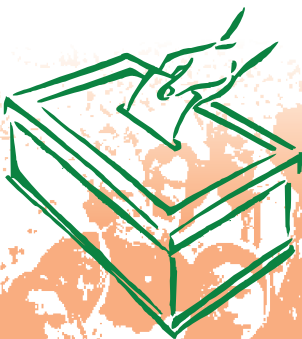




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INSTITUTE OF PUBLIC ENTERPRISE

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Odisha and the Governance Challenges

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Since 1991






An Empirical Analysis of MSMEs Growth,
Production and Employment Trends

Assessing the Social Impact of Urban
Infrastructure Development in Hyderabad:
A Multidimensional Analysis

Aims and Scope

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Contents

From the Editors' Desk	ii
Breaking the Chains: Witch-Hunting in Odisha and the Governance Challenges <i>Jagabandhu Sahoo, Biswajit Biswal and Pratima Sarangi</i>	I
Facilitating the Delivery of Public Services through SUWIDHA Centres in Punjab: An Analysis <i>Nirdosh Kaur Gill, Navreet Kaur and Chitrakshi Vashisht</i>	21
Intra-SAARC Trade: Whether the Potential is Fully Realized? <i>M. Chandra Meena, S. Pushparaj and M. Tamizharasan</i>	41
Collaborative Governance Model: An Approach to Achieve Last-Mile Delivery of Sdg 2030 Localisation <i>Diya Jayminbhai Desai</i>	54
Trend, Pattern, Direction, Diversification and Competitiveness of Spices Export in India Since 1991 <i>Ahamed Kabeer M</i>	74
An Empirical Analysis of MSMEs Growth, Production and Employment Trends <i>Vineet Kumar Tiwari and Rukmani Devi</i>	85
Assessing the Social Impact of Urban Infrastructure Development in Hyderabad: A Multidimensional Analysis <i>Kasireddy Vara Prasad</i>	101

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From the Editors' Desk



A W A I T E D

Breaking the Chains: Witch-Hunting in Odisha and the Governance Challenges

Jagabandhu Sahoo¹
Biswajit Biswal²
Pratima Sarangi³

Abstract

Witch-hunting is a harmful practice causing distress in society, fueled by accusations of witchcraft intending harm to individuals or communities. Suspected witches face trials and persecution. In the era of digitalisation and the information revolution, unfortunately, this barbaric practice persists in India. Similar to other regions of India, witch-hunting in Odisha poses a significant challenge to governance and social cohesion, as it is still highly prevalent in 12 of Odisha's 30 districts. It is an atrocious practice marked by social violence and tragic outcomes. The Odisha Prevention of Witch-Hunting Act, 2013 is a landmark step in curbing the menace, but even after the enforcement of the act, several incidents of witch-hunting have been reported in the various parts of the state. According to the National Crime Records Bureau (NCRB), the number of killings due to this malpractice is the second-highest in Odisha, after Jharkhand. This practice has emerged as a significant challenge to maintaining law and order within the state, posing a formidable obstacle to effective governance. It also threatens the safety and well-being of individuals. This paper, therefore, discusses the origin and factors driving witch-hunting in Odisha. It examines victim experiences, legal frameworks and their effectiveness in addressing the issue, and also suggests recommendations for eradicating this brutal practice.

Keywords: Governance, Social Violence, Witchcraft, Witch-hunting

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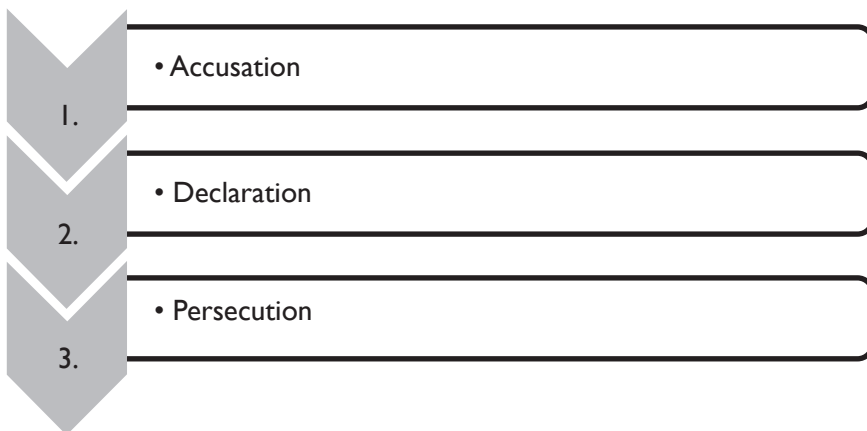
Introduction

While Western societies largely abandoned witch-hunting after the Enlightenment but the practice remains a horrifying menace in India. The United Nations has categorized India along with Nepal and specific areas in Africa as regions with a high frequency of killings linked to witchcraft. Witch-hunting is a burning issue across various Indian cultures and societies. Though outlawed, accusing and ostracizing individuals as witches persists in many rural and tribal communities where belief in witchcraft remains strong.

In simple terms, “Witch” refers to a woman, locally known as “Dahani” or “Dayan”, who is believed by others to possess evil powers capable of causing harm to people or their property. Similarly, “Witchcraft” involves the use of supernatural or magical powers with evil intentions. This also includes practices like calling up spirits, casting spells or finding stolen items. Other similar practices known locally as “Guni”, “Jhadaphunka”, “Cot Bidya”, “Bata Bidya”, “Kula Bidya”, “NakhaDarpana” or by any other name also fall under the definition of witchcraft.

A “Witch-doctor” is a person who claims to have supernatural or magical powers and is known by various names like Gunia, Tantrik or Kalisi. They are believed to have the ability to control or cure a witch by performing rituals to free a woman from evil spirits or bless a woman with a child or perform rituals with the intention of harming others.

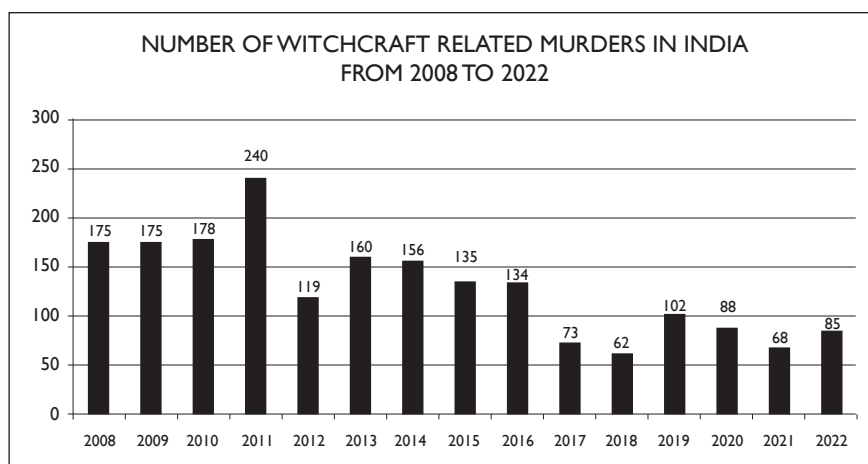
Witch-hunting represents the violent expression of belief in witchcraft and targeting women who are accused of being witches. It is a process which follows three stages in execution:



Accusations typically involve blaming women for various misfortunes within the community, such as deaths, diseases, natural disasters or crop failures. Following the accusation, the woman is declared or labeled as a

witch leading to her exclusion from society. Witch-finders, known locally as Gunia, identify women as witches through specific rituals, ultimately leading to their persecution. Persecution involves subjecting the accused woman to mental and physical torture. Witch-hunting is essentially a process of searching, identifying and punishing individuals suspected of practicing witchcraft. However, legally, the term “witch-hunting” is recognized as an offense against women. In India, it is predominantly a gendered crime with women as the primary targets of such violence.

According to the National Crime Records Bureau (NCRB), witch-hunting is prevalent in Jharkhand, Odisha, Madhya Pradesh, Chhattisgarh, Bihar, Haryana, Assam, Gujarat, Maharashtra and Andhra Pradesh. NCRB data describes that between 2008 and 2022; around 1950 individuals were murdered nationwide on accusations of witchcraft. The true number is likely much higher with a number of cases going unreported due to denial by authorities or other reasons. This introduction serves as a lens through which to understand the gravity of the issue, exploring its historical roots, cultural manifestations and contemporary implications.



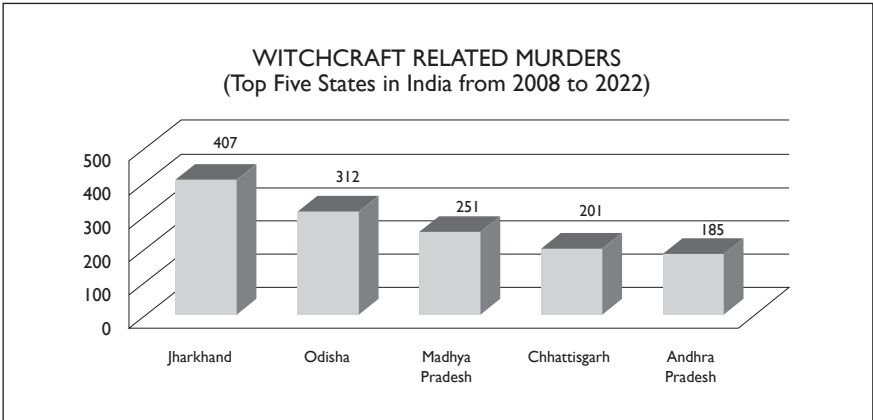
Source: National Crime Records Bureau (NCRB)

Reasons of Witch-Hunting

- **Accusation and Declaration:** Witch-hunting typically begins with an accusation against a woman who is perceived to have caused harm to individuals or society through supernatural means. This harm could include deaths, crop failures, diseases or other misfortunes. Subsequently, she is declared as a witch by local witch-doctors or Gunia which initiates the process of persecution. The perceived motive behind witch-hunting often revolves around the alleged hidden lethal intentions of the accused fueled by superstitions and unfounded beliefs.

- **Multiple Factors:** Witch-hunting is influenced by a complex interplay of political, social and economic factors. Superstitions, deeply entrenched religious beliefs, patriarchal norms, caste discrimination, political rivalries, economic disparities, sexual suppression, jealousy and interpersonal conflicts all contribute to the prevalence of witch-hunting practices in India.
- **Influence of Superstition:** Superstitions play a significant role in perpetuating witch-hunting practices. Beliefs in the evil eye, supernatural powers and protective measures against witchcraft are widespread across various communities in India. These superstitions often stem from social experiences, rituals and cultural narratives leading to the stigmatization and persecution of individuals accused of witchcraft.
- **Historical and Religious Contexts:** Witch-hunting is deeply rooted in historical and religious contexts. Different religious traditions, such as Hinduism and Christianity, have historically associated witches with evil powers. In Hinduism, witches are often depicted as female supernatural beings, while Christianity views them as disciples of the devil. However, Islam does not propagate beliefs in witches or the devil to the same extent, which influences the prevalence of witch-hunting practices in different regions.
- **Patriarchal Influence:** Patriarchal norms and values contribute significantly to the perpetuation of witch-hunting. In patriarchal societies, discriminatory traditions and cultural practices reinforce male dominance often at the expense of women's rights and autonomy. Accusations of witchcraft are frequently used as a means to silence outspoken or assertive women, maintain patriarchal control and justify the subordination of women within society.
- **Role of Caste:** Caste discrimination further exacerbates tensions and conflicts leading to witchcraft accusations within and between castes. Marginalized communities and lower-caste women are particularly vulnerable to witch-hunting as they are often targeted to maintain the social hierarchy and usurp property rights. Property disputes, especially involving widows who have rights to ancestral lands frequently fuel accusations of witchcraft.
- **Economic Factors:** Witch-hunting often arises from economic disputes, especially those related to property inheritance. Widows, particularly those without male heirs are vulnerable to accusations of witchcraft as they may be perceived as obstacles to the transfer of ancestral property. In many cases, witch-hunting serves as a tool for economic exploitation and the usurpation of land and resources.

- **Failures of Law Enforcement:** Many cases of witch-hunting go unreported or unresolved due to failures in the state’s law enforcement mechanisms. Weak legal frameworks, corruption and ineffective governance contribute to the impunity enjoyed by perpetrators of witch-hunting. Even if incidents are recorded the criminal justice system often intervenes only in cases of publicized or orchestrated violence against victims leaving many vulnerable individuals without protection or recourse to justice.



Source: National Crime Records Bureau (NCRB)

Odisha is the second-highest state for witchcraft-related killings with 312 incidents reported between 2008 and 2012. In light of the urgency of the issue and its profound implications for human rights and social cohesion, this research paper aims to provide an extensive analysis of witch-hunting in Odisha. By examining historical contexts, evaluating legal frameworks, assessing socio-economic impacts and identifying governance challenges, the paper seeks to inform policy reforms and community-based initiatives aimed at eradicating witch hunting and fostering a culture of respect, tolerance and equality in the state. Through concerted action and collective commitment, the state can pave the way towards a future free from the shackles of witch hunting where all individuals are treated with dignity and justice.

