before Aadhaar Act while there is a positive and significant relationship at less than 5% (p value <0.01) between Up to 12th level and Awareness of Aadhaar implementation before the Act while there is positive and highly significant relationship at less than 1% (p value <0.000) between Illiterates and Aadhaar.

The significant results describe that illiterates are less aware of biometrics, issues with Aadhaar, giving consent to take biometrics and implementation of Aadhaar was done before enacting Aadhaar law. The people who studied up to class 12 and professional graduates are also not aware of biometrics and completion of Aadhaar implementation before making a law while only Post graduates are more likely to be aware of issues with Aadhaar and its implementation. This shows that as the educational levels increase the awareness levels of biometrics, issues with Aadhaar and implementation also increase. It amounts to say that awareness levels are dependent on education levels.

Occupation

Housewife/Homemaker is taken as a reference category. Table- 4.6 results show that Agriculture, carpenter/halwai, and others with Odds ratio of 1.83, 5.18 and 1.92 are more likely to be aware of Biometrics taken for Aadhaar enrolment and there is no relationship between them. Big business, petty business, services, student and Unemployed are less likely to be aware of biometrics taken for Aadhaar enrolment and there is a positive and significant relationship at less than 5% (p value <0.03) between unemployed and awareness of biometrics taken while there is no relationship between other independent categories and dependent variable. Agriculture, Big business and petty business with Odds ratio of 1.01, 1.00, and 1.48 respectively are more likely to be aware of (privacy) safety and security issues associated with Aadhaar and there is no significant relationship between them. Carpenter/halwai, others, Service, student and unemployed are less likely to be aware of (privacy) safety and security issues associated with Aadhaar and there is a positive and less significant relationship at less than 10% (p value <0.07) between unemployed and

Awareness of issues with Aadhaar while no relationship between the other categories and issues with Aadhaar.

Table- 4.7 results show that agriculture, Big business, carpenter/halwai, petty business, service, student and unemployed with Odds ratio of 1.58, 1.61, 1.70, 1.28, 1.16, 1.94 and 1.50 respectively are more likely to be giving consent to take biometrics for Aadhaar enrolment despite safety and security issues associated with Aadhaar. There is a positive and less significant relationship at less than 10% (p value <0.06) between Petty business and consent to take biometrics despite issues while there is no relationship between the rest of the independent categories and consent to take biometrics. Others are less likely to be aware of giving consent to take biometrics and no relationship between them. Again Agriculture, Big business, carpenter/halwai, and others with Odds ratio of 3.05, 1.00, 4.39 and 1.52 are more likely to be aware of Aadhaar being implemented before enacting Aadhaar law and there is no relationship between them. Petty business, services, student and unemployed are less likely to be aware of Aadhaar implementation before Aadhaar law and no relationship between them.

The awareness of biometrics taken for Aadhaar enrolment and implementation of Aadhaar before enacting Aadhaar law significantly less among the unemployed. Though other occupational categories also show less awareness levels but not significant. This dichotomy is because of people engaged in petty business, service sector and student categories consider Aadhaar as a potential source of identity for their respective fields while people from Agriculture category are more likely to be aware of biometrics and issues because they are required to produce it more often to draw the government benefits like *Rythu Bandhu*, crop insurance, crop loan and Kisan cards. The Petty business category are more likely to give consent to take biometrics despite issues with Aadhaar and less aware that Aadhaar was implemented before Aadhaar Act. Although the other categories are more likely to give consent to take biometrics despite issues with Aadhaar and not aware of completion of Aadhaar project before Aadhaar law but significant.

During the field study, only the educated category from graduation to PhD scholars are clearly aware of biometrics and defined it as physiological pattern information related to fingerprints, Iris and facial recognition. They also use it for their mobile and computer application purposes. So, they believe that it is a fool proof method. They are also aware of supreme court judgements on Aadhaar. They partly agree with the supreme court verdicts on Aadhaar because selective application of Aadhaar and protection of privacy is incompatible. Since they think of Privacy as having complete right to have control over one's own information related to social, economic and biological and health profile of the individual. Moreover, they are of the opinion that privacy is a constitutional right under Article 21 of Indian constitution. The illiterates and semi-literates from (up to class 12) could not define either biometrics or privacy. They are not aware of supreme court verdicts on Aadhaar.

Table-4.6:
Logistic Regression Analysis to Capture the Awareness based on Demographic and Socio-Economic factors for Enrolling for Aadhaar Number

Predictor Variables	Outcome Variables					
	Aware of Biometrics taken			Aware of Safety and Security Issues with Aadhaar		
	Odds Ratio	[95 % CI]	p-value	Odds Ratio	[95 % CI]	p-value
Individual Characteristics						
GENDER						
Male	1.00 ^R			1.00		
Female	0.73	0.37 - 1.42	0.35	0.92	0.47 - 1.81	0.82
AGE						
18-24	1.00 ^R			1.00		
25-34	0.64	0.22 - 1.85	0.41	0.49	0.18 - 1.34	0.10*
35-44	0.49	0.15 - 1.60	0.24	0.28	0.09 - 0.87	0.03**
45-54	0.50	0.14 - 1.83	0.30	0.58	0.17 - 1.95	0.38
55 and above	0.81	0.24 - 2.72	0.03**	0.24	0.07 - 0.78	0.02**
RELIGION						

Hindu	1.00 ^R			1.00		
Agnostic	1.00	(empty)		1.12	0.04-28.90	0.95
Atheist	1.00	(empty)		2.01	0.07-60.00	0.69
Christain	0.26	0.06 - 1.13	0.07*	0.74	0.16 - 3.31	0.69
Muslim	0.88	0.32 - 2.40	0.80	1.43	0.50 - 4.10	0.51
Sikh	2.31	0.20 - 26.58	0.50	3.93	0.27-57.29	0.32
CASTE						
General	1.00 ^R			1.00		
OBC	1.44	0.73 - 2.83	0.29	1.23	0.62 - 2.46	0.56
SC	1.70	0.72 - 4.01	0.23	1.13	0.47 - 2.75	0.78
ST	1.55	0.56 - 4.27	0.40	1.20	0.41 - 3.55	0.74
EDUCATION						
Graduation	1.00 ^R			1.00		
Post-Graduate	1.49	0.50 - 4.53	0.47	1.48	0.54 - 4.03	0.45
Doctorate	1.00			0.39	0.01-15.23	0.62
Professional, Law, M MBS	0.26	0.06 - 1.05	0.06*	0.49	0.13 - 1.86	0.29
Other	1.00					
Up to class 12	0.45	0.21 - 0.97	0.04**	0.71	0.34 - 1.51	0.38
Illiterate	0.14	0.05 - 0.43	0.00** *	0.22	0.07 - 0.69	0.01**
OCCUPATION						
Housewife/Home Maker	1.00			1.00		
Agriculture	1.83	0.56 - 5.99	0.32	1.01	0.27 - 3.75	0.99
Big Business	0.22	0.01 - 4.81	0.34	1.00		
Carpenter/halwai	5.18	0.35 - 76.13	0.23	0.47	0.06 - 3.71	0.48
Others	1.92	0.65 - 5.65	0.24	0.76	0.25 - 2.34	0.63
Petty Business	0.38	0.10 - 1.39	0.14	1.48	0.40 - 5.50	0.55
Service	0.58	0.21 - 1.59	0.29	0.66	0.24 - 1.82	0.42
Student	0.57	0.16 - 1.99	0.37	0.47	0.14 - 1.60	0.23
Unemployed	0.25	0.07 - 0.86	0.03**	0.31	0.08 - 1.12	0.07*

INCOME						
1. Middle Class	1.00 ^R			1.00		
2. Poor	0.66	0.34 - 1.29	0.22	1.13	0.46 - 1.70	0.71
3. Above Middle class	4.42	0.40 - 49.17	0.02**	3.06	0.37-18.76	0.33
4. Rich	0.80	0.08 - 7.99	0.85	1.29	0.09-15.19	0.89
5. Richest	0.37	0.00 - 35.80	0.67	1.00		
TYPEOFHOUSE						
Gated Community	1.00 ^R			1.00		
Independent/Pucca house	0.34	0.06 - 1.98	0.23	0.45	0.10 - 2.09	0.31
Kachcha House	0.61	0.09 - 3.97	0.06*	0.53	0.10 - 2.91	0.46
Hut	0.83	0.08 - 8.54	0.88	1.04	0.09-11.82	0.98
RESIDENCE						
Urban	1.00 ^R			1.00		
Rural	0.88	0.48 - 1.62	0.68	0.75	0.40 - 1.39	0.36
OWNERHOUSE						
Own	1.00 ^R					
Rented	0.42	0.22 - 0.81	0.01**	0.42	0.22 - 0.82	0.01**
House on Public land	0.33	0.13 - 0.83	0.02**	0.30	0.11 - 0.85	0.02**
Cons	22.38	2.32 - 215.97	0.01**	12.72	1.51-10.03	0.02**
<i>Log likelihood</i>	-187.37966			-181.75329		
<i>Pseudo R2</i>	0.1893			0.1974		
<i>Prob > chi2</i>	0.0000***			0.0000***		
<i>Observation</i>	334			334		

Source: Author's calculations from the field study. . "The characters "*" "***" "****" indicates "10','5','1' percent level of significance".

Table-4.7:
Logistic Regression Analysis to Capture the Awareness levels based on Demographic and Socio-Economic factors for Enrolling for Aadhaar Number

Predictor Variables	Outcome Variables	
	Aware of Biometrics taken	Aware of Safety and Security Issues with Aadhaar

	Odds Ratio	[95 % CI]	p-value	Odds Ratio	[95 % CI]	p-value
Individual Characteristics						
GENDER						
Male	1.00 ^R			1.00		
Female	0.73	0.37 - 1.42	0.35	0.92	0.47 - 1.81	0.82
AGE						
18-24	1.00 ^R			1.00		
25-34	0.64	0.22 - 1.85	0.41	0.49	0.18 - 1.34	0.10*
35-44	0.49	0.15 - 1.60	0.24	0.28	0.09 - 0.87	0.03**
45-54	0.50	0.14 - 1.83	0.30	0.58	0.17 - 1.95	0.38
55 and above	0.81	0.24 - 2.72	0.03**	0.24	0.07 - 0.78	0.02**
RELIGION						
Hindu	1.00 ^R			1.00		
Agnostic	1.00	(empty)		1.12	0.04-28.90	0.95
Atheist	1.00	(empty)		2.01	0.07-60.00	0.69
Christain	0.26	0.06 - 1.13	0.07*	0.74	0.16 - 3.31	0.69
Muslim	0.88	0.32 - 2.40	0.80	1.43	0.50 - 4.10	0.51
Sikh	2.31	0.20 - 26.58	0.50	3.93	0.27-57.29	0.32
CASTE						
General	1.00 ^R			1.00		
OBC	1.44	0.73 - 2.83	0.29	1.23	0.62 - 2.46	0.56
SC	1.70	0.72 - 4.01	0.23	1.13	0.47 - 2.75	0.78
ST	1.55	0.56 - 4.27	0.40	1.20	0.41 - 3.55	0.74
EDUCATION						
Graduation	1.00 ^R			1.00		
Post-Graduate	1.49	0.50 - 4.53	0.47	1.48	0.54 - 4.03	0.45
Doctorate	1.00			0.39	0.01-15.23	0.62
Professional, Law, MBS	0.26	0.06 - 1.05	0.06*	0.49	0.13 - 1.86	0.29
Other	1.00					
Up to class 12	0.45	0.21 - 0.97	0.04**	0.71	0.34 - 1.51	0.38

Illiterate	0.14	0.05 - 0.43	0.00** *	0.22	0.07 - 0.69	0.01**
OCCUPATION						
Housewife/Home Maker	1.00			1.00		
Agriculture	1.83	0.56 - 5.99	0.32	1.01	0.27 - 3.75	0.99
Big Business	0.22	0.01 - 4.81	0.34	1.00		
Carpenter/halwai	5.18	0.35 - 76.13	0.23	0.47	0.06 - 3.71	0.48
Others	1.92	0.65 - 5.65	0.24	0.76	0.25 - 2.34	0.63
Petty Business	0.38	0.10 - 1.39	0.14	1.48	0.40 - 5.50	0.55
Service	0.58	0.21 - 1.59	0.29	0.66	0.24 - 1.82	0.42
Student	0.57	0.16 - 1.99	0.37	0.47	0.14 - 1.60	0.23
Unemployed	0.25	0.07 - 0.86	0.03**	0.31	0.08 - 1.12	0.07*
INCOME						
1. Middle Class	1.00 ^R			1.00		
2. Poor	0.66	0.34 - 1.29	0.22	1.13	0.46 - 1.70	0.71
3. Above Middle class	4.42	0.40 - 49.17	0.02**	3.06	0.37-18.76	0.33
4. Rich	0.80	0.08 - 7.99	0.85	1.29	0.09-15.19	0.89
5. Richest	0.37	0.00 - 35.80	0.67	1.00		
TYPEOFHOUSE						
Gated Community	1.00 ^R			1.00		
Independent/Pucca house	0.34	0.06 - 1.98	0.23	0.45	0.10 - 2.09	0.31
Kachcha House	0.61	0.09 - 3.97	0.06*	0.53	0.10 - 2.91	0.46
Hut	0.83	0.08 - 8.54	0.88	1.04	0.09-11.82	0.98
RESIDENCE						
Urban	1.00 ^R			1.00		
Rural	0.88	0.48 - 1.62	0.68	0.75	0.40 - 1.39	0.36
OWNERHOUSE						
Own	1.00 ^R					
Rented	0.42	0.22 - 0.81	0.01**	0.42	0.22 - 0.82	0.01**

House on Public land	0.33	0.13 - 0.83	0.02**	0.30	0.11 - 0.85	0.02**
Cons	22.38	2.32 - 215.97	0.01**	12.72	1.51-10.03	0.02**
<i>Log likelihood</i>	-187.37966			-181.75329		
<i>Pseudo R2</i>	0.1893			0.1974		
<i>Prob > chi2</i>	0.0000***			0.0000***		
<i>Observation</i>	334			334		

Source: Author's calculations from the field study. "The characters "**" "***" "****" indicates "10", "5", "1" percent level of significance".

Income/Class:

Middle class is taken as a reference category. Table- 4.6 results show that the Above middle class with odds ratio of 4.42 are more likely to be aware of Biometrics taken for Aadhaar enrolment and a positive and significant relationship at less than 5% (p value <0.02) between them. Poor, Rich and richest are less likely to be aware of biometrics taken and no significant relationship between them. Again Poor, Above Middle class, Rich and Richest are more likely to be aware of (Privacy) safety and security issues associated with Aadhaar and no significant relationship between them. Table- 6 results show that the Richest with odds ratio of 1.00 are more likely to be aware of giving consent to take biometrics for Aadhaar and no relationship between them. Poor, Above Middle class and Rich are less likely to be aware of giving consent to take biometrics and no relationship between them either. Again Richest with odds ratio of 1.00 are more likely to be aware of Aadhaar being implemented before Aadhaar Act and no value recorded because of less number of observations in this category. Poor, Above Middle class and Rich are less likely to be aware of Aadhaar implanted before enacting Aadhaar law and relationship between them.

The Above middle class are significantly more likely to be aware of biometrics taken for Aadhaar enrolment while other classes are less aware but not significant enough. Almost all the classes are more likely to be aware of safety of privacy and data security and less likely to give consent to take biometrics. Except the Rich/Richest other class

categories are also not aware that Aadhaar implementation was done before enacting the Aadhaar Act.

The Rich/Richest and most of the above middle-class respondents know about biometrics that include fingerprints, Iris and facial recognition. During the field study, they said that they are aware of Supreme Court verdicts on Aadhaar. They also agree with the supreme court, but not all the judgements. SC should be more strict on govt. because there is more emphasis on transparency. Right to Privacy/Sectoral mandatory is not acceptable. The Poor are not aware of biometrics and not aware of supreme court judgements on privacy. Moreover, they would find it difficult to grapple with the idea of privacy. Interestingly, they are more open to accepting the government's entry into their socio-economic domain because they think that the state has the right to know about them. So privacy seems to be a luxury of the privileged.

Type of House

Gated community is taken as a reference category. Table- 4.6 results show that Independent/Pucca house, Kachcha house and hut are less likely to be aware of Biometrics taken for Aadhaar. There is a positive and significant relationship at less than 5% (p value <0.02) between Kachcha house and Awareness of biometrics taken for Aadhaar enrolment while no relationship between independent house, hut and Awareness of biometrics taken. The Hut category with Odds ratio of 1.04 are more likely to be aware of (Privacy) safety and security issues associated with Aadhaar but no significant relationship between them. Independent/Pucca house and Kachcha house are less likely to be aware of (Privacy) safety and security issues with Aadhaar and no relationship between them. Table- 6 results show that independent/Pucca house, Kachcha and Hut are less likely to be aware of giving consent to take biometrics for Aadhaar enrolment and there is a positive and less significant relationship less than 10% (p value <0.08) between independent/pucca house and aware of consent to take biometrics while no relationship between other categories and awareness of consent to biometrics. Hut with Odds ratio of 11.44 are more likely to be aware of

Aadhaar being implemented before enacting Aadhaar law and no relationship between them. Independent and Kachcha house are less likely to be aware of Aadhaar implemented before enacting law and no relationship between them.

People living in the Kachcha house are significantly less aware of the biometrics, and issues with Aadhaar while people from independent house and Hut are also less aware of biometrics, issues with Aadhaar but Hut dwellers are more aware of complete implementation of Aadhaar before enacting Aadhaar law and not significant. The respondents from Hut and Kachcha also said, during the field study, that they are not aware of biometrics and not aware of supreme court judgements. They view privacy as something strange but equate it with secrecy. Hence, they say that everyone has his/her secrets that other should not try to know. The people from independent houses of Urban areas are somewhat aware because the respondents like Raju, Arun, Satyanarayana and Madhukar have said that they know about biometrics (defined as the information related to fingerprints, and Iris) but less aware of supreme court judgments on Aadhaar. They also view privacy as someone's control over personal information related to finance and family.

Place of residence

Urban is taken as a reference category. Table-4.6 results show that Rural category people are less likely to be aware of biometrics taken for Aadhaar enrolment and less aware of (privacy) safety and security issues with Aadhaar but no significant relationship between them. Table-4.7 results indicate that Rural with Odds ratio of 0.78 are less likely to be aware of giving consent to take biometrics for Aadhaar enrolment and a positive and significant relationship at less than 5% (p value <0.02) between Rural category and Consent to take biometrics. Rural with Odds ratio of 1.04 are more likely to be aware of Aadhaar being implemented before enacting Aadhaar law.

The Rural residents are significantly less likely to give consent to take their biometrics despite issues with Aadhaar because they are less aware of biometrics, issues with Aadhaar and complete implementation of Aadhaar. This amounts to say that the Rural residents have enrolled for Aadhaar in order to secure their benefits from the government since Aadhaar was a kind of de facto mandatory in welfare governance.

During the field study, the Rural respondents said that they do not know about biometrics and failed to define it. On reminding them about fingerprints, Iris and photographs for Aadhaar enrolment, the respondents like Prameela and Unnisa have recollected and said “yes” we know it. They live away from mainstream society and could not follow supreme court judgments on Aadhaar. Though they do not know what privacy means exactly but value that others should not intrude into their lives. They accept the government's attempts to know about them because the state is the service provider for them. Even if they value privacy but could not afford to enjoy it despite it being a constitutional right due to practical reasons. But, the Urban respondents are aware of biometrics and privacy. They would like to give restricted access to government/state into their personal life. A few of them who are into business and well-paid employment think that they should have absolute control over their information to safeguard their privacy.

Ownership of the House

Own house is taken as a reference category. Table- 4.6 results show that Rented and House on Public land with Odds ratio of 0.42 and 0.33 are less likely to be aware of Biometrics taken for Aadhaar enrolment and there is a positive and significant relationship at less than 5% between Rented (p value <0.01), House on public land (p value <0.02) and Awareness of biometrics taken. Rented and House on Public land with Odds ratio of 0.42 and 0.30 respectively are less likely to be aware of (Privacy) Safety and security issues associated with Aadhaar. There is a positive and significant relationship at less than 5% between Rented (p value <0.01), House on Public land (p value <0.02) and Awareness of (Privacy) safety and security issues with Aadhaar. Table-4.7 results describe that Rented

house category people are less likely to be aware of giving consent to take biometrics and significant relationship at less than 5% (p value <0.01) between Rented and Consent to take biometrics. The house on public land with Odds ratio of 2.55 are more likely to be giving consent to take biometrics and less significant at less than 10% (p value <0.07) between the house on public land and consent to take biometrics. On the same line, Rented house category is less likely to be aware of Aadhaar being implemented before enacting law and relationship between them while House on public land with Odds ratio of 1.24 are more likely to be aware of Aadhaar being implemented before enacting law and no significant relationship between them.

The people who live in Rented houses and House on public land are less aware of biometrics, issues with Aadhaar with a significant relationship. Subsequently, the people of rented house are less likely to give their consent to take biometrics despite the issues with Aadhaar while House on public land are more likely to consent for giving biometrics. It is because people from housing on public land are in the need of identity compared to the Rented house category. The people from Rental houses are less aware of completion of Aadhaar Act while houses on public land are more aware of it.

The respondents from own houses of Urban areas define biometrics as the fingerprint, Iris and photographic information while rented and people who live in houses on public land are not much aware of it. The sense of privacy was more among the urban and own house dwellers than the house on public land category because townhouse people, unlike rented and house on public land, think that they deserve to have complete control over their personal information. Most of them are not aware of supreme court judgements on Aadhaar exactly but they think supreme court should safeguard their right to privacy as per the respondents during the field study.

4.6. People's perceptions on Technology, Digital governance and Development

15 open ended questions are administered to understand and analyse the people's views on key concepts like identity, digital identity, privacy, surveillance, biometrics and other issues associated with technocratic governance and Supreme Court verdicts on Aadhaar related PILs (Public Interest Litigations). The following notable views of the people have been obtained during the field work. Urban women like Kalpana Kaur defined identity as “the proof of my existence as a citizen of India and as a taxpayer” while Pragya “a unique reference for myself”, Sujata Singh thinks that identity as “my individuality. Chanti, the urban educated male opined that “social status which means name and fame of reputation as an identity” but neither the caste nor the religion. Nikita Singh, says identity is that proves you are a legal part of a certain city/country. Kamala says that identity is a unique recognition. Anurudh, says that “identity means a class identification, based on personality and character traits that can be noted and is unique to each and every single person in the world and hence there is zero claim of mistake”. “a form of recognition that a person gets from government or personal”. Manasa who is working as a maid says that she doesn't understand what identity mean but she said that identity is the proof of living as an individual in the society after introductory discussion on identity with a few examples like caste, religion and gender. Rekha also agrees that she is not aware of what identity means but would like to define it as name and education in the society.

Kalpana Kaur also said that, on asking why you enrolled for Aadhaar, that I need an identity card. Aadhaar card is the identity proof. Pragya also said that it's one doc that identifies me uniquely from others. Sujata Singh says that she has enrolled for Aadhaar because of the purpose it was created; though it doesn't seem to be as effective. Nikita Singh says that my understanding is mostly to have one unique number that links all your data and because it seemed mandatory. Kamala says that she was enrolled because of Unique identity/ social security. The young people from Urban area could define biometrics as fingerprints, Iris and facial recognition. Especially the college going students like Amar, Rekha, Shivaraj and Jyothi could define biometrics as fingerprints and Iris because biometric attendance was introduced in their colleges. The middle aged and old

people and Rural residents have come to know the use of biometrics for identity purpose with the introduction of Aadhaar. They said that they did not follow or were not aware of Supreme Court judgements on privacy in the Aadhaar case. So, it is inadequate to assess their views on privacy but they trust the supreme court that it would save the rights of the people during the field interviews.

During the field study, some Muslim and Sikh respondents like Amina, Kalpana Kaur also viewed the biometrics as the proof of identification marks and can be used to authenticate my identity while Sujata Singh thinks that biometrics is not a fool proof method. Hence, they are aware of the purpose of biometrics taken for Aadhaar enrolment. On the question of Privacy safety and security, they replied that privacy is to hide my personal information and personal matters from outsiders/strangers and sometimes from family too/society. my data should be secured. Thus, the people belonging to various age groups, castes and religious communities have differed on the very notion of privacy and identity in the era of digital governance.

4.7. Conclusion

The above results show that identity purpose was a significant reason for the age group 35-44, Muslims, OBC, Illiterates, the occupational categories such as petty business, service and students, people living in Hut and Kachcha houses while the fear of losing government service influenced women, the old age people, the professional graduates and the people living in rented houses to enroll for Aadhaar. The proof of citizenship made people from Muslim, petty business, services, Rural categories while the free pressure (since neighbours have already taken) was a significant reason for 25-34 age group, and agriculture categories in Aadhaar enrolment. The mentioned reasons for Aadhaar enrolment do not qualify the claim of UIDAI set up by the government of India that people have enrolled for Aadhaar on voluntary basis. These vulnerable sections were asked to produce as a mandatory requirement which was told by many respondents when asked why they want an Aadhaar number during the field study. The reasons for Aadhaar enrolment

were examined in relation to the awareness levels of the people about functioning of the Aadhaar project in the country.

The categories such as old age people, Christian, professional graduates like Engineers, Illiterates, people who studied up to class 12, the above middle class, and rented and House on public land dwellers are not aware of the fact that the biometrics were being taken for Aadhaar enrolment. Though other categories like women, young and middle age people, OBC, SC, ST, Poor, student, unemployed, people from Hut and Rural categories are also less aware but statistically not significant. This was due to the fact that they could not understand the concept “biometrics” when asked during the field work. Most of the respondents replied that they consider photographs only but not fingerprints and Iris. This is to say that the idea of generating biometric identity was not communicated/ known to the people while executing the Aadhaar project.

The people of age ranging from 25-34, 35-44, and 55 and above, Illiterates, unemployed, rented and house on public land are not aware of privacy, safety and security issues associated with Aadhaar. Though other groups belonging to minorities, weaker sections like SC, ST and OBC, Poor and Hut dwellers are also less aware of privacy. The reasons can be attributed to their lack of understanding of privacy and data safety and security. The respondents were not able to define what privacy means to them during the field study. Most of the weaker sections think of privacy as something secrecy or hiding things from others during the discussion on privacy. Only a few educated people from Urban could define privacy as their right to have control over their information.

The age group 25-34, petty business and house on public land categories are more likely to give consent while Christian, OBC, Illiterate, people from independent and rented houses are unwilling/reluctant to agree to give consent to take biometrics despite the privacy, safety and security issues associated with Aadhaar. Though other age groups and

occupational categories are more likely to agree while the remaining religious, caste, class categories are also less likely to give consent but not significant. The women, ST, Professional graduates, Illiterate and Up to class 12 are significantly less aware while Post graduates are more aware of the fact that Aadhaar was executed before enacting Aadhaar law.

The discussion on the interpretation of the results infers that most of the people, especially weaker sections were anxious to enrol for Aadhaar enrolment though not aware of the Aadhaar Project and its legality, and issues associated with biometric data generated identity. They have enrolled for Aadhaar in order to secure their identity, government's services to a large extent and proof of citizenship and peer pressure to some extent. It also gives the impression that people would not bother to enrol provided services are not linked to the Aadhaar based identity. The government of India/UIDAI did not communicate with people on the modalities of the execution of Aadhaar project and assurance of imminent issues of privacy, safety and security of data with storage and governance of Aadhaar numbering and authentication.

It was also observed from the field interviews and analysis of data that the Rural, illiterate, semi-literate (up to class 12), Poor, some minorities like Christians, Muslims and Hut dwellers and even Rented house people could not understand identity but viewed caste, religion, native place, family background as the forms of identity. They also fail to define digital identity, biometrics and privacy until explained. They would like to have control over their personal information from others but not from the state because the government is the major service provider and they are open to accept the state/government's attempt to know about their socio-economic, health and biological information. This amounts to say that the privacy has been the luxury of the privileged though poor and vulnerable sections like SC, ST and OBC, Minorities would like to exercise but could not afford it.

Chapter-V:

Developmental Experience of People: Delivery of Developmental Policies through Aadhaar Services in Telangana State.

This chapter deals with the developmental experience of the people in accessing the welfare services delivered through Aadhaar seeding with government's schemes and policies in Telangana state.

5.1. Introduction

This chapter deals with the developmental experience of the people in Telangana state. The objective of the chapter is to enquire into the achievements of welfare development through Aadhaar in the country in general and Telangana state in particular. An attempt is made to understand and analyse the existing literature on Aadhaar led development at both national and state levels. A critical engagement with documents on welfare, by Union and State governments and concerns of policy scholars, is done to review the claims of benefits of biometric technology in governance. The empirical observations made by various scholars and surveys on the working of Aadhaar in India are studied to capture the trends in the Aadhaar based services in the country. Especially, the data on response of the people in the proposed study was collected through a questionnaire and codified for the purpose of statistical analysis within the framework of suitable methodology.

A detailed discussion on the acceptability and the utility of Aadhaar identity in rendering services to the people in the state of Telangana is derived from the results of the field work. The outcomes of field study are examined in the theoretical framework of Foucault's biopolitics and governmentality. The appropriate graphs, figures and tables are used to depict the essence of the arguments and effective presentation of statistics as per relevance.

5.2. Purpose and Practice of Aadhaar in India

Nandan Nilekani (2012) argues that Aadhaar is a “new database for a new India”. It is clearly argued in the book that “the goal was to make the demographic data as inclusive as possible so that nobody was left out of the database because they didn’t fit into the standard category” (Nilekani and Shah 2012, p.33). How is Aadhaar identity created? This question was addressed by a Biometrics Committee set up in 2009 by the Government of India, recommending for “combination of a person’s photograph as well as ten fingerprints and iris scans” (Nilekani and Shah, 2012, p.35) and generate 12-digit numbers for every individual as an identity number. According to Nandan Nilekani (2012) Aadhaar can be used in the following ways:

1. Social Security Schemes such as PDS, MGNREGA, Pensions, Janani Suraksha Yojana and Sarva Siksha Abhiyan.
2. Subsidies: Fertilizer, Kerosene, LPG, Food, Water and Electricity.
3. Government Services: Driving Licenses, Passport, Airport entry, Tax Returns and Payments, Land Titles, Certifications and Documents.
4. e-KYC: Bank Account opening, Buying, Financing products, Business Correspondence, Micro-ATMs, and buying SIM cards.
5. Voting: Voter ID Issuance while voting and Attendance of employees in both Government and Private sectors

In the view of using Aadhaar for multi-purpose, the safety and security of Aadhaar data is debated. Keshava Guha (2010) also opines that Aadhaar confers an impeachable identity to the citizens of India if not citizenship or guarantee of services. He also argued that the Aadhaar will make the poor count in the country and give them the benefits that they are entitled for. Interestingly, he observed that “While Aadhaar has received a remarkably enthusiastic reception from the beneficiaries-the poor and it has also attracted

considerable criticism from a kind of civil libertarians that successfully derailed ID schemes in other countries” (Guha, 2010, p.9).

R S Sharma (2010) also expresses the similar view that the “UIDAI will fill a significant gap that existed in our regulatory infrastructure” (Sharma, 2010, p.101). Sriram (2014) critically examines the state’s policy intervention in the financial inclusion that the introduction of Aadhaar has moved away from “Reserve Bank of India’s definition of more comprehensive and meaningful financial inclusion towards a model that facilitates transactional aspects” (Sriram, 2014) by overcoming the issues of identity, deputation and authentication. This view of UIDAI was buttressed by the empirical study done in Andhra Pradesh by Aakella (2015) that Aadhaar enabled technologies have been immensely useful in the identification, execution and measurement of the work done by the daily-wage labourers. This was possible as mobile-based technologies were customised for the MGNREGA staff to apply these in the areas of “work allocation, e-muster, e-measurement, e-check measurement, and e-muster verification is used in every gram panchayat in the state” (Akella, 2015, p.25). He also noted that the Aadhaar number has been instrumental in ensuring timely wages for the wage-seekers in MGNREGA. “The World Bank estimates that one in six people around the globe are unable to prove their identity—a burden that disproportionately affects women and girls” (Lemmon, 2018, p.25).