Statement of the Problem

The prevalence of witch-hunting in Odisha poses multifaceted challenges ranging from human rights violations to governance shortcomings. Victims of witch-hunting endure physical and psychological harm while communities grapple with social divisions and breakdowns in trust.

Moreover, the inefficacy of existing laws and governance structures exacerbates the problem leading to a cycle of impunity and further victimization.

This brutal practice demands serious attention. While studies on witch-hunting exist, there's a dearth of academic research focused on Odisha specifically. This research aims to discuss the contours of witch-hunting in the state through a theoretical lens providing a holistic understanding of this persistent social evil. The severity of the issue necessitates an in-depth academic examination.

Objectives of the Study

- To analyse the historical and cultural factors contributing to the prevalence of witch-hunting in Odisha.
- To examine the effectiveness of existing legal and policy frameworks in addressing witch-hunting and protecting the rights of victims.
- To assess the socio-economic impacts of witch hunting on individuals and communities in Odisha.
- To identify governance challenges and opportunities for intervention in combating witch hunting.
- To suggest appropriate socio-legal measures to end the menace of witch-hunting.

Study Area

The research focuses on the state of Odisha, specifically targeting districts such as Keonjhar, Malkangiri, Mayurbhanj, Gajapati and Sundargarh. These areas are particularly affected by witch hunting due to a combination of deep-rooted superstitions, socio-economic challenges and cultural practices. Keonjhar and Mayurbhanj are known for their dominant tribal populations, where traditional beliefs still hold strong influence. Malkangiri and Gajapati face issues related to poverty and limited access to education, exacerbating the problem. Sundargarh, with its diverse demographic, provides insight into how economic disparities contribute to the vulnerability of marginalized groups. This selection of districts offers a comprehensive view of the factors fueling witch hunting in Odisha, highlighting the urgent need for targeted interventions.

Methodology

This research paper focused on secondary data sources. Secondary information included newspaper reports, research publications, NCRB data, information collected by various published sources and government departments. We also gathered information from the key informants.

Limitation of Study

The study focuses specifically on witchcraft-related murders in Odisha from 2008 to 2022. It does not cover other regions or time periods which may limit the generalizability of the findings. Moreover, the study relies on available secondary data, which might not capture all incidents due to underreporting or lack of documentation.

Review of Literature

This section provides an overview of literature relevant to historical, theoretical, cultural, legal and mixed approaches to Witch-hunting and Witchcraft beliefs. It explores the facts and myths surrounding these beliefs and examines the methodologies used by researchers to address the objectives of their studies. By analyzing the appropriateness of the methodologies employed, this section aims to identify the gaps in existing research and determine the type of study needed to address unanswered questions. The literature review includes a wide range of sources both individual studies and combined analyses to understand the core issues related to the research problem and establish connections between the literature and the research objectives.

Books

Islam, J., & Ahmed, A. (2017) “Witch Hunting in Assam: Practices, Causes, Legal Issues and Challenges” delves into the causes behind witch-hunting in Assam. It highlights the alarming number of deaths particularly of women, attributed to rape, dowry and witch-hunting between 2006 and 2018. The authors shed light on the brutal treatment of women branded as witches who are often ostracized and forced to live in isolation. They advocate for legal reforms to criminalize witch-hunting and address this pervasive issue.

Khan, M. (2017) “Blinded by Superstition: A Case Study on Witch Hunting.” recounts a tragic incident where an innocent woman was killed after being accused of witchcraft. The report describes the horrific ordeal of the victim who was dragged from her home, doused in kerosene and set on fire in front of a gathered crowd. This case exemplifies the extreme violence and brutality associated with witch-hunting in India where victims endure physical and emotional abuse including rape and public humiliation.

Levack, B. P. (2013) “Witchcraft and the Law” provides an insightful overview of Witchcraft as a religious crime and the legal framework surrounding it. He explores the role of written law and legal officials in restricting prosecutions, reducing the use of torture in Witchcraft cases and establishing procedures for evidence in trials. The book also delves into the historical suppression of Witchcraft practices through legal means.

Varner, G. R. (2011)“**The Dark Wind: Witches and the Concept of Evil**” examines the concept of the Witch and the evolution of the idea of evil across different cultures. Varner surveys Native American, European and indigenous cultures worldwide to explore the existence and perception of Witches or shamans.

Levack, B. P. (2006)“**The Witch-Hunt in Early Modern Europe**” offers a comprehensive analysis of Witch belief and trials during the early modern period. Levack discusses recent studies on various aspects of Witchcraft trials, including the involvement of children, gender dynamics, male Witches and cases of demonic possession. The book provides insights into the intellectual, legal, and social factors that contributed to the widespread persecution of alleged Witches in Europe.

Barman, M. (2002)“**Persecution of Women: Widows and Witches**” focuses on the targeting of women particularly widows, in witch accusations in India. Barman’s study in the Malda district of West Bengal reveals that Witch hunts often stem from attempts to grab property from vulnerable women who lack support. The persecution of women through accusations of Witchcraft is examined within the context of patriarchal structures and property disputes.

Saletore, R. N. (1981) “**Indian Witchcraft.**” provides a scholarly exploration of Witchcraft within the context of Hinduism, Buddhism, Jainism and Islam in India. The book discusses the chief characteristics of Indian Witchcraft including its deities, practitioners, rituals and cultural significance across different religious traditions.

Articles

Gogoi Konwar, J., & Swargiari, D. (2015)“**Conflicting Idea of ‘Victim’ And ‘Perpetrator’ in Witch-Hunting: A Case Study in the State of Assam, India**” examine conflicting notions of victimhood and perpetration in witch-hunting in Assam. They elucidate the deep-rooted belief in witchcraft prevalent among Assamese communities where individuals accused of practicing witchcraft are seen as threats to the community. This perception often results in violent actions against alleged witches as a means of safeguarding the community from perceived magical harm.

Sinha, S. (2011)“**Witch-Hunts, Adivasis and the Uprising in Chhotanagpur**” highlights the socio-economic factors contributing to witch-hunting in regions like Chhotanagpur. Sinha explains how poverty, lack of education and resource scarcity fuel superstitious beliefs leading to violent witch hunts in response to perceived misfortunes.

Sinha, S. (2007)“**Witch-Hunts, Adivasis and the Uprising in Chhotanagpur**” explores the correlation between witch hunts in indigenous societies of Jharkhand and West Bengal and women’s land rights. The authors examine the traditional patrilineal lineage prevalent in

these areas where women have limited land ownership rights. They argue that conflicts over land often lead to witch hunts as women risk losing their land rights if accused of witchcraft.

Sau, R. (2003) “Recognition to Witchcraft: Illegal And Ill-Founded” sheds light on the political exploitation of superstitions surrounding witchcraft. The author criticizes instances where government officials including a Union Minister praise witch doctors for purportedly protecting villages from evil forces. Sau argues that promoting rural electrification and education would be more effective in dispelling superstitions than endorsing witch doctors and shamans.

Research Gap

The literature on witch hunting highlights the brutal consequences of superstitious beliefs as seen in tragic cases where victims face severe violence such as being burned alive. The legal frameworks historically aimed at curbing witchcraft accusations have been inconsistent in their effectiveness with efforts focused on reducing prosecutions and ensuring fair trials. Cultural studies reveal that the perception of witches has varied across societies often resulting in gender-based violence and the targeting of marginalized groups, especially women and widows. This persecution frequently stems from socio-economic motives, such as property disputes. Despite the existing laws and calls for specific legislation to address witch hunting, a comprehensive understanding of the socio-cultural dynamics and the effectiveness of legal interventions remains insufficient. The study gap lies in examining the interplay between these factors in Odisha, where the persistence of witch hunting necessitates targeted governance strategies and community-based initiatives to eradicate the practice and protect vulnerable populations.

Witch-Hunting in Odisha: An Overview

Witch-hunting has risen to prominence in Odisha, where religion and magic are frequently linked. The practice primarily targets the tribal's and other indigenous groups. The belief that education, development and modernization will eradicate such “superstitious beliefs” is demonstrably false. These social and cultural constructs persist adapting to new realities. As anthropologist Jean argues (1989), witch-hunting reflects the “reality of others,” a reality shaped by perceptions that are difficult to define. This socio-cultural reality fuels the stigmatization of alleged witches.

Witch hunting a barbaric practice continues to cast a shadow over the social landscape of the state which poses formidable challenges to governance and social cohesion. Despite strides towards modernity and development the scourge of witch hunting persists in various places of

the state perpetuating violence, fear and injustice. Historically, Odisha has been a crucible of diverse cultural influences where indigenous traditions, folklore and religious beliefs have intermingled with external influences over millennia. Within this rich tapestry of cultures, the belief in witchcraft and the persecution of individuals accused of practicing it have deep-seated historical precedents. From ancient folklore depicting witches as malevolent entities to more recent instances of witch hunts spurred by communal tensions, the practice has endured, adapting to changing societal norms and power dynamics.

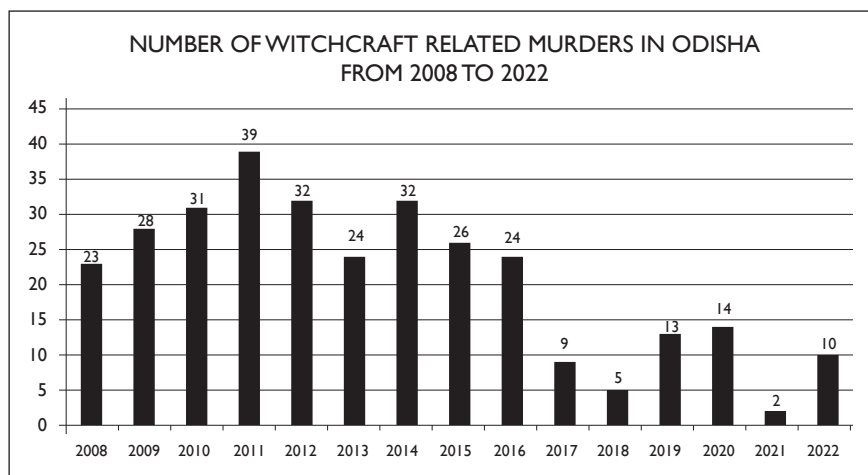
Cultural factors play a significant role in perpetuating witch hunting in Odisha. Traditional beliefs, superstitions and entrenched patriarchy contribute to the stigmatization of individuals particularly women as witches. Gender inequality, caste dynamics, and economic disparities further exacerbate vulnerabilities creating fertile ground for witch hunts to thrive. Moreover, the lack of education and awareness in many communities perpetuates misconceptions about witchcraft, fueling fear and suspicion.

In the contemporary context, witch-hunting poses multifaceted challenges to governance and social cohesion in Odisha. Despite legislative measures aimed at curbing the practice, implementation remains inadequate, with loopholes in enforcement and accountability. The socio-economic impacts of witch hunting extend beyond individual victims to affect entire communities, perpetuating cycles of poverty, discrimination, and violence. Furthermore, governance challenges such as institutional gaps, resource constraints and political apathy hamper efforts to combat witch hunting effectively.

However, amidst these challenges lie opportunities for intervention and change. By understanding the historical and cultural underpinnings of witch hunting and addressing governance deficiencies, stakeholders can work towards eradicating this barbaric practice and promoting social justice in the state. Through collaborative efforts involving government agencies, civil society organizations and grassroots initiatives, it is possible to challenge ingrained beliefs, empower vulnerable communities and foster inclusive societies.

The Human Cost of Witch-Hunting

Eradicating witch-hunting in India particularly in Odisha proves difficult. Deeply ingrained beliefs in witchcraft and the practice of witch-hunting are rooted in traditional social, spiritual and cultural systems even amidst scientific advancements. The accused victims face immense suffering and the practice disproportionately targets women who often fit the stereotypical image of a “witch.” The practice not only violates fundamental human rights but also weakens the economic position of women and reinforces male dominance.



Source: National Crime Records Bureau (NCRB)

Witchcraft-Related Murders in Odisha: A Few Reported Cases

Witchcraft-related murders remain a grave concern in Odisha with numerous incidents occurring across different districts. These incidents are characterized by mob violence, brutal attacks and superstition-driven accusations against individuals believed to be practicing witchcraft. It is highly prevalent in 12 of Odisha's 30 districts, especially Mayurbhanj, Keonjhar, Sundargarh, Malkangiri, Gajapati and Ganjam, according to a report, *Witch-Hunting in Odisha*, jointly released by the Odisha State Commission for Women and Action Aid, an international non-governmental organisation.

- **Case 1: Odisha couple hacked to death on suspicion of practising 'witchcraft'**

Keonjhar District (December, 2022)

Victims: Bahada Murmu and Dhani

Location: Rasool Jhumukipatiya Sahi village

Details: A 45-year-old man and his wife (35) were brutally hacked to death by unidentified assailants outside their house. Suspicions of practicing witchcraft were cited as the motive behind the murders. Despite one person being detained, investigations are ongoing to ascertain the full extent of the incident and identify all perpetrators involved.

(Source: <https://www.indiatoday.in/india/story/odisha-couple-hacked-to-death-suspicion-practising-witchcraft-2308020-2022-12-12>)

- **Case 2: 33 villagers booked for killing of a woman over alleged witchcraft in Odisha**

Ganjam District (October, 2022)

Victim:JhunuNahak

Location:Madhurjhol village

Details: 33 villagers including 20 women were arrested for brutally beating a woman namedJhunuNahak (55) to death over suspicion of witchcraft. The incident stemmed from allegations linking the victim's husband to witchcraft practices. Despite police intervention, the assailants attacked and killed the victim, demonstrating the entrenched belief in witchcraft within the community.

(Source:<https://www.thehindu.com/news/national/other-states/33-villagers-booked-for-killing-of-a-woman-over-alleged-witchcraft-in-odisha/article66061918.ece>)

- **Case 3: 65-yr-old Odisha tribal priest beaten to death alleging witchcraft**

Malkangiri District (May, 2022)

Victim:PadiaMadkami

Location:Kangrukonda village

Details: A 65-year-old tribal priest was beaten to death by his neighbors during a funeral gathering. Suspicions arose regarding the priest's alleged involvement in witchcraft practices due to frequent deaths in the area. This incident illustrates the swift resort to violence fueled by superstition and fear within the community.

(Source:<https://www.hindustantimes.com/india-news/65yrol-old-odisha-tribal-priest-beaten-to-death-alleging-witchcraft-101652892343155.html>)

- **Case 4: Witchcraft violence claims two lives in Odisha**

Gajapati District (June, 2021)

Victims: Luka Dalabehera and Anaka

Location:Muthaguda village

Details: A mob, suspecting the victims of practicing witchcraft, beat them to death in Odisha's Gajapati district. The assailants accused the victims Luka Dalabehera (55) and his son Anaka (22) of casting evil spirits on the villagers, reflecting the pervasive influence of superstition and fear within the community. Law enforcement authorities have initiated a search to apprehend the perpetrators and ensure justice for the victims.

(Source:<https://www.thestatesman.com/cities/bhubaneswar/witchcraft-violence-claims-two-lives-odisha-1502972513.html>)

- **Case 5: Couple Burnt Alive In Jajpur: 17 Persons Get Life Imprisonment**

Jajpur District (July, 2020)

Victims: Saila Balmuch and Basanti Balmuch

Location: Surisahi village

Details: Seventeen individuals were sentenced to life imprisonment by the additional district and sessions judge of Jajpur for the horrific murder of a couple, Saila (65) and Basanti Balmuch (60). The victims were burnt alive after being branded as witches and blamed for the untimely deaths of several villagers due to suspected sorcery. The perpetrators driven by superstition and fear believed that the couple's alleged black magic had caused the deaths. Pronouncing the verdict, the judge convicted the accused under various sections of the Indian Penal Code and the Odisha Prevention of Witch-hunting Act, 2013. Each convict was fined Rs 10,000, underscoring the severity of the crime and the need for stringent legal action against perpetrators of witchcraft-related violence.

(Source: <https://www.ndtv.com/india-news/17-villagers-get-life-in-jail-for-killing-odisha-couple-over-suspicion-of-black-magic-4581208>)

- **Case 6: Six held in Odisha for killing woman, her 4 children after branding them as witches**

Sundargarh District (January, 2019)

Victims: Mangri Munda and her four children

Location: Indupur village

Details: Six individuals including a self-proclaimed "witch doctor" were arrested for brutally killing a woman named Mangri Munda (30) and her four children (Aged 10 months to 12 years) on suspicion of witchcraft. The accused forcibly entered the victims' house and bludgeoned them to death with a crowbar before disposing of their bodies in a nearby well. Investigations are ongoing, with the accused confessing to the murders underscoring the urgent need to address superstition-driven violence in the region.

(Source: <https://www.bbc.com/news/world-asia-india-47053166>)

- **Case 7: 11 persons get life for killing a woman over suspicion of witchcraft in Odisha**

Sundargarh District (March, 2018)

Victim: Jasoda Singh

Location: Ratakhundi village

Details: Jasoda Singh (60) was killed in a brutal attack by her fellow villagers in Ratakhundi village, Sundargarh district over suspicions of practicing witchcraft. On the day of the incident, a group of villagers

ganged up and assaulted Jasoda with batons, stones and iron rods resulting in her death on the spot. Her husband, Fagu Singh and another individual Kamlesh managed to escape but sustained grave injuries in the assault. Adjudicating the case, Additional Session Judge V. Sujatha convicted 14 individuals for the murder sentencing 11 men to life imprisonment due to their direct involvement in the heinous crime. Additionally, three women were convicted under relevant sections of the IPC and the Odisha Prevention of Witch Hunting Act 2013 and sentenced to two years of imprisonment. The judgment underscored the severity of the offense and aimed to deliver justice to the victim and her family.

(Source: <https://www.thehindu.com/news/national/other-states/11-persons-get-lifer-for-killing-a-woman-over-suspicion-of-witchcraft-in-odisha/article66065810.ece>)

These cases illustrate the alarming frequency of witchcraft-related violence in Odisha, emphasizing the critical need for concerted efforts to combat superstition, promote awareness and ensure justice for the victims and their families. Urgent action is required to address the root causes of such violence and foster a more inclusive and equitable society in the region.

Witch-Hunting and the Governance Challenges

- **Lack of Effective Legal Frameworks:** The absence of comprehensive legal frameworks specifically addressing witch hunting undermines effective governance. While the Odisha Prevention of Witch Hunting Act exists, its implementation remains limited leaving loopholes in addressing the issue.
- **Inadequate Reporting Mechanisms:** Challenges arise due to inadequate reporting mechanisms for incidents of witch hunting. Victims often face barriers in accessing justice leading to underreporting and perpetuation of the problem.
- **Social Stigma and Discrimination:** Witch hunting perpetuates social stigma and discrimination against vulnerable groups particularly women. This undermines the principles of equality and human rights posing significant challenges for effective governance in promoting inclusive and just societies.
- **Weak Implementation of Laws:** Despite existing legislation, weak implementation of laws contributes to the persistence of witch hunting in the state. Ineffective law enforcement mechanisms hinder the government's ability to address the root causes and provide adequate protection to vulnerable communities.

- **Lack of Awareness and Education:** Limited awareness and education about the harmful effects of witch hunting further exacerbate the challenges for effective governance. Without proactive measures to educate communities and dispel myths and superstitions, efforts to eradicate witch hunting remain futile.
- **Political Interference and Power Dynamics:** Political interference and power dynamics within local communities often shield perpetrators of witch hunting from accountability. This compromises the effectiveness of governance mechanisms and perpetuates impunity for offenders.
- **Insufficient Support for Victims:** Inadequate support systems for victims of witch hunting pose challenges for effective governance. Victims often face social and economic ostracism, making it difficult for them to reintegrate into society and access essential services and support.

Legal Frameworks to Prevent Witch-Hunting in Odisha

The Odisha Prevention of Witch-hunting Act, 2013, represents a significant legislative endeavor aimed at addressing the pervasive issue of witchcraft-related violence in the state. Enacted by the state Legislative Assembly and assented to by the Governor on February 15, 2014, the purpose of this legislation is to address the problem of witch-hunting and prevent the practices of witchcraft within the region. It marks a crucial step towards safeguarding the rights and well-being of individuals vulnerable to such harmful practices.

This comprehensive legislation encompasses various provisions aimed at curbing the incidence of witch-hunting and related activities. It defines key terms such as “witch”, “witchcraft” and “witch-doctor” to provide clarity and specificity regarding the scope and nature of the prohibited behaviors. By delineating these terms, the act aims to set up a legal structure that can adequately deal with cases of violence and persecution related to witchcraft. Central to the act is the prohibition of witch-hunting and the practice of witchcraft with the intent to cause harm or injury to another person. It expressly prohibits individuals from engaging in acts of harassment, harm or injury against women accused of witchcraft, thereby seeking to protect their fundamental rights and dignity. Moreover, the act imposes stringent penalties including imprisonment and fines on those found guilty of committing witch-hunting or practicing witchcraft.

Furthermore, this Act emphasizes the significance of preventive measures and awareness-building initiatives to combat superstition and blind belief in the community. It empowers the state government to implement awareness programs aimed at educating the public about the fallacies of witchcraft and the inherent dangers of witch-hunting practices. By promoting

education and enlightenment, the act endeavors to foster a more informed and enlightened society that rejects superstition and embraces rationality.

The Act outlines specific penalties for various offenses related to witch-hunting and the practice of witchcraft. These penalties are designed to deter individuals from engaging in such harmful activities and to ensure accountability for those found guilty of perpetrating witch-hunting violence. The act categorizes offenses and prescribes corresponding punishments as follows:

Penalty for Witch-hunting

Individuals found guilty of committing witch-hunting or abetting, provoking or participating in witch-hunting activities face imprisonment for a term of up to three years. Alternatively, offenders may be fined with the fine amount not less than one thousand rupees or both imprisonment and fine.

Enhanced Penalty for Aggravated Offenses

In cases where individuals force a woman accused of witchcraft to consume inedible or obnoxious substances, parade her with painted face or body, or engage in similar derogatory act the penalty is more severe. Offenders in such cases face imprisonment for a term not less than one year but may extend up to five years, in addition to a fine.

Penalty for Witchcraft Practices

Individuals practicing witchcraft or similar practices with the intent to cause harm or injury to another person are liable to imprisonment for a term not less than one year but may extend to three years. Alternatively, offenders may be fined an amount not less than five thousand rupees or both imprisonment and fine.

4. Penalty for Witch-doctors

Witch-doctors, who knowingly engage in practices that cause harm or injury to individuals face imprisonment for a term not less than one year but may extend to three years. Offenders may also be fined an amount not less than five thousand rupees, or both imprisonment and fine.

5. Enhancement of Punishment for Repeat Offenders

Individuals convicted of repeat offenses under the act face enhanced penalties. For a second offense or any subsequent offense, the punishment includes imprisonment for a term not less than three years but may extend to seven years in addition to a fine of not less than ten thousand rupees.

In conclusion, the Act stands as a pivotal legislative instrument in the ongoing efforts to eradicate witchcraft-related violence and persecution in the state. By providing a robust legal framework, imposing penalties for offenders and promoting awareness and education this act represents

a proactive approach towards ensuring the safety, dignity and rights of all individuals within the state.

Gaps in the Laws

- Existing laws primarily focus on punishment mechanisms and do not address the root cause of irrational and superstitious beliefs.
- Reporting mechanisms for cases of witch-hunting are limited and the needs of victims and survivors are often neglected.
- This Act is underutilized with cases often invoking IPC sections instead. Additionally, some victims do not receive copies of FIRs.
- Accused individuals, often powerful males in villages frequently go unpunished as attacks are attributed to mob fury and unnamed assailants.
- Current laws fail to provide effective avenues for victim recovery leading to forced displacement, expulsion from villages and social and economic boycotts.

Concluding Observations

Addressing the issue of witch-hunting demands a concerted and effective approach, yet the current governmental policies lack clarity in dealing with this pressing social problem. Existing laws exhibit certain gaps which allowing perpetrators to evade punishment for their actions. To combat these heart-wrenching practices rooted in superstition and vested interests, there's an urgent need for an integrated action plan alongside the robust enforcement of legislation. This necessitates collaboration between the government and civil society to instigate a shift in grassroots mindsets.

Changing deeply entrenched cultural and socially sanctioned practices like witch-hunting requires a thorough understanding of the underlying structures supporting them. This understanding is crucial in devising effective strategies to dismantle these harmful traditions. Therefore, this chapter aims to conclude by proposing measures to combat the scourge of witch-hunting.

The major findings of the study can be summed up here as follows:

- Women are disproportionately targeted in witch-hunting practices particularly those aged between 30 to 40 years and 50 to 65 years.
- Victims of witch accusations often have no formal education due to poverty and inadequate educational infrastructure in the region.
- Witch doctors play an important role in branding and persecuting individuals accused of witchcraft while neighbors and friends may also participate in public smearing campaigns.
- Most perpetrators of witch-hunting are male residents or members of the same village as the victims.

- Superstition, suspicion, personality traits of the accused, alcoholism, land disputes, influence of witch doctors, jealousy, strained relations, past conflicts, denial of sexual advances, extramarital affairs, conspiracy and village politics are primary factors behind witch accusations.
- Victims of witch-hunting may face verbal and physical abuse, loss of property, banishment from the village, social stigma, fines, and in extreme cases, murder.
- Witnesses in witch-hunting cases often turn hostile due to community threats or pressure.
- The judiciary tends to overturn convictions for witch-hunting due to insufficient evidence or hostility from victims and witnesses.

Suggestions

- Central and state governments should prioritize addressing witch-hunting as a serious issue and establish dedicated departments and budgets for affected areas.
- Law enforcement agencies require proper training to handle cases sensitively and provide justice to victims.
- Victim rehabilitation programs including counseling and compensation must be implemented to aid recovery from trauma.
- Strong intelligence networks should be established in affected areas to enable swift action against perpetrators.
- Encouraging periodic medical camps in remote areas can aid in early detection of illnesses and dispel superstitions.
- Police support and protection are essential, especially for women victims and their families.
- Effective implementation of anti-witch-hunting legislation necessitates thorough understanding and gender-sensitive execution by government bodies.
- Witch doctors' activities should be strictly prohibited and local bodies like Gram Panchayats should actively prevent witch-hunting.
- Media platforms should amplify awareness efforts against witch-hunting to combat this societal evil effectively.
- NGOs should provide legal education to women victims and empowering them to seek justice for violations of their rights.