Generally, women are barred from accessing the benefits - banking, employment and institutional credit due to lack of identity. Lemmon quotes that “one study found that the rate of financial inclusion subsequently rose by 24 percent among women between 2014 and 2015” (Lemmon, 2018, p.26). Moreover, the report on women and law hails the merits of Aadhaar in helping the women in getting a robust identity in India. “Computerization of the Karnataka PDS started in 2005, and was conceived as a direct response to leakage. The initial idea was that of constructing a database of all the households entitled to the PDS” (Silvia and Amit, 2015, p.77). The idea of computerization to curb the irregularities in PDS could not achieve its goal as “leakage remains a major

issue in the Karnataka pds, estimated as 46.4% of the off take in 2011-12 (Gulati and Saini 2015, p.7)”, quoted by Silvia and Amit (2015). Despite the fact that leakages remained in the PDS, the computerization of PDS is a potential step towards bringing transparency and accountability in PDS provided Information Technology (IT) is equipped with real time monitoring mobile applications to address the machine failures and functioning of GPS. The problem of last mile is solved by methods such as “swiping smart cards or authenticating biometric information on, at the time of purchase, perform the function of verifying the number of beneficiaries availing the PDS in the state” (Khera, 2011, p.40). A field study by Khera and Muthiah (2010) also endorse the claims of Tamilnadu government’s control of leakages in disbursement of payments to the MGNREGA workers.

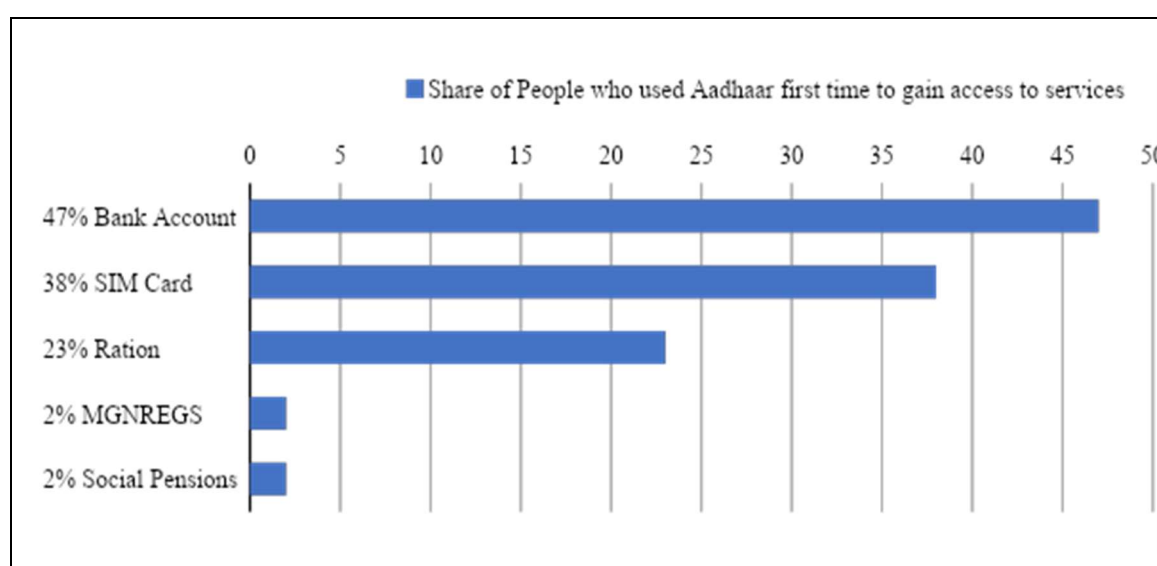
Finance Secretary, Ashok Lavas has claimed that Government of India was able to save Rs.34000 crore by implementing Aadhaar in 78 schemes by 2017 itself. Moreover, he on behalf of government has claimed that “Aadhaar has brought efficiency and transparency brought in the public schemes in the country” (The Economic Times, 30/03/2017). As per the State of Aadhaar’s report 2019, “1.2 billion people have enrolled for Aadhaar number. “88.8% of India’s population is covered with Aadhaar that provides universal legal identity” (Niti Aayog, 2019-2020, p.209). The state of Aadhaar’s findings are:

“This biometric Aadhaar identity is essential for inclusive development in the country. 39% of people (an estimated 330 million) give their Aadhaar-linked biometrics regularly to receive rations. 29% of households (an estimated 80 million) depend on these rations for more than half of their monthly supplies. 50% of households have given their Aadhaar at least once for LPG subsidy. 11% of households (an estimated 32 million) have given their Aadhaar at least once for kerosene subsidy. 9 million people older than 65 years verified their Aadhaar to continue drawing social pensions, which for most is their only source of income. 90% of farmers (an estimated 96

million) have given their Aadhaar at least once for their fertilizer subsidy. 102 million MGNREGA workers have given their Aadhaar at least once in order to receive MGNREGS wages” (State of Aadhaar Report, 2019, p.7).

Aadhaar has been instrumental in providing accessing services by people who would like to avail the government and non-government benefits.

Fig.5.1: Share of Access by First time users



Source: State of Aadhaar Report, 2019.

The above graph shows the role of Aadhaar in enabling the people to access the government benefits. The figures also imply the universal acceptability of Aadhaar, by both government and private, as a valid identity proof in obtaining the public and private services. This signifies the argument that “Aadhaar is a de facto mandatory” (Acharya, 2015) despite Supreme Court’s verdicts and directions in using Aadhaar.

5.3. Development through Aadhaar

Aadhaar has become a potential tool in bringing transparency and accountability in the governance for welfare of the deserving and genuine people in the country. As an ID

document for resident Indians, it not only achieved universal coverage but also acceptance in the country. According to UIDAI, 1.2 billion residents have enrolled for Aadhaar with more than 90% adult saturation in most of the states in India. 271 million unique individuals have used Aadhaar for digital authentication, says UIDAI. Thus, Aadhaar has been very instrumental in digitalization of governance to weed out the ghost beneficiaries from welfare schemes in India. It is not an exaggeration to say that welfare cannot be done without Aadhaar in contemporary India. Biometrics technology enabled the state to identify the potential individuals for welfare unlike earlier community-oriented welfare schemes. This digital governance, through biometrics authentication, brought 435 government schemes under the umbrella of Aadhaar for DBT (Direct Benefit Transfer) transactions (State of Aadhaar, 2017-18, p.18). This DBT was able to create a direct interface between the beneficiaries and the state, eliminating the human interference such as middle men and improved financial administration in the country.

It must be noted here that the idea of development envisaged is inclusive and sustainable in its nature and purpose. “Much of India’s development agenda is mirrored in the Sustainable Development Goals. Our national plans are ambitious and purposeful; Sustainable development of one-sixth of humanity will be of great consequence to the world and our beautiful planet” (Niti Aayog’s Voluntary National Review of SDGs report, 2017, p.vii). Several of the Government’s programmes would directly contribute to the advancement of the SDG agenda. A noteworthy example is the “Pradhan Mantri Jan Dhan Yojana (PMJDY)”, the world’s largest financial inclusion programme. The government of India was able to disburse the amount of Rs. 1.6 trillion (USD 25 billion) to 329 million genuine beneficiaries through Direct Benefit Transfer (DBT) by leveraging JAM of “PMJDY, Aadhaar and Mobile telephony”.

According to Government of India, “Aadhaar represents a potentially transformative way for citizens, governments, and businesses to interact with each other. For an identity programme that is increasingly central to India’s economy and development efforts, there

are gaps in our understanding of Aadhaar's coverage and performance in key areas" (UIDAI, 2020).

5.3.1. Social Protection: A step to end poverty

Economic Survey of India 2016-17 opined that social protection programmes constitute an essential lifeline for India's poor. However, these programmes – Public Delivery Systems (PDS), MGNREGA, pensions, and other benefits – suffer from immense leakages. With digitization of governance, Aadhaar has been envisaged as a key reform to deliver India's social protection programmes for the poor, especially the delivery of food ration subsidies via the PDS. This can be observed by two ways: 1) Aadhaar seeding (aims to remove duplicate and fake entries from database); this resulted in an increase of seeded PDS beneficiary households from 72% to 82% across all states in India. 2) Aadhaar based-authentication (aims to prevent access to non-genuine persons); this gave rise to increase of PDS shops from 35% to 57% e-PoS devices all over India (State of Aadhaar Executive Summary, 2017-18, p.5).

The Government of India spends more than one-sixth of its total budget (around \$47 billion). It aims to provide robust safety nets to India's poor, including food subsidies, employment guarantees, and direct cash transfers. However, the efficacy of these social protection programmes has been constrained by financial leakages and service delivery inefficiencies. According to UIDAI reports, Aadhaar has the potential to enhance the effectiveness of India's social protection programmes in three ways.

First, Aadhaar number linking can remove the fake beneficiaries to her or his identity record in each programme's database. According to the DBT portal, the Government of India could save Rs. 14,000 crores (\$2.1 billion) in Public Distribution System (PDS) subsidies and Rs. 26,000 crores (\$3.9 billion) in LPG subsidies, by weeding out 23 million and 35 million duplicates, respectively. *Second*, Aadhaar-enabled electronic transactions

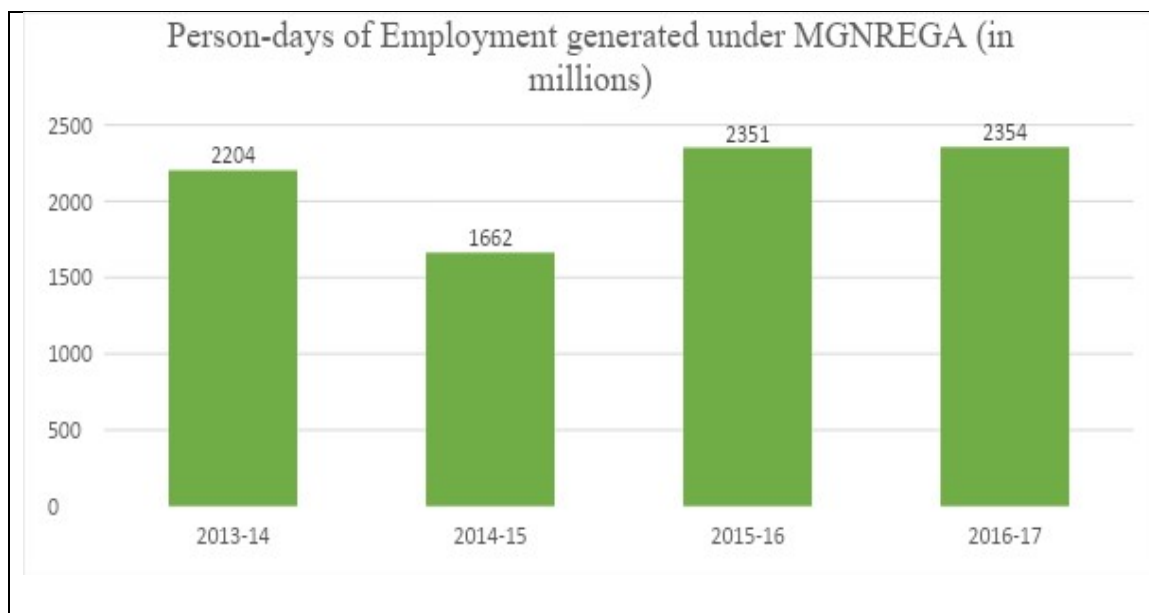
can prevent financial frauds by using biometric authentication for each beneficiary. For example, electronic point-of-sale (ePoS) machines in the Government's largest food subsidy programme, PDS, have deployed 186,726 (35%) of its fair price shops with biometric authentication for each transaction. Despite this potential, states like Andhra Pradesh and Telangana reported authentication failure in the implementation. "From April 2015 to March 2017, the pension programme in Andhra Pradesh reported fingerprint authentication failure for 17.4 percent of individuals, despite three attempts. Similarly, the failure rate averaged 7.8 percent for the Mahatma Gandhi National Rural Employment Guarantee Scheme in Telangana" (State of Aadhaar, 2017-18, pp.5-6).

Third, Direct Benefit Transfers (DBTs), enabled by Aadhaar in banking transactions to the beneficiaries, is effective in curbing syphoning of money by middlemen as well as payment delays. "About 33 percent of all DBTs in FY 2016-17 were made using APBS with the rest relying on older systems such as National Electronic Funds Transfer (NEFT). However, rigorous evaluations are needed to determine whether and to what extent Aadhaar-enabled DBT reduces financial leakages and payment delays" (State of Aadhaar, 2017-18, p.6).

5.3.2. Anti-Poverty Programmes

Anti-poverty schemes include The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and Deendayal Antyodaya Yojana, the National Livelihoods Mission that ensures the sustainable development in India. This programme addresses the SDG 8 (Decent work and Economic Growth), SDG 5 (Gender Equality) and SDG 10 (Reduced Inequalities) by legal assurance of annual 100 days work per household for unskilled workers in rural India.

Fig.5.2: Employment Person days under MGNREGS

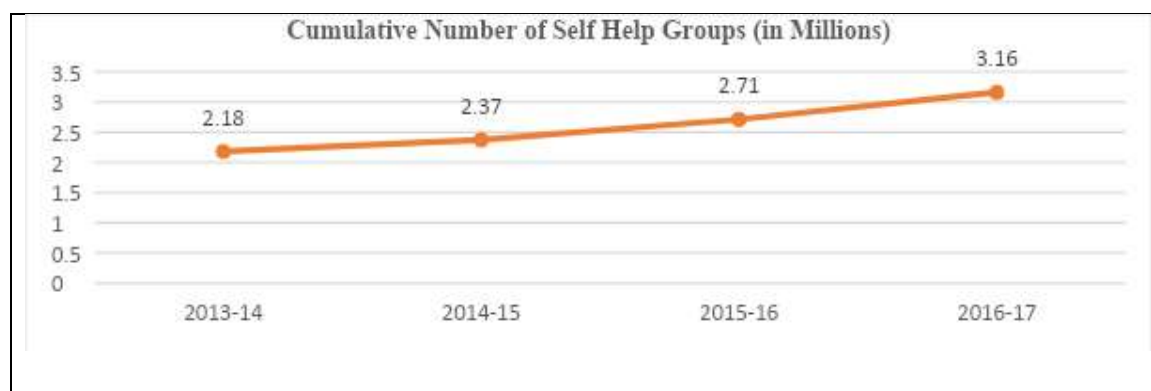


Source: NITI Aayog Voluntary National Review of SDGs Report, 2017

The above graphical presentation shows the changing trends in implementation of MGNREGA that the political will is the driving force in acting against poverty. There was a sharp decline in Person-days of employment from 2204 to 1662 during 2013-14 to 2014-15 when UPA lost the power in the Lok Sabha general elections and NDA came to power in the Union government. Again, the work days increased from 1662 to 2351 during 2014-15 to 2015-16 while there is no change in the following year. The rise of working days must be attributed to the fact that the pressure from the Sustainable Development Summit took place at UNO could have influenced the implementation of MGNREGA by India in 2015 as we failed to achieve Millennium Development Goals across the globe. Though there is improvement in the governance with digitalization of databases, the employment days remained very same in the following year, 2016-17 due to lack of strong political will. Otherwise, it can be ascribed to the issues associated with Aadhaar where services are denied to the deserving because of authentication failure or seeding of Aadhaar with the beneficiaries.

Another initiative, the Deendayal Antyodaya Yojana, the National Livelihoods Mission, is devoted to creating skilled employment for the poor. The Mission aims at women empowerment by bringing one female member, at least, from poor households in rural areas into “Self-Help Groups” in a phased manner. This programme is to fulfil the SDG 1 (End Poverty) and SDG 5 (Gender Equality) of Sustainable Development Goals.

Fig.5.3. Cumulative Number of SHGs (Millions)



Source: NITI Aayog Voluntary National Review of SDGs Report, 2017

The graph shows the steady increase but in the slow pace in the cumulative number of Self-Help Groups from 2013-14 to 2016-17 years. Such slow progress is insufficient to bring gender equality in India while India ranked top the index for dangerous country for women by Thomson Reuters Foundation, 108th in Gender Inequality Index by UNDP and 130th in Gender Gap Index by World Economic Forum.

5.3.3. Financial Inclusion

“Economic Growth in India has not been inclusive; unemployment and poverty remain high and a vast majority of the population remains excluded from health and education facilities. In order for growth to be inclusive, there needs to be not only the creation of economic opportunities, but also equal access to them” (Vashisht and Wadhwa, 2015, p.5). Another important initiative for ‘Collective Efforts and Inclusive Growth’ is

Pradhan Mantri Jan-Dhan Yojana (PMJDY), launched in 2014 with the aim of “providing access to the entire gamut of financial services, including banking, credit, insurance and pension.” This process has been further buttressed by the “JAM trinity” of Jan Dhan, Aadhaar, and Mobile in banking and welfare sectors. It is evident from the last two and a half years that more than 282 million bank accounts were created under the PM Jan Dhan Yojana.

During the same period of time, Aadhaar was used as e-KYC to open 44.7 million bank accounts, eliminating the need for other identity documents. “Digital finance... can lead to greater financial inclusion, expansion of financial services to non-financial sectors, and the expansion of basic services to individuals since nearly 50% of people in the developing world already own a mobile phone” (World Bank Report on Digital Finance, 2014, p.27). It also brought the unbanked, in India, into mainstream banking through digital financial inclusion by opening “280 million new accounts with deposits amounting to Rs.639 billion (USD 9.9 billion)” (State of Aadhaar, 2017-18, p.18). This has further facilitated the delivering of Government benefits directly into the accounts of beneficiaries and minimising leakages, the initiative has enhanced the effectiveness of several social security schemes in the country.

The United Nations Conference on Trade and Development is also of the opinion that “...Financial inclusion can contribute to poverty reduction, economic and social development, and financial stability. The use of new technology and innovative business models that help overcome barriers to such access could contribute to improved inclusion” (UNCTAD Secretariat’s Concept Note, 2014; 1). This has been materialised with the introduction of Aadhaar/linking of Aadhaar with PAN and Bank accounts. “Using the foundation of unique identification provided by Aadhaar, payment systems have emerged that attempt to solve different market frictions. The Aadhaar Payment Bridge System (APBS) is used for Direct Benefit Transfers (DBT) from the government to individuals.

The Aadhaar Enabled Payment System (AEPS) allows those who live or work far from a bank branch to carry out banking transactions through trusted intermediaries such as using micro-ATMs” (State of Aadhaar’s Executive Summary, 2017-18, p.4). In addition, financial inclusion is spearheading with other technological tools. “The term ‘Fintech’ denotes ‘financial technology’ and is defined as the delivery of financial and banking services through modern technological innovation led by computer programs and algorithms” (Peterson, 2018, p.331). Thus, financial inclusion has been envisaged to reduce the economic inequalities and eradicate poverty in the phased manner to achieve Sustainable Development in India.

Niti Aayog report, SDG INDIA: Index and Dashboard 2019-20 States that:

“India has taken massive strides towards financial inclusion, and the percentage of Indians with bank accounts has more than doubled from 40 per cent to a near 99.99 per cent. This steep rise has been a result of well-coordinated efforts related to *Aadhaar*, a biometric database that provides a unique identity to each Indian citizen; no-frills savings bank accounts called *Jan Dhan*; the direct transfer of social benefit payments into these Jan Dhan accounts; and a digital payment infrastructure called *BHIM*” (Niti Aayog, 2019-20, p.109).

India has witnessed a revolutionary change in the domain of financial inclusion with the introduction of Aadhaar enabled banking and digital financing. The “financial technologies” have reduced the waste of time in the physical banking and workload on the bankers. Moreover, the user centric banking services are at a single click away in one’s own mobile. It must be noted that the faceless transactions have empowered the banking customers against the middle men and traditional ways of dealing with hard cash. The payments for social security schemes like pensions and MGNREGS have reduced the risks associated with middlemen who would undue advantage in the system.

The claims of success of financial inclusion are not free from the ordeals of common people. A report from Rajasthan, “JAM trinity has already caused grievous disruption. Instead of receiving their pension (Rs 500 per month) at their doorstep through the postal system, the elderly are forced to travel to a bank in areas without public transport and deal with banking procedures” (Khera, 2016, para 3). The contradicting claims of the success of Aadhaar based services and pains caused by biometric authentication governance to the people denotes that the developmental experience of the people is not uniform for everyone. It varied from person to person, place to place and other factors like age, social and economic background of the people.

5.3.4. Exclusion from beneficiary list due to Authentication failure

Jean Dreze and Reetika Khera raised the question of exclusion that “over 10 crore people have been excluded from the Public Distribution System because outdated 2011 census data is being used to calculate State-wise National Food Security Act coverage” (The Hindu, 15/05/2020). This goes against the spirit of the welfare state in India.

Fig.5.4: Number of People under covered by Aadhaar seeding with PDS in India (in Crores).

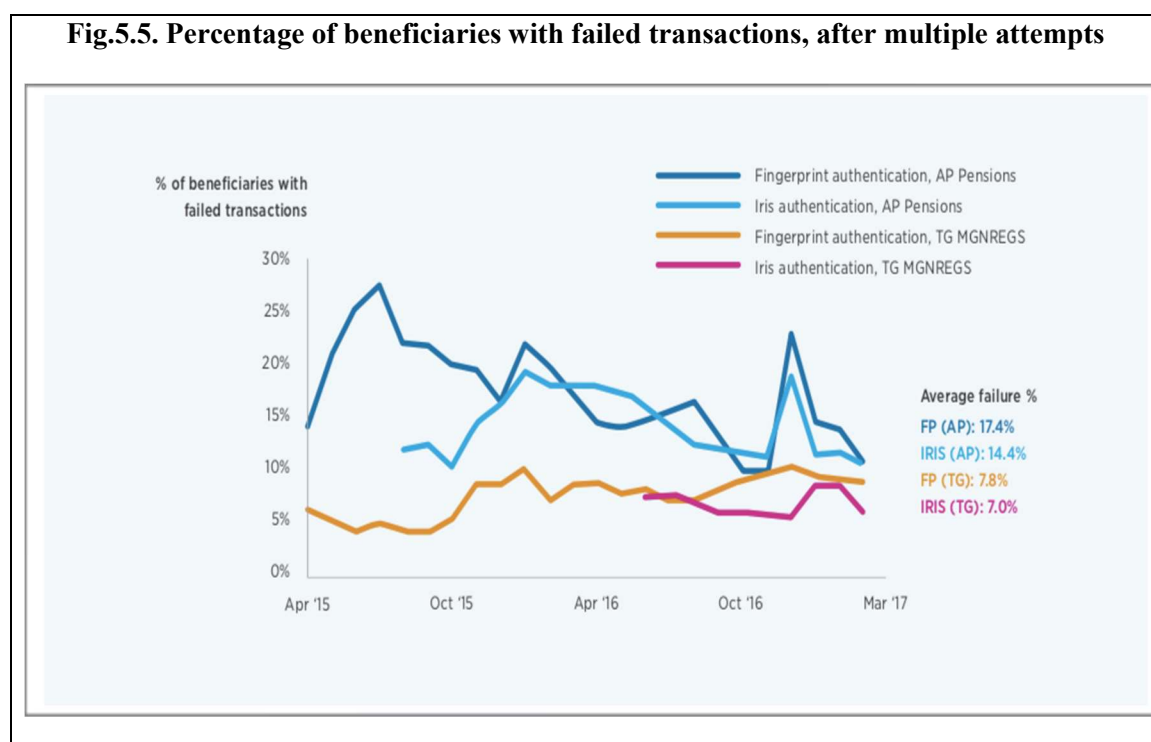
State	Coverage (2011 population)	Coverage (2020 population)	Estimated under coverage
Uttar Pradesh	15.21	18.06	2.80
Bihar	8.71	10.48	1.77
Madhya Pradesh	5.46	6.42	0.90
Rajasthan	4.47	5.25	0.79
Maharashtra	7	7.66	0.66
India	81.35	92.19	10.84

Source: The Hindu, 15th April 2020.

The above table gives us the figures excluded due to the “per-capita expenditure benchmark” (Drèze and Khera, 2020) in enumeration for PDS services and seeding with Aadhaar.

However, the imposition of ABBA on PDS has created the exclusion problems where passing biometric authentication is a tough job for old and manual workers in Jharkhand (Jean Drèze et al 2017). The issues with transaction failures and quantity fraud remained to plague the PDS in Jharkhand. A study by Abdul Lateef Jameel Poverty Action Lab (J-PAL) has flagged the question of exclusion due to Aadhaar in its findings that around 88% of deleted ration cards belong to the genuine beneficiaries in the state of Jharkhand (Sen, 2020). A similar trend has been found across the country.

Fig.5.5: “Figure shows the Percentage of beneficiaries with failed transactions, after multiple attempts, using fingerprint and Iris in Andhra Pradesh and Telangana state, Apr 2015 - March 2017.”

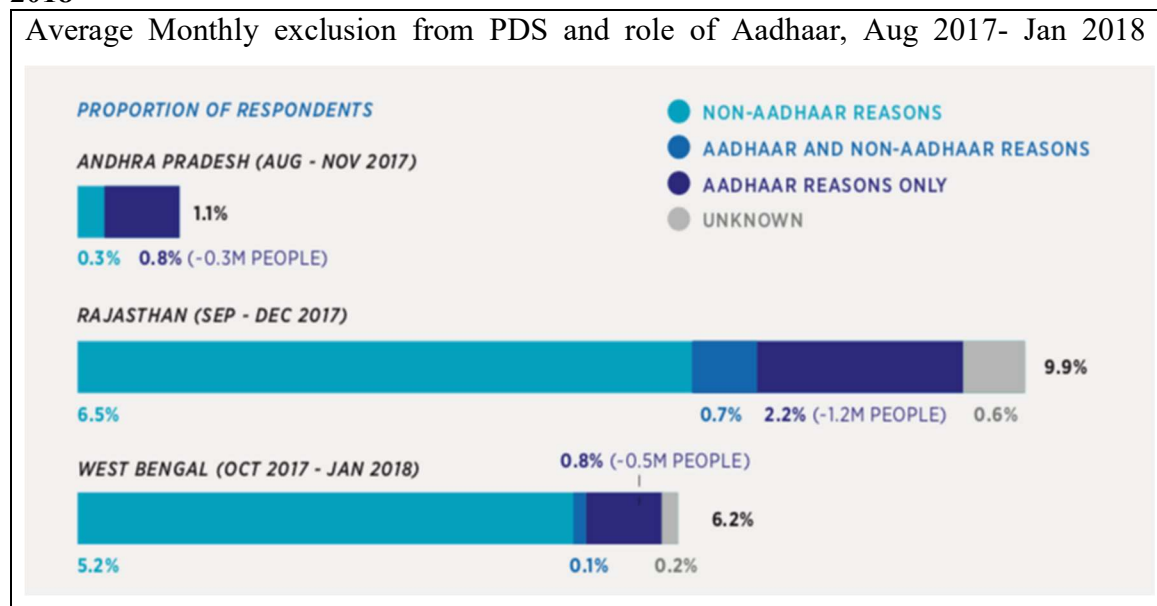


Source: State of Aadhaar Report, 2018.

It must be noted down here the term “Authentication failure” may include the fraudulent attempt also but most of the graphical presentation shows the authentication issues faced by MGNREGA and Pension schemes in Andhra Pradesh and Telangana state. The idea of eliminating the fake beneficiary has become trouble for some genuine beneficiaries. It amounts to say that the state is trying to discover the poor inspite of enumeration of the poor and estimation of poverty by various methods. If there is no robust alternative to the application of technology in welfare schemes, the genuine beneficiaries are not humiliated but also impoverished further. Then the aim of achieving the eradication of poverty and hunger free nation will remain as a mere dream. This will further impact the freedom of the individual in other sphere of life.

This is further buttressed by the data that exclusion of genuine beneficiaries from PDS due to Aadhaar as well. The exclusion continues to take place due to limitations of technology in the welfare schemes. The study by State of Aadhaar brings out the issues associated with the biometric authentication for most of the poor in the country.

Fig.5.6: Average Monthly exclusion from PDS and role of Aadhaar, Aug 2017- Jan 2018



Source: State of Aadhaar Report, 2018.

The above chart gives us the role of Aadhaar in exclusion of the beneficiaries from PDS. It may be low in terms of percentage but affects huge in absolute numbers. According to the state of Aadhaar report, it amounts to 2 million people in just 3 states, Andhra Pradesh, Rajasthan and West Bengal. The irony of Aadhaar is that it humiliates the deserving beneficiaries of the poor against its objective to eliminate the ghost beneficiaries from the welfare sector and save the state's exchequer. The smart card system for drawing ration in states like Chhattisgarh, Puducherry and West Bengal could be emulated in overcoming the issues of biometric authentication (Jean Drèze et, al 2017).

5.4. The Story of Development in Telangana

The Government of Telangana has promised "*Bangaru Telangana*" (Golden Telangana) to its people in its budget with the estimated GSDP growth rate of 6.39 % against national growth rate of 5.71% for year 2013-2014 at constant 2004-05 prices (Socio Economic Outlook, 2014, p.20). The budget of 2014-15 was termed as a 1st step towards creating a *Bangaru Telangana* with the announcement of various welfare schemes: Streamlining of Public Distribution System (PDS), Kalyana lakshmi/ Shaadi Mubarak, Aasara Pensions, Ambedkar Overseas Nidhi for SC/STs, Minority Overseas Fellowship, 3 acres of land for landless Dalit families, Double bed room house, *Haritha Haram* and other initiatives under *Mana Vuru Mana Pranalika* in 2014. These initiatives were prepared based on the *Samagra Kutumba Survey* (Intensive Household survey) which is an Integrated Household Survey by the Telangana state government soon after attaining the statehood in 2014. This was the first step by the state government towards "governmentality". As Foucault (1969) argues that the state is always interested in its population because they are the political economy of the state. The state can control the conduct of the people by knowing everything about them. The Telangana state *Samagra Kutumba Survey* tried to extract every bit of information about each individual in the family despite there being no legislative backing either in the form of ordinance or an act. Indeed, the idea of offering welfare services made people volunteer for enumeration in the survey. This survey has been the basis for various government's welfare initiatives for future governance of the state.

In creating *Bangaru Telangana*, the Socio Economic Outlook, 2015 gives an account of the further schemes like Mission Kakatiya, Arogya Lakshmi, “Telangana Palle Pragathi project (Telangana Rural Inclusive Growth Project – TRIGP) “, Self Help Groups (SHGs) Bank linking, and Stree Nidhi in 2015. Mission Bhagiratha (Telangana Drinking Water initiative), eradication of poverty through PDS, Aasara pensions and Arogyasri, Mid-day meals and other women centric schemes were hailed as potential schemes by government to improve the rank of Telangana state in the Human Development Index in 2016 (Socio Economic Outlook, 2016). Moreover, the government made an effort to adopt Sustainable Development Goals (SDGs) by focusing on education, health and economy of the people under the title of “Reinventing in 2016. As such, the Government of Telangana has revamped the administrative structure of the state by re-organizing 33 districts for effective and efficient governance. “Telangana State Resident Data Hub (TG-SRDH)”, the single source of all the residents in Telangana, containing all the developmental data is linked with Aadhaar.