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Facilitating the Delivery of Public Services through SUWIDHA Centres in Punjab: An Analysis

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Abstract

The delivery of essential services with great efficiency and transparency is the key task of every government around the world. The arena of public services involves the most common and biggest interface between the people and the state. In fact, the delivery of those services determines the people's trust in the government. The improvement in the delivery of public services has more significance in the country like India where millions of people still live below poverty line and lack awareness. The government of India has been working gradually for the administrative reforms since the independence of the country. Many Commissions and committees were constituted to make recommendations on different issues related to the governance mechanism of the country. The revolution in information technology gave birth to The National E governance Plan. This plan made its major theme to make all public services attainable to the common man in his locality, through common service delivery outlets. Following the path of the central government, state governments also initiated many plans for better public service delivery. The government of Punjab introduced many projects to bring efficiency, transparency, accountability and responsiveness in the administration. The most important institutional mechanism developed for rendering essential services to the citizens under one roof came in the form of establishing Single User-Friendly Window Disposal Helpline for Applicants (SUWIDHA) Centre. This paper is a modest attempt to study the origin of the SUWIDHA Centres in Punjab as well as making an evaluation of the experiences and perceptions of the users of the SUWIDHA Centres. The paper has been divided into two parts. First part deals with the historical background of the administrative reforms

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and working of public services delivery institutions in India and particularly in Punjab. The second part examines the perceptions and experiences of the users of the SUWIDHA Centre in Punjab. The significant aspect of this study is to assess the effectiveness of the SUWIDHA Centres through the experiences of the users of the SUWIDHA Centre. The experiences of the users as well as the comparative study made of the different regions of the state can contribute as feedback to the system for improving the weak areas found in the working of these Centres of the different regions.

Key words: Governance, Public Services, SUWIDHA Centre, Transparency

Introduction

The delivery of public services has been considered as one of the basic responsibilities of every state not only in the present but in the past also. The delivery of public services is also an important aspect of good governance because it affects the life of almost every citizen of the country in direct or indirect ways from birth to death. The quality of governance and public service delivery influences economic growth, reduces poverty, inequality and corruption also. The improvement in the delivery of public services has more significance in the country like India where millions of people still live below poverty line and lack awareness.

The governance reforms took place in one or the other spheres of the administration in every era of the country, however, the welfare approach, special attention to the development of the backward areas and creating citizen centric administration is the post-independence phenomenon. Since the 1950s, the Government of India has been working gradually yet relentlessly towards making the administration citizen friendly. But after the 1990s, the various suggestions given by The World Bank as well as the experience gathered all through these years made governments at the national as well as state levels to accept that three elements responsiveness, transparency and accountability are necessary for a government to be called equipped enough for rendering good governance.

The Objectives of the Study

The following are the objectives of the study:

- To comprehensively study the origin of the SUWIDHA Centres in Punjab.
- To make an evaluation of the experiences and perceptions of the users of the SUWIDHA Centres of studied districts.
- To make a comparative study of the working of the SUWIDHA Centres in the three regions of Punjab.

Research Methodology

The study is based on both primary as well as secondary sources. The primary sources include the data collected through field study with the help of a comprehensive interview schedule prepared with the purpose of gathering information about the working of the SUWIDHA Centres. A total of 3 district headquarters SUWIDHA Centres, one each from the three regions of Punjab i.e. Amritsar (Majha), Shaheed Bhagat Singh Nagar (Doaba) and Moga from (Malwa) were selected to get data. A total of 600 respondents selecting 200 from each district /region were randomly interviewed during the study. The studied SUWIDHA Centreshave been visited many times to gather information about the different aspects of the research proposal. The secondary sources used in the study include the documentary sources of Punjab government such as reports of the Governance Reforms Commission, brochures, guidelines issued for establishing SUWIDHA Centres in the state, websites of the studied districts, books, periodical literature, journals, newspapers and various articles published in newspapers as well as on internet.

Part-I

The year 1964 flagged the history of the administrative reforms in India when the Department of Administrative Reforms under the Ministry of Home Affairs was set up. The 1980s witnessed capacity-building as the central point for the administrative reforms. The declaration of the new economic policy in 1991 not only emphasized privatization and liberalization in public sector but also on down-sizing of bureaucracy. But the major move towards accomplishing good governance came in 1997 at the conference of the Chief Ministers. The overall focus of the conference remained on the ‘rebuilding the credibility of the government’ by making plans and programmes for a responsive and effective administration. The sub-sub-themes of the conference were directly related to the concept of good governance which included responsive, humane and caring administration which should relate to the general welfare of the people in the acclaimed manner (Jha, 1998, p. 5).

However, there was a broad consensus that the state has failed to deliver the public services effectively to majority of its citizens. Jean Dreze and Amartya Sen explained the gloomy performance of the country on almost all dimensions of human development. These can be mentioned as regional disparities, denial of basic needs to a substantial proportion of the population, discrimination withpeople based on caste, religion and gender, lack of sensitivity especially regarding vulnerable sections of the society and equally lacking transparency and accountability in the working of the state machinery and delayed justice (Dreze and Sen, 2013, p. 8). There are no clear-cut standards for the delivery of public services. India adopted

democratic form of government and democratic India seems to have fulfilled the doctrine of 'a government by the people' only. Even after more than seven decades of independence the people are still unable to experience the 'government of the people' and more emphasizingly 'government for the people'. For a common man any contact with the government is still a horror experience be it a visit to the police station for registering FIR, or to the respective authorities for obtaining a permission/license/certificate, or a visit to the government hospitals or any other government institutions, the procedures are so lengthy and cumbersome, attitude of the public officials so disgusting. The citizen is no longer satisfied with the way services are provided, he/she needs to wait for hours in long queues, for those services even which can be provided within hours if the whole system is working efficiently in favour of the citizens. This type of procedure ultimately leads to the corruption through the middlemen. The citizen has no interest in knowing the names and faces of the bureaucratic structure, he/she only wants that the service should be delivered effectively, efficiently through a single window and in a transparent manner and the officials delivering the service should take responsibility for whatever they have plan to provide or whatever they are providing. Even 10th Plan document has identified poor governance; too many unwieldy rules and regulations breed sequential ills like discontent and eventually an environment of despondency in the society (Approach paper to 10th plan, 2001, p. 51).

So looking at the dismal condition, the Indian government planned to provide various kinds of services through the single window using information technology. The concept of e governance was introduced in the Indian subcontinent in the early 1970s. The national e-governance plan was formulated by the Department of Information Technology (DIT) and Department of Administrative Reforms and Public Grievances (DAR&PG). The National e governance Plan presented its broad theme in the following words "Make all government services accessible to the common man in his locality, through common service delivery outlets and ensure efficiency, transparency and reliability of such services at affordable costs to realize the basic needs of the common man" (Kumar, 2012, p. 53). For the first time the government of India outlined a governance approach to development in the National Human Development Report 2001. It involved three facets of arrangements: institutions, delivery mechanism, framework of rules and procedures. The institutions involve both formal and informal arrangement necessary for managing the different spheres of activities of socio-political and economic dimensions. The delivery mechanism should be citizen centric, and the concerned institutions should be oriented in compassion (National Human Development Report, 2001, p. 118). Later on the Twelfth five year plan (2012-2017) also emphasized the use of information

technology to make the governance process citizen friendly, transparent, efficient, effective and above all easily approachable to the public. (The Planning Commission, Report of the Working Group on information technology, 2012, p.2). So, various recommendations and proposals at different levels of the government led to the establishment of large number of e-governance initiatives. Most of the states are using IT to improve the delivery of services to the citizens. They are moving from conventional cumbersome process to conveniently located single window service centre at public places. There is a huge list of projects which are presently operational in different states. Some of them include: E- Seva, Computer-aided Administration of Registration Department (CARD) and Fully Automated Services of Transport (FAST) in Andhra Pradesh, Electronic Citizen Services (ECS) in Andaman Nicobar island, E-Sampark Centres, E-Jan Sampark, M-Sampark and E- Gram Sampark in Chandigarh, Chhattisgarh online information for citizen empowerment (CHOICE) is a project set up by Chhattisgarh government to provide quality services to the citizens, Mahitishakti, Computerised Inter State Check Post (CICP), E- Dhara, Jan Sewa Kendra in Gujarat, E- Disha Centres in Harayana, Lok Mitra, E Samadhan, and Sugam Service centre in Himachal Pradesh, Bhoomi, Kaveri and Khajane in Karnatka, Fast Reliable Instant Effective Network for Disbursement of Services (FRIENDS) in Kerala, Gyandoot in Madhya Pradesh, Rajnidhi, Rajswift, Janmitra and Lokmitra in Rajasthan, Lokvani, E Suvidha, Koshvani and Property Evaluation and Registration application (PRERNA) in Uttar Pradesh,

Governance Reform Initiatives in Punjab

The government of Punjab introduced many projects to bring efficiency, transparency, accountability and responsiveness in the administration to establish good governance in the state. Many State Mission Mode Projects under National e governance plan have been conceptualized. The state government has established Police *Sanjh Kendras*, *Fard Kendras* along with many other projects. The most important institutional mechanism developed for rendering essential services to the citizens under one roof was named Single User-Friendly Window Disposal Helpline for Applicants (SUWIDHA) Centre. The project (SUWIDHA) was started in the state in August 2002. The district Fathesar Sahib was the first district to take this initiative. It was inaugurated on 31 October 2002 by the then Chief Minister of Punjab Capt. Amrinder Singh. The project was funded by the government of India and was successfully completed by the district administration with the technical support of the National Informatics Centre and Punjab state Centre. This project was found to be successful in delivering essential services and the government of Punjab

decided to execute this project in all the districts of the state in December 2004. The SUWIDHA centres serve as a single window system for a variety of services. To provide services in effective manner the SUWIDHA Centres were fully equipped with latest hardware, software and trained manpower. The major objectives of the SUWIDHA Centres were not only to provide different services under single roofs but also to curb corruption and enhance transparency. The major objectives of the SUWIDHA Centres were not only to provide different services under single roofs but also to curb corruption and enhance transparency. Moreover, when all activities in the SUWIDHA centre were computerized it facilitated better record management of the delivery of documents. These Centres were established in the district administration complexes in all the districts of Punjab. The government recommended 36 services of varying nature related to the 13 different departments to be provided by the SUWIDHA Centres.

Before the introduction of the SUWIDHA Centres a citizen had to face a lot of difficulties for obtaining a document from the government office. People used to have harassing experience, and to getting one certificate they were supposed to go to various departments. Most people did not know the whole procedure. There was no time fixed for getting any kind of document. People used to wait for months for getting important services like driving license, caste, residence, rural area certificates etc. The public officials were so indifferent to the plight of the citizens that generally the service seekers did not dare to make any kind of complaint to the higher authorities about their harassment. Moreover, the citizens were unaware about the procedure to register their grievances if any. This kind of harassment and delay in the delivery of public services gave birth to corruption through middlemen, usually called agents. The agents used to have good business for providing documents to the citizens.

So, considering these pitiable conditions, the government of Punjab decided to remove these maladies in the administration and provide relief to the citizens for accessing public services. And thus made the people feel the presence of good governance through a shift from a bureaucratic centric approach to the citizen centric approach.

The Objectives of SUWIDHA Centre

- To provide services through single window.
- To provide a proof to the common man, that he/she has applied for a particular service on a particular date.
- To reduce corruption and various forms of mal practices.
- To facilitate better record management of delivery documents.
- To reduce crowding in the government offices.

- To keep a check on disposal / delivery mechanism.
- To reduce the workload of government offices so that it can concentrate on some other development work.
- To lessen delays in the delivery of services by coordinating back end and front-end processes in the SUWIDHA Centre (suwidha.nic.in/html/about_suwidha.html).

Punjab Governance Reforms Commission

In order to bring required changes in the governance pattern of the state, the government set up the Punjab Governance Reforms Commission in January 2009. The Governance Reforms Commission gave nine status reports on the various issues concerning administrative reforms to bring efficiency, transparency and citizen centric administration in the state. The major task assigned to the Commission was to bring changes in the poor conditions of especially vulnerable and underprivileged sections of the society in Punjab and to suggest required changes in the process, procedures and rules and regulations for the better delivery of public services. The most important required change was to alter the colonial working system in which the citizens were not trusted at all by the government (PGRC Status Report, 2009, p 30). The first status report given by the Governance Reforms Commission especially focused on the SUWIDHA Centres.

Recommendations of First Status Report

The first PGRC addressed various issues related to the simplification and reengineering of the essential public services. The PGRC in its very first year made assessments on what was in practice about the delivery of public services in Punjab. It is considered important to critically examine these initiatives to revamp them and make them more effective. It made a detailed assessment of the Single User-Friendly Window Disposal Helpline for the Applicants (SUWIDHA) Project, Community Policing Resource Centres and citizen charters. The first status report was submitted to the state government in July 2009. **The following recommendations were made regarding the SUWIDHA Centres:**

The Commission found that the project SUWIDHA had tremendous potential to drastically improve the delivery of the citizen services as there was a well laid out institutional structure to give sustenance to the project and over a period, the project had got well entrenched across the state both at the district level as well as sub-division level. However, the performance of every SUWIDHA Centre was not the same. The PGRC made it a point to ensure uniformity and excellence across the SUWIDHA Centres in the state in the delivery of citizen services. Based on the assessment of the

status of the SUWIDHA Centres at that time the Commission made the following recommendations:

- All the twenty-four services identified for the district headquarters and twelve services identified for the sub-divisional headquarters should be immediately operationalized.
- All the back-end software available should be immediately used at all the district/ sub-divisional headquarters.
- The wide area network connections should be given to all the Centres.
- The new innovative ideas practiced by some districts should be made popularized in the other districts also to bring overall efficiency in the working of the SUWIDHA Centres.
- The status of the application filed by the services seeker should not only be uploaded on the website immediately but also the citizen must be informed through SMS and even on telephone.
- A new helpline should be created for the SUWIDHA Centre to provide more convenience to the citizens.
- All the SUWIDHA Centres should ensure an adequate number of service counters to provide services and well-furnished centralized hall for the citizens.
- All the counters should be clearly numbered as well as mentioning the name of the service to be provided on the counter. Along with this each counter should have its own token display system.
- It should not only be mandatory for the service counter operator to check the contents filled by the citizen in the application form as well as documents attached with the application form but also he/she must be held accountable for accepting incomplete application.
- The documents must be delivered on the particular date given to the service seeker. If in any case, there is some kind of delay due to some reason the service seeker should be informed prior to the date of delivery.
- The delivery of the document should be made both ways- on the counter as well as through Courier also.
- To avoid the unnecessary delay in the delivery of document the service counter operator should be empowered enough to mark the application file to the concerned department directly.
- The SUWIDHA Centre aims to provide services in an integrated manner under a single roof. In order to achieve that purpose all, the facilities like photographer, a doctor for medical certificate, a motor vehicle inspector and a Magistrate must be available at the SUWIDHA Centres.
- It must be mandatory for the officials to prepare pending list every day. The concerned authorities must scrutinize the list randomly.

Part-II

Perceptions of the Respondents regarding Working of SUWIDHA Centres

The following section of the paper is primarily data based and analyses the working of the SUWIDHA Centres and experiences of the respondents. To bring efficiency in the process of the service delivery was one of the basic purposes of establishing the SUWIDHA Centres. The computerization of the process and procedures was considered as the medium of bringing efficiency in the work process of service delivery in the SUWIDHA Centres.

Table-1: Perceptions of the Respondents regarding Waiting Time for Availing Service at SUWIDHA Centre

Waiting time for Availing Services at SUWIDHA Centres	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
Two hours	5 (2.5)	23 (12.5)	17 (8.5)	45 (7.5)
Three hours	57 (28.5)	55 (27.5)	67 (33.5)	179 (29.8)
Four Hours	80 (40.0)	69 (34.5)	59 (29.8)	208 (34.7)
Five Hours	19 (9.5)	23 (11.5)	24 (12.0)	66 (11.0)
More than Five Hours	39 (18.5)	30 (15.0)	33 (16.5)	102 (17.0)
Total	200 (100%)	200 (100%)	200 (100%)	600 (100%)

Source: Field Study

Table-1 reveals that a total of 34.7 percent respondents had to wait for four hours and 29.8 percent for three hours for availing of service after arriving in SUWIDHA Centres Complex. Most of the respondents who had to wait for four hours were found to be from Majha (40) followed by Doaba (34.5) and Malwa (29.8). These respondents opined that most of the time the SUWIDHA Centres were overcrowded, and there used to be long queues of service seekers. Sometimes when a service seeker was about to reach the counter some technical fault with the system would arise and again the service seeker would have to wait unless that fault was removed. The correction of the fault could take hours and sometimes two or three days also. There were 17 percent respondents who informed that sometimes it took whole day and sometimes more than a day. So, whatever the reason until respondent was able to file the application, the whole time could be counted as waiting time.

The respondents were then asked after applying for the service how many days it takes finally to get the document. The Right to Services Act, 2011 has made delivery of every service time bound. Every service has been allotted on different days as per the requirements of the service. There are certain services like affidavits, issuance of indemnity bond, surety bond, marriage certificate etc. which are provided on the same day while on the other hand certain services like new arms license, No Objection Certificates (NOC) for petrol pump, marriage palace, hotel etc. have been allotted 40 to 45 days.

Table-2: Perceptions of the Respondents regarding Waiting Period after Applying for the Service

Waiting Period after Applying for the Service	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
1-2 days	26 (13.0)	39 (19.5)	31 (15.5)	96 (16.0)
3-4 days	18 (9.0)	33 (16.5)	25 (12.5)	76 (12.7)
One week	24 (12.0)	17 (8.5)	19 (9.5)	60 (10.0)
15 Days	90 (45.0)	53 (26.5)	59 (29.5)	202 (33.7)
More than 15 days	42 (21.0)	58 (29.0)	66 (33.0)	166 (27.8)
Total	200 (100%)	200 (100%)	200 (100%)	600 (100%)

Source: Field Study

Table-2 shows the opinion of the respondents regarding the time taken for the delivery of the document after applying for the same. The table indicates that majority of the total respondents i.e. 33.7 percent are of the opinion that it generally takes 15 days to get a complete document followed by 27.8 percent who received document even after 15 days. It was also found that the largest percentage of the respondents received document within 15 days belong to Majha (45) followed by Malwa (29.5) and Doaba (26.5). On the other hand, there were only 16 percent of respondents who declared that they received the applied document within one or two days only. Overall majority of the respondents got documents after two weeks.

The government claimed that the process of service delivery in the SUWIDHA Centre eliminated the need of agents or middlemen. The process involves personal presence of the service seeker on the SUWIDHA

Counter because in many cases service requires photograph also. So in that case middlemen or agent had no place in the working of the SUWIDHA Centre. But the respondents of the present study indicated the presence of agents in the SUWIDHA Centre.

Table-3:Perceptions of the Respondents regarding role of Middleman / Agent for Availing of Services

Need of Middlemen or Agent	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
Yes	68 (34.0)	53 (26.5)	61 (30.5)	182 (30.3)
No	132 (66.0)	147 (73.5)	139 (69.5)	418 (69.7)
Total	200 (100%)	200 (100%)	200 (100%)	600 (100%)

Source: Field Study

The SUWIDHA Centres were opened to provide services to the general public without any middlemen or agent. The agent or middlemen are considered to be the biggest reasons of corruption in our society. But in spite of government efforts the role of these people is still there in such institutions. It was found that one third of the total respondents felt the need for such people to help them to get work done.

The governments keep on taking initiatives to eradicate the malpractices involving corrupt means in the working of such institutions. The SUWIDHA Centres were one such initiative to provide corruption free services to the people. The centres were planned to include such basic services which were needed by the people in their daily life. As more than a decade has already passed since the beginning of such centres an attempt has been made to analyse whether people are able to get their routine work done without paying any bribe. The viewpoint of the respondents has been explained in the following table.

Table-4: Perceptions of the Respondents regarding Corruption in SUWIDHA Centres

Corruption in SUWIDHA Centres	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
Yes	58 (29.0)	28 (14.0)	37 (18.5)	123 (20.5)
No	112 (56.0)	133 (66.5)	111 (55.5)	356 (59.3)
Don't remember/ Can't Say	30 (15.0)	39 (19.5)	52 (26.0)	121 (20.2)
Total	200 (100%)	200 (100%)	200 (100%)	600 (100%)

Source: Field Study

Table-4 shows the respondents' opinion on one of the crucial aspects

related to the working of the SUWIDHA Centres. The respondents were asked “Did you ever have to bribe to the SUWIDHA Centre employees for availing of any service”? It was found that the largest percentage of the respondents, i.e. 59.3 percent, are of the view that nobody asked them for any kind of bribe in the SUWIDHA Centres while availing of services. On the other hand, 20.2 percent of respondents remained nonresponsive on this issue and 20.5 percent respondents told us that they had to bribe the SUWIDHA Centre employees to get their work done. The highest percentage of the respondents who did not bribe for any service in SUWIDHA Centres belong to Doaba (66.5) followed by Majha (56) and Malwa (55.5). It is to mention here that usually the respondents were hesitant to provide information on this issue. There is probability that the respondents who opined that they did not remember might have to pay for one or the other reason. The respondents who had to bribe for availing of any service were further asked to mention the reason for bribing. The most common purposes which respondents informed were either to speed up the work or to get service out of turn.

Table-5: Perceptions of the Respondents regarding Purpose of Paying Bribe

Purpose of Paying Bribe	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
Expediting the Process	44 (22.0)	21 (10.5)	31 (15.5)	96 (16.0)
Service Out of Turn	14 (7.0)	7 (3.5)	6 (3.0)	27 (4.5)
*N A	142 (71.0)	172 (86.0)	163 (81.5)	477 (79.5)
Total	200 (100%)	200 (100%)	200 (100%)	600 (100%)

Source: Field Study

Table-5 discloses that 16 percent of the total respondents paid money to speed up the process of availing of service while 4.5 percent paid to get service out of turn. It was found that the largest percentage of the respondents paying money for expediting the process belong to Majha (22) followed by Malwa (15.5) and Doaba (10.5). The related question was asked “whom did you pay”?

Table-6: Perceptions of the Respondents regarding Staff employed as Recipients of Bribe Money

Recipient of Bribe Money	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
SUWIDHA Centre Employees	37 (18.5)	15 (7.5)	17 (8.5)	69 (11.5)
Agent/ Typist	21 (10.5)	13 (6.5)	20 (10.0)	54 (9.0)
¹ *N.A*	142 (71.0)	172 (86.0)	163 (81.5)	477 (79.5)
Total	200 (100%)	200 (100%)	200 (100%)	600 (100%)

Source: Field Study

Table-6 reveals that majority of the respondents (11.5) paid money to SUWIDHA Centre employees. It was also found that the largest number of respondents who paid money to SUWIDHA Centre employees belong to Majha (18.5) followed by Malwa (8.5) and Doaba (7.5). The respondents were also asked to recall the amount they paid and name the service for which they had to bribe either to the SUWIDHA Centre employees or typist/ agent.

Table-7: Information regarding Total Amount Paid

Total Amount Paid (In Rupees)	Districts			Total (%)
	Amritsar	SBS Nagar	Moga	
Up to 1000	8 (4.0)	1 (0.5)	4 (2.0)	13 (2.2)
Up to 2000	25 (12.5)	12 (6.0)	3 (1.5)	40 (6.7)
More than 5000	25 (12.5)	15 (7.5)	30 (15)	70 (11.7)
² *N.A	142 (71.0)	172 (86.0)	163 (81.5)	477 (79.5)
Total	200 (100%)	200 (100%)	200 (100%)	600 (100%)

Source: Field Study

Table-7 reveals that a total of 11.7 percent of respondents paid Rs. more than 5000 as bribe money to get the required service. It was also found that the highest percentage of such respondents belongs to Malwa (15) followed

- ¹ * Second and third categories given in table no. 4 the respondents who did not have to pay and who did not answer the question have been clubbed here. 59.3+20.2 totaling 79.5%
- ² * Second and third categories given in table no. 4 the respondents who did not have to pay and who did not answer the question have been clubbed here. 59.3+20.2 totaling 79.5%

by Majha (12.5) and Doaba (7.5). Majority of the respondents bribed for procuring arms license, marriage registration and correction or late entry in birth certificate etc. Along with money, another mode of corruption includes the practice of using ‘sifarish’ or connections or links. Another additional question was asked “Do you think people with connections or ‘Sifarish’ or approach get service out of turn in the SUWIDHA Centre”? The results have been presented in the following table.

Table-8: Perceptions of the Respondents regarding Practice of Using Connections or ‘Influential person’s recommendation

Practice of Connections or ‘Sifarish’	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
Yes	125 (62.5)	95 (47.5)	140 (70.0)	360 (60.0)
No	75 (37.5)	105 (52.5)	60 (30.0)	240 (40.0)
Total	200 (100%)	200 (100%)	200 (100%)	600 (100%)

Source: Field study

It was found that 60 percent of the total respondents clearly responded that the queue system is mostly breached unabashedly and people with connections and approaches get service out of turn. There was a larger regional variation on the issue. The largest percentage of the respondents who opined that people with links or approach get service out of turn belong to Malwa (70) followed by Majha (62.5) and Doaba (47.5). It is to mention here that the process of work in the SUWIDHA Centre involves token system in which a token number is issued to the service seeker and service seeker waits for his/her turn until the token number is displayed on the display screen, even then practice of bribing and using links or connections with the employees is still prevalent in the SUWIDHA Centres in availing of necessary services.

In spite of the development of the best traditions through the constitution, many negative notions have arisen about the working of our political and administrative institutions. Though the SUWIDHA Centres were established to bring institutional reforms in the process of public service delivery still mal practices are found in its working. The respondents were given three statements about the working of the SUWIDHA Centres and were asked to choose one among them according to their experiences in the SUWIDHA Centres. The statements included; firstly, it is possible to get work done in the SUWIDHA Centre if the work is legitimate and one has all the documents, secondly legitimate work and proper documents are not

enough, links and bribe money is equally important, thirdly documents and procedure do not matter, if one has proper connection and ability to pay bribe, the service can be availed of from the SUWIDHA Centre.