Thus, a new image of Telangana state has been created by the ruling Telangana Rashtra Samithi (TRS) party led government under the leadership of K. Chandrashekhara Rao. This was the second and most important step by the Telangana government to reach out to each and every corner of the state. Consequently, the physical presence of the state government can be felt. The objective of the reorganisation of new districts was said to be decentralising the governance to ensure that the last man (the last individual) would not be left out of the welfare programmes by the state. Indeed, this helped the state to achieve 100% Aadhaar seeding with ration cards and linking with other welfare services in Telangana state. Thus, the Aadhaar based biometric governance has, underneath welfare services, empowered the state in counting and controlling of the population. Thus, the governmentality of the biopolitical state of India has taken roots in the Telangana state of India.

However, the government of Telangana reiterates its commitment for “comprehensive, inclusive and holistic development of its people, in achieving the State’s vision: ‘*Bangaru Telangana*’ through programmes targeting social welfare and inclusive growth” (Socio Economic Outlook, 2017, p.188). A Plan of action was prepared by mapping the existing schemes such as Abhaya Hastham (Insurance cum Pension scheme for SHGs, Vaddileni Runalu (Interest free loans for SHGs), Asara Pensions, extending Mid-day meal up to class X, Telangana Rural Inclusive Growth, improving irrigation, Arogyasri health cards, KG to PG free education, Land distribution, Telangana State programme for Rapid Inclusion of Dalit Entrepreneurs (TS-PRIDE) and other welfare programmes in 2017.

Telangana government has introduced flagship programmes like Kanti Velugu (Free Eye screening and treatment) and Rythu Bandhu (Financial Assistance for farmers) in 2018 in addition to the existing welfare schemes. “Scheduled Castes and Scheduled Tribes Special Development Fund (Planning, Allocation and Utilisation of Financial Resources) Act, 2017” (Socio Economic Outlook, 2018) was given a full shape despite the existence of SC/ST-Sub Plan Act legislated by erstwhile Andhra Pradesh state. The Socio Economic Outlook, 2019 and 2020 reports celebrate the hike of Asara pensions, success of Owner-cum-Driver for SC/STs, Skill Training programmes for rural youth, Mission Baghiratha and completion of reservoirs such as Kaleshwaram project but interesting Planning Department of Telangana has introduced a new chapter titled, “Governance” in its Socio Economic Outlook, 2021. This needs a special attention to decipher the reasons behind the state's projection of governance to the people. The document claims that “Good governance is the foundation for better developmental experience”, “taking governance and service delivery to door steps of the people”, “improving citizens; experience - Ease of living” through digital governance, “strengthening rule of law and empowering people”, and “towards outcome oriented governance” Scheduled Castes and Scheduled Tribes Special Development Fund (Planning, Allocation and Utilisation of Financial Resources) Act, 2017) are goals of state’s goals of new governance.

After five years of reorganisation of new Mandals, new Revenue Divisions and new districts, Telangana government finds digital governance assisted by biometric identity (Aadhaar number) is effective and efficient enough to regulate the welfare services in the state. As mentioned in the previous Chapter-IV, Aadhaar seeding with ration cards helped the government save Rs.917 crore (Civil Supplies Dept. Annual report, 2018-19, p.7) of public money by curbing leakages and ghost beneficiaries. This can be further buttressed by the study on Phone based monitoring of transfers (Muralidharan et, al (2020) observed that “this is a highly cost-effective intervention, with the calls enabling faster receipts of transfers worth Rs. 7 crores at a cost of Rs. 25 lakhs” (The Socio economic Outlook, 2021, p.214). The Government of Telangana is exploring means and ways of using AI (Artificial Intelligence) for monitoring newborns and other policies under the IT policy of Blockchain technology framework (2019) and AI framework (2020).

According to SDG India: Index and Dashboard, 2019-20, Telangana state with a performance Score of 67% has surpassed the national SDG Index Score of 60% in achieving SDG targets in the country. Telangana state’s performance in developmental programmes of SDGs secured third spot in the Composite SDG India Index, 2019 prepared by Niti Aayog. Thus the efforts of 100% Aadhaar seeding with various welfare schemes resulted, in Telangana, for improving human capital and sustainable development goals through welfare services outlined in the Socio Economic Outlook for 2016, 2017 and 2018 could succeed and emerge as one of the “front runners” in SDG Goal 3: Good Health and Well Being”, Goal 6: Clean Water and Sanitation, Goal 7: Affordable and Clean Energy, Goal 8: Decent Work and Economic Growth and Goal 10: Reduced Inequality, Goal 13: Climate Action, Goal 16: Peace, Justice and Strong Institutions, Telangana is treated as “performer” state in Goal 1: End Poverty, Goal 4: Quality Education, Goal 9: Industry, Innovation and Infrastructure, Goal 11: Sustainable Cities and Communities, Goal 12: Responsible Consumption and Production, Goal 15: Life on the Land, “aspirant” in Goal 2: Zero Hunger, Goal 5: Gender equality (Niti Aayog, 2019-20). Goal 14: Life Below Water and Goal 17: Partnership for Goals are not applicable since there is no sea coast for Telangana state. Telangana state, along with other 10 states, has achieved “National Health

Policy target of IMR of less than 100 per 1,00,000 live-births in 2015- 17” (Niti Aayog, 2019-20; 49).

Somanchi et al (2017) identifies ABBA (Aadhaar Based Biometric Authentication) leading to exclusion of the beneficiaries from the PDS in Hyderabad. This exclusion is caused by the persisting issues in the “fragile technologies: fingerprint failure, Remote Aadhaar servers, seeding of Aadhaar numbers, Point of Sale (PoS) machines and Internet connection” (Drèze 2016) in implementing National Food Security Act (NFSA), 2013 in the state. Telangana state reported to have 87% of Aadhaar accuracy user experience (State of Aadhaar, 2019; 34). “The authentication failure rate for Aadhaar-based transactions was at 36% for the period between January to till date; this was higher than the failure rate of 34% recorded in the October-December period last year” (Kapoor et al 2017, *The Mint*). Reddy (2018) also points out at least 10% of failure Aadhaar authentication/mismatch in transactions related to MGNREGS and Pensions in Telangana. But the success is showing as 92.97% which amounts to say that the mismatch/authentication failure in Aadhaar is reduced by around 2% in MGNREGS and Pensions, according to Telangana benefit Disbursement Portal, from 2018 to 2021. In this context, there is a need to capture and analyse the developmental experience of the governed in Telangana state.

5.4.1. Research Methodology and Empirical Framework of the Logit Regression Model

The research methodology includes the survey questionnaire for the sample size of 500 and obtained 340 valid questionnaires for analysis. The empirical framework of the logistic regression model is chosen in analysing the results obtained from using state to run the data collected from the field work. The logic regression model is used for the analysis of the study with the following understanding.

5.4.2. The logit (logistic) regression model

In fact, the Multinomial Logistic Regression (MLR) model is a fairly straightforward generalization of the binary model, and both models depend mainly on logit analysis or logistic regression. Logit analysis in many ways is the natural complement of ordinary linear regression whenever the response is categorical variable. When such discrete variables occur among the explanatory variables, they are dealt with by the introduction of one or several (0, 1) dummy variables, but when the response variable belongs to this type, the regression model breaks down. Logit analysis provides a ready alternative .

$$\text{logit}[\gamma(x)] = \log \frac{\gamma(x)}{1-\gamma(x)} = \theta + \beta x, \quad \text{Where, the odds} = \frac{\gamma(x)}{1-\gamma(x)}$$

For a response variable Y with two measurement levels (dichotomous) and explanatory variable X , let; $\gamma(x) = \left[P \frac{Y=1}{X=x} = 1 - P \frac{Y=0}{X=x} \right]$, the logistic regression model has linear form for logit of this probability

The odds = $\text{Exp}(\theta + \beta x)$, the logarithm of odds is called logit

$$\text{Hence, the logit follows } \text{logit}[\gamma(x)] = \log \frac{\gamma(x)}{1-\gamma(x)} = \log[\text{Exp}(\theta + \beta x)] = \theta + \beta x$$

The logit has linear approximation relationship, and ($\log = \text{logarithm}$) of the odds. The parameter (β) is determined by the rate of increase or decrease of the S-shaped curve of $\gamma(x)$. The sign of (β) indicates whether curve increase ($\beta > 0$) or decrease ($\beta < 0$), and the rate of change increases as $|\beta|$ increases.

5.4.3. Multiple logistic regressions

The logistic regression can be extending to models with multiple explanatory variables. Let k , denotes number of predictors for a binary response (Y) by $(x_1 x_2 x_3, \dots, x_k)$, we can rewrite the model of log odds is, it follows:

$$\log[P(Y = 1)] = \partial + \beta x_1 + \beta x_2 + \beta x_3 + \beta x_4 \dots \dots \beta x_k$$

And the alternative formula, directly specifying, $\gamma(x)$, is

$$\gamma(x) = \frac{\text{Exp}(\beta x_1 + \beta x_2 + \beta x_3 + \beta x_4 \dots \dots \beta x_k)}{1 + \text{Exp}(\beta x_1 + \beta x_2 + \beta x_3 + \beta x_4 \dots \dots \beta x_k)}$$

The parameter (β_i) , refers to the effect of (x_i) on the log odds that $(Y = 1)$, controlling other (X_j) , for instance, $\text{Exp}(\beta_1)$ is the multiplicative effect on the odds of a one unit increase in (x_i) at fixed levels of other (x_j) . *Type equation here.*

If we have (n) independent observations with p -explanatory variables, and the qualitative response variable has (k) categories, to construct the logits in the multinomial case, one of the categories must be considered the base level and all the logits are constructed relative to it. Any category can be taken as the base level, so we will take category (k) as the base level. Since there is no ordering, it is apparent that any category may be labelled (k) . Let (γ_i) denote the multinomial probability of an observation falling in the (j^{th}) category, to find the relationship between this probability and the p explanatory variables, $(X_1, X_2, X_3, X_4 \dots \dots X_p)$, the multiple logistic regression model then is,

$$\text{Log} \left[\frac{\gamma_j(x_i)}{\gamma_k(x_i)} \right] = \partial_{oi} + \beta_{1j} x_{1i} + \beta_{2j} x_{2i} + \beta_{3j} x_{3i} \dots \dots \beta_{\alpha j} x_{pi}$$

Where $j = 1, 2, \dots, (k - 1), i = 1, 2, \dots, n$. Since all the (γ) add to unity, this reduces to,

$$\text{Log}(\gamma_j(x_i)) = \left[\frac{\text{Exp}(\partial_{oi} + \beta_{1j} x_{1i} + \beta_{2j} x_{2i} + \beta_{3j} x_{3i} \dots \dots \beta_{\alpha j} x_{pi})}{1 + \sum_{j=1}^{k-1} \text{Exp}(\partial_{oi} + \beta_{1j} x_{1i} + \beta_{2j} x_{2i} + \beta_{3j} x_{3i} \dots \dots \beta_{\alpha j} x_{pi})} \right]$$

For $(j = 1, 2, \dots, (k - 1))$, the model parameters are estimated by the method of ML. Practically, we use Stata 15 statistical software to estimate this fitting, (Chatterjee and Hadi, 2006).

5.5. Developmental Experience of the people in Telangana State

The development discourse around Aadhaar and Welfare schemes do not include the development experience of the people. It is important to understand and analyse people's views and response to Aadhaar and Welfare schemes.

Multinomial logit regression tables 5.1, 5.2, and 5.3, are discussed in this section. These tables are placed in the appendix (refer to the appendix page numbers from 299 to 315). The value 0 (Zero) is taken as Base outcome of disagreement, the value 1 (One) is taken as "Agree" and the value 2 (Two) is taken as 'Neutral' in the Multinomial tables numbered as 5.1, 5.2 and 5.3 in this chapter.

Gender

Male is taken as a reference category. Table-5.1 shows that the covariate female category is less likely to agree and more likely to be neutral that they are not afraid of sharing Aadhaar details with government agencies only compared to the base outcome of disagreement. There is no significant relationship between them. Moreover, the female category is less likely to agree and more likely to be neutral compared to the base outcome of disarmament that the Aadhaar's aim is to provide unhindered services to people compared to the base out of disagreement but no significant relationship between them. Table- 5.2 results indicate that the covariate female category is less likely to agree and less likely to be neutral for both the statements that Aadhaar guaranteed my identity to receive service compared to the base outcome of disagreement. No relationship between them. Similarly, the female category is less likely to agree and less likely to be neutral compared to the base outcome disagreement that Aadhaar guarantees services like US Social Security Number does and no significant relationship between them. However, the same female category is more likely to agree and more likely to be neutral compared to the base outcome of disagreement that Welfare cannot be done without Aadhaar in India. There is a positive and highly significant relationship between the female category and (p value <0.000)

agreement of welfare without Aadhaar while a less significant relationship between the female category and (p value <0.10) neutrality. Table- 6 results show that the covariate female category is less likely to agree and more likely to be neutral compared to the base outcome of disagreement that Aadhaar is beyond duplication and no relationship between them. Similarly, the female category is more likely to agree and neutral compared to the base outcome of disagreement that Aadhaar can be a potential tool for surveillance and no relationship between them.

The given data results infer that the female category (women) are of the view that welfare cannot be carried out without Aadhaar in India though they are less in agreement and more neutral compared to the base outcome of disagreement with the duplication of Aadhaar and surveillance through biometric governance. The women (female category) significantly are more likely to agree and more likely to be neutral compared to the base outcome of disagreement that welfare cannot be done without Aadhaar. Women are not afraid of sharing Aadhaar details with government agencies only and less likely to agree that Aadhaar's primary aim is to provide unhindered services to the people. They also face less authentication issues and are less likely to agree that Aadhaar guarantees services like a US social security number. But these outcome variables are not significantly related to the predictor variables.

Harini says that digital governance can reduce corruption in governance because it takes away the arbitrary exercising discretionary powers granted to bureaucrats in India. She also believes that Aadhaar is one such tool and can effectively reduce corruption. Parvathy says that digital governance minimises the time and efforts of certain processes but in the end, it is also not free of problems. Sunitha also agrees that there is no human discretion. State transportation used to have problems with written records. Licence used to be given by officers as per their discretion. It is a big reform in India now. They defined surveillance as watching someone's activities without their knowledge but remain neutral/disagree to say that Aadhaar can be a potential tool for surveillance. Even the Rural

respondents like Sangeeta and Jaya agree that Aadhaar based digital governance will reduce the corruption in governance but the issues like machine failure or authentication problems cause delay or denial of the services sometimes. Most of the Rural women do not know what surveillance means but respondents like Manemma, Prameela and Tekam Bheembai are open to state's attempts to know about them/their life.

Age

The age group 18-24 is taken as a reference category. Table-5.1 results show that There is a positive and significant relationship between the age group 45-54 and agree (p value <0.02) and neutral (p value<0.09) for not being afraid of sharing Aadhaar details with Government agencies. The individuals of age group 45-54 are less likely to agree and more likely to be neutral that they are not afraid of sharing Aadhaar with govt agencies only, compared to the base outcome of disagreement. It amounts to saying that the individuals of this particular age group are afraid and reluctant to share their Aadhaar details with government agencies. The age groups 25-34, 35-44 and 55 and above are less likely to agree and more likely to be neutral compared to the base outcome of disagreement that they are not afraid of sharing their Aadhaar details with government agencies only and no significant relationship between them.

Similarly, the age groups 35-44 are less likely to agree and more likely to be neutral compare to the base outcome of disagreement while and 55 and above are less likely to agree and be less neutral compare to the base outcome of disagreement that Aadhaar's primary aim is to provide unhindered services to the people. There is a positive and significant relationship between the age group 35-44 and (p value <0.02) agreement with Aadhaar's aim to provide services while no relationship between the same age group and neutrality. A positive and significant relationship at less than 5% between the covariate age group 55 and above and (p value <0.04) agreement with Aadhaar's aim to provide service and a less significant relationship at less than 10% between the same age group (55 and above) and (p value <0.07) neutrality. Other covariates 25-34 are less likely to agree and be less neutral while 45-54 are less likely to agree and more likely to be neutral compared

to the disagreement that Aadhaar's primary aim is to provide unhindered services to the people. No relationship between them.

Table-5.2 results show that all the age groups are more likely to agree and be more neutral compared to the disagreement of the statement that Aadhaar guaranteed my (their) identity to receive services. There is a positive and significant relationship at less than 5 % (p value <0.05) between the age group 45-54 and agreement with Aadhaar guaranteed my identity to receive services while there is no relationship between other age groups and agreement and neutrality. Similarly, the age groups 25-34, 35-44 and 55 and above (except 45-54) are more likely to agree and more neutral compared to the disagreement that Aadhaar has guaranteed services like a US social security number. There is no relationship between the age groups, 25-34, 35-44 and 55 and above and agreement while a positive and significant relationship between age group 25-34, 35-44 and 55 and above and the values of (p value <0.02), (p value <0.06) and (p value <0.01) of neutrality. The age group 45-54 are less likely to agree and more likely to be neutral compared to the disagreement of the view that Aadhaar guaranteed services like US social security number does. No relationship between them. Further, the age groups 25-34 are more likely to agree and be less neutral, 35-44 category are more likely to agree and be more neutral, the age group 45-54 are more likely to agree and be less neutral compare to the disagreement of the statement that welfare cannot be done without Aadhaar in contemporary India. The age group 55 and above are less likely to agree and be more neutral compared to the disagreement of the view that welfare cannot be done without Aadhaar in contemporary India. There is a positive and significant relationship at less than 5 % between the age group 55 and above and (p value <0.01) agreement and (p value <0.05) neutrality of the view that welfare cannot be done without Aadhaar.

Table- 5.3 results indicate that all the age groups from 25-34 to 45-54 are less likely to agree and be less neutral compare to the disagreement that Aadhaar is beyond duplication while the age group 55 and above are less likely to agree and be more neutral

compare to the disagreement that Aadhaar is beyond duplication. A positive and significant relationship less than 10% (p value <0.06) between the age group 25-34 and agreement and significant relationship at less than 10% (p value <0.08) between the age group 45-54 and neutrality of the statement that Aadhaar is beyond duplication. Similarly, the age groups 25-34 and 55 and above are less likely to agree and be more neutral compared to the disagreement that Aadhaar is a potential tool for surveillance while no significant relationship between them. The age groups 35-44 and 45-54 are more likely to agree and be more neutral compared to the disagreement of the view that Aadhaar can be a potential tool for surveillance. A positive and significant relationship at less than 10% between the age group 45-54 and neutrality while no relationship between other age groups and dependent variables -agreement and neutrality of the view that Aadhaar is a potential surveillance.

Above data interpretation describes that The age groups 45-54 are significantly less likely to agree and more likely to be neutral compared to the base outcome of disagreement that they are not afraid of sharing their Aadhaar details with government agencies only. They are also more likely to agree compared to the base outcome of disagreement that Aadhaar has guaranteed their identity to receive services. The age groups 35-44 are less likely to agree and more likely to be neutral and 55 and above are less likely to agree and less likely to be neutral compared to the base outcome of disagreement that Aadhaar's primacy aim is to provide unhindered services to the people. The age groups 25-34, 35-44 and 55 and above are more likely to be neutral compare to the base outcome of disagreement that Aadhaar provides services like US social security number while the only 55 and above age group are more likely to be neutral that Welfare cannot be done without Aadhaar in contemporary India. The age group 25-34 are less likely to agree while the age group 45-54 are less likely to be neutral compared to the base outcome of disagreement that Aadhaar is beyond duplication. People of 45-54 age group are more likely to be neutral compared to the base outcome of disagreement that Aadhaar can be a potential tool of surveillance.

The results infer that the age groups 45-54 remain neutral about sharing their Aadhaar details with government agencies, Aadhaar's primary aim to provide unhindered services to the people and Aadhaar being a potential tool of surveillance while less neutral about Aadhaar being beyond duplication. The young people of 25-34 like 34-44 age groups seem to be neutral on the question that Aadhaar is beyond duplication. The old age people of 55 and above remain neutral and less agree that Aadhaar is to provide unhindered services to the people because they seem to disagree (as they less agree and less neutral) Aadhaar is beyond duplication. They also remain neutral about Aadhaar providing services like US social security number because they do not have any idea what US social security number means to welfare services in the USA and tend to be neutral about Aadhaar being a surveillance tool due to lack of understanding what and how surveillance takes place in the digital world.

The young people like Anil Kumar, Sampath and Madhukar have said that they are reluctant to share their details with government agencies. They believe that Aadhaar can provide services since the government has introduced it for identity purpose to access the welfare services but they expressed their doubt about Aadhaar being beyond duplication. They sounded more neutral when it came to the question of surveillance. In fact, they don't want anyone to watch them doing anything. Madhukar cited the utility of CCTV cameras in controlling the road accidents as a benefit of surveillance but he also disagreed with surveillance over personal life of the individuals. The Rural respondents both young and old like Devaiah, Suresh, Devarao and Udaya Sonu Rao are not aware of surveillance, especially digital surveillance.

Religion

Hindu religion is taken as a reference category. Table-5.1 results show that covariates Agnostic are more likely and be more neutral while Christian are more likely and be less neutral compared to the disagreement that they are not afraid of sharing the Aadhaar details with government agencies only. There is a positive and significant relationship at less than

5% (p value <0.05) between Christian and neutrality of not being afraid of sharing Aadhaar details while no relationship between Agnostic and dependent variables. Atheist, Muslim and Sikh are less likely to agree and be less neutral compare to the disagreement that they are not afraid of sharing Aadhaar details with government agencies. A positive and significant relationship at less than 5% (p value <0.05) between Muslim and agreement with not afraid of sharing and no relationship between Muslim and neutrality. No relationship between agnostic, atheist, Christian and Sikh and agreement while no relationship between agnostic, atheist, Muslim and Sikh and neutrality.

Table- 5.2 results show that agnostic and atheist are more likely to agree and be more neutral compared to the disagreement that Aadhaar guaranteed my identity to receive services but no relationship between them. Christian, Muslim and Sikh are less likely to agree and be less neutral compare to the disagreement that Aadhaar has guaranteed my identity to receive services. There is a positive and significant relationship at less than 10% (p value <0.10) between Muslim and neutrality of Aadhaar guaranteed identity to receive services while no relationship between other covariates and dependent variables. Similarly, Agnostic category are less to agree and be more neutral compared to the disagreement that Aadhaar guarantees services like US social security number does and no relationship between them. Atheist category are more likely to agree and be less neutral compared to the disagreement that Aadhaar guarantees services like US social security number does but no relationship between them. Christian is less likely to agree and be more neutral while Muslim and Sikh categories are less likely to agree and be less neutral compare to the disagreement that Aadhaar guarantees services like US social security number does. There no relationship between all these religious categories and agreement with Aadhaar guaranteed services like US social security number while a positive and significant relationship between two independent categories Christianity and Muslim and neutrality. Similarly, Agnostic, Atheist and Christian categories are more likely to agree and be more neutral compared to the disagreement that welfare cannot be done without Aadhaar in contemporary India but no relationship between them. The Muslim are less likely to agree and be less neutral while Sikh are less likely to agree and be more neutral compare to the

disagreement that welfare cannot be done without Aadhaar in contemporary India but no significant relationship between them.

Table- 5.3 results describe that the covariates Agnostic are less likely to agree and be more neutral compared to the disagreement that Aadhaar is beyond duplication but no relationship between them. Atheists are more likely to agree and be more neutral while Christian are less likely to agree and be more neutral compared to the disagreement that Aadhaar is beyond duplication but no significant relationship between them. The Muslim category are more likely to agree and be less neutral while Sikh is more likely to agree and be more neutral compare to the disagreement that Aadhaar is beyond duplication and no significant relationship between them. Similarly, Agnostic and Atheist categories are more likely to agree and be more neutral compared to the disagreement that Aadhaar can be a potential tool for surveillance but no significant relationship between them. Christian category is less likely to agree and be less neutral while Muslim and Sikh are more likely to agree and be more neutral compare to the disagreement that Aadhaar can be a potential tool for surveillance in governance. There is a positive and significant relationship at less than 5% between covariate Christian category and two dependent variables (p value <0.05) agreement and (p value <0.05) neutrality of Aadhaar being a tool of surveillance while no relationship between the two covariates Muslim and Sikh and two dependent variables; agreement and neutrality.

The Muslim are less likely to agree and less neutral (not significant) compare to the base outcome of disagreement that they are not afraid of sharing Aadhaar details with government agencies. They along with Sikh are also more likely to agree and be more neutral (not significant) compared to the base outcome of disagreement that Aadhaar 's primary aim is to provide unhindered services to the people. Muslims are less likely to be neutral compared to the base outcome of disagreement that Aadhaar has guaranteed their identity to receive services and Aadhaar guarantees like US social security number while Christians are more likely to agree that Aadhaar provides services like US social security

number. Though Sikh and Christians are more likely to be neutral while Christians are less likely to be neutral compared to the base outcome of disagreement that welfare cannot be done without Aadhaar in contemporary India. The interpretation of the results imply that Minorities are afraid of sharing their Aadhaar details with government agencies because they don't consider Aadhaar would provide identity enough to receive the welfare services. Most of them do not know what and how a US social security number works to compare their experience with Aadhaar.

The Christian category is less likely to agree and less neutral compared to the base outcome of disagreement that Aadhaar can be a potential tool for surveillance. This implies that christian tend to disagree that Aadhaar being a potential tool of surveillance in the governance while other categories Muslim and Sikh seem to agree with Aadhaar being a tool for surveillance but not significant.

The respondents Amina, Unnisa, Subhani, Md Tajoddin from Muslim are open to share their Aadhaar details with government. Kalpana Kaur, Harini, Nikita Singh, Pragya and Chanti belonging to Sikh have expressed their reservations in sharing Aadhaar with government agencies. They also said that it is not a fool proof mechanism and can be duplicated. So, the surveillance by Aadhaar is possible and a rogue state can use it for such a purpose, says Sunny. The rural respondents like Mariamma, Joshua, Thimothi from Christian are open to sharing their Aadhaar with government agencies in order to draw the benefits and do not agree that Aadhaar is beyond duplication. A woman (whose name is not disclosed) has said that she acquired the second Aadhaar card by paying the middle man. So, they also think that surveillance can be possible with Aadhaar.

Caste

General category is taken as a reference category. Table-1 results show that the covariate OBC are less likely to agree and be more neutral while SC and STs are more

likely to agree and be more neutral compared to the disagreement that they are not afraid of sharing Aadhaar details with government agencies only. There is a positive and significant relationship at less than 10% (p value <0.10) between SC and agreement with not afraid of sharing Aadhaar with govt agencies while no relationship SC and neutrality. No relationship between the other covariates and independent variables was found. Similarly, OBC, SC and ST are more likely to agree and be more neutral compared to the disagreement that Aadhaar's primary aim is to provide unhindered services to the people. There is a positive and significant relationship at less than 10% between ST and agreement with Aadhaar's primary aim to provide services and no relationship with neutrality while a positive and significant relationship at less than 10% between OBC and neutrality of Aadhaar's aim to provide services and no relationship with Agreement. No relationship between OBC and agreement and SC and dependent variables; agreement neutrality of Aadhaar's aim to provide services was found.

Table- 5.2 results show that the covariates OBC are less likely to agree and be less neutral while SC are more likely to agree and be more neutral compared to the base outcome disagreement that Aadhaar has guaranteed my identity to receive services but no relationship between them. ST category are less likely to agree and be less neutral compared to the base outcome of disagreement that Aadhaar has guaranteed my identity to receive service and a positive and significant relationship at less than 10% between ST and agreement but no relationship with neutrality was found. Similarly, OBC are more likely to agree and be less neutral while SC are more likely to agree and be more neutral compared to the base outcome of disagreement that Aadhaar guarantees services like US social security number does. There is a positive and significant relationship at less than 10% (p value <0.07) between SC and agreement with Aadhaar guarantees services like US social security number and no relationship with neutrality. ST category are less likely to agree and be less neutral compared to the base outcome of disagreement that Aadhaar guarantees services like US social security number. A positive and significant relationship at less than 10% (p value <0.09) between ST and neutrality and no relationship with agreement. Further, OBC category are more likely to agree and be more neutral while SC category are

less likely to agree and be less neutral compared to the base outcome of disagreement that Welfare cannot be done without Aadhaar in contemporary India but no significant relationship between them. ST category are less likely to agree and be less neutral compared to the base outcome of disagreement that Welfare cannot be done without Aadhaar in contemporary India and there is positive and significant relationship between ST and (p value <0.08) agreement and (p value <0.03) neutrality of the view that welfare cannot be done without Aadhaar.

Table-5.3 results show that the covariates OBC and SC are more likely to agree and be more neutral while ST category are less likely to agree and be more neutral compared to the base outcome of disagreement that Aadhaar is beyond duplication but no relationship between them. Similarly, OBC and SC are more likely to agree and more neutral while ST category are more likely to agree and be less neutral compared to the base outcome of disagreement that Aadhaar can be a potential tool for surveillance. There is a positive and significant relationship at less than 5 % between OBC and (p value <0.02) and (p value <0.03) neutrality of the view that Aadhaar can be a tool of surveillance.

The above data description imply that the SC category are more likely to agree while OBCs are more likely to be neutral compared to the base outcome of disagreement that they are not afraid of sharing their Aadhaar details with government agencies. It amounts to say that the SCs are not afraid and OBCs remain neutral to share Aadhaar with the government. The ST category are more likely to agree while OBC are more neutral compared to the base outcome of the disagreement that Aadhaar's primary purpose is to provide services to the people. ST are less likely (and neutral is not significant) to agree compared to the base outcome of disagreement that Aadhaar guaranteed their identity to receive services. It means their Aadhaar identity is not enough to receive the welfare benefits. SC category are more likely (and neutral is not significant) while STs are less likely to be neutral compared to the base outcome of disagreement that Aadhaar guarantees services like US social security number does and STs are less likely to agree and less

neutral compared to the base outcome of disagreement that welfare. STs believe that Aadhaar based identity is not enough as it won't guarantee services like US social security number does while SCs believe that it does help in ensuring the services to the people. Therefore, STs disagree with the view that Welfare cannot be done without Aadhaar in contemporary India.

The OBCs are more likely to agree and be more neutral compared to the base outcome of disagreement that Aadhaar can be a potential tool of surveillance. It implies that OBCs think that Aadhaar can be used as a surveillance tool in governance while SC and STs also agree but not significant. OBC, SC and ST are more likely to agree that Aadhaar is beyond duplication but not significant. This is due to the fact that they never had to witness any such situation of duplication of Aadhaar card and they seem to agree with the government's view that Aadhaar is a fool proof identity source.

OBC respondents like Srinivas, Kanakaiah and Jyothi say that surveillance is meant for protection. CCTV cameras prevent people from crime. They seem to accept that digital surveillance is possible with the help of Aadhaar. Parthu also opined that Aadhaar can be used to keep track of my activities. They believe that Aadhaar will provide services to the people if the government is committed for the cause. Most of the Scheduled Castes like Nagender say that it will ensure safety and security and monitoring of the work done by the employees. We should not accept surveillance for harnessing the dissents. Even the ST respondents like Takem Indru, Bheembai, Devarao and Lakshman said that surveillance is acceptable by the government to prevent the crime but not the very personal life of the family. They (SC and ST respondents) could give such an opinion once we had a detailed discussion on the surveillance during the field study.