Table-9: Perceptions of the Respondents regarding the Working of the SUWIDHA Centres

Statement	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
Proper Documents, Legitimate Work, Work is Done	70 (35.0)	98 (49.0)	82 (41.0)	250 (41.7)
Proper Documents, Connections and Bribery Equally Important	116 (58.0)	91 (45.5)	108 (54.0)	315 (52.5)
Proper Connections and Enough Bribe Money, No Need of proper Documents	14 (7.0)	11 (5.5)	10 (5.0)	35 (5.8)
Total	200 (100%)	200 (100%)	200 (100%)	600 (100%)

Source: Field Study

Table-9 shows the respondents' opinion on the working of the SUWIDHA Centres. It reveals that the largest percentage of the respondents (52.5) believed that legitimate work, proper documents and information about the process of getting service is not enough, one needs to use connections generally called 'Sifarish' and bribery to get work done in the SUWIDHA Centre. It was also found that the highest percentage of the respondents in their respective regions having such opinion belong to Majha (58) followed by Malwa (54) and Doaba (45.5). It shows that the institution of the SUWIDHA Centre is not fully successful in checking the practice of corruption. Though the whole working process has been computerized, the people are supposed to go according to the token number, yet it is evident that by paying extra money service can be availed out of turn.

Table-10: Perceptions of the Respondents regarding Number of Visits for Availing of Services

Number of Visits for Availing of Services	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
1-2 Visits	12 (6.0)	47 (23.5)	9 (4.5)	68 (11.3)
3-4 Visits	70 (35.0)	52 (26.0)	63 (31.5)	185 (30.8)
5-6 Visits	16 (8.0)	19 (9.5)	49 (24.5)	84 (14.0)

Number of Visits for Availing of Services	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
7-8 Visits	7 (3.5)	8 (4.0)	21 (10.5)	36 (6.0)
N.A	95 (47.5)	74 (37.0)	58 (29.0)	227 (37.8)
Total	200 (100%)	200 (100%)	200 (100%)	600 (100%)

Source: Field Study

Table-10 shows the number of visits that the respondents had to make to avail services in the SUWIDHA Centres. It was found that the largest percentage of the total respondents, i.e. 30.8, were of the view that they had to make 3-4 visits to avail services of the SUWIDHA Centre. The highest percentage of respondents in this category belong to Majha (35) followed by Malwa (31.5) and Doaba (26). On the other hand, there were 11.3 percent of the total respondents who got delivery of documents by making 1-2 visits to these centres. But the overall conclusion drawn based on the whole table is that maximum respondents had to make multiple visits to get their work done.

The respondents were also asked to indicate the problems they faced because of the delay in receiving the document and estimate of financial loss they had to bear by making multiple visits to these centres. It was found that most of the respondents were of the view that delaying documents caused many problems like delay or missing admission in educational institutions and pension, financial loss due to multiple visits, delay in availing benefits of government schemes, delay in procuring passport etc. Above all it created a lot of mental, harassment and anxiety to such respondents.

With the setting up of these centres a new hope was raised about the correctness of the required documents. The whole process of these centres was computerized and services were expected to be foolproof from the printing mistakes. Moreover, computerized print out of the document made the document legible. The following table expresses the opinion of the respondents on this variable.

Table-I I: Perceptions of the Respondents regarding Errors in Documents

Errors in Documents	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
Always	27 (13.5)	12 (6)	25 (12.5)	64 (10.7)
Sometimes	99 (49.5)	100 (50.0)	128 (64)	327 (54.5)

Errors in Documents	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
Never	74 (37.0)	88 (44.0)	47 (23.5)	209 (34.8)
Total	200 (100%)	200 (100%)	200 (100%)	600 (100%)

Source: field study

Table-11 shows the quality of documents provided to the citizens by these institutions. There seems to be no end of the unnecessary harassment of the general public. Table 5.31 shows that only about one third of the total respondents got flawless documents from the service centres. There are various reasons for mistakes in the documents. For example, the whole work is done by the contract-based employees with low paid salaries. They are neither fully trained nor adequately equipped with rules and regulations about these services. The respondents were further asked “How many times you had to visit SUWIDHA Centre for making correction in that document”? The following table expresses their opinion.

Table-12: Perceptions of the Respondents regarding Visits to SUWIDHA Centre for Correction in the Document

Number of Visits for Correction in the Document	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
One time	17 (8.5)	23 (11.5)	24 (12.0)	64 (10.7)
Two times	48 (24.0)	60 (30.0)	56 (28.0)	164 (27.3)
Many times	61 (30.5)	29 (14.5)	73 (36.5)	163 (27.2)
N.A	74 (37.0)	88 (44.0)	47 (23.5)	209 (34.8)
Total	200 (100%)	200 (100%)	200 (100%)	600 (100%)

Source: Field Study

Table-12 shows that there were only 10.7 percent respondents of the total respondents who could manage to make corrections in the document from the SUWIDHA Centres within one visit only. On the other hand, more than half of the total respondents had to make two or more than two visits to make corrections to the document. It was also found that there was not a big difference between the number of respondents who made two visits or more than two visits.

The SUWIDHA Centres came into existence for providing facilities to the people. It was totally a new experience in the delivery of public services. The new techniques were devised to facilitate the citizens for updating them about the status of their work. It was made mandatory as part of these centres to provide information to the public about the status of their application. But service seekers alone can vouch whether these techniques were practically applied or not. The respondents were asked “How do you come to know about the completion of your work”? The following table explains the various methods through which the respondents come to know about the completion of their work.

Table-13: Perceptions of the Respondents regarding Information given by SUWIDHA Centre on the Completion of Work

Information on the Completion of Work	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
Personal Visit	113 (56.5)	140 (70)	125 (62.5)	378 (63)
Get SMS	58 (29)	47 (23.5)	55 (27.5)	160 (26.7)
Post	7 (3.5)	4 (2)	7 3.5%	18 3%
Courier	17 (8.5)	1 (.5)	10 (5)	28 (4.7)
Phone Call	5 (2.5)	8 (4)	3 (1.5)	16 (2.7)
Total	200 (100%)	200 (100%)	200 (100%)	600 (100%)

Source: Field Study

Table-13 indicates that majority of the total respondents, i.e. 63 percent, get information about the completion of their work by making a personal visit to the SUWIDHA Centre. It was also found that the largest percentage of such respondents belong to Doaba (70) followed by Malwa (62.5) and Majha (56.5). The results show that the SUWIDHA Centre started all these new methods to protect people from different kinds of harassment with high hopes but practically these were not implemented to the extent it should have been. Many respondents informed that in the earlier years of the SUWIDHA Centre, SMS was made about almost every service and many respondents received documents by courier also.

The respondents were asked to give their opinion on the overall working of the SUWIDHA Centres in their respective areas based on their

experiences, whether they were satisfied or not with the whole process of the SUWIDHA Centres. The following table explains their viewpoint.

Table-14: Perceptions of the Respondents regarding Overall Satisfaction or Dissatisfaction with the SUWIDHA Centres

Overall Satisfaction or Dissatisfaction with the working of the SUWIDHA Centres	District			Total (%)
	(Majha) Amritsar	(Doaba) SBS Nagar	(Malwa) Moga	
Satisfied	76 (38)	147 (73.5)	87 (43.5)	310 (51.7)
Not Satisfied	124 (62)	53 (26.5)	113 (56.5)	290 (48.3)
Total	200 (100%)	200 (100%)	200 (100%)	600 (100%)

Source: Field Study

Table-14 shows that more than half of the total respondents, i.e. 51.7 percent, were satisfied with the SUWIDHA Centres. It was also found that the highest percentage of the satisfied respondents belongs to Doaba (73.5) followed by Malwa (43.5) and Majha (38). The overall data shows that a larger majority of the respondents from Doaba were satisfied with the infrastructure, facilities and working of the SUWIDHA Centre. On the other hand, majority of the respondents from Majha were found to be dissatisfied with the process of working in the SUWIDHA Centre.

To sum up it can be argued that to address the complexity of governance-related problems the government had introduced many citizens' centric initiatives at the Union and State level. The SUWIDHA Centres were the first new type of institutional mechanism developed for the public service delivery in the state of Punjab. An attempt has been made to assess the actual working of the SUWIDHA Centres. It has been found that no doubt the government is successful in establishing the structural framework of the service delivery centres but there exist functional lapses in the form of inadequate infrastructure, erratic electricity supply, lack of hygienic washrooms within the premises, shortage of the staff and access to other facilities. Furthermore, the presence of agents outside the premises makes the situation worse for some of the respondents. In addition to it the staff deputed by the Government to cater to the needs of the citizens is inadequate. The less human resources lead to overcrowding within the premises. The equipment, i.e. computers and control systems (servers) were not regularly updated with new versions available in the market. The old computers develop technological snags which sometimes lead to delays in the delivery of the services. But the positive aspect that has come out of

this analysis is that despite the problems, majority of the respondents found this system better and satisfactory in comparison to the earlier system of public service delivery in many aspects.

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Footnotes

*Second and third categories given in table no. 4 the respondents who did not have to pay and who did not answer the question have been clubbed here. 59.3+20.2 totaling 79.5%.



Intra-SAARC Trade: Whether the Potential is Fully Realized?

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Abstract

Regional Trade Agreements (RTAs) form an important component in the framework of international trade relations. Despite the grand ideals in terms of trade outcomes, the SAARC met with limited outcomes. Identification of factors that stand in the way of realising full potential may open up the trade potential. The study aimed to analyse the bilateral trade between the SAARC countries. The data on export values are taken from the International Monetary Fund (IMF), Gross Domestic Product (GDP) and Per Capita Income (PCI) are taken from World Development Indicators (WDI) and distance between capital cities, common language, and adjacency are taken from the French Centre for Exploratory Studies and International Information. The study uses the Ordinary Least Square (OLS) to test the gravity equation model of the variables GDP and distance. The study found that intra-SAARC trade is too low, and SAARC countries as a whole trade less with the outside world than would be expected. The high potential trade (exports) had been found between Pakistan and Nepal and low potential trade (exports) between Nepal and Sri Lanka in the SAARC region.

Keywords: Gravity Model, Intra-SAARC Trade, Potential Trade

Introduction

The international trade agreements are to boost economic development and trade relationships. Regional Trade Agreements (RTAs) are an important

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component of international trade relations. The South Asian Association for Regional Cooperation (SAARC) was established in 1985 to encourage trade, economic welfare, and socioeconomic stability in South Asia. The SAARC Trade Block comprises the following countries: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. The SAARC's primary goal is to encourage intra-regional trade in South Asia. As intra-regional trade amongst member countries rises, it also increases the national income among those countries, the alleviation of poverty, and the development of technology. The shared commitment to regional trade promotion has been institutionalized following the ratification of the agreement by all the member countries of SAARC of a South Asian Preferential Trading Agreement (SAPTA) in 1995. At the Ninth SAARC Summit, the Heads of Government decided that informal political consultations would be helpful in promoting peace, stability, and socio-economic cooperation in the region due to political issues like those that occurred between India and Pakistan and Sri Lanka in the years 1986 and 1987. Since the member-country disagreements, the SAARC has not been able to conduct an annual summit. In terms of its economic potential, India is well ahead of the other SAARC nations. 8 percent of India's exports to the SAARC nations are for the global market. The two nations that profit the most from intra-SAARC trade are Bhutan and Nepal. When compared to global trade, their trade between the two nations is 90 per cent and 61 per cent respectively. In the year 2021, the intra-SAARC trade contribution of the countries' international markets was 6.0 percent. Mukesh K. Kayathwal (1992) addressed the difficulties with SAARC due to the region's unfavourable political atmosphere between the two major protagonists, Pakistan and India, which is neither beneficial to collaboration. According to numerous studies, trade agreements between SAARC nations did not result in increased trade (Jahangir Khan Achakzai, 2006). Therefore, it is important to analyse whether trade potential between SAARC countries is fully realised. The present study aimed to analyse the bilateral trade between the SAARC countries by using a gravity model.

Review of Literature

In the context of trade, SAARC studies have used a traditional gravity model to analyse the bilateral trade flows of the SAARC region. Some studies used augmented gravity models to estimate the trade flows by using explanatory variables such as GDP, PCI, Inflation rate, transport cost, Distance, Tariff, Population etc. M. Kabir Hassan (2001) found that the Intra- SAARC is low as compared with the other trade blocs and suggests that SAARC member countries are yet to achieve the trade creating benefits. Surya Bahadur Thapa (2012) finds that the Trade

potential of Nepal is exceeding with 10 partner countries including India and China and remains trade potential with 9 partner countries including Bangladesh. Hemlata Manglani (2019) has found that there is a presence of the Linder model and SAARC countries are highly open, and income is increasing in bilateral trade in India. Bergstrand (1989) concludes that the coefficient of the exporter and importer income matches the variation in trade flows from generalised gravity equations estimated for aggregate trade flows. Srinivasan P (2011) reveal that the market size, GDP per capita, trade openness, infrastructure facilities, and inflation, degree of risk and uncertainty and SAARC country formation are the most significant factors in determining FDI in the SAARC countries. Muhammad Ishaq et al., (2016) aimed to describe the impact of SAPTA and SAFTA on trade in the SAARC region. Fixed effects model is estimated to manage the unobserved heterogeneity, and the Poisson estimator is used to estimate the gravity model that deals with inbuilt heteroscedasticity due to zeros in trade data. Some studies related to SAARC used random effects and fixed effects models to analyse the trade pattern of SAARC countries.