Education

Graduation is taken as a reference category. Table-5.1 results show that the post graduate category are more likely to agree and be less neutral, Doctorate are more likely to agree and be less neutral, Professional graduates are more likely to agree and be less neutral, Other care more likely to agree and be more neutral while Up to class 12 are more likely to agree and be less neutral and Illiterates are more likely to agree and be more neutral compared to the base outcome that they are not afraid of sharing Aadhaar with government agencies only. No relationship between them was found. Similarly, the Postgraduate category is less likely to agree and be less neutral while Doctorate and professional graduates are more likely to agree and be more neutral compared to the base outcome of the disagreement that Aadhaar's primary aim is to provide unhindered services to the people but no significant relationship between them. Others are more likely to agree and be less neutral while Up to class 12 and illiterate are more likely to agree and be more neutral compared to the base outcome that Aadhaar's aim is to provide unhindered services to the people. There is a positive and significant relationship between educational category Others and two dependent variable; (p value <0.10) agreement and (p value <0.03) neutrality while significant relationship between Up to class 12 and (p value <0.09) and no relationship with neutrality. A positive and significant relationship between the illiterate and (p value <0.09) agreement and (p value <0.03) neutrality.

Table-5.2 results indicate that the educational category Post graduation are less likely to agree and be less neutral, Doctorate are more likely to agree and be more neutral, Professional graduates and others are more likely to agree and be more neutral while Up to class 12 are more likely to agree and be less neutral and the illiterates are more likely to agree and be less neutral compare to the base outcome of the disagreement that Aadhaar guaranteed my identity to receive services. There is a positive and significant relationship at less than 5% between the educational category Up to class 12 and (p value <0.003) agreement and no relationship with neutrality while a positive relationship illiterate and (p value <0.08) neutrality and no relationship with agreement. Similarly, the educational categories post graduate category are less likely to agree and be less neutral, Doctorate are

less likely to agree and be more neutral, Professional graduates are more likely to be agree and be more neutral, others category are less likely to agree and be more neutral, Up to class 12 are more likely to agree and be more neutral and, the illiterate are less likely to agree and be more neutral compared to the base outcome category of disagreement that Aadhaar guarantees services like US social security number. There is a positive and significant relationship between the educational category post graduate and (p value <0.02) neutrality and no relationship with agreement and a positive and significant relationship between educational category Up to class 12 and neutrality and no relationship with agreement with the statement that Aadhaar guarantees services like US social security number while no relationship between other educational category and dependent variables.

Further, educational categories Post graduate are less likely to agree and be less neutral, doctorate are more likely to agree and be more neutral, professional graduates are more likely to agree and be more neutral, others category are more likely to agree and be more neutral, Up to class 12 are more likely to agree and be more neutral, and illiterate category are more likely to agree and be more neutral compare to the base outcome of disagreement that welfare cannot be done without Aadhaar in contemporary India. There is a positive and significant relationship at less than 5 % between educational category Up to class 12 and (p value <0.05) agreement and (p value <0.03) neutrality of the view that Welfare cannot be done without Aadhaar while no relationship between other educational categories and dependent variables was found.

Table- 5.3 results show that the educational category Postgraduates are less likely to agree and be more neutral compared to the base outcome of disagreement that Aadhaar is beyond duplication. There is a positive and significant relationship between the post graduate and (p value <0.02) agreement and neutrality of the view that Aadhaar is beyond duplication. Doctorate are less likely to agree and be less neutral, Professional graduates are more likely to agree and be more neutral, Other category is more likely to agree and be

less neutral, Up to class 12 are more likely to agree and be more neutral, and Illiterate are more likely to agree and be more neutral compare to the base outcome of disagreement that Aadhaar is beyond duplication. There is a positive and significant relationship between the educational category Professional graduates and (p value <0.10) neutrality and no relationship with agreement of Aadhaar beyond duplication while no relationship between other educational categories and dependent variables. Similarly, Postgraduates are less likely to agree and be less neutral compared to the base outcome of disagreement that Aadhaar can be a potential tool of surveillance. There is a positive and significant relationship between the post graduate and (p value <0.04) agreement and (p value <0.09) neutrality of the view that Aadhaar can be a surveillance tool. Doctorate are more likely to agree and be more neutral, Professional graduates are more likely to agree and be more neutral, Others category are more likely to agree and be more neutral, Up to class 12 are less likely to agree and be less neutral, and Illiterates are less likely to agree and be less neutral compare to the base outcome of disagreement that Aadhaar can be a potential tool of surveillance. There is a positive and significant relationship between the illiterate category and (p value <0.10) agreement and no relationship with neutrality. No relationship between the other educational categories and dependent variables.

The illiterates are more likely to agree and be more neutral, people who studied up to class 12 and other categories more likely to agree while professional graduates are more likely to be neutral compared to the base outcome of disagreement that Aadhaar's primary aim is to provide unhindered services to the people. The people who studied up to class 12 are more likely to agree and the illiterates are less likely to agree compared to the base outcome of disagreement that Aadhaar has guaranteed their identity to receive services. The post graduates are less likely to be neutral and the people who studied up to class 12 are more likely to be neutral compared to the base outcome of disagreement that Aadhaar guarantees services like US social security number. The semi-literates/people who studied up to class 12 are more likely to agree and be more neutral compared to the base outcome of disagreement that welfare cannot be done without Aadhaar in contemporary India. Though the other categories are not significantly related with dependent variables. The post

graduates are less likely to agree while professional graduates are more likely to be neutral compare to the base outcome of disagreement that Aadhaar is beyond duplication and they, along with poor, are also less likely to agree and less likely to be neutral compare to the base outcome of disagreement that Aadhaar can be a potential tool for surveillance.

This interpretation of results indicates that the illiterates would believe that Aadhaar's aim is to provide services and people who studied up to class 12 also believe that Aadhaar aims at services because Aadhaar identity guarantees services like US social security number does. They (up to class 12) also think that welfare can not be done without Aadhaar in India now. This opinion among semi-literates was due to wider application of Aadhaar as an identity card. Though the post graduates and professional graduates would disagree (since they are less likely to be neutral) that Aadhaar works like a US social security number because of their understanding about the difference between them. It was observed that irrespective of education levels people would not believe that Aadhaar can be a potential tool for surveillance and as the education levels decrease the trust in Aadhaar identity and its services increase among the people within the variables of significant relationship.

The educated respondents like Anuridh and Harini said that surveillance means indulging in any form of recording the information and control through such person or authority. It can be legal or illegal. However, it is mostly illegal and used for nefarious purposes. They are open to share their Aadhaar details with government agencies if mandatory only. The uneducated/illiterates like Sangeeta, Manemma, Venkataish, Takem Indru, and Sonu Rao believe that Aadhaar identity is good enough (if no error printed in the Aadhaar card) to access the government services. They also have no idea about the US social security number to compare with the Aadhaar number. Most of the illiterates and semi-literates would think that Aadhaar is not beyond duplication and one can get by paying/bribing the middle men (they refer to meeSeva or computer centre people). They

are not willing to share but afraid of losing the services so they are ready to share with government agencies only.

Occupation

Housewife/homemaker is taken as a reference category. Table-5.1 results show that the occupational categories Agriculture are more likely to agree and be more neutral, Big business are less likely to agree and be less neutral, carpenter are more likely to agree and be less neutral, Others are less likely to agree and be more neutral, Petty business are less likely to agree and be more neutral, service are less likely to agree and be more neutral, student are less likely to agree and be more neutral, and unemployed are less likely to agree and be more neutral compared to the base outcome of disagreement that they are not afraid of sharing Aadhaar details with government agencies only. There is a positive and significant relationship between occupational category others and (p value <0.05) agreement and no relationship with neutrality while a positive relationship the occupational category student and (p value <0.01) agreement and no relationship with neutrality of the view that is not afraid of sharing Aadhaar details with govt agencies. A positive and significant relationship between the occupational category unemployed and (p value <0.09) neutrality and no relationship with agreement while no significant relationship between other occupational categories and independent variables; agreement and neutrality of the view that they are not afraid of sharing Aadhaar details with govt agencies only.

Similarly, Agriculture are more likely to agree and be more neutral, big business are more likely to agree and be more neutral, carpenter/halwai are more likely to agree and be more neutral, Other category are less likely to agree and be more neutral, Petty business are less likely to agree and be more neutral, service category are more likely to agree and be more neutral, student are more likely to agree and be neutral, and the unemployed are less likely to agree and be less neutral compare to the base outcome of disagreement that Aadhaar's primary aim is to provide unhindered services to the people. There is a positive and significant relationship between the occupational category service and (p value <0.02)

agreement and no relationship with neutrality of the view that Aadhaar's primary is to provide services while a positive and significant relationship between the occupational category others and (p value<0.08) agreement and no relationship with neutrality. A positive and significant relationship between the occupational category service and (p value <0.03) neutrality of the view that Aadhaar's primary aim is to provide services to the people.

Table- 5.2 results describe that the occupational category agriculture are less likely to agree and be less neutral, big business are more likely to agree and be more neutral, carpenter/halwai are more likely to agree and be less neutral, others category are less likely to agree and be less neutral, Petty business are more likely to agree and be less neutral, Service are more likely to agree and be less neutral, student are more likely to agree and be more neutral, and unemployed are less likely to agree and be less neutral compare to the lease outcome of disagreement that Aadhaar guaranteed my identity to receive services. There is a positive and significant relationship between occupational category others and neutrality and no relationship with agreement of the view that Aadhaar has guaranteed my identity to receive services and no relationship remaining educational categories and between dependent variables. Similarly, the occupational category agriculture are more likely to agree and be more neutral, Big business are more likely to agree and be more neutral, carpenter/halwai are less likely to agree and be more neutral, others are more likely to agree and be more neutral, petty business are more likely to agree and be more neutral, service are more likely to agree and be more neutral, student are more likely to agree and be less neutral, and Unemployed are more likely to agree and be more neutral compare to the base outcome of disagreement that Aadhaar guarantees services like a US social security number does. There is a positive and significant relationship at less than 5% between the occupational category others and (p value <0.03) agreement and (p value <0.03) neutrality of the view that Aadhaar guarantees services like US social security number while a significant relationship between the petty business and (p value<0.04) neutrality, and the occupational category service and (p value <0.07) neutrality of the view

that Aadhaar guarantees services like US social security number. No relationship between remaining occupational categories and the dependent variable.

Further, the agriculture category are less likely to agree and be more neutral, Big business are more likely to agree and be more neutral, carpenter/halwai are less likely to agree and be more neutral, others category are more likely to agree and be more neutral, petty business are more likely to agree and be more neutral, service are more likely to agree and be more neutral, student are less likely to agree and be more neutral, and unemployed are less likely to agree and be more neutral compare to the base outcome of disagreement that welfare cannot be done without Aadhaar in contemporary India. There is a positive and significant relationship between the occupational category others and (p value <0.05) dependent variable neutrality of the view that welfare cannot be done without Aadhaar, awhile a positive and significant relationship between petty business and (p value <0.09) neutrality, and student category and (p value <0.04) neutrality of the view that welfare cannot be done without Aadhaar in contemporary India. No relationship between the remaining occupational categories and dependent variables.

Table- 5.3 results indicate that the occupational category agriculture are less likely to agree and be less neutral, big business are more likely to agree and be less neutral, carpenter/halwai are less likely to agree and be more neutral, others are more likely to agree and be less neutral, petty business are less likely to agree and be less neutral, service are more likely to agree and be more neutral, student are less likely to agree and be less neutral, and unemployed are less likely to agree and be less neutral compare to the base outcome of disagreement that Aadhaar is beyond duplication. There is a positive and significant relationship at less than 5% between the occupational category unemployed and (p value <0.02) agreement and no relationship with neutrality of the view that Aadhaar is beyond duplication while a positive and significant relationship between service and (p value <0.02) neutrality and no relationship with agreement of the view that Aadhaar is beyond duplication. No relationship between the remaining occupational categories and dependent

variables was found. Similarly, Agriculture are more likely to agree and be more neutral, big business are more likely to agree and be more neutral, carpenter/halwai are more likely to agree and be more neutral, others are less likely to agree and be more neutral, petty business are more likely to agree and be more neutral, service are more likely to agree and be more neutral, service are more likely to agree and be more neutral, student are more likely to agree and be more neutral, and unemployed are less likely to agree and be more neutral compared to the base outcome of disagreement that Aadhaar can be a potential tool for surveillance. There is a positive and significant relationship between the occupational category petty business and (p value <0.06) agreement and no relationship with neutrality of the view that Aadhaar can be a potential tool of surveillance while a positive and significant relationship between the occupational category student and (p value <0.10) neutrality and no relationship with the agreement of the view that Aadhaar being a tool for surveillance.

The occupational categories others and students are less likely to agree while others and unemployed are more likely to be neutral compared to the base outcome of disagreement that they are not afraid of sharing their Aadhaar details with government agencies only. The service category is more likely to agree while others, student categories are more likely to be neutral compared to the base outcome of disagreement that Aadhaar's primary aim is to provide unhindered services to the people. The occupational category is less likely to be neutral compared to the base outcome of disagreement that Aadhaar guaranteed their identity to receive government services and more likely to agree. The others, petty business and service categories are more neutral compared to the base outcome of disagreement that Aadhaar guarantees services like US social security number. The others, petty business and student categories are more likely to be neutral compared to the base outcome of disagreement that welfare cannot be done without Aadhaar in contemporary India. The unemployed are less likely to agree while professional graduates are more likely to be neutral compared to the base outcome of disagreement that Aadhaar is beyond duplication. The petty business category is more likely to agree while the student

category is more likely to be neutral compared to the base outcome of disagreement that Aadhaar can be a potential tool for surveillance.

The data description shows that the occupational categories others and student agree that they are not afraid of sharing their Aadhaar details with government agencies only though these categories along with the service sector would remain neutral on Aadhaar's aim is to provide uninterrupted services to the people. The petty business, others and service sector remain neutral about the question of whether Aadhaar guarantees services like a US social security number does. The petty business only believes that welfare cannot be done without Aadhaar while the student category remains neutral on this point. Most of the occupational categories remain neutral on duplication of Aadhaar and surveillance with the help of Aadhaar in governance.

The respondents like Sudhakar, Devaiah, Thimothi and Madei Manik Rao from agriculture category are not afraid of sharing their Aadhaar details with government agencies only. They said that they are not aware of US social security number and surveillance with Aadhaar. People Sunny from big business, Swathi, Venkatesh, Sampath and Sumalatha from petty business said that welfare cannot be done with Aadhaar because Aadhaar is beyond duplication. They think that Aadhaar can be used to provide services like a US social security number if the government intended. Shiva Shankar, Thirupathi, Archana and Sindhuja from service sector and Nilanjan, Naresh, Anji and Joshua from student category neither agree nor disagree on the question of Aadhaar providing services like US social security number does. They also opined that Aadhaar can be a potential tool for surveillance in digital governance.

Income/Class

Middle class is taken as a reference category. Table- 5.1 results show that the income category Poor are more likely to agree and be more neutral, the Above middle class are

less likely to agree and be more neutral, Rich are more likely to agree and be less neutral, and the Richest are more likely to agree and be more neutral compare to the base outcome of disagreement that they are not afraid of sharing their Aadhaar with government agencies only. There is a positive and significant relationship at less than 5% between the income category Poor and (p value <0.03) agreement and no relationship with neutrality of the view that they are not afraid of sharing Aadhaar with government agencies only while relationship between other income groups and dependent variables. Similarly, Poor are less likely to agree and be less neutral, the Above middle class are more likely to agree and be more neutral, Rich are more likely to agree and be more neutral, and Richest are more likely to agree and be more neutral compare to the base outcome of disagreement that Aadhaar's primary aim is to provide unhindered services to the people. There is a positive and significant relationship at less 5% between Poor and (p value <0.02) agreement and no relationship with neutrality of the view that Aadhaar's primary aim is to provide unhindered services to the people while no relationship between the remaining income categories and the dependent variable.

Table-5.2 results show that the poor are less likely to agree and be more neutral, Above Middle class are less likely to agree and be more neutral, Rich are more likely to agree and be more neutral, and Richest are more likely to agree and be more neutral compare to the base outcome of disagreement that Aadhaar guaranteed my identity to receive services. There is a positive and significant relationship at less than 5% between the Poor and (p value <0.05) neutrality and no relationship with agreement of the view that Aadhaar guaranteed my identity to receive services while no relationship between the remaining income categories and dependent variable. Similarly, Poor are more likely to agree and be more neutral, the Above middle class are more likely to agree and be more neutral, Rich are more likely to agree and be less neutral, and the Richest are less likely to agree and be less neutral compare to the base outcome of disagreement that Aadhaar guarantees services like US social security number does. There is a positive and significant relationship at less than 5% between the Richest and (p value <0.04) agreement and no relationship with neutrality of the view that Aadhaar provides services like US social

security number does while a positive and significant relationship between the poor and (p value <0.05) neutrality and no relationship with agreement with the view that Aadhaar provides services like US social security number. No relationship between the remaining income groups and dependent variable. Further, the poor are less likely to agree and be more neutral, the Above middle class are less likely to agree and be more neutral, Rich are more likely to agree and be less neutral, and Richest are more likely to agree and be less neutral compare to the base outcome of disagreement that welfare cannot be done without Aadhaar in contemporary India. There is a positive and significant relationship between Poor and (p value <0.10) agreement and no relationship with neutrality of the view that Welfare cannot be done without Aadhaar while no relationship between the remaining income categories and dependent variable.

Table- 5.3 results indicate that the Poor are more likely to agree and be less neutral, Above Middle class are more likely to agree and be more neutral, Rich are less likely to agree and be less neutral, and Richest are more likely to agree and be less neutral compare to the base outcome of disagreement that Aadhaar is beyond duplication. NO relationship between the income categories and dependent variable was found. Similarly, the poor are more likely to agree and be more neutral, Above middle class are more likely to agree and be more neutral, Rich are less likely to agree and be less neutral, and Richest are less likely to agree and be less neutral compare to the base outcome of disagreement that Aadhaar can be a potential tool for surveillance. There is a positive and significant relationship between the poor and (p value <0.09) agreement and (p value <0.03) neutrality of the view that Aadhaar can be a tool for surveillance while no relationship between the remaining income categories and dependent variable.

The discussion on the above results indicate that the Poor are more likely to agree (and neutral is not significant) compared to the base outcome of disagreement that they are not afraid of sharing their Aadhaar details with government agencies only. The poor are less likely to agree (and neutrality is not significant) compared to the base outcome that

Aadhaar's aim is to provide services to the people. They (poor) are also more likely to be neutral compared to the base outcome of disagreement that Aadhaar has guaranteed their identity to receive government services and also are more likely to be neutral compared to the base outcome of disagreement that Aadhaar guarantees services like US social security number does. They are also less likely to agree compared to the base outcome of disagreement that welfare cannot be done without Aadhaar in contemporary India. The poor are more likely to agree and be more neutral compared to the base outcome of disagreement that Aadhaar can be a potential tool of surveillance.

This implies that the poor are most affected by Aadhaar based governance in the state in particular and the country in general. The poor rely on Aadhaar and have huge expectations from its services while they are also suspicious of surveillance by Aadhaar. However, poor acknowledge the Aadhaar's utility in accessing services and disagree to say that welfare cannot be done without Aadhaar. The Poor like Manemma, Madhavi, Narasimhulu, Sangeeta, Gouramma, Bheembai, Tekam Indru, Manik Rao and Devrao from OBC, SC and ST opined that Aadhaar can provide services like US social security number because it is beyond duplication. They mentioned that they do not know much about surveillance. The respondents like Chanti, Sujatha Singh, Harini from the Above middle classes and Rich said that Aadhaar cannot provide services like the US social security number because Aadhaar is also vulnerable to duplication. They are convinced that Aadhaar can be a potential tool for surveillance.

Type of House

Gated community is taken as a reference category. Table-5.1 results show that the independent/Pucca house type are less likely to agree and be less neutral, Kachcha house are less likely to agree and be less neutral, and Hut type are less likely to agree and be less neutral compare to the base outcome of disagreement that they are not afraid of sharing their Aadhaar details with government agencies only. There is a positive and significant relationship between the Kachcha house type and (p value <0.07) agreement and no

relationship with neutrality of the view that they are not afraid of sharing Aadhaar with government agencies while no relationship between the remaining type of houses and dependent variables. Similarly, Independent/Pucca house are less likely to agree and be more neutral, Kachcha house are less likely to agree and be less neutral, and Hut are less likely to agree and be less neutral compare to the base outcome of disagreement that Aadhaar's primary aim is to provide unhindered services to the people. There is a positive and significant relationship between the Hut type of house and (p value <0.06) agreement and no relationship with neutrality of the view that Aadhaar's primary aim is to provide unhindered services to the people while no relationship between the remaining type of houses and dependent variable.

Table-5.2 results show that the independent/Pucca house are more likely to agree and be more neutral, Above Middle class are more likely to agree and be more neutral, and Hut are more likely to agree and be more neutral compare to the base outcome of disagreement that Aadhaar has guaranteed my identity to receive services. There is a positive and significant relationship between the Kachcha house type and (p value <0.10) neutrality and no relationship with the agreement of the view that Aadhaar guaranteed my identity to receive services while no relationship between the remaining type of houses and dependent variable. Similarly, independent/pucca houses are less likely to agree and be less neutral, Kachcha house are less likely to agree and be less neutral, and Hut are less likely to agree and be less neutral compared to the base outcome of disagreement that Aadhaar provides services like US social security number. There is a positive and significant relationship at less than 5% between Kachcha type of house and (p value <0.03) agreement and (p value <0.02) neutrality of the view that Aadhaar provides services like US social security number while not relationship between remaining type go houses and dependent variable. Further, the Independent/Pucca house are more likely to agree and be more neutral, Kachcha house are less likely to agree and be more neutral, and Hut are more likely to agree and be more neutral compare to the base outcome of disagreement that Welfare cannot be done without Aadhaar in contemporary India. There is a positive and significant relationship between independent house type and (p value<0.03) agreement and no

relationship with neutrality of the view that welfare cannot be done without Aadhaar while no relationship between the remaining house types and dependent variables.

Table- 3 results describe that the independent/pucca house type are less likely to agree and be less neutral, Kachcha house are less likely to agree and less neutral, and Hut category are more likely to agree and be more neutral compared to the base outcome that Aadhaar is beyond duplication. There is a positive and significant relationship between independent house and (p value <0.07) neutrality and no relationship with the agreement of the view that Aadhaar is beyond duplication while no relationship between remaining house types and dependent variables. Similarly, Independent/pucca house type are more likely to agree and be more neutral, Kachcha house are more likely to agree and be more neutral, and Hut are more likely to agree and be more neutral compare to the base outcome of disagreement that Aadhaar can be a potential tool for surveillance but no significant relationship between them.

The above interpretation of results infers that the people from Kachcha house are less likely to agree (and neutral is not significant) compared to the base outcome of disagreement that they are not afraid of sharing their Aadhaar details with government agencies only. The hut dwellers are less likely to agree (neutrality is not significant) compared to the base outcome of disagreement that Aadhaar's primary aim is to provide unhindered services to the people. The Kachcha house people are more likely to be neutral compared to the base outcome that Aadhaar guaranteed their identity to receive government services while they are also less likely to agree and be less neutral compared to the base outcome of disagreement that Aadhaar guarantees services like US social security number does. The independent house dwellers are less likely to be neutral compared to the base outcome of disagreement that welfare cannot be done without Aadhaar in contemporary India. The people from independent house are also less likely to be neutral compared to disagreement that Aadhaar is beyond duplication.

The discussion on the results indicates that the people from Kachcha house are afraid of sharing their Aadhaar details with government agencies because they do not think that Aadhaar guarantees services like the US social security number does. The Hut dwellers would accept that Aadhaar's primary aim is to provide services while the people independent house category do not agree with the statement that welfare can't be done without Aadhaar and think that Aadhaar is not beyond duplication (as they are less likely to be neutral compared to the base outcome of disagreement). The respondents like Manemma, Rajaiah and Sangeeta have mentioned that Aadhaar guaranteed identity to receive government services because it is beyond duplication. They also agree that welfare cannot be done without Aadhaar in contemporary India. Therefore, they are open to sharing Aadhaar details with government agencies. The independent house dwellers like Kalpna Kaur, Pragya and Chanti mentioned that Aadhaar is not fool proof and can be a potential source of surveillance. Hence, they are not willing to share Aadhaar details with government agencies.

Residence

Urban is taken as a reference category. Table-5.1 results show that the Rural are less likely to agree and be less neutral compared to the base outcome of disagreement that they are not afraid of sharing Aadhaar details with government agencies only but no relationship between them. Similarly, Rural category are more likely to agree and be more neutral compared to the base outcome of disagreement that Aadhaar's primary aim is to provide unhindered services to the people. There is a positive and significant relationship at less than 10% between the Rural category and (p value <0.09) agreement and no relationship neutrality of the view that Aadhaar's primary aim is to provide unhindered services to the people.

Table-5.2 results show that the Rural category are more likely to agree and be more neutral compared to the base outcome of disagreement that Aadhaar guaranteed my identity to receive services. There is a positive and significant relationship at less than 5% between

Rural and (p value <0.05) neutrality and no relationship with Aadhaar. Similarly, Rural category are less likely to agree and be less neutral compared to the base outcome of disagreement that Aadhaar provides services like US social security number does but no relationship between them. Further, the Rural category are more likely to agree and be more neutral compared to the base outcome of disagreement that welfare cannot be done without Aadhaar in contemporary India. There is a positive and significant relationship between at less than 5 % the residence category Rural (p value <0.07) agreement and (p value <0.03) neutrality of the view that Welfare cannot be done without Aadhaar.

Table-5.3 results show that the Rural category are more likely to agree and be less neutral compared to the base outcome of disagreement that Aadhaar is beyond duplication but no significant relationship between them. Similarly, the Rural category are more likely to agree and be more neutral compared to the base outcome of disagreement that Aadhaar can be a potential tool for surveillance. There is a positive and significant relationship at less than 5% between Rural and (p value <0.02) neutrality and no relationship with agreement of the view that Aadhaar can be a potential tool for surveillance.

The results describe that the Rural residents are more likely to be neutral compared to the base outcome of disagreement that Aadhaar has guaranteed their identity to receive services while they are also more likely to agree and be more neutral compared to the base outcome that welfare cannot be done without Aadhaar. The rural residents also are more likely to be neutral compared to the base outcome of disagreement that Aadhaar can be a potential tool for surveillance in governance. The rural category does not have any significant relationship with other dependent variables.

This implies that the rural residents seem to accept that Aadhaar based identity enables access to the government welfare services because they believe that welfare cannot be done without Aadhaar. They remain neutral about surveillance by Aadhaar. The Rural residents

like Sangeeta, Nagender, Tekam Indru, Madei Manik Rao, Sonu Rao, Bheembai, Devaro and Athram Amrutha Rao are open to share Aadhaar number with government agencies for accessing benefits. They have said that they have no idea about surveillance by Aadhaar. They remain neutral about duplicating Aadhaar and also think duplication of Aadhaar can be done. The Urban respondents like Amina, Md Tajoddin, Chanti, Pragya and Kalpana Kaur opine that they are aware of Surveillance and it can be a potential tool for surveillance.

Ownership of House

Own house is taken as a reference category. Table-5.1 results show that the ownership type of the house rented category are more likely to agree and be more neutral while House on public land is more likely to agree and be more neutral compared to the base outcome of disagreement that they are not afraid of sharing their Aadhaar with government agencies only. No significant relationship between them. Similarly, the Rented are more likely to agree and be more neutral while House on public land are more likely to agree and be less neutral compared to the base outcome of disagreement that Aadhaar's primary aim is to provide unhindered services to the people. There is a positive and significant relationship between ownership at less than 5% category Rented and (p value <0.01) and (p value <0.02) neutrality while no relationship between House on public land and dependent category of Aadhaar's primary aim is to provide services to the people.

Table- 5.2 results show that Rented house category are more likely to agree and be more neutral while House on public land are less likely to agree and be less neutral compared to the base outcome of disagreement that Aadhaar guaranteed my identity to receive service but no significant relationship between them. Similarly, the Rented houses are more likely to agree and be more neutral while House on public land category are more likely to agree and be more neutral compared to the base outcome of disagreement that Aadhaar provides services like US social security number does. There is a positive and highly significant relationship between Rented category and (p value <0.000) and no

relationship with neutrality of the view that Aadhaar provides services like US social security number, and a significant relationship between the ownership type House on public land category and (p value <0.02) and (p value <0.01) neutrality with the view that Aadhaar provides services like US social security number. Further, the Rented are more likely to agree and be less neutral while House on public land category are less likely to agree and be less neutral compared to the base outcome of disagreement that Welfare cannot be done without Aadhaar in contemporary India. There is a positive and significant relationship at less than 10% between House on public land category and (p value <0.06) agreement and (p value <0.07) neutrality while no relationship between the Rented category and dependent variable-Welfare cannot be done without Aadhaar in contemporary India.

Table-5.3 results show that covariates of the Rented house type are more likely to agree and be less neutral while House on public land are less likely to agree and be less neutral compare to the base outcome of disagreement that Aadhaar is beyond duplication but no significant relationship between them. Similarly, the covariates of rented house type are more likely to agree and be less neutral while House on public land are more likely to agree and be more neutral compare to the base outcome of disagreement that Aadhaar can be a potential tool for surveillance but no significant relationship between them.

The above results from the tables would imply that people from rented houses are more likely to agree and be more neutral compared to the base outcome that Aadhaar's primary aim is to provide unhindered services to the people. They are also more likely to agree while people from house on public land are more likely to agree and be more neutral compared to the base outcome of disagreement that Aadhaar guarantees services like the US social security number does. The people from house on public land are less likely to agree and less neutral compared to the base outcome of disagreement that welfare can not be done without Aadhaar. The ownership categories are not significantly related to the remaining dependent variables.

The urban respondents like Amina Khan, Sujatha Singh, Harini, Jytohi, Swathi and Sunny consider are reluctant to share Aadhaar details with government agencies because it can be a potential tool for surveillance and not any fool proof tool in the digital governance. Madhavi, Narasimhulu, Tajoddin from the rental house and Shanthi, Venkataiah and Radha from the house on public land have said that Aadhaar guaranteed their access to receive government services. They also mentioned that welfare cannot be done without Aadhaar in contemporary India because Aadhaar is beyond duplication. Hence, they are not much aware of surveillance with the help of Aadhaar.

5.6. Improvement in the Governance with Introduction of Aadhaar in Service Delivery

The tables 5.4, 5.5 and 5.6 are discussed in this section to understand and analyse the improvement in the governance with the implementation of Aadhaar based biometric governance in delivery of the welfare services. The improvement of governance is studied by examining the financial inclusion, denial of services like PDS, Pension benefits, and authentication failures and issues after Aadhaar in governance.

Gender

Male is taken as a reference category. Table-5.4 results show that Female category with Odds ratio of 1.10 are more likely to agree that they were/are denied services due to authentication issues/lack of Aadhaar but no significant relationship between them. Similarly, Female category with Odds ratio of 0.81 are less likely to agree that Aadhaar linkage has improved access to Banking services and no significant relationship between them. Table-5.5 results indicate that the female category with Odds ratio of 0.94 are less likely to agree that Ration was denied due to problems due to lack of Aadhaar and no significant relationship between them. On the same line, Female category with Odds ratio of 0.53 are less likely to agree that Pension was denied due to lack of Aadhaar and no significant relationship between them. Table-6 results show that female category with Odds

ratio of 0.63 are less likely to agree that Aadhaar authentication fails often and a positive and significant relationship at less than 10% (p value <0.08) between female category and improvement in failure of Aadhaar authentication. Female category with Odds ratio of 0.66 and 0.98 are less likely to agree that the improvement in governance and problems remain still even after Aadhaar respectively and no significant relationship between them.

The above interpretation of the results from tables imply that the women (female category) are significantly more likely to agree that the failure of authentication with Aadhaar but less likely to agree that they were denied services like ration and pension due to lack of/issues with Aadhaar. They are also less likely to agree with the view that Aadhaar has improved the governance but not significant. This is due to the fact the alternative mechanism practised by the fair shop dealers or ration shop officers to ensure that no deserving people should be left out.