Few researchers used trade intensity indices to find the trade creation and trade diversion of SAARC countries. Trade intensity indices and Gini coefficient used to examine the opportunities and commodity potential of Trade between India and SAARC countries. The study also used Revealed comparative advantage to analyse the commodity trade potential between India and SAARC countries (Radha Raghurampatruni et al., 2021).

Theoretical Background

In the past four decades, Smith (1723-90) and Ricardo (1772-1823) agree on one point that is, with trade, specialisation in the production of a commodity that a country can produce relatively more cheaply than other countries; each country then, with a given number of resources, can consume more than it could without trade. The Heckscher-Ohlin theory leading studies of international trade between the 1920s and the early 1980s, states that a country's exports depend on its resources endowment whether it is capital-abundant or labour-abundant. The only difference existing is that different countries have different resource endowments, and this major discrepancy is sufficient to cause a different production possibility frontier in the two countries such that equilibrium price ratios would differ in an autarky.

The Product life Cycle Theory stipulates that a trade cycle occurs where a product is generated by a parent company, then by its alien subsidiary firms and lastly anywhere in the world where costs are at their minimum possible (Wells, 1968, Vernon, 1966; Morgon and Katsikeas, 1997). It also expounds how a product may emanate as a nation's export and work through the life cycle to at long last transform to an import (Morgan and

Katsikeas, 1997). As noted by the theory, market size and innovations in technology are very crucial for leveraging in external trade and naturally economic growth. The Stolper-Samuelson theorem states that an increase in the price of a good will cause an increase in the price of the factor used intensively in that industry, and a decrease in the price of the other factor.

Kravis' Theory of Availability – In the Kravis' (1956) model, technological innovation as a basis of trade operates through his product availability hypothesis. Linder's Theory of Volume of Trade and Demand Pattern – Linder (1961) in his theory gave importance to demand side factors like similarity in income levels across nations and income distribution characteristics in determining pattern of trade. Posner's Imitation Gap or Technological Gap Theory – M.V. Posner (1961) analysed the effect of technology on trade. He regards technological changes as a continuous process which influences the pattern of international trade. Vernon's Product Cycle Theory – Vernon (1966) has put forth the product cycle hypothesis. Vernon's model is a generalization and extension of the technological gap model.

The recent literature has shifted the focus away from the conventional or traditional models based on the assumptions of perfect competition and constant returns in production to the implications of imperfect competition and economies of scale for international trade. The set of ideas contained in the recent literature of international trade has been termed the "new trade theory" and has been pioneered by Dixit and Norman (1980), Krugman (1979b, 1980, 1981), Helpman (1981) and Ethier (1982).

Global strategic rivalry theory emerged in the 1980s and was based on the work of economists Paul Krugman (1984) and Kelvin Lancaster (1980). Their theory focused on MNCs and their efforts to gain a competitive advantage against other global firms in their industry. According to Ezeala-Harrison (1999: 22), the new trade theory (NTT) emanates from the new growth theory (NGT) that emerged within the international trade and economic growth and development literature during the early 1990. The NGT emphasizes technological progress as well as the externalities that the development and application of new knowledge confers, as explicit variables that determine economic growth.

Methodology

The present study covers 8 SAARC countries and trade between them. That gives 56 observations (8*7). The model reported the minimum number of observations because of two reasons. First, some of the countries do not have export values. Second, the log values of the given data are zero and negative numbers. These values are excluded from the observations. The gravity equation was estimated for the year 2021. The export values for

SAARC countries are taken from the International Monetary Fund (IMF). The Gross Domestic Product (GDP) and Per Capita Income (PCI) are taken from World Development Indicators (WDI). The data for distance between capital cities, common language and adjacency are taken from French Centre for Exploratory Studies and International Information.

The data on bilateral trade flows is bound to show some zeros. These may reflect either the absence of trade, or simply the presence of very small amounts of trade that for statistical reasons are reported as zeros. This possesses a methodological problem since all variables in the gravity model are in log form and the log of zero is not defined. There are three ways of dealing with this problem. One of them replaces zero by very small figures. The problem with this method is that the log of very small figures is a relatively large negative number. Thus, small bilateral trade flows will be given very large weights. Another method includes the zeros and uses a semi-log formulation that is estimated with the Tobit technique which takes account of truncated data for the dependent variable. Finally, a third possibility is simply to exclude the zero entries from the sample and estimate it with OLS. The gravity model was applied to describe the trade flows between SAARC countries. The present study uses the Ordinary Least Square (OLS) to test the gravity equation model of the variables GDP and distance. This latter is the simplest of all methods and has been widely used in most studies of the gravity model.

Gravity Model

Gravity Equation was first drawn from Newton's Law of Universal Gravitation in 1687. According to Newton, an object in the universe attracts any other with a force varying directly as the product of the masses and the inversely as the square of the distance between them. Tinbergen (1962) was the one who formulated the mathematical model for the gravity equation for International trade. Polyhonen (1963), Pulliainen (1963) and Linnemann (1966) worked to further develop the theoretical foundations of the gravity equation. The traditional gravity equation is as follows:

$$T_{ij} = GDP_i GDP_j DIST_{ij} \dots (1)$$

Where, T_{ij} is the value of bilateral trade between country i and j , GDP_i and GDP_j are country i and j 's respective national income. Distance is the measure of the bilateral distance between the two countries and is constant of proportionality. Taking logarithms of the gravity model equations as in (1) the present study gets the linear form of the model and the estimating equation as:

$$\log(T_{ij}) = \alpha + \beta_1 \log(GDP_i \cdot GDP_j) + \beta_2 \log(DIST) + U_{ij} \dots (2)$$

Where α , β_1 and β_2 are the coefficients of the given equation. The error term, U_{ij} indicates any other unobserved factors that may affect the bilateral trade between two countries. Equation (2) is the gravity equation where

bilateral trade is predicted to be a positive function of income and negative function of distance.

Anderson (1979) was the first economist who formed the theoretical economic foundation for the gravity equation under the assumptions of product differentiation by place of origin and Constant Elasticity of Substitution (CES) expenditures. Bergstrand (1985 & 1989) was the first author to provide the microeconomic bases of the gravity model. Some authors have contributed the development of the trade theory (Brakman and Garretse, 2009; Helpman and Krugman, 1985; Helpman, 1984; Krugman and Obstfeld, 2002).

As Hamilton and Winters (1992) point out, “this does not imply that prices are ineffective in allocating resources. Rather, the model should be viewed as a reduced form in which GDP, PCI and distance are the ultimate determinants both of trade and of prices.

$$ij = \beta_0 + \beta_1 * GDP_i + \beta_2 * GDP_j + \beta_3 * PCI_i + \beta_4 * PCI_j + \beta_5 * DIST_{ij} \dots (3)$$

Here, ij is the trade between the countries i and j , GDP and PCI are the respective Gross Domestic Product and per capita income and DIST is the distance between them. The trade is positively related to GDP and negatively related to DIST. So the expected sign of coefficient β_1 and β_3 should be positive; β_5 should be negative and β_2 and β_4 could be positive or negative. The study expects trade to be positively affected by economic size (GDP) and negatively related to distance (DIST). The coefficients on per capita income (PCI) could be positive or negative. Since trade is expected to increase with the size of domestic economy (GDP), the expected sign of β_1 is positive. The GDP of the exporting country measures productive capacity, while that of the importing country measures absorptive capacity.

Model Specification

The Tinbergen's log-linear specification gravity model has the strongest theoretical foundation in Anderson and van Wincoop (2003). The gravity model of bilateral trade explains that the export between country i and j is directly proportional to product GDP of country i and j respectively and inversely proportional to the distance between them. Other explanatory variables like common borders, common language and common memberships in regional trade agreements are also included.

The estimated gravity equation is

$$\log(ij) = \beta_0 + \beta_1 \log(GDP_i) + \beta_2 \log(GDP_j) + \beta_3 \log(PCI_i) + \beta_4 \log(PCI_j) + \beta_5 \log(DIST_{ij}) + \beta_6 (ADJ_{ij}) + \beta_7 (LANG_{ij}) \dots (4)$$

Where, X_{ij} is the total exports between country i and country j .

GDP_i is the Gross Domestic Product of country i .

GDP_j is the Gross Domestic Product of country j .

PCI_i is the Per capita income of country i .

PCI_j is the Per capita income of country j .

$DIST_{ij}$ is the distance between the capital cities of country i and country j .

ADJ_{ij} is the dummy for common borders which takes the value 1 if two countries have the common border; otherwise 0.

$LANG_{ij}$ is the dummy for common language which takes the value of 1 if two countries have the common language; otherwise 0.

According to Newton's law of gravity, trade is expected to increase with the size of the gross domestic product (GDP) and fall with the distance (DIST) between the countries. The study expects trade to be positively affected by economic size (GDP) and negatively related to distance (DIST). The coefficients on per capita income (PCI) could be positive or negative. Since trade is expected to increase with the size of the domestic economy (GDP), the expected sign of β_1 is positive. The GDP of the exporting country measures productive capacity, while that of the importing country measures absorptive capacity.

Results

The gravity model was applied to estimate the trade potential between the countries. The present study uses the OLS to test the gravity equation model of the variables GDP and distance. Other explanatory variables such as PCI, common borders, common language and membership in SAARC are also included as variables. The result of the gravity equation model is given in Table-1 and 2.

Table-1: Regression Results of SAARC Countries Export

Variable	Coefficient	Ordinary t-Statistic	HAC t-Statistic
C	-52.4221	-6.8249*	-9.0440*
Log(GDP1)	1.3838	8.3718*	9.1713*
Log(GDP2)	0.9183	5.9628*	10.7430*
Log(PCI1)	0.8780	2.2284*	2.2553*
Log(PCI2)	0.4970	1.5086	2.9753*
Log(DIST)	-1.8325	-3.6393*	-6.8549*
ADJ	1.6973	1.9272	4.0072*
LANG	-8.9804	-5.8608*	-3.7727*
R-squared	0.77		
F-Statistic	17.37		
No. of observations	44		

Note: * indicates significance at 5%

Computed by author

Table-2: Regression Results of SAARC Countries Import

Variable	Coefficient	Ordinary t-Statistic	HAC t-Statistic
C	-48.2703	-6.6939*	-8.9179*
Log(GDP1)	0.9973	7.1866*	6.5923*
Log(GDP2)	1.3352	9.6270*	9.6543*
Log(PCI1)	0.6559	1.9609	3.4641*
Log(PCI2)	0.5144	1.6344	1.9667
Log(DIST)	-2.2556	-4.9908*	-5.6608*
ADJ	1.3525	1.6205	2.7626*
LANG	-8.2967	-5.6048*	-4.2860*
R-squared	0.81		
F-Statistic	24.86		
No. of observations	48		

Note: * indicates significance at 5%

Computed by author

The study explains that Export and GDP are directly related to each other. The increase in the size of the domestic product leads to an increase in exports. The trade elasticity of the export country GDP is 1.4 indicates the 1 per cent increase in GDP, increases the export by 1.4 per cent. On these terms, the trade elasticity of the import country is 0.9, indicating a 1 per cent increase in GDP, increasing exports by 0.9 per cent. The coefficient GDP per capita is statistically significant and the coefficient for the exporting country is positive and for the importing country is significant. The trade elasticity of the export country PCI is reported as 0.88. It indicates the 1 per cent increase in PCI, increases the export by 0.88 per cent. The distance is negative and also highly significant. According to Newton's law of gravity, the export and distance between countries is inversely proportional to each other. The coefficient of log of the distance between capital cities is reported as -1.83, indicating the 1 per cent increase in distance, diminishing the exports by 1.83 per cent. The adjacency is positive and significant.

The results are reported in Table 2 the coefficient of GDP of the importing country is statistically significant at 5 per cent and carries the expected sign. This reveals that a 1 per cent increase in the GDP of an exporting country will increase the exports of the partner country by 0.99 per cent. 1 per cent rise in the GDP of an importing country increases its exports by 0.99 per cent. The coefficient of the distance variable is negative and statistically significant at 5 per cent. It implies that 1 per cent increase in distance leads to 2.26 per cent reduction in imports between SAARC countries and its trading partners. In addition to the two primary variables, the study includes GDP per capita for a pair of countries as an explanatory variable in the model. The coefficient of the variable concerned of the

importing country and the exporting country is positive and significant at 5 per cent. The estimated value of the exporting country is 0.66 and importing countries is 0.51, which implies that bilateral trade increases as the per capita GDP of SAARC and its trading partners. The coefficient of adjacency has a positive and significant. The dummy for common language is negative and significant. The trade is decreasing within the SAARC region, but increasing among countries outside SAARC. Hence we can conclude that intra-regional trade between SAARC countries are not playing their expected role in boosting trade flows among member countries.