During the field study, the women respondents like Kalpana Kaur, Pragya, Sujata Singh, Nikita Singh and Harini said that they are not denied any services due to lack of/issues with Aadhaar. They have said that their access to banking was improved with Aadhaar. The online banking through BHIM app and other payment apps have accepted Aadhaar number for eKYC norms for them in daily cashless transactions. Some women respondents like Sangeeta said that they faced troubles for school admission for their children. Madhavi and Jytohi have mentioned that they faced authentication issues while trying to draw ration. Bheembai said that her father-in-law could not get pension because of the error with age in the Aadhaar card. Though some of them have opened bank accounts with the help of Aadhaar but not useful further due to the fact that they do not engage in financial transactions. They also do not do cashless transactions in their daily life. So it has a mixed results for women as per their education, place of residence and occupation.

Age

The Age group 18-24 is taken as a reference category. Table-5.4 results show that the age groups ranging from 25-34, 35-44 and 45-54 with Odds ratio of 0.87, 0.46 and 0.55 are less likely to agree that they were denied services due to issues/lack of Aadhaar and no significant relationship between them. Age groups 55 and above with Odds ratio of 1.51 are more likely to agree that they were denied services due to Aadhaar and no significant relationship between them. Similarly, the age groups, 25-34, 35-44, 45-54 and 55 and above with Odds ratio of 0.29, 0.30, 0.43 and 0.29 respectively are less likely to agree that there is improvement in access to banking services. There is a positive and significant relationship at less than 10% between age groups (25-35 and 35-44) and (p value <0.06) denial of services and (p value <0.10) improvement in access to banking services while no relationship between the age groups (45-54 and 55 and above) and improvement in access to banking services.

Table- 5.5 results show that all the age groups (25-34, 35-44, 45-54 and 55 and above) with Odds ratio of 0.91, 0.49, 0.33 and 0.86 respectively are less likely to agree that they were denied of Ration services due to lack of/issues with Aadhaar. There is a positive and less significant relationship at less than 10% (p value <0.10) between the age group, 45-54 and denial of Ration while no relationship between other age groups and ration. Similarly, the age groups 25-34 and 55 and above with Odds ratio of 2.24 and 2.03 respectively are more likely to agree that they/their family members were denied Pension due to lack of/issues with Aadhaar and no significant relationship between them. The other age groups (34-44 and 45-54) are less likely to agree to the denial of Pension due to lack/issues with Aadhaar and no significant relationship between them.

Table- 5.6 results that the age groups ranging from 25-34, 35-44 and 45-54 with Odds ratio of 0.30, 0.34 and 0.65 are less likely to agree with the failure of authentication of Aadhaar. There is a positive and significant at less than 5 % (p value <0.02) relationship between the age group 25-34 and failure of authentication and less significant relationship

at less than 10% (p value <0.08) between age group, 35-44 and failure of authentication while there is no relationship between age group 45-54 and failure of authentication. The age group, 55 and above with Odds ratio of 1.03 are more likely to agree that failure of authentication happens often and no relationship between them. Similarly, age groups (35-44 and 45-54) with Odds ratio of 1.14 and 1.72 are more likely to agree that there is improvement in governance with Aadhaar while age groups (25-34 and 55 and above) with Odds ratio of 0.63 and 0.76 respectively are less likely to agree that Aadhaar improved governance. No significant relationship between the age groups and improvement in governance. The same age groups are also less likely to agree that the problems still remain even after introduction of Aadhaar. There is a positive and significant relationship at less than 5% between the age groups (p value <0.03 for both age groups 35-44 and 45-54) and problems still remain after introducing Aadhaar and while no relationship between age groups 25-34 and 55 and above and problems remaining after Aadhaar.

The results describe that the age groups 25-34 and 35-44 are less likely to agree that Aadhaar has improved access to banking because they also less likely to agree with the failure of authentication while the age group 45-54 are less likely to agree that they were denied services. The age groups 34-44 and 45-54 are less likely to agree that problems still remain in the governance even after the introduction of Aadhaar. Though the old age people of 55 and above age group are more likely to agree with failure of authentication but statistically not significant because of alternative verification mechanisms to ensure the delivery of the pension. The aim of Aadhaar is to improve governance, banking services and removing the problems by easing of the process is not translated into action while providing welfare services like Ration, Pension, Rythu Bandu, Kalyana Lakshmi, MGNREGA and Farm insurance and market services like Internet, SIM card are effectively rendered by using Aadhaar as a proof of identity among the people.

The younger respondents like Amarnath, Rukmini, Anil Kumar and Swathi said that they were not denied services due to lack of/ issues with Aadhaar. They also mentioned

that Aadhaar linking has improved access to banking services especially the online/digital transactions. They neither agreed nor disagreed on the question of Aadhaar being beyond duplication. They also mentioned that surveillance like CCTV cameras or hacking personal information is possible with the help of Aadhaar but they trust the government that it will not do such things to its own people. Hence, they are open to share Aadhaar details with government agencies only. But also emphasised that the private players like Mobile networks and band widths insist on producing Aadhaar number or authentication for securing a SIM card or internet connection. Old age people like Mariamma, Sarojana, Jaya, Narasimhulu, Venkataiah, Tekam Indru, Bheembai and Thimothi from Adilabad are open to share their Aadhaar details because they believe Aadhaar identity will ensure unhindered services to them provided no mistakes are printed in it.

Religion

The Hindu religion is taken as a reference category. Table- 5.4 results show that the religious categories Agnostic, Atheist and Sikh with Odds ratio of 1.00, 1.00 and 1.20 are more likely to agree with the denial of services due to lack of/issues with Aadhaar and no significant relationship between them. Christian and Muslim categories with 0.74 and 0.76 are less likely to agree that lack of/issues with Aadhaar caused denial of services and no significant relationship between them. (Agnostic, Atheist) Sikh category with Odds ratio of 1.04 are more likely to agree that Aadhaar has improved access to banking services and a positive and less significant at less than 10% (p value <0.08) relationship between them. Christian and Muslim categories are less likely to agree that Aadhaar has improved access to banking services while there is positive and significant relationship at less than 10% (p value <0.10) between Christian and improvement in access to banking and no relationship between the Muslim category and improvement of access to banking. Table- 5.5 results show that (Agnostic and Atheist) christian and Sikh with Odds ratio of 2.62 and 2.25 are more likely to agree that they were denied Ration due to lack of/issues with Aadhaar but no significant relationship between them. Muslims with Odds ratio of 0.52 are less likely to agree that they were denied services due to lack of/issues with Aadhaar. Similarly, all religious categories (except Agnostic and Atheist) Christian, Muslim and Sikh are less

likely to agree that they were denied of pension due to lack of /issues with Aadhaar and no significant relationship between them.

Table- 5.6 results show that (Agnostic and Atheist with 1.00 Odds ratio) Muslim category with Odds ratio of 1.17 are more likely to agree that there is failure of authentication with Aadhaar and a positive and significant relationship at less than 5% (p value <0.01) between them. Christian and Sikh categories with Odds ratio of 0.91 and 0.52 respectively are less likely to agree that their failure of authentication often with Aadhaar and no significant relationship between them. Similarly, (Agnostic and Atheist) Muslim with Odds ratio of 1.96 are likely to agree that Aadhaar has improved governance but no significant relationship between them. Christian and Sikh categories with Odds ratio of 0.97 and 0.42 respectively are less likely to agree that Aadhaar has improved governance and no significant relationship between them. Further, (Agnostic and Atheist) Christian, Muslim and Sikh categories with Odds ratio of 1.77, 1.47 and 3.03 respectively are more likely to agree that the problems still remain even after introduction of Aadhaar in governance. There is a positive and significant relationship at less than 5% between (p value <0.03) Muslims, (p value <0.02) and Problems remaining even after introduction of Aadhaar in governance.

The above results infer that the religious categories Christian are less likely to agree and Sikh are more likely to agree that Aadhaar has improved access to banking at significant levels. The Sikh are more likely to agree while Christian, Muslim groups are less likely to agree that they were denied of services like Ration, Pension, LPG subsidy, and Passport but not significant. Though Muslim agree that Aadhaar has improved governance and are more likely to agree that they experience failure of authentication significantly but not denied the services since Aadhaar linkage with Ration card. Hence, Muslims along with Sikh category are more likely to agree that problems still remain in governance even after introduction of Aadhaar in the welfare governance. The Christians are less likely to agree that they experience authentication failure and do not agree that

Aadhaar improved governance so the problems still remain even after Aadhaar in the welfare governance.

These religious groups are of the view that Aadhaar being mere identity card/number could bring any substantial change in the governance because they experience updating their details is a tough part and have undergone tedious process. Once the details are in place, Aadhaar can be a good source of identity in accessing the government services with any hassles.

The Minority respondents like Amina, Subhani and Md Tajoddin, Prangya, Sujatha Singh, and Kalpana Kaur have mentioned that Aadhaar ensures their identity to access government services provided no authentication failure or machine failure. They also acknowledged the Aadhaar's role in improving their access to banking in terms of digital banking. Most of the Christian respondents like Joshua and Thimothi like Muslim and Sikh categories are open to share their Aadhaar with government because it can work US social security number if government would like to use it for such intention and they also cited the CCTV camera and GPS as the examples for surveillance in the cities while the rural respondents Unnisa, Sirraj and Mariamma have said that they welfare cannot be done without Aadhaar in contemporary India.

Caste

General category is taken as a reference category. Table- 5.4 results describe that OBC, SC and ST with Odds ratio of 0.92, 0.71 and 0.86 respectively are less likely to agree to the denial of services and no significant relationship between them. Similarly, OBC and SC with Odds ratio of 0.62 and 0.74 respectively are less likely to agree that Aadhaar has improved their access to banking services and no significant relationship between them. ST category with Odds ratio of 1.10 are more likely to agree that Aadhaar has improved their access to banking but no significant relationship between them. The STs could get

private banking services in the agency area of Adilabad district where Aadhaar was produced at private ATMs run by individuals to withdraw the money on the commission basis. This was perceived as an access to banking services with the help of Aadhaar by STs in Utnoor in Adilabad district. Table-5 results show that OBC and ST with Odds ratio of 1.67 and 1.68 respectively are more likely to agree to the denial of Ration provisions due to lack of/issues with Aadhaar but no significant relationship between them. SC category with Odds ratio of 0.42 are less likely to agree to the denial of Ration provisions due to lack of/issues with Aadhaar and there is a positive and significant relationship at less than 5% (p value <0.05) between SC and denial of ration.

Further, OBC, SC and ST with Odds ratio of 0.80, 0.44 and 0.54 respectively are less likely to agree that lack of/issues with Aadhaar has caused denial of pension and there is a positive and significant relationship at less than 5% between three independent (p value<0.05) OBC, at less than 5 % (p value <0.07) SC and (p value <0.02) ST and dependent variable denial of pension. Table- 6 results show that OBC, SC and ST categories with Odds ratio of 2.70, 1.09 and 1.27 are more likely to agree that there is failure of Authentication with Aadhaar. But a positive and significant relationship at less than 5% (p value <0.01) between OBC and failure of authentication while no relationship between SC, ST and failure of authentication. Similarly, SC and ST with Odds ratio of 1.56 and 1.08 are more likely to agree that Aadhaar has improved governance but no significant relationship between them. OBC with Odds ratio of 0.98 are less likely to agree that there is an improvement in governance due to Aadhaar but no significant relationship between them. Further, OBC, SC and ST with Odds ratio of 0.95, 0.30, and 0.87 are less likely to agree that problems still remain in welfare governance even after introduction of Aadhaar and no significant relationship between them.

The discussion above results from the tables indicate that the caste groups OBC, SC, ST are less likely to agree that they were denied of services like Ration and Pension significantly though OBCs said to have experienced authentication failure. Only ST

category significantly are more likely to agree that Aadhaar has improved banking service while OBC and SC are less likely to agree with it but not significant relationship. This is due to the perception of prevalence of private ATM services in Utnoor of Adilabad where people ask the Tribals to produce Aadhaar to get money withdrawn from their personalised banking.

The OBC, SC and ST respondents Madhavi, Sangeetha, Jyothi, Nagender, Swathi, Tekam Indru, Sonu Rao, Devrao and Mandavalli Lakshman said that they were not denied services due to lack of Aadhaar since officers provided in the alternative way until the grace period is over. This was done on the request of an ITDA project officer in Adilabad, said the locals of Darmajipeta Utnoor. Even the Ration officers also agreed that they continued the civil supplies to ensure no one will go hungry in the Hyderabad district until completion of Aadhaar seeding with welfare schemes. Therefore, most of these weaker sections believe that welfare cannot be done without Aadhaar in contemporary India. However, they have no idea about the US social security number.

Education

Graduation is taken as a reference category. Table- 5.4 results show that Post graduation, Doctorate, and other with Odds ratio of 1.83, 1.00 and 1.00 respectively are more likely to agree to the denial of services due to lack of/issues with Aadhaar and no significant relationship between them. Professional graduates, Upto class 12 and Illiterates with Odds ratio of 0.83, 0.80 and 0.85 are less likely to agree with the denial of services due to lack of/issues with Aadhaar and no significant relationship between them. Similarly, Post graduates, professional graduates, Up to class 12 and Illiterates with Odds ratio of 0.32, 0.49, 0.48 and 0.16 are less likely to agree that Aadhaar has improved access to banking services. There is a positive and significant relationship at less than 5% between two independent variables (p value <0.04) post graduate, (p value <0.05) Illiterate and dependent variable, -improvement access to banking services while no relationship between Professional graduates and improvement in access to banking services.

Table- 5.5 results indicate that Post graduate, Doctorate, Upto class 12 and Illiterate and (Other) with estimated Odds ratio of 1.45, 1.00, 1.11, 1.90 and (1.00) are more likely to agree with the denial of Ration due to lack of /issues with Aadhaar but no significant relationship. SC category with Odds ratio of 0.80 are less likely to agree to the denial of services due to lack of /issues with Aadhaar and no significant relationship between them. Similarly, Doctorates, Others and Illiterate categories with Odds ratio of 1.00, 1.00 and 2.44 respectively are more likely to agree with the denial of pension due to lack of /issues with Aadhaar. There is a positive and less significant relationship at 10% (p value <0.10) between Illiterate and denial of pension while no relationship between Doctorate, other and denial of pension. Post graduate, Professional graduate and Up to class 12 categories with Odds ratio of 0.87, 0.45 and 0.98 are less likely to agree with the denial of pension due to lack of /issues with Aadhaar and no significant relationship between them. Post graduate, Doctorate, professional graduates and others with Odds ratio of 1.43, 1.00, 3.33 and 1.00 respectively are more likely to agree with the failure of Aadhaar authentication.

There is a positive and significant relationship at less than 5% (p value <0.001) between Professional graduates and failure of authentication while no relationship between three independent variables; Post graduates, Doctorate and Other, and failure of authentication. Up to class 12 and Illiterates with Odds ratio of 0.80 and 0.96 are less likely to agree with the failure of authentication and no significant relationship between them. Further, (Doctorates and Others with Odds ratio 1.00 for each) Up to class 12 and Illiterate categories with Odds ratio of 0.49 and 0.18 are less likely to agree that Aadhaar has improved governance and there is positive and a highly significant relationship at less than 1% (p value <0.000) between Illiterate and improvement of governance while a positive and less significant relationship at less than 10% (p value <0.08) between Up to class 12 and improvement of governance. Post graduate and professional graduates with Odds ratio of 0.99 and 0.35 are less likely to agree that Aadhaar has improved governance and no significant relationship between them. Similarly, Post graduate, Doctorate, professional graduates, others, Up to class 12 and Illiterate categories with Odds ratio of 1.03, 1.00, 2.65, 1.00, 1.59 and 3.26 respectively are more likely to agree that the problems still remain

in welfare governance even after introduction of Aadhaar. There is a positive and significant relationship of less than 5% (p value <0.03) between Illiterate and problems remaining even after Aadhaar in governance.

The discussion on the interpretation of the results shows that the illiterates and people who studied up to class 12 and post graduate categories significantly are less likely to agree that Aadhaar has improved their access to banking services. This is because of the supreme court judgement on Aadhaar that it was not mandatory before. Therefore, the KYC norms were not taken seriously. Especially the illiterates were denied pension and Ration (not significant though) hence they believe that Aadhaar has not improved governance and problems still remain even after introducing Aadhaar. The professional graduates face failure of authentication with Aadhaar and of the opinion that problems still remain in the governance. Similarly, the post graduates are more likely to agree that they were denied services like ration but not pension and would think that Aadhaar has not improved their access to banking, often experience failure of authentication so the problems still remain in the governance even after introduction of Aadhaar. This implies that Aadhaar is not user friendly for illiterates and semi-literates while graduates and above can make use of it as per requirement.

The well-educated respondents like Chanti, Pragya, Nikita Singh, Kalpana Kaur consider Aadhaar guaranteed identity will certainly improve their access to government services and also less possibility for denial of services. They also cite the examples of online banking, apps for money transactions with the help of ease of banking services. Professional graduate respondents like Anirudh, Harini, and Rukmini mentioned that Aadhaar can be used as the US social security number to ensure better welfare services. The illiterates and people who studied up to class 12 like Thimothi, Manemma, Sudhakar, Raju and Swamy said that Aadhaar's primary aim is to provide unhindered services to the people because Aadhaar is beyond duplication and welfare cannot be done without Aadhaar in contemporary India.

Occupation

Housewife/Homemaker is taken as a reference category. Table-5.4 results show that Agriculture, Big business, others and student categories with Odds ratio of 1.36, 1.00, 2.39 and 1.54 are more likely to accept the denial of services caused by lack of/issues with Aadhaar. There is a positive and less significant relationship at less than 10% (p value <0.08) between the occupation category and denial of service while there is no relationship between the remaining occupation category and denial of services. Petty business, service and Unemployed with Odds ratio 0.86, 0.91 and 0.40 are less likely to agree to the denial of service due to lack of/issues with Aadhaar and no relationship between them. Similarly, the occupation category Petty business with estimated Odds ratio of 1.28 are more likely to accept that Aadhaar has improved access to banking services and no relationship between them. Agriculture, big business, carpenter/halwai, others, petty business, service, student and unemployed with estimated Odds ratio of 0.55, 0.10, 0.26, 0.91, 0.51, 0.26 and 0.99 respectively are less likely to agree that Aadhaar has improved access to banking services. There is a positive and significant relationship at less than 10% (p value <0.06) between student and improvement in banking services while there is no relationship between other occupational categories and improvement in access to banking services. Table- 5 results show that occupational categories Agriculture, Big business, Others, Petty business, service and student with the estimated Odds ratio of 2.72, 12.27, 8.76, 1.47, 2.19 and 1.90 respectively are more likely to agree with the denial of Ration due to lack of/issues with Aadhaar. There is a positive and highly significant relationship at less than 1% (p value <0.000) between others and denial of Ration while a positive and less significant relationship at less than 10% (p value <0.09) between agriculture and denial of Ration. Carpenter/halwai and unemployed with Odds ratio of 0.77 and 0.63 respectively are less likely to agree that lack of/issues with Aadhaar has caused denial of Ration and there is a positive and less significant relationship at less than 10% p value <0.06) unemployed and denial of Ration while there is no relationship between carpenter/halwai category and denial of ration.

Similarly, Big business, carpenter/halwai and others with estimated Odds ratio of 1.00, 2.10 and 2.24 are more likely to agree with the denial of Pension due to lack of/issues with Aadhaar. There is a positive and significant relationship at less than 10% (p value <0.07) between Carpenter/halwai and denial of pension while there is no relationship between big business, others and denial of pension. Agriculture, Petty business, service, student and employed with Odds ratio of 0.53, 0.70, 0.73, 0.83 and 0.18 are less likely to agree to the denial of pension due to lack of/issues with Aadhaar. There is a positive and significant relationship at less than 5% (p value <0.020 between unemployment and denial of pension while no relationship between the remaining occupational categories and denial of pension. Table- 5.6 results show that the categories big business and others with Odds ratio of 1.00 and 1.00 are more likely to accept that lack of/issues with Aadhaar has caused denial of Ration and no relationship between them. Similarly, Agriculture, carpenter/halwai, Petty business, service, student and unemployed categories with odds ratio of 0.88, 0.75, 0.16, 0.42, 0.58 and 0.28 are less likely to agree that the failure of authentication with Aadhaar. There is a positive and highly significant relationship at less than 1% between (p value <0.000) petty business, significant relationship at less than 5% between (p value <0.03) Unemployed, less significant relationship at less than 10% (p value <0.06) student and failure of authentication while no relationship between remaining occupational categories and failure of authentication. Further, (except big business and carpenters which does not record any value) agriculture, other, petty business, service, student and unemployed are less likely to accept that Aadhaar has improved governance and no relationship between them. Similarly, occupational categories Agriculture, big business, carpenter/halwai, others, petty business, service, student and unemployed with the estimated Odds ratio of 2.37, 1.00, 1.95, 2.83, 1.66, 1.66, 1.79 and 2.37 are more likely to agree that the problems still remain in welfare governance even after introduction of Aadhaar. There is a positive and significant relationship at less than 5% (p value<0.04) between other categories and problems still remain in governance even after Aadhaar while there is no relationship between remaining categories and problems remaining after Aadhaar.

The above results describe that the other occupational category significantly is more likely to agree that they were denied services like Ration and believe that problems still remain in governance even after introduction of Aadhaar. People from agriculture significantly are more likely to agree that they were denied ration because Aadhaar has not improved governance and problems still remain in the system (though not significant). The student category is less likely to agree that Aadhaar improved their access to banking, the carpenter/halwai are more likely to agree that they were denied pension and believe that problems still remain in governance after introduction of Aadhaar. The unemployed are less likely to agree that they were denied the services like Ration and welfare because unemployed along with petty business and service categories would not experience failure of authentication with Aadhaar. Though other occupational categories

The respondents like Sudhakar, Sampath, Raju, Narayana and Gouri from agriculture and carpenter category have mentioned that they could not get Rythu Bandhu and Pension for lack of Aadhaar for one crop term (Rabi season) and later they have sanctioned the amount on connecting. Another agriculture labourer Lingaiah and daily wage labourers like Madei Manik Rao, Bheemabi and Sonu rao stated that they experienced issues like wrong authentication with Aadhaar that caused two to three months' delay in accessing the government services like Pension and Ration. The respondents like Shivashankar, Thirrupathi from services sector, Swathi from Petty business also mentioned that Aadhaar's primary aim is to provide unhindered services to the people since it works as a robust proof of identity.

Income/Class

Middle class is taken as a reference category. Table -5.4 results show that Poor, above middle class, rich and Richest with estimated Odds ratio of 1.58, 1.47, 1.00 and 1.00 respectively are more likely to agree with the denial of services due to lack of/issues with Aadhaar and no relationship between them. Similarly, Middle class and Richest with Odds ratio of 1.00 and 3.25 are more likely to agree that Aadhaar has improved access to banking

services and no relationship between them. Poor and Rich with the estimated Odds ratio of 0.57 and 0.24 are less likely to agree that Aadhaar has improved their access to banking services and no significant relationship between them. Table- 5.5 results indicate that Poor, Above Middle class and Richest categories with estimated Odds ratio of 1.52, 1.00 and 1.00 are more likely to agree the lack of/issues with Aadhaar has caused denial of Ration and no significant relationship between them. The above middle class with Odds ratio of 0.55 are less likely to accept the denied Ration and a positive and significant relationship at less than 1% (p value <0.000) between them. Similarly, Poor, Above Middle class, Rich and Richest with the estimated Odds ratio of 2.15, 1.40, 2.16 and 1.00 respectively are more likely to agree that the pension was denied due to lack of/issues with Aadhaar. There is a positive and significant relationship at less than 5% between Poor and denial of Pension while no relationship between the two independent categories; Above Middle class, Rich, Richest and dependent variable- denial of pension. Table- 6 results indicate that Rich and Richest with Odds ratio of 1.00 for each are more likely to agree that failure of authentication with Aadhaar and no relationship between them. Poor and the Above middle class with Odds ratio of 0.93 and 0.12 respectively are less likely to agree with the failure of authentication often with Aadhaar. There is a positive and significant relationship at less than 10% (p value <0.08) between Above middle class and failure of authentication while no relationship between poor and failure of authentication.

Similarly, Above Middle class, Rich and Richest with the estimated Odds ratio of 1.50, 1.00 and 1.00 respectively are more likely to agree that Aadhaar has improved governance. There is a positive and significant relationship at less than 10% (p value <0.06) between Above middle class and improvement in governance while no relationship between the categories and improvement in governance. Poor with Odds ratio of 0.91 are less likely to agree that Aadhaar has improved governance and no relationship between them. Further, Poor and Rich with the estimated Odds ratio of 1.68 and 1.00 respectively are more likely to agree that the problems still remain in governance even after Aadhaar. There is a positive and significant relationship at less than 10% (p value <0.10) between Poor and problems still remaining after Aadhaar while no relationship between Rich and

problems remain after Aadhaar. Above Middle class and Richest with Odds ratio of 0.63 and 0.45 are less likely to agree that the problems still remain after Aadhaar in governance no relationship between them.

The above results show that the poor were denied of Pension due to lack of/issues with Aadhaar and they believe that the problems still remain in the system even after introduction of Aadhaar. The Above middle class face less authentication failure and believe that Aadhaar has improved governance though they were denied services like Ration. The respondent said, during the field study, that denial caused as a part of the eradication of fake beneficiaries drive but they still claim to be entitled for these welfare services due to reasons like rise in the prices of the essential commodities. Though Aadhaar can be a robust source of identity but not people friendly in administering welfare services, it has acquired a class character in terms of accessing the services.

The poor respondents Satyanarayana, Manemma, Jaya, Bheembai, Sangeeta, and Narasihumlu, Shankar, Shirisha hailing from Rural and slum areas of Adilabad and Hyderabad respectively have mentioned they they were denied of services due to lack or issues with Aadhaar. They said that the authentication failure caused the delay for two months to access the government services. They also believe that Aadhaar guarantees them identity to receive the welfare services by the government. The Above middle class and Rich respondents like Chanti, Pragya, Kalpana Kaur said that they did not face any issues with authentication as they do not use for welfare services but identity purpose while accessing the market services provided by the private players. However, both the categories Poor and Rich agree that welfare cannot be done without Aadhaar in contemporary India.

Type of House

Gated Community is taken as a reference category. Table- 5.4 results show that independent/pucca house, Kachcha house and Hut with the estimated Odds ratio of 8.91,

18.53 and 8.94 respectively are more likely to agree that they were denied services due to lack of/issues with Aadhaar. There is a positive and significant relationship at less than 5 % between (p value <0.05) independent/Pucca house, (p value <0.01) Kachcha house and denial of services while there is a positive and highly significant relationship at less than 1% (p value <0.000) between Hut and denial of services. Similarly, independent categories- Independent/pucca house, Kachcha house and Hut with the estimated Odds ratio of 1.01, 1.42 and 3.16 are more likely to agree that Aadhaar has improved access to banking services and no relationship between them. Table-5 results show that independent/Pucca house, Kachcha house and Hut with the estimated Odds ratio of 3.42, 5.66 and 4.50 respectively are more likely to agree that the denial of Ration is caused by lack of/issues with Aadhaar. There is a positive and less significant relationship at less than 10% (p value <0.08) between Kachcha house and denial of Ration while there is a positive and highly significant relationship at less than 1% (p value<0.000) between Hut and denial of Ration. There is no relationship between an independent house and denial of Ration. Similarly, independent/Pucca house, Kachcha house and Hut with Odds ratio of 3.10, 3.64 and 3.67 are more likely to agree that they were denied pension due to lack of/issues with Aadhaar. No relationship between them. Table- 6 results show that independent/Pucca house, Kachcha house and Hut with the estimated Odds ratio of 2.08, 3.32 and 11.98 respectively are more likely to agree that there are often failures of authentication with Aadhaar. There is a positive and significant relationship at less than 5% (p value <0.05) between Hut and failure of authentication often while no relationship between independent house, Kachcha house and failure of authentication. Similarly, independent/Pucca house with the estimated Odds ratio of 1.05 are more likely to agree that Aadhaar has improved governance and no relationship between them. Kachcha house and hut with Odds ratio of 0.78 and 0.54 are less likely to agree that Aadhaar has improved governance and no relationship between them. Further, independent/Pucca house, Kachcha house and Hut with the estimated Odds ratio of 0.95, 0.78, and 0.59 are less likely to agree that problems still remain in governance even after introduction of Aadhaar.

The discussion on the interpretation of the above results indicates that the people who live in both independent, Kachcha and Hut houses are significantly more likely to agree that they were denied services. Especially the Kachcha and Hut house dwellers were denied ration due to lack of/issues with Aadhaar. The people living in Hut often face authentication failure. So, the people from Kachcha and Hut houses are less likely to agree/believe that Aadhaar has improved governance and problems still remain in the system.

The respondents Devrao, Tekam Indru, Sonu, Bheembai, Raju, Sudhakar from Hut and Kachcha house (Adilabad) have said that Aadhaar guaranteed their identity to receive government services so they are open to share their Aadhaar details with government agencies only. They said that they have not heard of anything like the US social security number and so cannot compare. On discussing with them about USSSN (US Social Security Number) they mentioned that it is desirable to have or use Aadhaar with such intention in the welfare services. However, the people residing in independent house Anil Kumar has said that Aadhaar can be a robust identity source to access both government and market services and also opined that welfare cannot be done with Aadhaar in contemporary India.

Residence

Urban is taken as a reference category. Table- 5.4 results show that Rural with the estimated Odds ratio of 0.61 are less likely to agree that they were denied services due to lack of/issues with Aadhaar and a positive and significant relationship at less than 10% (p value <0.10) between them. Similarly, Rural category with Odds ratio of 0.86 are less likely to agree that Aadhaar has improved access to banking services and no relationship between them. Table- 5 results show that Rural with Odds ratio of 0.64 are less likely to agree that they were denied Ration due to lack of/issues with Aadhaar and no relationship between them. Similarly, Rural category with Odds ratio of 0.68 are less likely to agree that they were denied pensions due to lack of/issues with Aadhaar. Table- 5.6 results indicate that

Rural with Odds ratio of 0.91 are less likely to agree that failure of authentication with Aadhaar and no relationship between them. The Rural category with Odds ratio of 1.63 are more likely to agree that Aadhaar has improved governance while Rural with Odds ratio of 1.01 are more likely to agree that problems still remain in governance even after Aadhaar in governance. No significant relationship between independent category Rural and two dependent variables-improvement in governance and problems still remain in governance even after introduction of Aadhaar.

The summary of the above results is that the Rural residents are less likely to agree that they were denied services due to lack of/issues with Aadhaar. Though the Rural residents are less likely to agree that Aadhaar has improved governance and solving problems by introducing Aadhaar but not significant. Most of the rural people believe that the government's (ill) will for them is the main reason than issues with Aadhaar in delivering the welfare services. However, after introduction of Aadhaar, the access to receive the basic welfare schemes like ration, Rhythu Bandhu, Kalyana Lakshmi and Kanti velugu has improved but depends on the panchayat secretary in the villages.

Rural respondents like Mariamma, Nagesh, Bheembai, Thimothi, Manemma, Joshua, Sudhakar, Tekam Indru and Devrao have mentioned that machine failure or remote sensing authentication or fingerprints authentication have caused delay in accessing government services for two months. Moreover, the Aadhaar guaranteed identity was robust enough (after failures also) to access the benefits. They have no clue about USSSN and remained neutral to compare it with Aadhaar. But also agreed that welfare cannot be done without Aadhaar in contemporary India. They are open to sharing Aadhaar details with government agencies only. Hence, the Rural Telangana experience the digital divide and issues with biometric enabled digital governance in the state.

Ownership of House

Own house is taken as a reference category. Table- 5.4 results show that house on public land with an Odds ratio of 1.51 are more likely to agree that they were denied services due to lack of Aadhaar and no relationship between them. Rented house with Odds ratio of 0.71 are less likely to agree that they were denied services due to lack of /issues with Aadhaar. Similarly, Rented and house on Public land categories with the estimated Odds ratio of 2.67 and 3.03 respectively are more likely to agree that Aadhaar has improved access to banking services. Table- 5.5 results show that house on public land with Odds ratio of 1.64 are more likely to agree that they were denied of Ration due to lack of/issues with Aadhaar while Rented house with Odds ratio of 0.65 are less likely to agree that they were denied of ration. No relationship between them. Similarly, the category house on public land is more likely to agree that they were denied pension due to lack of//issues with Aadhaar while Rented house with odds ratio of 0.63 are less likely to agree that they were denied pension due to lack of/issues with Aadhaar. No relationship between them. Table- 6 results show that Rented and House on public land with the estimated Odds ratio of 0.43 and 0.49 respectively are less likely to agree that failure of authentication often happen with Aadhaar. There is a positive and significant relationship at less than 5% (p value < 0.010) between rented house and failure of authentication while no relationship between house on public land and failure of authentication. Similarly, rented house and House on public land with Odds ratio of 0.90 and 0.94 respectively are less likely to agree that Aadhaar has improved governance and no relationship between them. Further, Rented and House on public land with Odds ratio of 0.38 for each are less likely to agree that the problems still remain in governance even after Aadhaar. There is a positive and highly significant relationship at less than 1% (p value < 0.000) between Rented house and problems remain after Aadhaar while a significant relationship at less than 5% (p value < 0.04) between House on public land and problems remain after Aadhaar.

The discussion on the above results informs us that the people from rented house and house on public land are more likely to agree that Aadhaar has improved access to banking services and also face less authentication failure. Hence, they are Lesley to

agree/believe problems still remain after introduction of Aadhaar in governance. Though they are also less likely to agree that they were denied services like Ration and Pension due to lack of/issues with Aadhaar.

The respondents Sathyanarayana, Swamy, Nagarani, Sangeeta and Nagender, Raghu from rental and house on public land have expressed their satisfaction with Aadhaar guaranteed identity that it was enough to receive government services. Except for the errors with name and age for some people, the Aadhaar has improved access to banking services like digital payments. They said that they are open to sharing their Aadhaar details with government agencies because they believe that Aadhaar can provide services like USSN if the government wanted. They also opined that welfare cannot be done without Aadhaar in contemporary India.

Table-5.4

Logistic Regression analysis to capture the Relationship between Demographic factors and the financial inclusion and welfare services due to Aadhaar

Predictor Variables	Outcome Variables					
	Denial of Services			Improvement in Access to Banking Services		
	Odds Ratio	[95 % CI]	p-value	Odds Ratio	[95 % CI]	p-value
Individual Characteristics						
GENDER						
Male	1.00 ^R			1.00		
Female	1.10	0.62-1.93	0.75	0.81	0.43-1.50	0.50
AGE						
18-24	1.00 ^R			1.00		
25-34	0.87	0.32 - 2.37	0.78	0.29	0.08-1.04	0.06*
35-44	0.46	0.15 - 1.45	0.19	0.30	0.07-1.30	0.10*
45-54	0.55	0.16 - 1.90	0.34	0.43	0.09-2.13	0.30

55 and above	1.51	0.48 - 4.73	0.48	0.29	0.07-1.29	0.11
RELIGION						
Hindu	1.00 ^R			1.00		
Agnostic	1.00	(empty)		1.00		
Atheist	1.00			1.00		
Christain	0.74	0.20 - 2.72	0.65	0.39	0.10-1.49	0.10*
Muslim	0.76	0.33 -1.75	0.51	0.65	0.27-1.54	0.27
Sikh	1.20	0.14- 10.68	0.87	1.04	0.08-13.22	0.08*
CASTE						
General	1.00 ^R			1.00		
OBC	0.92	0.46 – 1.82	0.80	0.62	0.29-1.31	0.21
SC	0.71	0.31 – 1.60	0.41	0.74	0.30-1.80	0.50
ST	0.86	0.34 - 2.17	0.75	1.10	0.39-3.07	0.86
EDUCATION						
Graduation	1.00 ^R			1.00		
Post-Graduate	1.83	0.65 - 5.15	0.26	0.32	0.11-0.95	0.04**
Doctorate	1.00					
Professional, Law, M MBS	0.83	0.21 - 3.19	0.78	0.49	0.11-2.13	0.34
Other	1.00					
Up to class 12	0.80	0.37-1.72	0.57	0.48	0.19-1.19	0.10*
Illiterate	0.85	0.30 - 2.42	0.76	0.16	0.05-0.52	0.05**
OCCUPATION						
Housewife/Home Maker	1.00			1.00		
Agriculture	1.36	0.44 - 4.21	0.60	0.55	0.17-1.81	0.33
Big Business	1.00	(empty)		0.10	0.00-2.34	0.15
Carpenter/halwai	0.28	0.02 -3.15	0.30	0.26	0.03-2.12	0.21
Others	2.39	0.89 – 6.40	0.08*	0.91	0.32-2.60	0.86
Petty Business	0.86	0.26 - 2.82	0.81	1.28	0.29-5.66	0.74
Service	0.91	0.37 - 2.24	0.83	0.51	0.19-1.36	0.18
Student	1.54	0.49 - 4.85	0.46	0.26	0.07-1.04	0.06*

Unemployed	0.40	0.13 - 1.324	0.11	0.99	0.27-3.61	0.99
INCOME						
Middle Class	1.00 ^R			1.00		
Poor	1.58	0.83 - 3.00	0.17	0.57	0.28-1.18	0.13
Above Middle Class	1.47	0.20 - 11.00	0.71	1.00		
Rich	1.00	(empty)		0.24	0.02-2.41	0.23
Super Rich	1.00	(empty)		3.25	0.09-11.80	0.51
TYPEOFHOUSE						
Gated Community	1.00 ^R			1.00		
Independent/Pucca house	8.91	0.98 - 80.69	0.05**	1.01	0.19-5.38	0.99
Kachcha House	18.53	1.84 - 18.22	0.01**	1.42	0.23-8.75	0.71
Hut	8.94	4.47 - 14.22	0.00** *	3.16	0.27-36.40	0.36
RESIDENCE						
Urban	1.00 ^R			1.00		
Rural	0.61	0.33-1.10	0.10*	0.86	0.45-1.66	0.66
OWNERHOUSE						
Own	1.00 ^R					
Rented	0.71	0.37 - 1.35	0.29	2.67	1.27-5.62	0.01**
House on Public land	1.51	0.61 - 3.72	0.37	3.03	1.06-8.67	0.04**
_cons	1.10	0.01 - 1.32	0.08*	35.26	3.32-374.95	0.00***
<i>Log likelihood</i>	-190.03255			-164.17437		
<i>Pseudo R2</i>	0.1470			0.1625		
<i>Prob > chi2</i>	0.0002***			0.0007***		
<i>Observation</i>	324			324		

Source: Author's calculations from the field study. The characters “*” “**” “***” indicates “10’,”5’,’1’ percent level of significance

Table-5.5

Logistic Regression analysis to capture the Relationship between Demographic Factors and exclusion from services in the state due to Aadhaar

Predictor Variables	Outcome Variables
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	Denial of Ration			Denial of Pension		
	Odds Ratio	[95 % CI]	p-value	Odds Ratio	[95 % CI]	p-value
Individual Characteristics						
GENDER						
Male	1.00 ^R			1.00		
Female	0.94	0.52 - 1.70	0.84	0.53	0.28-1.01	0.05
AGE						
18-24	1.00 ^R			1.00		
25-34	0.91	0.31-2.64	0.87	2.24	0.75-6.63	0.15
35-44	0.49	0.15-1.64	0.25	0.52	0.15-1.87	0.32
45-54	0.33	0.08-1.25	0.10*	0.47	0.12-1.95	0.30
55 and above	0.86	0.25-2.90	0.81	2.03	0.58-7.07	0.26
RELIGION						
Hindu	1.00 ^R			1.00		
Agnostic	1.00	(empty)		1.00		
Atheist	1.00			1.00		
Christain	2.62	0.69-9.92	0.16	0.61	0.13-2.91	0.54
Muslim	0.52	0.21-1.28	0.15	0.89	0.37-2.14	0.79
Sikh	2.25	0.29-17.61	0.44	0.76	0.06-9.30	0.83
CASTE						
General	1.00 ^R			1.00		
OBC	1.67	0.69-9.92	0.16	0.80	0.38-1.67	0.05**
SC	0.42	0.21-1.28	0.05**	0.44	0.18-1.07	0.07**
ST	1.68	0.29-17.61	0.44	0.54	0.20-1.45	0.02**
EDUCATION						
Graduation	1.00 ^R			1.00		
Post-Graduate	1.45	0.48-4.35	0.51	0.87	0.26-2.87	0.82
Doctorate	1.00			1.00		
Professional, Law, MBB S	0.88	0.22-3.55	0.86	0.45	0.10-2.03	0.30
Other	1.00			1.00		
Up to class 12	1.11	0.50-2.46	0.80	0.98	0.43-2.25	0.97
Illiterate	1.90	0.63-5.70	0.25	2.44	0.82-7.27	0.10*
OCCUPATION						
Housewife/Home Maker	1.00			1.00		
Agriculture	2.72	0.84-8.80	0.09*	0.53	0.16-1.76	0.30

Big Business	12.27	0.39-38.69	0.15	1.00		
Carpenter/halwai	0.77	0.07-9.03	0.84	2.10	0.29-15.42	0.07*
Others	8.76	3.03-25.32	0.00***	2.24	0.79-6.32	0.13
Petty Business	1.47	0.42-5.14	0.55	0.70	0.20-2.52	0.59
Service	2.19	0.84-5.69	0.11	0.73	0.27-1.98	0.54
Student	1.90	0.55-6.50	0.31	0.83	0.24-2.87	0.78
Unemployed	0.63	0.18-2.14	0.06*	0.18	0.05-0.74	0.02**
INCOME						
1. Middle Class	1.00 ^R			1.00		
2. Poor	1.52	0.77-3.01	0.23	2.15	1.05-4.42	0.04**
3. Above Middle class	1.00	0.14-7.25	0.00***	1.40	0.17-11.59	0.75
4. Rich	0.55	0.03-9.05	0.67	2.16	0.17-27.46	0.55
5. Richest	1.00			1.00		
TYPEOFHOUSE						
Gated Community	1.00 ^R			1.00		
Independent/Pucca house	3.42	0.57-20.42	0.18	3.10	0.48-19.96	0.23
Kachcha House	5.66	0.83-38.70	0.08*	3.64	0.50-26.74	0.20
Hut	4.50	3.37-42.09	0.00***	3.76	2.01-7.95	2.46
RESIDENCE						
Urban	1.00 ^R			1.00		
Rural	0.64	0.35-1.20	0.17	0.68	0.36-1.29	0.24
OWNERHOUSE						
Own	1.00 ^R					
Rented	0.65	0.33-1.30	0.23	0.63	0.31-1.27	0.19
House on Public land	1.64	0.65-4.14	0.29	1.22	0.47-3.14	0.68
_cons	1.10	0.01-1.02	0.05**	0.21	0.02-2.23	0.20
<i>Log likelihood</i>	-179.45496			-168.83765		
<i>Pseudo R2</i>	0.1840			0.2047		
<i>Prob > chi2</i>	0.0000***			0.0000***		
<i>Observation</i>	331			329		

Source: Author's calculations from the field study. The characters “*”, “**”, “***” indicates “10’,”5’,”1’ percent level of significance.

Table-5.6
Logistic Regression Analysis to capture the Relationship between Demographic Factors and the Improvement in governance with the use of Aadhaar in Welfare services

Predictor Variables	Outcome Variables								
	Failure of Authentication			Improvement in Governance			Problems still After Aadhaar		
	Odds Ratio	[95 % CI]	p-value	Odds Ratio	[95 % CI]	p-value	Odds Ratio	[95 % CI]	p-value
Individual Characteristics									
GENDER									
Male	1.00 ^R			1.00			1.00		
Female	0.63	0.36-1.12	0.08*	0.66	0.37-1.18	0.16	0.98	0.55-1.74	0.95
AGE									
18-24	1.00 ^R			1.00			1.00		
25-34	0.30	0.10-0.85	0.02**	0.63	0.21-1.87	0.41	0.58	0.20-1.64	0.30
35-44	0.34	0.11-1.11	0.08*	1.14	0.34-3.85	0.83	0.26	0.08-0.84	0.03**
45-54	0.65	0.19-2.28	0.51	1.72	0.45-6.59	0.43	0.25	0.07-0.88	0.03**
55 and above	1.03	0.31-3.41	0.97	0.76	0.23-2.53	0.65	0.78	0.24-2.56	0.68
RELIGION									
Hindu	1.00 ^R			1.00			1.00		
Agnostic	1.00			1.00			1.77	0.08-41.50	0.72
Atheist	1.00			1.00			1.00		
Christain	0.91	0.26-3.21	0.89	0.97	0.27-3.47	0.97	1.77	0.47-6.62	0.40
Muslim	1.17	0.51-2.70	0.01**	1.96	0.78-4.92	0.15	1.47	0.63-3.44	0.03**
Sikh	0.53	0.05-6.26	0.62	0.42	0.05-3.22	0.40	3.03	0.42-21.84	0.02**
CASTE									

General	1.00 ^R			1.00			1.00		
OBC	2.70	1.35-5.44	0.01**	0.98	0.48-1.99	0.95	1.35	0.67 -2.74	0.41
SC	1.09	0.48-2.47	0.84	1.56	0.67-3.62	0.30	0.66	0.28 -1.52	0.33
ST	1.27	0.50-3.24	0.61	1.08	0.42-2.78	0.87	0.77	0.30 -1.94	0.57
EDUCATION									
Graduation	1.00 ^R			1.00			1.00		
Post-Graduate	1.43	0.51-3.98	0.50	0.99	0.31-3.17	0.99	1.03	0.38-2.84	0.95
Doctorate	1.00			1.00			1.00		
Professional, Law, MMBS	3.33	0.76-14.51	0.01**	0.35	0.09-1.33	0.12	2.65	0.64-11.00	0.18
Other	1.00			1.00			1.00		
Up to class 12	0.80	0.38-1.72	0.58	0.49	0.22-1.09	0.08*	1.59	0.74-7.80	0.24
Illiterate	0.96	0.33-2.78	14.5	0.18	0.06-0.52	0.00***	3.26	1.14-9.34	0.03**
OCCUPATION									
Housewife/Home Maker	1.00			1.00			1.00		
Agriculture	0.88	0.28-2.79	0.83	0.64	0.21-1.97	0.44	2.37	0.16-7.80	0.16
Big Business	1.00			1.00			1.00		
Carpenter/halwai	0.75	0.11-4.89	0.76	1.00			1.95	0.49-12.74	0.49
Others	1.08	0.40-2.88	0.88	0.52	0.20-1.37	0.19	2.83	0.04-7.81	0.04**
Petty Business	0.16	0.05-0.55	0.00***	2.12	0.52-18.64	0.29	0.94	0.92-3.09	0.92
Service	0.42	0.17-1.03	0.06**	0.72	0.29-1.81	0.49	1.66	0.27-4.15	0.27
Student	0.58	0.18-1.86	0.36	0.04	0.13-1.49	0.19	1.79	0.33-5.74	0.33
Unemployed	0.28	0.09-0.86	0.03**	0.90	0.31-2.63	0.85	2.37	0.41-1.87	0.41
INCOME									
1. Middle Class	1.00 ^R			1.00			1.00		
2. Poor	0.93	0.49-1.79	0.83	0.91	0.46-1.78	0.78	1.68	0.87-3.25	0.10*
3. Above Middle class	0.12	0.01-1.27	0.08*	1.50	0.21-10.74	0.06*	0.63	0.11-3.44	0.59

4. Rich	1.00			1.00			1.00		
5. Richest	1.00			1.00			0.45	0.01-15.91	0.66
TYPEOFHOUSE									
Gated Community	1.00 ^R			1.00			1.00		
Independent/Pucca house	2.08	0.43-10.14	0.37	1.05	0.21-5.26	0.95	1.60		0.53
Kachcha House	3.32	0.59-18.72	0.17	0.78	0.14-4.47	0.78	2.12		0.36
Hut	11.98	1.03-139.33	0.05**	0.54	0.06-5.22	0.59	2.93		0.34
RESIDENCE									
Urban	1.00 ^R			1.00			1.00		
Rural	0.91	0.50-1.67	0.77	1.63	0.88-3.02	0.12	1.01	0.55-1.84	0.98
OWNERHOUSE									
Own	1.00 ^R			1.00			1.00		
Rented	0.43	0.22-0.82	0.01**	0.90	0.46-1.74	0.75	0.38	0.20-0.74	0.00***
House on Public land	0.49	0.20-1.22	0.13	0.94	0.37-2.38	0.90	0.38	0.15-0.96	0.04**
_cons	2.02	0.26-15.75	0.50	5.05	0.59-43.31	0.14	0.63	0.09-4.57	0.65
<i>Log likelihood</i>	-188.39412			-181.61438			-189.25337		
<i>Pseudo R2</i>	0.1609			0.1460			0.1653		
<i>Prob > chi2</i>	0.0000***			0.0003***			0.0000****		
<i>Observation</i>	324			318			328		

Source: Author's calculations from the field study. The characters “*” “**” “***” indicates “10’,”5’,’1’ percent level of significance.

5.7. Conclusion

This notion of Aadhaar being an essential tool in the welfare governance has emerged among women due to wider application for identity purpose and implementing it as a de facto mandatory in the governance. The results infer that the age groups 45-54 remain neutral while the occupational categories, others and student categories are not afraid of sharing their Aadhaar details with government agencies and they also remain neutral on the question of Aadhaar's primary aim to provide unhindered services to the people. Hut dwellers would accept that Aadhaar's primary aim is to provide services.

The illiterates and people who studied up to class 12 believe, people from rented houses would believe and the old age people of 55 and above remain neutral and less agree that Aadhaar is to provide unhindered services to the people while the people from Kachcha house are afraid of sharing their Aadhaar details with government agencies.

The people from rented houses and those who studied up to class 12 also believe and the post graduates, professional graduates Kachcha house, people from house on public land do not agree while the old age people along with petty business, others and service sector remain neutral about Aadhaar providing services like US social security number because they do not have any idea what US social security number means to welfare services in USA.

The poor are most affected by Aadhaar based governance in the state in particular and the country in general. The poor rely on Aadhaar and have huge expectations from its services while they are also suspicious of surveillance by Aadhaar. However, the poor acknowledge the Aadhaar's utility in accessing services. The poor, people from independent house disagree and the petty business, the rural residents, and people who studied up to class 12 and those who live in houses on public land believe with the view

that welfare cannot be done without Aadhaar while the student category remain neutral about it.

The young people of 25-34 like 34-44 age groups seem to be neutral while the old age group 55 and above, and people from the independent house disagree with the view that Aadhaar is beyond duplication. Most of the occupational categories remain neutral on duplication of Aadhaar and surveillance with the help of Aadhaar in governance. The Christians tend to disagree and OBCs agree while age group 45-55 and 55 and above remain neutral Aadhaar being a potential tool of surveillance. The middle age onwards people remain neutral about Aadhaar being a surveillance tool due to lack of understanding what and how surveillance takes place in the digital world. It was observed that irrespective of education levels people would not believe that Aadhaar can be a potential tool for surveillance and as the education levels decrease the trust in Aadhaar identity and its services increase among the people within the variables significant relationship.

The seeding of Aadhaar with welfare services has mixed consequences: poor, women, illiterates and people who studied up to class 12 and people who live in hut and kachcha houses, agriculture, OBC are facing authentication failure mostly. This often leads to denial of services like ration and pension for once or twice (not permanently as respondents said during the field study). But the easing of governance by introducing Aadhaar in governance is yet to yield results in bringing outcome-oriented governance as the government of Telangana is aiming for. Interestingly, Minority sections like Muslims, Christians and Sikh believe that Aadhaar has improved the governance for them. It must be noted that most of the educated minorities are tech savvy like people so they understand the intricacies of digital governance and make use of it accordingly. The educated and upper-class people can make use of Aadhaar as a potential source of identity in accessing services. Even the Urban residents compared to the Rural areas find that Aadhaar being an important tool for raising the standards of governance in the welfare. It was observed that as education levels increase the services of Aadhaar also increase and are effective. The same was noticed with the class category that poor are the victims of issues with Aadhaar.

The problems associated with Aadhaar include updating one's details in the Aadhaar. This is tough and sections like Poor, illiterates and even people who studied up to 12 cannot deal with updating effectively. This was due to reasons like lack of mee-Seva or designated post office or banks to help them in getting corrections or updating details in the Aadhaar card. People belonging to weaker sections like OBC, SC and ST in the rural Telangana have opened their bank accounts with the help of Aadhaar but could not use banking services either digitally or physically since they do not engage in financial transactions. Hence, they find that Aadhaar has not improved their access to banking. This is a concern for employment generation which can enable them to utilise the banking services.

However, the role of Aadhaar in delivering the welfare services is significant despite it giving troubles to the poor and weaker sections. The issues of updating and failure of authentication must be taken seriously to provide welfare to the deserving in alternate ways.

CHAPTER-VI: CONCLUSION

This chapter deals with the concluding observations of the previous chapters and synthesises the arguments on “Decoding the Politics of Technology and Welfare: A Study of Welfare based Services in Telangana state”. A summary of the results for the stated objectives and research questions obtained from the research analysis. The Neo-liberal policies aiming at making the individuals responsible for their own welfare has been furthered by the use of biometrics in governance in the country. Moreover, the bio-political development also produced resilient citizens who adopt themselves to the policies of the state.

The implications of implementing the Aadhaar project, in India, for privacy, safety and security of biometric data have created a vibrant debate among the academics, activists and jurisprudence. Some important PILs (Public Interest Litigations) have moved the Supreme Court of India against the legislative process; introducing and passing Aadhaar as a money bill in the parliament reveal the gravity of the legal framework of Aadhaar functioning in the governance of welfare services. The merits of digital governance are not immune to the criticism that technocratic governance will empower the state more than the citizens. In addition, the Aadhaar act was brought after almost complete implementation of the Aadhaar project from enrolment to application in the welfare schemes in the country. This has raised doubts about the integrity of the Indian state for bypassing the public debate in the parliament of India.

The biometric governance with help of Aadhaar might enable India to catch up the international/global standards of governance. But such a view was examined by comparing the experience of biometric governance in the U.K, USA, India with that of China to analyse the similarities and dissimilarities. The impact of biometric governance on the nature of the polity in the rising behavioural markets (Zuboff, 2019) of liberal democratic and communist totalitarian states gave the scope to analyse surveillance capitalism and its potential threat to privacy and security of the people. This was further examined by analysing the techniques of governmentality in

disciplining the citizens in the studying of the Aadhaar based services in Telangana state. This study has contributed aspects of people's developmental experience.

The selection of Hyderabad and Adilabad districts based on Rural-Urban population as per the census 2011. A very brief demographic outline of the both districts; Hyderabad and Adilabad provided the preliminary understanding of the field study in analysing the biometric governance in welfare services. Thus, the Telangana state's Identity Rights Model for developmental policies is considered to be suitable for executing the research on universal legal identity guaranteed by Aadhaar in India. Moreover, Telangana state has the large number of weaker sections belonging to SC, ST, OBC and Religious minorities and the government's attempt to digitise the governance have justified the purpose of the study.

There have been robust attempts to develop biopolitical science as a separate discipline by various scholars. Much before Foucault's theorization of bio-politics, scholars such as Albert Somit (1972), Rudolf Kjellen in 1920s, and Arnhart and Larry (2010) to develop a new discipline called "Bio-political Science" to understand people's political behaviour by using methodological tools of biological science. They relied more on the analysis of technicalities of functioning of different body parts such brain, heart, blood circulation for scientific understand of the people's political behaviour in its entirety. These attempts have not been successful in the studies of political science to understand and predict the people's decision making in socio-political and economic aspects in scientific manner. However, the political scientists like Robert Dhal, during 1930s to 1960s, turned towards "behaviouralist approach" to study and predict the political behaviour through analysing the public policy after the World War-II. These attempts were operated within the purview of modernity, especially political modernity rendered by social sciences.

It was Michel Foucault, who attempted to research on German medicine, has revisited the concept of biopolitics in the discourse of philosophy, literature and social studies. Foucault's attempt has not only questioned (the political) modernity practised

in the clinics, jails and schools but also exposed the Benthamic panopticon practices involved in exercising the control over the people. Unlike earlier attempts of using methodology of biological science, Foucault focused on the power relations between people, institutions and state. The state's quest for controlling every aspect of life from cradle to grave is understood by analysing the political economy of the population. Thus, the state's urge for controlling, instead of predicting, the people's behaviour has been achieved by regulating the people's sexuality, birth, death, health and economy. Thus, Foucault establishes the viability of bio-politics in political philosophy by analogous explanations from functions of the seventeenth Catholic Church.

Foucault's biopolitics, this regulation by the state is manifested in the art of governing. The modern state deploys the techniques of governance that will shape the conduct of the people which is known as the "governmentality". The governmentality is visible in the modern state's developmental agenda. This governmentality is enforced through reformation, education and norms (rules and procedures) rather than coercive methods. With the changes in mode of development from liberalism to neoliberalism, the state became the "facilitator" rather than service provider in the welfare governance. As neoliberalism rolled back the state and minimised its role in developmental activities, the private (market) agencies started stepping into the role of the state in acquiring and exercising the power over 'the population'. This is further strengthened by the technological advancements and the nexus between the state and market agencies. Technology has empowered the state and market than the individual in a geometric progression. These trends in state's regulation and market agencies reflect Foucault's governmentality (a rationality behind an art of governance) in nurturing and shaping aspirations and conduct of the people suitable to its policies. Though Giorgio Agamben (2003), Derek Kerr (1999), McKee (2009) and Kean Birch (2017) have raised methodological concerns for theoretical framework of Foucault's bio-politics and governmentality but they could not rule out the significance for studying the policies and power relations in the society.

Apart from Alain Miller (1987) who has demonstrated the utilitarian aspects of technologies and surveillance in controlling the production of mass destructive

weapons like nuclear and chemical weapons. Mezzadra, Reid and Samaddar (2013) apply Foucault's concepts of bio-politics and governmentality in the framework of neo-liberal development that is termed as "bio-political development". This kind of development aims at "the resilient citizens" for future programmes. The surveillance technologies such as CCTV cameras, satellites, drone technologies and Aadhaar based biometrics are used under the pretext of "augmenting the welfare", "reducing crimes", and "order of the society". These tools of governance are observed to be helpful in collecting the data for management of the individuals by exercising the control over the population. Further, this has been evident from the works of Currah & Mulqueen (2011), Guzik (2016) and Quinan (2017) that the application of technologies such as biometrics, DNA sampling and body scanning found to be discriminatory from the analysis of gender, health, security, privacy, and surveillance aspects.

It was noted that the use of technologies like biometrics in governance could lead us towards "biological citizenship" which suits the body polity against inclusive development in the neo-liberal era. This does not have any participatory approach in devising because anxiety of identity, anti-corruption and security measures has generated the scope for 'governmentality' that permits the state's exercise of the power. This has the potential to redefine the relationship between the state and people by widening the gap between the rich and poor leading to increasing inequalities. Thus, the scholars largely agree that Foucault's theoretical framework of bio-politics is immensely useful in studying politics of technology and welfare to understand the privacy and surveillance issues of (digital) governance in the research.

There is emerging evidence for application of Foucault's biopolitics in studying privacy and surveillance problems emanating from the politics of technology and welfare, the study has adopted the comparative analysis of biometric governance in selected countries; UK, USA, China and India. The debate on genesis and development of biometrics observed that the early biometric governance was used in criminal investigations by the state machineries like police and forensic departments. Hosein (2012), Andrew Clement et al, (2002) and (Ramkumar, 2010) opine that biometric identity for citizens has roots in the fear of security threat from external sources. They

give incidents like 7/7 London attacks in the UK, 9/11 attacks in the USA and Intrusions into India and Kargil war in India that have led to introduction of biometric ID cards to their citizens for the first time. Ramanathan (2010), Hvistendahl (2012), Sarkar (2014), Khera (2016), and Richardson (2021) observed that the state agencies started using foolproof biometric ID in welfare administration because of its robustness in identifying the eligible beneficiaries for the welfare services. The biometric enabled authentication by instruments like Aadhaar would help in eliminating the fake/ghost beneficiaries tapping the government schemes. Though western countries like UK and USA have restricted the usage of biometrics in governance but India, like China, legislated the Aadhaar Act, 2016 for targeted and speedy delivery of welfare services based on biometric authentication.

However, the biometric technologies are surveillance prone and have potential in Bentham's Panopticon state that deploys the techniques of Foucault's governmentality. The technology, governance and welfare intersection opened the opportunities for state surveillance through governance. As the developing countries like India and China, in overcoming the legitimacy crisis, have adopted economic reforms and grappling with neo-liberal policies, the state became a facilitator rather than service provider. The americanisation of welfare has led us from "welfare to work". It has been observed that developed countries UK's national ID card system, USA's Social Security Number differ from developing countries; India's "Aadhaar project" and China's "Social Credit System" in the biometric governance of welfare services. There is remarkable convergence of governance techniques between India and China. This convergence of governance reflects the Foucault's governmentality that paved the way for emergence of biopolitics in India and China as new surveillance technologies such as DNA profiling and Genomic surveillance taking place in both the countries. Though India, the UK and USA, unlike China, pledge to protect the privacy and data of their citizens, the legal means differ on many grounds.

The rise of new technology has paved the way for emergence of "surveillance capitalism" (Zuboff, S, 2019) by big tech companies like Google, Facebook, Apple, Microsoft and Chinese Baidu aimed at commercialization of data. Thus, the data

became a new oil for the surveillance capitalism where human behaviour is commodified in the new “behavioural markets”. These big data analytics use the digital algorithm to keep the track of consumers’ internet browsing and customise further products and services. Technologies like biometric governance, evident from India, China and western countries, transformed the modern state into “Foucault’s bio-political state” by accessing and controlling the life of people in the tyranny of technology in the neo-liberal era. The comparative analysis practices of biometric governance and surveillance techniques in UK, USA, India and China infers that India is slowly and steadily sliding towards a benevolent surveillance state that of China.

The surveillance tendencies from Aadhaar enabled biometric governance in India propels the study to examine the developmental experience of the people after the introduction of Aadhaar authentication in welfare services. However, People’s Perceptions and Practices of (Digital) Identity and Privacy tend to question the homogeneous reading of privacy for all the sections in implementation of Aadhaar in India. It was observed that the reasons such as “identity purpose”, “fear of losing government benefits”, “proof of citizenship”, “peer pressure” have influenced the vulnerable sections such as women, minorities, OBCs, Illiterates, people living in hut, Kachcha house dweller from Rural areas, students, petty business owners, and the Middle age people (35-44), Old age (55 and above), service sector categories have enrolled for Aadhaar number. Urban, rich and the educated categories are influenced by the identity reason for enrolment.

The stated reasons for people’s Aadhaar enrolment do not qualify the government of India’s claim that people have enrolled for Aadhaar on voluntary basis. Moreover, it was noted, as some of the respondents pointed out during the field study, that the vulnerable sections were asked to produce Aadhaar as a mandatory for accessing the government services. The reasons for enrollment for Aadhaar are not voluntary but people are compelled to register for a 12-digit Aadhaar number as it is linked to accessing the benefits from government schemes.

The people's awareness of biometrics, privacy and data safety issues associated with Aadhaar are also examined to analyse people's perception and practices of privacy in the times of digital governance.

The old age people, Christian, professional graduates like Engineers, Illiterates, proper who studied up to class 12, the above middle class, OBC, SC, ST, Poor, student, unemployed, people from Hut and Rural, and rented and House on public land categories are not aware of "biometrics" taken for Aadhaar enrollment. This was due to the fact that they could not comprehend the concept "biometrics" when asked during the field work. Most of the respondents replied that they consider photographs only but not fingerprints and Iris. Many respondents considered photograph was enough for biometric ID cards only but not fingerprints and Iris. It amounts to say that the idea of generating biometric identity was not communicated/ known to the people while executing the Aadhaar project.

The same vulnerable categories are less aware or not aware of privacy and data safety issues associated with Aadhaar. Interestingly, the age group ranging from 25-34, 35-44 to old age people also do not comprehend privacy issues in digital governance by Aadhaar biometrics. The reasons can be attributed to their lack of understanding of privacy and data safety and security. The respondents were not able to define what privacy means to them during the field study. Most of the weaker sections think of privacy as something secrecy or hiding things from others doing the discussion on privacy. Only a few educated people from Urban could define privacy as their right to have control over their information.

After discussing the privacy and data safety with the respondents, the consenting to collection of biometrics is more among the educated and young (25-34) people while the vulnerable groups like minorities, OBCs, Illiterates and petty business, and people living on the public land are hesitant to agree for biometrics extraction for Aadhaar enrollment. They fear that they may be deprived of government benefits due to digital issues. The women, STs, Professional graduates, Illiterate and Up to class 12 are

significantly less aware while Post graduates are more aware of the fact that Aadhaar was executed before enacting Aadhaar law.

The overall summary of the results and respondents' views on identity, digital identity, biometrics, and privacy, it is observed that the Rural, illiterate, semi-literate (up to class 12), Poor, some minorities like Christians, Muslims and Hut dwellers and even Rented house people view caste, religion, native place, family background as the forms of identity. They also fail to define digital identity, biometrics and privacy until explained. The rich, urban and upper castes consider their social status, religion and caste, language as their identity. For the affluent, social media is their digital identity. After a detailed explanation of privacy, data theft issues and duplication of identity in digital platforms. The vulnerable sections would like to have control over their personal information from others but not from the state. It is because they trust the state as the government is the major service provider. Therefore, they accept the state's attempt to know about their lives by collecting the data of socio-economic, health and biological information. This indicates the poverty of privacy among the marginalised sections in Telangana state. This amounts to say that the privacy has been the luxury of the privileged though poor and vulnerable sections like SC, ST and OBC, Minorities would like to exercise but could not afford it. The idea of privacy and data safety tend to be centred around urban, upper class, upper castes, male and highly educated categories in the state.

The overall summary from regression analysis and field notes indicates that though people have not voluntarily enrolled for Aadhaar number, it was found that the Aadhaar based universal legal identity has created a sense of security among the vulnerable categories than other categories in Telangana state. Partly due to lack of understanding of identity, privacy and digital governance techniques, the marginalised sections comply and forgo their privacy rights to access the government benefits. Thus, the introduction of Aadhaar biometric governance has convinced the people to compromise on their privacy rights and it signifies the Foucault's governmentality operated by the Telangana state. Moreover, the government of Telangana also reported

to have saved Rs.917 crores by Aadhaar seeding with welfare services (Annual Report, 2018-19, p.14).

As the Aadhaar became an essential part of the welfare governance, it is pertinent to study whether Aadhaar based services are in consonance with the welfare development in Telangana state. Telangana state government, like any other Indian state, has adopted the identity based rights model in delivery of the welfare services by complying and achieving 100 percent of Aadhaar seeding with welfare schemes. The interpretation of the results from the logistic regressions suggests that women, illiterates, up to 12 class, minorities, SC, ST, poor, rural respondents are not afraid of sharing their Aadhaar details with government agencies only because they believe that government is the service provider. The respondents from professional graduates, petty business and service sector categories do not agree that Aadhaar Number works and assures the way US social security number does to its citizens. The respondents from rural, poor, farmers and kachcha house tend to agree that Aadhaar number and US social security number work in similar ways because of their lack of understanding about US social security number as observed in the field study. The poor, illiterate and rural categories acknowledge that Aadhaar rendered universal identity has enabled them to access the government schemes and they are of the opinion that welfare cannot be done without Aadhaar in the contemporary times.

Though UIDAI, Government of India assures the people of India that Aadhaar is beyond duplication, the respondents of old age, 25-34 and 35-44 age group and independent houses think that Aadhaar is not beyond duplication. Middle age (45-54). Old age, Minorities, SC, ST, OBC, and most of the occupational categories trust the government's claim that Aadhaar cannot be used for surveillance in governance. This opinion emerges because of their lack of understanding of surveillance. It was observed that irrespective of education levels people would not believe that Aadhaar can be a potential tool for surveillance and as the education levels decrease the trust in Aadhaar identity and its services increase among the people. Only some urban, rich and service sector people are worried about surveillance by Aadhaar based biometric governance.

The seeding of Aadhaar with welfare services has mixed consequences that poor, women, illiterates and people who studied up to class 12 and people who live in hut and kachcha houses, agriculture, OBC are facing authentication failure mostly. This often leads to denial of services like ration and pension for once or twice (not permanently as respondents said during the field study). But the easing of governance by introducing Aadhaar in governance is yet to yield results in bringing outcome-oriented governance as the government of Telangana is aiming for inclusive development under *Bangaru Telangana*.

Interestingly, respondents from Minority sections like Muslims, Christians and Sikhs believe that Aadhaar has improved the governance for them. The educated and upper-class categories can make use of Aadhaar as a potential source of identity in accessing services. Even the Urban residents compared to the Rural areas find that Aadhaar being an important tool for raising the standards of governance in the welfare. It was observed that as education levels increase the services of Aadhaar also increase. The same was noticed with the class category that poor are the victims of issues with Aadhaar.

Many respondents complained that the problems associated with Aadhaar include updating one's details in the Aadhaar. This is tough and sections like Poor, illiterates and even people who studied up to 12 cannot deal with updating their mobile numbers, corrections to their names, age and address in Aadhaar card effectively. This was due to reasons; lack of mee-Seva or designated post office or banks to help them in getting corrections or updating details in the Aadhaar card. People belonging to weaker sections like OBC, SC and ST in the rural Telangana have opened their bank accounts with the help of Aadhaar but could not use banking services either digitally or physically since they do not engage in financial transactions. Hence, they find that Aadhaar has not improved their access to banking. This is a concern for employment generation which can enable them to utilise the banking services.

Despite some issues with updating and authentication failure in Aadhaar based services in the governance, the seeding of Aadhaar number proved to be a robust enough to ensure the delivery of the services to the people in implementation of social security schemes such as civil supplies of Ration, LPG subsidy for cooking, kerosene, *Rythu Bandu*, *Aasara Pensions*, *Kalyana Lakshmi*, MGNREGA, *Arogyasri*, *Arogya Lakshmi*, Financial inclusion through JAM (Jan Dhan-Aadhaar-Mobile linkage), KCR kits and Kanti velugu and other schemes. Most of the people are open to sharing their Aadhaar details with government agencies for better access and transparency in the governance in Telangana state.

However, this thesis has contributed to the analysis of functional aspects of governmentality in Telangana state. It was observed that Telangana state's integrated/intensive household survey (*Samagra Kutumba Survey*) in 2014 provided the scope of knowing every aspect of people living in Telangana state. The massive participation by the people indicated their willingness to expose themselves to the state for receiving the government benefits. Indeed, the integrated/intensive household survey has been helpful in re-organizing the 33 new districts in 2016 that has changed the hitherto existing identity of Telangana itself. Such an attempt has been "a great step forward" in reaching out to the last man (individual) in the state in terms of physical infrastructure so that the average resident of Telangana state would feel the presence of the government. These two attempts created the conducive environment for digitalization of governance e.g., Dharani portal, e-governance of PDS and disbursal of pensions and other schemes with Aadhaar seeding. This governance was named as "the outcome-oriented governance" as per socio economic outlook, 2021. The national awards that Telangana state received for emerging as a best/leading state in digital governance prove that technocratic governance has been treated as a one stop solution for the administrative problems. This implies the state metamorphoses its governance in addressing the problem as part of governmentality if not solved. Such attempts propelled the study to go for field study to analyse the developmental experience of the people in the state.

The analysis of perceptions and practice of Aadhaar identity has concluded that the universal legal identity is able to create a sense of security among the people if they procure an Aadhaar number in Telangana state. Moreover, the people opined that the biometric authentication of Aadhaar identity in governance of welfare schemes indicate that Aadhaar guarantees access to the government and market services in the state. So, the viability of universal legal identity provided by Aadhaar is key in addressing the issues of duplication, leakages and corruption in the welfare administration.

However, it must be noted that the dependency welfare schemes like Kalyana Lakshmi, distribution of sheep and pensions with the help of Aadhaar would imply the governmentality of Telangana state. Instead of such dependency schemes, the state government can introduce the schemes intended for asset creation and employment generation. Then the dream of *Bangaru Telangana* (Golden Telangana) will materialise and Aadhaar number is capable of playing a vital role in it. The discussion on results from the field study suggest that Aadhaar has been a great help for the government of Telangana state to shape and nurture the desirable conduct from the people that amounts for the operational aspects of Michel Foucault's governmentality in the welfare governance in the state.

Future of the Study

“One Nation One Ration Card” with portability option can be taken up for future study. It has immense potential to contribute to the studies on “data governance” and welfare for migrant labourers.

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Appendix Tables

(Chapter-5 tables)

Table-5.1:
Multinomial Logistic Regression Analysis to capture the Relationship between Demographic Factors and Utility of Aadhaar services in Governance

Predictor Variables	Outcome Variables					
	Not Afraid of sharing Aadhaar with Govt agencies			Aadhaar's Primary aim to provide unhindered services to people		
	Coef.	[95 % CI]	p-value	Coef.	[95 % CI]	p-value
Individual Characteristics						
0	No					
1	Yes					
GENDER						
Male	1.00 ^R			1.00		
Female	-0.43	-1.13 – 0.26	0.22	-0.01	-1.40 -1.37	0.99
AGE						
18-24	1.00 ^R			1.00		
25-34	-0.16	-1.39 -1.07	0.80	-1.75	-4.87 -1.36	0.27
35-44	-0.65	-2.01 - 0.72	0.35	-1.82	-5.22 -1.57	0.02**
45-54	-0.85	-2.30 – 0.61	0.02**	-0.96	-4.77 -2.86	0.62
55 and above	-0.71	-2.15 – 0.72	0.33	-2.61	-6.10 -0.88	0.04**
RELIGION						
Hindu	1.00 ^R			1.00		
Agnostic	15.22	-85.3 – 86.7	1.00	17.43	-21.2 -21.11	1.00
Atheist	-17.53	-78.2– 77.18	1.00	15.69	-46.2 -46.62	1.00
Christian	0.19	-1.34 – 1.72	0.81	14.28	-54.14 -54.7	1.00
Muslim	-0.27	-1.21 – 0.67	0.05**	0.53	-1.07- 2.14	0.02**
Sikh	-0.07	-2.14 – 2.00	0.95	0.06	-3.26-3.39	0.97
CASTE						
General	1.00 ^R			1.00		
OBC	-0.16	-0.98 – 0.66	0.71	1.34	-0.08 -2.77	0.07
SC	0.87	-0.19 - 1.94	0.10*	18.21	-23.53 -24.9	0.99
ST	0.22	-0.90 – 1.34	0.70	1.83	-0.29 -3.95	0.09*
EDUCATION						
Graduation	1.00 ^R			1.00		
Post-Graduate	0.66	10.58 – 1.91	0.30	-0.47	-2.44 -1.49	0.64
Doctorate	34.28	-99.40- 10.9	1.00	0.09	-46.93 -46.1	1.00
Professional, Law, MMBS	1.07	-0.66 – 2.80	0.23	16.10	-68.34 -68.5	1.00
Other	17.02	-11.79-11.8	1.00	1.78	-0.32 -3.89	0.10*

Up to class 12	0.51	-0.38 – 1.41	0.26	2.50	-0.40 -5.41	0.09*
Illiterate	0.41	-0.90-1.71	0.54	2.50	-0.40-5.41	0.09*
OCCUPATION						
Housewife/Home Maker	1.00			1.00		
Agriculture	1.44	-0.81 – 3.69	0.21	16.61	-42.62 -42.8	0.99
Big Business	-2.09	-5.51 – 1.33	0.23	14.20	-12.30 -12.7	1.00
Carpenter/halwai	0.64	-1.76 – 3.03	0.60	16.99	-11.01 -11.9	1.00
Others	-0.40	-1.60 – 0.81	0.05**	-0.07	-2.02 -1.89	0.95
Petty Business	-0.07	-1.44 – 1.29	0.91	-0.43	-2.66 -1.80	0.71
Service	-0.21	-1.29 – 0.88	0.71	1.23	-0.66 -3.12	0.02**
Student	-1.76	-3.16–0.35	0.01**	1.75	-1.41 -4.92	0.28
Unemployed	-0.54	-1.84 – 0.76	0.41	-0.62	-2.91 -1.67	0.60
INCOME						
1. Middle Class	1.00 ^R			1.00		
2. Poor	0.40	-0.38 – 1.18	0.03**	-1.99	-3.63-0.34	0.02**
3. Above Middle class	-0.25	-2.24 – 1.75	0.81	16.45	-69.43 -69.3	1.00
4. Rich	1.20	-1.52 – 3.92	0.39	16.06	-87.61-87.7	1.00
5. Richest	15.88	-63.63–63.3	1.00	18.34	-15.21- 15.8	1.00
TYPE OF HOUSE USE						
Gated Community	1.00 ^R			1.00		
Independent/Pucca house	-1.01	-2.85 – 0.83	0.28	-1.03	-3.94 -1.88	0.49
Kachcha House	-1.86	-3.87 – 0.15	0.07*	-2.34	-5.96 -1.29	0.21
Hut	-1.61	-4.30 – 1.08	0.24	-4.92	-10.10-0.25-	0.06*
RESIDENCE						
Urban	1.00 ^R			1.00		
Rural	-0.05	-0.75 - 0.65	0.89	0.75	-0.63 -2.13	0.09*
OWNER HOUSE USE						
Own	1.00 ^R			1.00		
Rented	0.14	-0.65 – 0.92	0.74	3.01	0.93-5.10	0.01**
House on Public land	0.84	-0.32 – 2.01	0.16	0.25	-1.57 -2.07	0.79
constant	2.55	0.07 – 5.03	0.04**	2.78	-1.52 -7.09	0.21
2	Neutral					
GENDER						
Male	1.00 ^R			1.00		
Female	0.55	-0.26 – 1.37	0.18	0.21	-1.20 -1.63	0.77
AGE						

18-24	1.00 ^R			1.00		
25-34	0.56	-1.06 – 2.18	0.15	-0.53	-3.75 -2.68	0.74
35-44	1.33	-0.49 – 3.16	0.36	0.19	-3.31 -3.68	0.91
45-54	0.92	-1.06 – 2.90	0.09*	0.45	-3.49 -4.40	0.82
55 and above	1.62	-0.26 – 3.51	0.50	-0.54	-4.13 -3.06	0.07*
RELIGION						
Hindu	1.00 ^R			1.00		
Agnostic	17.12	-85.43- 86.6	1.00	18.18	-21.5 -21.8	1.00
Atheist	-18.54	-13.67- 13.5	1.00	16.12	-46.81- 46.0	1.00
Christain	-0.66	-2.72 - 1.40	0.05**	14.60	-54.82 -54.0	1.00
Muslim	-0.38	-1.53 - 0.77	0.52	0.04	-1.62 -1.70	0.97
Sikh	-16.06	-31.57- 30.4	0.99	0.30	-3.16 -3.76	0.06*
CASTE						
General	1.00 ^R			1.00		
OBC	0.01	-0.95 – 0.96	0.09*	1.17	-0.27 -2.62	0.10*
SC	0.20	-1.10 – 1.49	0.77	17.99	-23.75 -24.7	0.99
ST	0.10	-1.28 – 1.48	0.89	1.30	-0.87 -3.47	0.24
EDUCATIO N						
Graduation	1.00 ^R			1.00		
Post-Graduate	-0.31	-1.92 – 1.30	0.71	-0.18	-2.20 -1.85	0.86
Doctorate	16.83	-13.37- 13.0	1.00	0.13	-46.90 -46.1	1.00
Professional,L aw,MMBS	-0.55	-3.16 – 2.06	0.68	15.85	-68.60-68.0	1.00
Other	0.07	-16.36- 16.5	1.00	-30.99	-96.00-96.0	0.01**
Up to class 12	-0.24	-1.38 – 0.90	0.68	1.45	-0.70-3.60	0.19
Illiterate	0.16	-1.41 – 1.73	1.73	3.24	0.32-6.17	0.03**
OCCUPATI ON						
Housewife/Ho me Maker	1.00 ^R			1.00		
Agriculture	2.54	0.15 – 4.93	0.04	16.22	-42.01 -42.4	0.99
Big Business	-13.55	-52.0 - 52.9	1.00	15.90	-12.60-12.4	1.00
Carpenter/hal wai	-14.14	-41.77- 41.4	1.00	16.31	-11.69-11.3	1.00
Others	0.97	-0.44 – 2.37	0.10*	0.01	-2.00-2.02	0.08*
Petty Business	0.23	-1.66 – 2.11	0.82	0.02	-2.28-2.32	0.98
Service	0.89	-0.44 – 2.23	0.19	1.17	-0.78-3.11	0.24
Student	0.99	-0.80 – 2.78	0.28	2.53	-0.70 -5.77	0.03**
Unemployed	1.34	-0.19 – 2.86	0.09*	-0.10	-2.45 -2.25	0.93
INCOME						
1. Middle Class	1.00 ^R			1.00		
2. Poor	0.75	-0.21 – 1.72	0.13	-1.46	-3.14 -0.23	0.09
3. Above Middle class	0.01	-2.73 – 2.74	1.00	16.28	-69.60 -69.1	1.00

4. Rich	-13.91	-35.10- 35.2	0.99	16.05	-87.62 -87.7	1.00
5. Richest	1.61	-82.93- 82.1	1.00	1.11	-18.69-18.9	1.00
TYPEOFHOUSE						
Gated Community	1.00 ^R			1.00		
Independent/Pucca house	-0.75	-5.12 – 1.39	0.53	0.44	-2.85 -3.73	0.79
Kachcha House	-1.62	-4.18 – 0.94	0.22	-1.11	-5.06 -2.83	0.58
Hut	-1.86	-5.12 – 1.39	0.26	-4.63	-10.08 -0.82	0.10
RESIDENCE						
Urban	1.00 ^R			1.00		
Rural	-0.24	-4.18 – 0.94	0.59	0.63	-0.79 -2.05	0.38
OWNERHOUSE						
Own	1.00 ^R			1.00		
Rented	0.01**	-0.94 – 0.95	0.99	2.58	0.47 -4.69	0.02**
House on Public land	0.49	-.091 – 1.88	0.49	-0.24	-2.12-1.64	0.80
_cons	-1.43	-4.58 – 1.72	0.37	-0.94	-5.64 -3.76	0.70
<i>Log likelihood</i>	-280.41866			-228.01354		
<i>Pseudo R2</i>	0.1378			0.1856		
<i>Prob > chi2</i>	0.1038			0.012**		
<i>Observation</i>	340			340		

Source: Author's calculations from the field study. The characters “*” “**” “***” indicates “10’,”5’,”1’ percent level of significance.

Table-5.2:
Multinomial Logistic Regression Analysis to Capture the Relationship between Demographic factors and Confidential levels of people since Aadhaar has been used in governance.

Predictor Variables	Outcome Variables								
	Aadhaar guaranteed my Identity to receive Services			Aadhaar guarantees services like US Social Security Number			Welfare cannot be done without Aadhaar in India		
	Coef.	[95 % CI]	p-value	Coef.	[95 % CI]	p-value	Coef .	[95 % CI]	p-value
Individual Characteristics									
0	No								
1	Yes								
GENDER									
Male	1.00 ^R			1.00			1.00 ^R		
Female	-0.28	-1.38 – 0.81	0.61	-0.15	-1.05 -0.75	0.74	0.45	-0.24-1.13	0.00** *
AGE									
18-24	1.00 ^R			1.00			1.00		
25-34	0.85	-1.79 – 3.49	0.53	0.20	-1.29- 1.70	0.79	0.29	-0.92 – 1.51	0.64
35-44	0.14	-2.46 – 2.74	0.92	0.54	-1.14 -2.22	0.53	0.42	-0.91 – 1.74	0.54
45-54	0.95	-1.84 – 3.74	0.05**	-0.11	-1.87 -1.65	0.90	0.33	-1.06 – 1.71	0.64
55 and above	0.48	-2.06 – 3.03	0.71	0.63	-1.33- 2.59	0.53	-0.08	-1.45 – 1.30	0.01**

RELIGION									
Hindu	1.00 ^R		1.00	1.00			1.00 _R		
Agnostic	17.09	-38.90 - 38.93	1.00	-0.16	-45.73 -45.40	1.00	0.00	-88.10 -88.11	1.00
Atheist	18.13	-19.07 - 195.32	1.00	15.37	-63.22 -64.96	1.00	13.9 5	- 34.97 - 34.8	0.99
Christain	-1.12	-3.72 - 1.49	0.40	-0.81	-3.03 -1.41	0.48	0.19	-1.25 - 1.63	0.79
Muslim	-0.93	-2.26 – 0.39	0.17	-0.71	-1.88 -0.46	0.23	-0.51	-1.50 - 0.48	0.31
Sikh	-2.00	-4.68 – 0.68	0.14	-0.01	-2.41 -2.39	0.99	-0.89	-3.05 - 1.27	0.42
CASTE									
General	1.00 ^R			1.00			1.00 _R		
OBC	-0.71	-1.95 – 0.54	0.27	0.29	-0.78 -1.36	0.60	0.49	-0.33 - 1.30	0.25
SC	16.44	-38.91 – 38.79	0.99	1.31	-0.11 – 0.46	0.07**	0.20	-0.77 - 1.18	0.69
ST	-1.39	-3.02 – 0.23	0.09*	-0.97	-2.51 -2.39	0.22	-0.30	-1.35 - 0.76	0.08*
EDUCATION									
Graduation	1.00 ^R			1.00			1.00 _R		
Post-Graduate	-0.31	-2.25 – 1.62	0.75	-0.71	-2.00 -	0.28	-0.08	-1.24 - 1.08	0.90
Doctorate	-0.69	-19.26 – 19.89	1.00	-13.26	-65.49 -65.97	1.00	14.1 0	-34.82 - 34.01	0.99

Professional, Law, MMB S	16.33	-73.76 - 73.42	1.00	0.37	-1.64 -2.39	0.72	0.24	-1.34 - 1.81	0.77
Other	18.54	-42.40 - 420.48	1.00	-18.97	-24.54 – 24.60	1.00	17.5 4	-86.31 -87.40	1.00
Up to class 12	0.74	-0.72 – 2.19	0.03**	0.46	-0.70 -1.62	0.44	0.24	-0.63 - 1.12	0.05**
Illiterate	0.00	-1.83 – 1.82	1.00	-0.18	-1..93-1.57	0.84	0.45	-0.74 - 1.65	0.46
OCCUPATION									
Housewife/Home Maker	1.00 ^R			1.00			1.00 R		
Agriculture	-0.45	-2.60 – 1.71	0.68	0.50	-1.61	0.64	-0.74	-2.19 – 0.70	0.31
Big Business	16.46	-17.18 - 17.09	1.00	15.84	-30.08	0.99	0.37	-2.64 – 3.37	0.81
Carpenter/halwai	17.25	-15.22 - 15.71	1.00	-14.41	-18.49	0.99	-0.67	-3.32 – 1.99	0.62
Others	-0.77	-2.39 – 0.85	0.35	0.74	-0.94	0.03**	0.74	-0.44 – 1.91	0.22
Petty Business	0.58	-1.38 – 2.54	0.56	0.66	-1.24	0.50	0.47	-0.89 – 1.82	0.50
Service	0.33	-1.26 – 1.91	0.69	0.77	-0.60	0.27	0.23	-0.80 – 1.26	0.66
Student	17.15	-42.65 - 43.94	0.99	-0.14	-1.76	0.86	-0.07	-1.44 – 1.31	0.93
Unemployed	-0.13	-2.04 – 1.79	0.90	0.25	-1.44	0.77	-0.19	-1.42 – 1.04	0.76
INCOME									
1. Middle Class	1.00 ^R	1.00 ^R		1.00			1.00 R		
2. Poor	-0.08	-1.46 – 1.31	0.91	0.06	-0.97 -1.09	0.91	-0.63	-1.39 – 0.13	0.10*

3. Above Middle class	-0.49	-2.83 – 1.81	0.68	0.42	-2.33 -3.16	0.77	-0.60	-2.52 – 1.32	0.54
4. Rich	18.37	-11.92 – 11.66	1.00	0.13	-2.49 -2.74	0.93	0.08	-2.02 – 2.18	0.94
5. Richest	19.46	-14.26 – 14.17	1.00	-1.63	-5.65 -2.38	0.04**	0.65	-2.61 – 3.90	0.70
TYPEOFHOUSE									
Gated Community	1.00 ^R			1.00			1.00 _R		
Independent/Pucca house	0.55	-1.71 – 2.81	0.63	-1.19	-3.38 -0.99	0.28	0.17	-1.34 – 1.67	0.03**
Kachcha House	0.96	-1.66 – 3.58	0.47	-2.78	-5.26 – 0.30	0.03**	-0.49	-2.19 – 1.21	0.57
Hut	17.58	-93.74 - 93.91	0.10	-1.59	-5.10 -1.93	0.38	15.4 9	-17.25 – 17;26	0.99
RESIDENCE									
Urban	1.00 ^R			1.00			1.00 _R		
Rural	0.77	-0.33 – 1.88	0.17	-0.18	-1.08 – 0.72	0.69	0.65	-0.05 – 1.34	0.07*
OWNERHOUSE									
Own	1.00 ^R			1.00 ^R			1.00 _R		
Rented	0.78	-0.64 – 2.20	0.28	1.69	0.64 – 2.74	0.00***	0.05	-0.71 – 0.81	0.90
House on Public land	-0.50	-1.81 – 0.82	0.46	2.38	0.39 – 4.37	0.02**	-0.48	-1.51 – 0.55	0.06*
_cons	0.98	-2.55 – 4.51	0.59	0.61	-2.45 – 3.56	0.69	-0.56	-0.14 - 1.22	0.62
2	Neutral								

GENDER									
Male	1.00 ^R			1.00			1.00 _R		
Female	-0.32	-1.58 – 0.95	0.62	-0.48	-1.32 – 0.35	0.26	0.54	-0.14 - 1.22	0.10*
AGE									
18-24	1.00 ^R			1.00			1.00 _R		
25-34	0.41	-2.43 – 3.25	0.78	1.62	0.23 -3.02	0.02**	-0.28	-1.48 – 0.93	0.65
35-44	0.78	-2.05 – 3.62	0.59	1.56	-0.03 -3.15	0.06*	0.00	-1.34 – 1.33	1.00
45-54	1.77	-1.28 – 4.81	0.26	0.64	-1.06 – 2.33	0.46	-0.33	-1.83 – 1.16	0.66
55 and above	1.00	-1.86 – 3.87	0.49	2.67	0.83 -4.52	0.01**	0.39	-0.96 – 1.74	0.05**
RELIGION									
Hindu	1.00 ^R			1.00			1.00 _R		
Agnostic	18.03	-38.96 - 38.02	1.00	15.47	-2944.48 -2975.42	0.99	17.60	-59.71 - 59.90	1.00
Atheist	2.68	-26.34 - 268.71	1.00	-0.13	-64.69 -64.43	1.00	15.32	-34.59 -34.23	0.99
Christain	-0.09	-2.91 – 2.73	0.95	0.22	-1.48 -1.91	0.08*	0.35	-1.14 – 1.85	0.64
Muslim	-1.28	-2.85 – 0.28	0.10*	-1.37	-2.47 -0.27	0.02**	-0.43	-1.40 – 0.53	0.38
Sikh	-1.45	-4.40 – 1.50	0.33	-1.10	-3.63-1.43	0.39	0.61	-1.56 – 2.77	0.58
CASTE									

General	1.00 ^R			1.00			1.00 ^R		
OBC	-0.64	-2.04 – 0.75	0.37	-0.81	-1.81 -0.19	0.11	0.66	-0.15 – 1.46	0.11
SC	15.81	-38.54 - 38.16	0.99	0.21	-1.15 -1.56	0.76	-0.57	-1.57 – 0.44	0.27
ST	-2.92	-4.98 – 0.87	0.01	-1.10	-2.36 -0.17	0.09*	-1.21	-2.33 – 0.09	0.03**
EDUCATION									
Graduation	1.00 ^R			1.00			1.00 ^R		
Post-Graduate	-0.46	-2.53 – 1.61	0.66	-1.62	-2.96 – 0.28	0.02**	-0.50	-1.79 – 0.79	0.45
Doctorate	19.21	-27.33 - 27.92	1.00	15.81	-53.62 -53.23	1.00	11.62	-34.29-34.5	1.00
Professional, Law, MMB S	14.49	-73.60 - 73.57	1.00	0.22	-1.65 -2.08	0.82	-0.64	-2.35 – 1.07	0.46
Other	0.01	-51.53 - 51.55	1.00	19.9	163.10 -16.30	1.00	0.33	-12.5-12.16	1.00
Up to class 12	-0.83	-2.50 – 0.84	0.33	0.82	-0.28 -1.92	0.10*	0.16	-0.76 – 0.79	0.03**
Illiterate	-1.92	-4.10 – 0.25	0.08*	0.49	-1.12 – 2.10	0.55	0.26	-0.99 – 1.51	0.68
OCCUPATION									
Housewife/Home Maker	1.00 ^R			1.00			1.00 ^R		
Agriculture	-0.88	-3.41 – 1.65	0.50	0.50	-1.45 -2.45	0.62	0.31	-0.98 – 1.61	0.64
Big Business	0.17	-23.73 - 230.06	1.00	16.48	-29.44 -30.40	0.99	-11.94	-28.67-27.7	0.99

Carpenter/halwai	-1.15	-19.69 - 194.39	1.00	0.48	-1.72 -2.67	0.67	1.35	-0.76 -3.45	0.21
Others	-1.57	-3.50 – 0.36	0.10*	1.69	0.13 – 3.25	0.03**	1.24	0.01 – 2.47	0.05**
Petty Business	-1.45	-3.97 – 1.08	0.26	1.81	0.06 -3.55	0.04**	1.25	-0.19 – 2.90	0.09*
Service	-0.13	-1.89 – 1.63	0.88	1.21	-0.08 -2.51	0.07*	0.56	-0.57 – 1.68	0.33
Student	16.47	-42.33 – 43.27	0.99	0.46	-1.08 -2.01	0.56	1.50	0.09 - 2.90	0.04**
Unemployed	-0.07	-2.24 -	0.95	1.08	-0.42 -2.59	0.16	0.23	-1.05 – 1.51	0.73
INCOME									
1. Middle Class	1.00 ^R			1.00			1.00 _R		
2. Poor	0.50	-1.02 0 – 2.02	0.05**	0.95	-0.01 -1.92	0.05**	0.02	-0.78 – 0.82	0.96
3. Above Middle class	0.70	-2.09 – 3.48	0.62	0.22	-2.38 -2.82	0.87	0.52	-1.46 – 2.51	0.60
4. Rich	18.24	-11.05 – 11.53	1.00	-1.63	-4.81 -1.55	0.31	- 14.7 4	- 22.02- 21.5	0.99
5. Richest	1.85	-21.83 – 21.53	1.00	-3.34	-8.07 -1.40	0.17	- 14.7 3	- 32.05- 32.5	0.99
TYPE OF HOUSE									
Gated Community	1.00 ^R			1.00			1.00 _R		
Independent/Pucca house	1.46	-1.16 – 4.07	0.28	-1.31	-5.52 -1.05	0.21	0.74	-0.95 – 2.44	0.39
Kachcha House	2.47	-0.59 – 5.53	0.10*	-2.62	-4.90 – 0.35	0.02**	0.22	-1.65 – 2.10	0.82

Hut	1.67	-12.99 - 12.32	1.00	-2.24	-5.52 – 1.05	0.18	0.07	-2.25 – 2.40	0.95
RESIDENCE									
Urban	1.00 ^R			1.00			1.00		
Rural	1.27	0.00 – 2.53	0.05**	-0.56	-1.41 -0.29	0.20	0.02	0.10 – 1.54	0.03**
OWNERHOUSE									
Own	1.00 ^R			1.00			1.00 _R		
Rented	0.03	-1.54 – 1.59	0.97	0.44	-0.53 -1.41	0.37	-0.50	-1.28 – 0.29	0.21
House on Public land	-0.39	-1.54 – 1.59	0.64	2.46	0.61 -4.30	0.01**	-1.05	-2.18 – 0.08	0.07*
_cons	-0.34	-4.34 – 3.65	0.87	0.64	-2.11 -3.40	0.65	-1.62	-3.95 – 0.71	0.17
<i>Log likelihood</i>	-192.42386			-255.51848			-320.32382		
<i>Pseudo R2</i>	0.2148			0.2275			0.1420		
<i>Prob > chi2</i>	0.009***			0.0000***			0.008***		
<i>Observation</i>	340			340			340		

Source: Author's calculations from the field study. The characters “*” “**” “***” indicates “10’,”5’,’1’ percent level of significance.

Table- 5.3:
Multinomial Logistic Regression Analysis to Capture the Relationship between Demographic
Factors and threats from Aadhaar in Governance

Predictor Variables	Outcome Variables					
	Aadhaar is Beyond Duplication			Aadhaar can be a Potential Tool for Surveillance		
	Coef .	[95 % CI]	p-value	Coef.	[95 % CI]	p-value
Individual Characteristics						
0	No					
1	Yes					
GENDER						
Male	1.00 _R			1.00		
Female	-0.43	-1.17 – 0.32	0.26	0.50	-0.72 – 1.71	0.42
AGE						
18-24	1.00 _R			1.00		
25-34	-1.25	-2.55 - 0.06	0.06*	-0.21	-2.37 -1.95	0.85
35-44	-1.11	-2.55 – 0.34	0.13	0.03	-2.24 -2.31	0.98
45-54	-0.45	-2.08 – 1.18	0.59	0.49	-2.03 -3.01	0.70
55 and above	-0.02	-1.63 – 1.59	0.98	-0.65	-2.90 -1.60	0.57
RELIGION						
Hindu	1.00 _R			1.00		
Agnostic	- 14.76	-29.85 - 29.3	0.99	16.44	-19.20 -19.	1.00
Atheist	14.94	-40.17 - 41.0	0.99	1.53	-28.24- 28.29	1.00
Christain	-0.81	-2.51 – 0.89	0.35	-2.29	-4.61-0.03	0.05**
Muslim	0.01	-0.99 – 1.00	0.99	15.63	-29.99 -29.24	0.99
Sikh	0.36	-2.48 – 3.19	0.81	17.02	-60.38- 60.42	1.00
CASTE						
General	1.00 _R			1.00		
OBC	0.06	-0.81 - 0.94	0.89	1.81	0.25 -3.37	0.02**
SC	0.17	-0.91 – 1.25	0.76	0.64	-0.93 -2.22	0.42
ST	-0.64	-1.82 – 3.19	0.29	0.75	-1.06 -2.56	0.42
EDUCATION						
Graduation	1.00 _R			1.00		

Post-Graduate	-0.72	-1.93 – 0.50	0.02**	-0.86	-3.07 – 1.34	0.04**
Doctorate	- 30.7 1	-83.04- 82.63	0.99	11.48	-34.90 -34.86	1.00
Professional, Law, MBS	1.34	-0.94 – 3.61	0.25	15.59	-52.06- 53.23	1.00
Other	14.0 4	-60.79- 60.8	1.00	4.21	-34.49- 34.91	1.00
Up to class 12	0.69	-0.28 – 1.65	1.04**	-0.70	-2.41 -1.02	0.43
Illiterate	0.18	-1.20 – 1.55	0.80	-1.83	-4.18 – 0.52	0.10**
OCCUPATION						
Housewife/Home Maker	1.00			1.00		
Agriculture	-0.84	-2.39 – 0.72	0.29	1.23	-1.50 -3.96	0.38
Big Business	0.29	-3.05 – 3.63	0.86	16.59	-96.36-96.55	1.00
Carpenter/halwai	-0.09	-2.72 – 2.53	0.95	16.32	-93.10 -94.75	1.00
Others	0.20	-1.11 – 1.51	0.77	-0.47	-2.52 -1.58	0.65
Petty Business	-0.47	-1.84 – 0.90	0.50	0.45	-2.44 -3.33	0.06*
Service	0.72	-0.50 – 1.94	0.25	0.06	-1.92 -2.04	0.95
Student	-0.66	-2.10 – 0.78	0.37	0.72	-1.89 -3.33	0.59
Unemployed	-0.83	-2.23 – 0.58	0.02**	-0.41	-2.48 -1.65	0.70
INCOME						
1. Middle Class	1.00 R			1.00		
2. Poor	0.21	-0.63 – 1.05	0.21	1.00	-0.35 -2.36	0.09*
3. Above Middle class	0.12	-2.52 – 2.76	0.12	15.39	-51.16 -52.94	1.10
4. Rich	-1.02	-3.52 – 1.49	-1.02	-1.76	-5.86 -2.33	0.40
5. Richest	13.1 8	-33.42 - 33.7	3.18	-0.10	-12.96 -12.77	1.00
TYPE OF HOUSE						
Gated Community	1.00 R			1.00		
Independent/Pucca house	-1.86	-4.28 - 0.56	0.13	15.59	-46.57- 45.39	1.00
Kachcha House	-1.56	-4.15 – 1.02	0.24	16.17	-46.15 -45.81	1.00
Hut	11.9 9	-14.10- 14.0	0.99	17.03	-46.01 -45.95	0.99
RESIDENCE						
Urban	1.00 R			1.00		

Rural	0.10	-0.67 – 0.88	0.80	1.15	-0.18 -2.48	0.09
OWNERHOUSE						
Own	1.00 R			1.00		
Rented	0.62	-0.24 – 1.49	0.16	0.64	-0.66 -1.95	0.33
House on Public land	-0.01	-1.16 – 1.14	0.99	16.26	-34.02 - 34.5	0.99
_cons	3.17	0.20 – 6.14	0.04**	15.88	-45.10 -46.86	1.00
2	Neutral					
GENDER						
Male	1.00 R			1.00		
Female	0.16	-0.65 – 0.97	0.70	0.29	-0.91 -1.49	0.63
AGE						
18-24	1.00 R			1.00		
25-34	-1.09	-2.54 – 0.37	0.14	1.09	-1.15 -3.34	0.34
35-44	-1.26	-2.91 – 0.38	0.13	1.45	-0.93 -3.82	0.23
45-54	-0.82	-2.66 – 1.02	0.08*	2.39	-0.22 -5.01	0.07*
55 and above	0.11	-1.67 – 1.89	0.91	1.73	-0.60 -4.06	0.15
RELIGION						
Hindu	1.00 R			1.00		
Agnostic	0.49	-2.80 – 3.78	0.77	17.37	-19.28 -19.01	1.00
Atheist	0.79	-56.24- 56.8	1.00	19.02	-28.26-28.30	1.00
Christain	0.06	-1.65 – 1.77	0.94	-0.79	-2.81 -1.23	0.05**
Muslim	-0.23	-1.38 – 0.92	0.70	15.01	-29.61-29.62	0.99
Sikh	0.96	-1.70 – 3.61	0.48	15.19	-60.21-60.59	1.00
CASTE						
General	1.00 R			1.00		
OBC	0.44	-0.55 – 1.43	0.38	0.95	-0.60 -2.49	0.03**
SC	0.27	-0.96 – 1.50	0.67	0.29	-1.24 -1.83	0.71
ST	0.67	-0.60 – 1.93	0.30	-0.20	-1.97 -1.57	0.83
EDUCATION						
Graduation	1.00 R			1.00		

Post-Graduate	0.36	-0.87 – 1.59	0.57	-2.05	-4.40 -0.29	0.09*
Doctorate	- 18.0 4	-12.95 - 12.8	1.00	22.53	-34.01 -34.95	1.00
Professional, Law, M BBS	1.98	-0.41 – 4.36	0.10*	15.69	-52.96 –53.10	1.00
Other	-0.72	-78.39 - 78.9	1.00	14.25	-36.48 -36.98	1.00
Up to class 12	0.86	-0.22 – 1.95	0.12	-0.51	-2.25 -1.24	0.57
Illiterate	0.64	-0.90 – 2.19	0.42	-1.10	-3.43 -1.22	0.35
OCCUPATION						
Housewife/Home Maker	1.00 R			1.00		
Agriculture	-0.34	-2.02 – 1.35	0.70	1.56	-1.09 -4.20	0.25
Big Business	- 13.8 6	-25.71 - 25.9	0.99	18.21	-96.74 -96.16	1.00
Carpenter/halwai	0.95	-1.83 – 3.72	0.50	17.17	-93.25 -94.59	1.00
Others	-0.15	-1.59 – 1.28	0.84	0.49	-1.49 -2.47	0.63
Petty Business	-1.15	-2.81 – 0.50	0.17	0.78	-2.12 -3.69	0.60
Service	0.71	-0.60 – 2.03	0.02**	0.83	-1.13 -2.78	0.41
Student	-0.42	-1.97 – 1.14	0.60	2.24	-0.43 -4.92	0.10*
Unemployed	-0.36	-1.84 – 1.13	0.64	0.59	-1.40 -2.59	0.56
INCOME						
1. Middle Class	1.00 R			1.00		
2. Poor	-0.02	-0.95 – 0.91	0.97	1.45	0.12 -2.79	0.03**
3. Above Middle class	0.82	-1.80 – 3.44	0.54	14.58	-51.97 -52.13	1.00
4. Rich	-1.75	-4.77 – 1.27	0.26	-1.72	-5.69 -2.25	0.40
5. Richest	-2.68	-42.62 - 42.2	1.00	-0.39	-12.26 -12.48	1.00
TYPE OF HOUSE						
Gated Community	1.00 R			1.00		
Independent/Pucca house	-2.26	-4.70 – 0.18	0.07*	15.02	-46.00 -45.96	1.00
Kachcha House	-2.08	-4.70 - 0.55	0.12	14.75	-46.73 -45.23	1.00
Hut	11.8 2	-14.27 - 14.9	0.99	15.15	-46.13 -45.83	1.00
RESIDENCE						

Urban	1.00 R			1.00		
Rural	-0.44	-1.31 – 0.42	0.31	0.71	-0.59 -2.02	0.02**
OWNERHOUSE						
Own	1.00 R			1.00		
Rented	-0.45	-1.41 – 0.51	0.36	-0.29	-1.55 -3.34	0.66
House on Public land	-0.24	-1.51 – 1.03	0.71	15.80	-34.48 -34.09	0.99
_cons	2.73	-0.37 – 5.83	0.08*	13.69	-45.29 -46.67	1.00
<i>Log likelihood</i>	-294.19839			-231.95941		
<i>Pseudo R2</i>	0.1419			0.2257		
<i>Prob > chi2</i>	0.03**			0.0000***		
<i>Observation</i>	340			340		

Source: Author's calculations from the field study. The characters “*” “**” “***” indicates “10’,”5’,”1’ percent level of significance.

Interview Schedule

Interview Schedule No:.....

Date:.....

INTERVIEWER'S INTRODUCTION

*I am Gurram Ashok, pursuing Ph. D (with Reg. No: 16SPPH06) in the subject of Political Science at **University of Hyderabad**. I am conducting a research survey on "Aadhaar Project" for my research topic, "**Decoding the Politics of Technology and Welfare: A case Study of Aadhaar based services in Telangana**". I am interviewing hundreds of people from different parts of the Telangana and India. The findings of these interviews will be used in my Ph. D thesis without giving any respondent's name. It has no connection with any political party or the government. I need your co-operation to ensure the success of my study. Kindly spare some time to answer the questions. The answers mentioned in the schedule will be used only for the purpose of doctoral research and not for anything else. I assure you that your name and the information given by you will be kept strictly confidential.*

Name (Optional)	
Gender	1. Male 2. Female 3. Third Gender
Age in years	
Religion	1. Hindu 2. Muslim 3. Christian 4. Sikh 5. Buddhist 6. Jain 7. Atheist 8. Agnostic 9. others (specify)
Caste	1. General 2. Backward Caste /OBC 3. Scheduled Caste 4. Scheduled Tribe
Education	1. (Illiterate/ No Education) 2. (1- 12 level) 2. (Graduation) 3. (Post Graduate) 5. (Doctorate) 6. (Professional such as Law, MMBS, Engineering) 7. Others
Occupation	
Annual Income (In Lakhs)	
Type of House	1. Gated Community 2. Independent House/ pucca house 3. Kachcha 4. Hut
Nature of the ownership of the house	1. Own 2. Rented 3. House on Public land
Place of Residence	1. Urban 2. Rural

Code for Q. 16, (Acceptability Levels)	Codes for Occupations		Code for column from Q48 to Q59
Strongly Disagree	1	Agriculture Related	1
Disagree	2	Service	2
Neither Agree		Unemployed	3
Nor Disagree	3	Student	4
Agree	4	Petty business	-5
Strongly Agree	5	Big Budiness	6
		Carpenter/ Halwai/ Rajmistri	7
		Others	8
		Old and No Job	9
		Depended	10
		No more/ Child	- 11
		Housewife/Home maker	-12
			Non-Availability of Aadhaar Card/ number (NA). -9
			Authentication Failure of Biometrics (Fingerprints and Iris) (AF) -8
			Others (specify) -7

Section-A: Awareness Questions

	Question	Level	Remarks
Q02	Do you have Aadhaar card/number?	1. Yes 2. No	If No, skip to open ended question 6 and 7
Q03	How did you know about Aadhaar enrolment?	1. Govt. Agencies(Notifications) 2. Private Agencies 3. Family members/ Relatives 4. Friends 5. T.V 6. News Paper 7. Online sources	
Q04	Why did you enrol for Aadhaar?	1. Identity reasons 2. Fear of losing Govt. services 3. Proof of citizenship 4. Since Neighbours have already enrolled	
Q05	Was there any trouble in Aadhaar enrolment?	1. Yes 2. No	
Q06	<i>If Yes</i> , nature of the trouble	1. Fingerprints 2. Iris 3. Machine Failure 4. Other (specify)	
Q07	I was aware of the fact that my Biometrics (fingerprints and Iris) are being taken for Aadhaar enrolment.	1. Yes 2. No	

Q08	<i>If Yes</i> , source of awareness	1. Govt. agencies (UIDAI) 2. Family members/ Relatives 3. Friends 4. T.V 5. News Paper 6. Online	
Q09	I am aware of the safety and security issues associated with Aadhaar	1. Yes 2. No	<i>If yes, go to Q10 and Q11</i>
Q10	<i>If yes</i> , nature of issues known	1. Data Protection 2. Misuse of data 3. Privacy 4. Surveillance 5. Other (specify)	
Q11	Source of awareness	1. Govt. agencies 2. Family members/ Relatives 3. Friends 4. T.V 5. News paper 6. Online 7. Others (specify)	
Q12	I gave my consent to take Biometrics information despite safety and security issues associated with Aadhaar	Yes - 1 No - 2	
Q13	<i>If yes</i> , reasons	1. Fear of losing govt. services 2. Needed a robust identity proof 3. UIDAI can take care of data protection 4. Aadhaar is beyond duplication/hacking	
Q14	Do you know the fact that Aadhaar project (enrolment and execution) was almost done before legislation of Aadhaar Act?	1. Yes 2. No	
Q15	<i>If yes</i> , reasons	1. To improve access to govt. welfare services 2. To eliminate fake beneficiaries without delay 3. Executive body of Union govt. wanted to bypass the scrutiny of Legislative house (Parliament)	

Section-B: Acceptability levels

SL.	Statement	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Q16	I voluntarily enrolled for Aadhaar					
Q17	I am aware of the fact that my biometrics information is taken for Aadhaar registration					
Q18	The objective of Aadhaar project has been clearly communicated to the public					
Q19	Aadhaar enrolment centre was near and accessible					
Q20	I received my Aadhaar card on time without any hurdle					
Q21	Aadhaar card guaranteed my identity to receive government services/benefits					
Q22	I am not afraid of (security/safety issues) sharing my Aadhaar number with government agencies only					
Q23	I don't have any security/safety concerns to share my Aadhaar number with non-governmental or private agencies as an identity proof					
Q24	I consider Aadhaar Card as equivalent to citizenship card					
Q25	The aim of Aadhaar numbering is clearly communicated to the public					
Q26	Aadhaar number is enough to provide a unique identity proof					
Q27	Aadhaar number guarantees government services like US Social Security number does					
Q28	Aadhaar number authentication reduces the middlemen and corruption in accessing the government services					
Q29	Aadhaar number linkage with Bank accounts ensures prevention of money laundering/ black money					
Q30	Aadhaar project's primary aim is to ensure unhindered government welfare services to deserving people of India					
Q31	Aadhaar Act provisions are satisfactory w.r.t. services and safety/security measures					

Q32	Aadhaar is beyond duplication					
Q33	UIDAI can ensure safety and security from data theft/misuse					
Q34	Aadhaar can be a potential tool for surveillance					
Q35	Aadhaar linkage with PAN Card is acceptable					
Q36	Aadhaar linkage with Mobile is acceptable					
Q37	Welfare cannot be done without Aadhaar in contemporary India					

Section-C: Usage and services of Aadhaar

	Question	Level	Remarks
Q38	Is Aadhaar useful for multiple purposes?	1. Yes 2. No	If No, skip to open ended questions
Q39	If Yes, (Put a star (*) in the following box)	1. Birth certificate 2. Death Certificate 3. Caste Certificate 4. Income Certificate 5. Residence Certificate 6. Passport ID 7. Voter ID 8. Ration Card 9. Bank Account 10. Others (specify)	
Q40	Have you ever been denied services for not being able to produce Aadhaar Card?	1. Yes 2. No	If Yes, ask from Q48 to Q59
Q41	If Yes, how long have you been denied welfare services?	1. Less than 3 months 2. 3 to 6 months 3. 6 to 12 months 4. Above 1 year	Go to Questions from 48 to 59
Q42	What was your alternative to Aadhaar in accessing the govt. services?	1. Voter ID 2. PAN Card 3. Passport ID 4. Ration Card 5. Others (specify)	
Q43	Are you aware of National Population Register(NPR)	1. Yes 2. No 3. Not heard	
Q44	Were you denied Voter ID due to non-enrolment/producing/linking of Aadhaar?	1. Yes 2. No	

Q45	Have you opened Bank Account with help of Aadhaar?	1. Yes 2. No	<i>If No, give reasons</i>
Q46	Did Aadhaar linking with Bank Account improve your access to banking services?	1. Yes 2. No	
Q47	If yes, how	1. Physical access for deposits and withdrawals 2. Online Banking 3. Mobile banking with help of Apps	
Q48	Were you/your family member denied Birth Certificate due to issues with Aadhaar?	1. Yes 2. No 3. Not Applicable	If yes, nature of the issue: 1. NA 2. AF 3. Others (Specify)
Q49	Has Death Certificate ever been denied to your family due to issues with Aadhaar?	1. Yes 2. No 3. Not Applicable	If yes, nature of the issue: 1. NA 2. AF 3. Others (Specify)
Q50	Were you /your family member ever denied of Caste Certificate/Minority Certificate due to issues with Aadhaar?	1. Yes 2. No 3. Not Applicable	If yes, nature of the issue: 1. NA 2. AF 3. Others (Specify)
Q51	Were you/your family member ever denied Income certificate due to issues with Aadhaar?	1. Yes 2. No 3. Not Applicable	If yes, nature of the issue: 1. NA 2. AF 3. Others (Specify)
Q52	Were you /your family member ever denied Residence Certificate due to issues with Aadhaar?	1. Yes 2. No 3. Not Applicable	If yes, nature of the issue: 1. NA 2. AF 3. Others (Specify)
Q53	Were you ever/your family member denied Passport ID due to issues with Aadhaar?	1. Yes 2. No 3. Not Applicable/Did not apply yet	If yes, nature of the issue: 1. NA 2. AF 3. Others (Specify)

Q54	Were you /your family member ever denied Ration Card or Ration due to issues with Aadhaar?	1. Yes 2. No 3. Not Applicable	If yes, nature of the issue: 1. NA 2. AF 3. Others (Specify)
Q55	Were you /your family member ever denied Pension due to issues with Aadhaar?	1. Yes 2. No 3. Not Applicable	If yes, nature of the issue: 1. NA 2. AF 3. Others (Specify)
Q56	Were you /your family member ever denied of Scholarship due to issues with Aadhaar?	1. Yes 2. No 3. Not Applicable	If yes, nature of the issue: 1. NA 2. AF 3. Others (Specify)
Q57	Were you/your family member denied school admission due to issues with Aadhaar?	1. Yes 2. No 3. Not Applicable	If yes, nature of the issue: 1. NA 2. AF 3. Others (Specify)
Q58	Were you /your family member ever denied LPG connection due to issues with Aadhaar?	1. Yes 2. No 3. Not Applicable	If yes, nature of the issue: 1. NA 2. AF 3. Others (Specify)
Q59	Were you /your family member ever denied Electricity due to issues with Aadhaar?	1. Yes 2. No 3. Not Applicable	If yes, nature of the issue: 1. NA 2. AF 3. Others (Specify)
Q60	Which area became more accessible with Aadhaar linkage?	1. Central govt. schemes 2. State govt. 3. Private sector	If state govt., go to Q58, If private, go to Q59
Q61	If central govt. give the sectorial marking	1. LPG 2. PM Jandhan Yojana 3. Health 4. Education 5. Housing 6. Pension 7. Transportation 8. Others (Specify)	

Q62	If State govt, choose sectors	1. Education 2. Health 3. Electricity 4. Housing 5. Pension 6. Kalyana Lakshmi 7. (agriculture) Raithu Bandu 8. Transportation 9. Others (Specify)	
Q63	If Private,	1. Banking 2. Education 3. Health 4. Information and Communication 5. Pension 6. Transportation 7. Others (specify)	
Q64	How often do you face authentication problem?	1. Very often 2. Often 3. Frequently 4. Rare 5. Never	
Q65	Did Aadhaar improve governance in welfare?	1. Yes 2. No	
Q66	Do you think your problems still remain even after introduction of Aadhaar?	1. Yes 2. No	

Open ended Questions:

1. What do you understand by IDENTITY?
2. How do you look at DIGITAL IDENTITY?
3. What does BIOMETRICS mean to you?
4. What do you mean by PRIVACY?
5. What do you understand by SURVEILLANCE?
6. Why do you need Aadhaar?
7. Why did you not enroll for Aadhaar? (If relevant to you)
8. How was Aadhaar helpful to you during DEMONITIZATION?
9. How does Cashless economy help you in your daily life?
10. Are you aware of Supreme Court Judgments on Aadhaar? If so, do you agree with SC? And Why?
11. Why do we need technology to solve human problems?
12. Whom do you trust more Computer or Officer (Human Being) in administration? Why?
13. Why do you think that Digital Governance can reduce corruption in governance?
14. According to you is Artificial Intelligence (AI) a boon or bane? (empowers or subverts human being).

Photos from the Field





Decoding the Politics of Technology and Welfare: A Study of Aadhaar Based Services in Telangana State

by Gurram Ashok

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The Biopolitics of Caste: Analysing the (Dis)honour Killings in South India

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Gurram Ashok¹  and Ramdas Rupavath²

Abstract

Even after 75 years of independence, India witnesses the increasing violence unleashed by the upper caste families against the individuals for inter-caste love or marriage. The objective of this article is to critically engage with the operational aspects of Michel Foucault's biopolitics of caste system in enforcing endogamy in the marital relationship between two individuals. Caste as a social institution governs every aspect of Dalit's life, ranging from cradle to graveyard. As such, the increasing incidents of (dis)honour killings, from South India, reflect the idea of endogamy, with the ulterior motto of controlling the sexuality of the Dalits and women, thereby ensuring the purity of the caste Hindu society. Thus, the patriarchy is an inseparable element of caste system in controlling the freedom of women in choosing her partner and it is prevalent in sub-castes of Dalit folds also. The question of discrimination and practice of endogamy within Dalit communities should be addressed in marching towards annihilation of the caste.

Keywords

Caste, biopolitics, inter-caste love or marriage, (dis)honour killing, endogamy

Strange Fruit

Southern trees bear strange fruit,
Blood on the leaves and blood at the root,
Black bodies swinging in the Southern breeze,
Strange fruit hanging from the poplar trees.
Pastoral scene of the gallant South,
The bulging eyes and twisted mouth,
The scent of magnolias, sweet and fresh,
Then the sudden smell of burning flesh.
Here is a fruit for the crows to pluck,
For the rain to gather, for the wind to suck,
For the sun to rot, for the trees to drop,
Here is a strange and bitter crop.
(Abel Meeropol, 20 April 1937)

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POLITICS BEFORE ELECTIONS: A STUDY OF WELFARE GOVERNMENT IN ELECTIONS

Gurram Ashok
Ramdas Rupavath

This paper aims at critical engagement of public policy in influencing the voters, in Assembly general elections of 2018, in Telangana. The objective is to examine the operational aspects of Michel Foucault's governmentality in implementation of welfare policies such as Rythu Bandhu and Kanti Velugu by ruling party before elections. The methodology includes quantitative analysis of the data obtained from secondary source, Lokaiti-CSDS Pre-Poll Survey. It is observed that the welfare governmentality is a new technique by ruling parties in influencing the voters in the elections.
Key Words: Welfare Schemes, Elections, Rythu Bandhu, Kanti Velugu, Dalita Bandhu, Governmentality

Introduction:

This paper investigates the research question of whether spending on the welfare before elections will have impact on voting behaviour in favour of the ruling party. The General elections, especially the State Legislative Assembly elections are fought on the discourse of development rather than ideological factor. The introduction of "Dalitha Bandhu scheme for Dalit empowerment" on 19th July, 2021 on the eve of by-elections for Huzurabad Assembly constituency in Telangana state. Prior to implementing this scheme at the state level, Dalitha Bandhu scheme, with the allocation of Rs.1500 to 2000 crore, will be tried on the pilot basis in the Huzurabad Constituency segment as per the guidelines¹.

The civil society organisations and the opposition political parties argue that the government of Telangana state has not utilised the funds allocated under Scheduled Castes Sub Plan Act 2013. But the government has been diverting the SC/ST Sub plan funds to other programmes since 2014 in the state. Moreover, the TRS led government has converted SC/ST Sub Plan into Scheduled Caste Special Development Fund in 2017. Chief Minister of

Telangana state has claimed, in a public meeting, that TRS party government has introduced the Dalitha Bandhu to secure votes from Dalit families in future by-elections in Assembly constituency of Huzurabad. The Urban local body elections also witnessed similar porto-type experiment that the ruling party, TRS has announced the "Flood Relief Fund", in 2020, to the flood victims in Hyderabad city. Subsequently, TRS was able to form local governments in the Urban local bodies. This trend indicates the practice of "welfare governmentality" in elections in the state. This Michel Foucault's governmentality is a political rationality that seeks the "individuals to regulate their behaviour and actions in consonance with the interests of the state."² Here, the ruling party TRS acts as agency of the state in exerting this governmental rationality through welfare schemes in the electoral politics. Thus, the phantasmagoria of electoral strategies is entangling with the welfare policies in the Indian democracy.

In such context of deciphering the welfare as electoral strategy by the political parties, it is important to examine the role of welfare schemes in influencing the voting behaviour of legislative Assembly general elections in 2018 in Telangana

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Minimum Government and Maximum Governance: Empowering the Impoverished Through Digital India Campaign

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Abstract

Prime Minister Narendra Modi's call for 'minimum government and maximum governance' aims at addressing India's complexity of governance. The poor and marginalised sections are invisible in governance. In overcoming this lacuna, Digital India (with its nine pillars) endeavours for digital empowerment in creating a knowledgeable society where people's participation in policy formulation and governance of the welfare are given primacy. The minimalist role of governance is to increase people's engagement in building new India, and *Atmanirbhar Bharat* (self-reliant India) reflects Mahatma Gandhi's *sarvodaya* and Deendayal Upadhyaya's philosophy of *antyodaya* (the rise of the last person).

Keywords

Minimum government and maximum governance, good governance, digital India, empowerment, inclusion

Introduction

Governance is a scientific endeavour in decision making and implementation of the State policies. Conventionally, 'the term governance refers to the exercise of sovereign power by the state; it is a reference to processes and mechanisms for determining and realising the collective goals' (Sharma, 2018, p. 2). Governance is often equated with the government for administering law and order, welfare

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Council for Social Development

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Certificate of Participation

This is to certify that **Mr. Gurram Ashok** has presented a paper titled '*A Wealthy State With Unhealthy Indicators: A Study of Nutritional Status of Dietary Diversity and Policy Response in Telangana*' at the two-day National Seminar on the 'Status of Health Indicators in Telangana since 2014-15' organised by the Council for Social Development, Hyderabad during November 25-26, 2021.

Seminar Convener
Anudeep Gujjeti

Seminar Co-Convener
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This is to certify that

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**“Grassroots Innovations: A Step towards Inclusive and
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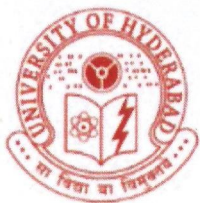
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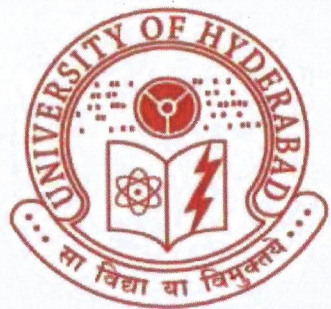
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Certificate

This is to certify that Dr./Ms./Mr. Gurram Ashok
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Sustainable Development through Aadhaar In India
in the three day National Seminar on **"Sustainable Development Goals and Building Future India"**
organized (in collaboration with ICSSR- SRC, Hyderabad) by the **Centre for the Study of Social
Exclusion and Inclusive Policy (CSSEIP), School of Social Sciences, University of Hyderabad.**

Prof. K. RAJA MOHAN RAO
HEAD, CSSEIP &
Seminar Coordinator



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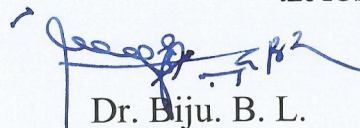


National Seminar
Politics before Elections
25-26 March, 2019

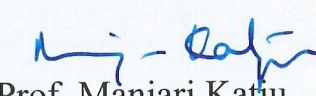
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This is to certify that Mr./Ms./Dr./Prof.

Gurram Ashok
of University of Hyderabad presented a paper/ chaired a
session titled The Impact of Welfare Schemes in Elections : Rythu Bandu in
in the Two Day National Seminar organized under the auspices of the Department of Political Science, University of Hyderabad funded by Telangana state
the ICSSR-Southern Regional Centre, Hyderabad. His / her contribution is highly appreciated.


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Council for Social Development
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Kalpana Kannabiran
Professor & Regional Director