Actual and Potential Trade

When studying international trade, the concept of trade potential is one that is frequently and extensively used. To calculate a country's trade potential, two methods are typically utilised. The ratio approach is one, and the absolute difference method is another. The ratio of predicted trade to actual trade (P/A) is calculated by using the ratio method. The dependent variable's estimated value is represented by the predicted (P) value, whereas the actual (A) value represents the actual trade between the two countries. The ratio (P/A) reveals the country's trade potential and trade direction in the future. If P/A is more than unity, the home country could establish trading relationships with its trading partners. The second technique calculates trade potential using the absolute difference between predicted and actual values (P-A). If P-A is positive, the home nation and the partner country could establish their trade between them, whereas a negative value in trade shows that the home country has reached its trade potential with that trading partner. The ratio approach (P/A) will be used in this study to classify the nations with which SAARC countries could potentially increase trade. The estimated model is used to predict the intra-SAARC countries' exports. The estimated coefficients given by the equation are used to predict the volume of trade between the countries. The predicted value of bilateral trade is compared with the observed values to predict bilateral trade potential.

Table-3: Intra-SAARC Export Potential

Countries	AFG	BGD	BTN	IND	MDV	NPL	PAK	LKA
AFG	-	0.28	-	0.47	-	-	0.77	-
BGD	0.84	-	2.09	1.41	1.33	1.16	1.27	1.23
BTN	-	1.61	-	0.55	-	-0.53	0.37	-
IND	0.92	1.16	0.998	-	0.76	1.04	0.48	0.85
MDV	-	0.60	-	1.38	-	-	-	2.12
NPL	0.69	2.23	0.12	0.997	0.57	-	18.83	-1.60

Countries	AFG	BGD	BTN	IND	MDV	NPL	PAK	LKA
PAK	0.9	0.79	-	-1.27	0.62	2.24	-	0.57
LKA	-	0.75	0.22	0.85	0.57	0.54	0.67	-

Source: Computed by the Author

Table-4: Intra-SAARC Import Potential

Countries	AFG	BGD	BTN	IND	MDV	NPL	PAK	LKA
AFG	-	1.03	-	0.92	-	-	0.75	-1.66
BGD	0.12	-	0.78	1.17	0.30	2.93	0.88	0.94
BTN	-	2.20	-	0.79	0.98	0.46	-	0.30
IND	0.68	1.37	0.65	-	0.94	-0.06	11.39	0.85
MDV	-	1.07	-	0.81	-	0.44	0.59	0.62
NPL	0.66	1.17	-0.003	1.02	0.54	-	2.15	0.55
PAK	0.83	1.25	0.27	0.63	0.43	3.11	-	0.67
LKA	0.57	1.05	-	0.84	1.02	-0.40	0.57	-

Source: Computed by the Author

The Table-3 and 4 illustrate the potential trade in relation to exports and imports among SAARC countries. A quick look at table 3 and table 4 reveals that there is scope for Afghanistan and Maldives to expand its trade with several countries. In terms of exports, Afghanistan has a sufficient trade with countries like Bangladesh, India and Pakistan. Likewise Afghanistan imports from Bangladesh exceed the actual trade (imports) and there is sufficient trade (imports) with India, Pakistan and Sri Lanka. The maximum trade (exports) potential for Bangladesh exists Bhutan, followed by India, Maldives, Pakistan, Sri Lanka and Maldives, while the trade (exports) potential already exhausted with Afghanistan. Bangladesh has to increase the trade (imports) with India and Nepal and it has approached the maximum trade (imports) with countries like Afghanistan, Bhutan, Maldives, Pakistan and Sri Lanka, in other words, the potential is already exhausted. Bhutan has to increase the trade i.e., exports and imports with Bangladesh and it has sufficient trade with India, Maldives, Nepal, Pakistan and Sri Lanka. In the SAARC region, India has the trade (exports) potential with Bangladesh and Nepal. In terms of imports, trade potential of India with countries like Afghanistan, Bhutan, Maldives, Nepal and Sri Lanka are already exhausted and other countries in the SAARC region have the trade (imports) potential.

Maldives has the trade (exports) potential with Sri Lanka and India. Maldives trade (imports) potential has already exhausted with India, Nepal, Pakistan and Sri Lanka and the trade (imports) potential is still exists with Bangladesh. Nepal has high trade potential (exports) with Pakistan and Bangladesh. In terms of imports, Nepal has the sufficient trade with four

trading partners namely, Afghanistan, Bhutan, Maldives and Sri Lanka, because the actual trade (imports) is higher than the predicted trade (imports). Only Bangladesh, India and Pakistan have the potential to expand the trade (imports) with Nepal. Except Nepal, other SAARC countries like India, Sri Lanka, Maldives, Bangladesh and Afghanistan have already exhausted the trade (exports) with Pakistan, that means only Bangladesh has the opportunity to increase the trade (exports) with Pakistan. The result also reveals that there is a chance to expand the Pakistan trade (imports) with Bangladesh and Nepal. Except Afghanistan, all the SAARC countries have sufficient trade (exports) with Sri Lanka. Sri Lanka has the trade (imports) potential with Bangladesh and Maldives. The maximum trade (imports) levels with countries like Afghanistan, India, Nepal and Pakistan, which means the potential trade (imports) is already exhausted.

Conclusion

Intra-SAARC trade flows are very low compared with the other trade blocks and Achakzai (2006) also observes that SAARC countries are yet to achieve trade creation benefits. Some of the previous studies confirm that the low trade volume between SAARC countries is due to the political issues among them. The gravity equation is used to estimate the trade potential between the SAARC countries for the year 2021. The OLS test for the gravity model variables (GDP and distance) has the expected sign and high significance at the 5 percent level of significance. PCI has negative signs and is found to be statistically significant. The other variable, like adjacency, is statistically significant with positive signs. The common language is found to be negative and significant. The result of the study shows that India has the great potential and resources to play a vice role in the success of the SAARC cooperation and development among member countries. The present study also found that intra-SAARC trade is too low, and SAARC countries as a whole trade less with the outside world than would be expected. Most of the countries in the SAARC region have not reached their optimum trade (exports) in the intra-SAARC trade. In this analysis, the possible reason for the proportional relation between distance and trade flows is that all the SAARC nations are connected to India and share common borders, either land borders or shared water bodies. Hence, there is no distance barrier between them that hinders trade flow. The free trade agreement also had a positive impact on the trade flow. Tariffs are barriers for the trade flow; hence, any reduction in tariff rates will tend to increase the trade flow between the two countries, and this economic theory is proved by the gravity model analysis of the current study. This study suggests that the SAARC countries have the potential to increase

the trade volume between SAARC member countries and also have the opportunity to make it an active association for regional cooperation in South Asia.

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Collaborative Governance Model: An Approach to Achieve Last-Mile Delivery of SDG 2030 Localisation

Diya Jayminbhai Desai*

Abstract

The 2030 Sustainable Development Agenda has set 17 global goals for a socially, economically, and ecologically sustainable world. However, generalising the goals for states diverse in geography, demography, economy, climatic conditions, and political system makes its achievement more daunting. Government at all levels inevitably plays a crucial role in SDG localisation, but owing to the increasing burden of responsibilities, the role of only governmental actors won't yield favourable results. This research proposes implementing a collaborative governance model that brings together Civil Society Organisations – NGOs and NPOs, the private sector, and the government under one umbrella to achieve last-mile delivery of public services and help nations achieve the Sustainable Development Agenda. The research is conducted through a comprehensive thematic analysis of 20 impact assessment reports whose analysis and interpretation strongly suggest that the collaborative governance model be used in the SDG localisation process to achieve last-mile delivery.

Keywords: Collaborative Governance, Last-mile Delivery, SDG Localisation, Thematic Analysis

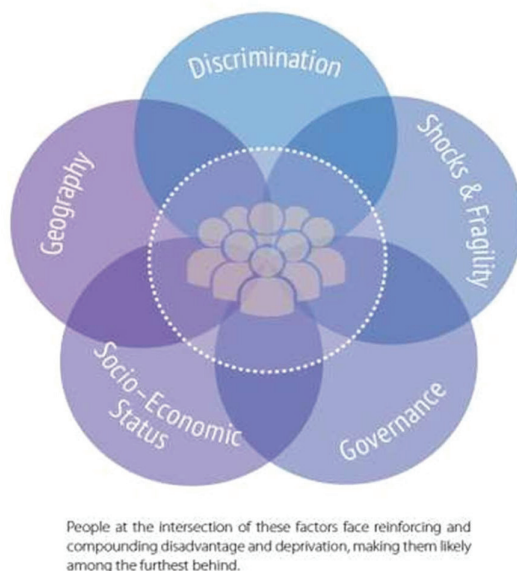
Introduction

In September 2000, the United Nations signed the Millennium Declaration, which included 8 Millennium Development Goals (MDGs) to eliminate extreme poverty, hunger, gender inequality, lack of access to primary education, increasing child mortality rates, the spread of HIV/AIDS, a lack of formal approach towards ecological sustainability, and the significance of fostering a global partnership for development.

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With a fast forward of 15 years, The United Nations adopted the Sustainable Development Goals (SDGs) with a global transformative promise of “Leave No One Behind.” The 17 SDGs nearly reflect the same issues as the 8 MDGs. Still, it takes an integrated approach toward a socially, economically, and environmentally sustainable present and future and focuses on monitoring progress through data. One might wonder then, what is the differentiating factor between MDGs and SDGs? The distinctive element of difference is that SDGs call for global action, i.e., seek impactful outcomes from both developed and developing countries of the world in different fields of social, economic, and environmental concern, unlike the MDGs that were aimed towards only the developing ones.

Figure- I: Being Left Behind: Five Intersecting Factors



Source: UNDP. (2018, July). What Does it Mean to Leave No One Behind? UNDP Discussion Paper. Retrieved from: Discussion_Paper_LNOB_EN_lres.pdf(undp.org)

For India, the commitment to the attainment of SDGs is more crucial as it aligns with its value system and vision. As we envision a “New India,” “Sabka Saath, Sabka Vishwas” – the synonymous form of “Leaving No One Behind” has become significant to India’s growth more than ever. (UNDP, 2018) suggests that governance plays a pivotal role in staying true to the principle. Rather than MDGs, SDGs are nationally owned. Hence, the policy framework can be country-specific, which helps the nation adjust the SDG parameters with the available resources, capacity, and potential leading to SDG localisation. With a strong emphasis on integration and programme coherence, the framework resolution (UN General Assembly,

2015) states, “Governmental institutions and public agencies will also work closely on execution with international establishments, regional and local officials, subregional institutions, philanthropic organisations, academia, volunteer cohorts, and others.”

Chaturvedi (2021) States that SDGs are to be implemented through guided national policies and meaningful multistakeholder and international partnerships and that the welfare of the people can be achieved only through the participation of people and the community. India, though one of the fastest-emerging economies in the world, has not yet been able to match its pace of infrastructure and capacity-building with the rate of population explosion. This brings excessive burden on the shoulders of the administrators to provide efficient delivery of services to the people especially the marginalised communities, people with disabilities, people residing in extremely remote areas, etc. Over the last decade, it has been observed that the targeted beneficiaries have been unable to reach, and the welfare schemes put into place for them do not achieve the expected outcomes.

The primary objective of this research is to propound and inspect the execution of the collaborative governance model: a formal multi-stakeholder forum where non-governmental stakeholders along with public agencies engage in decision-making with participation from the community as well; as a medium to achieve last-mile delivery of SDG 2030 Localisation. (MacDonald et al., 2018; Newman et al., 2004). This governance model fosters a participatory and inclusive platform involving stakeholders beyond the government in the formation as well as the delivery of effective public policies. (Szetey et al., 2021).

To substantiate the effectuality of the collaborative governance model in ensuring the last-mile delivery of SDG localisation, this qualitative research is based on a comprehensive thematic analysis of a stratified sample of 20 impact assessment reports. The qualitative data provides definite insights into the possible impact on last-mile delivery of public services and SDG attainment along with an understanding of the real-world implementation of collaborative governance initiatives.

The findings of the qualitative analysis strongly highlight the presence of collaborative governance initiatives across diversified activities conducted as either welfare initiatives or CSR activities and their direct relation with various parameters of assessing the sustainability of those activities. Concluding it, the research underlines that the collaborative governance model acts as a promising solution to the trade off between the accelerating need to attain SDGs and meeting the varied needs of the people against extremely scarce resources. It also ensures that the gap between governmental institutions and the beneficiaries is bridged by the organisations at the grassroots level – CSOs, NGOs, the private sector, etc.

The consequent sections of the paper examine the challenges faced in institutionalising collaborative governance models provide actionable solutions to overcome the shortcomings and focus on a concerted effort to achieve the benchmarks of SDGs.

Significance and Scope of the Study

This study's analysis of the collaborative governance model as a pragmatic approach to attaining localisation of the 2030 Agenda for Sustainable Development (SDGs) in the context of a large and varied nation like India is significant because it sheds light on this method's potential for achieving last-mile delivery. The 17 global goals included in the 2030 Sustainable Development Agenda cover diverse facets of social, economic, and ecological sustainability. However, these objectives must be tailored locally to suit the particular difficulties that different nations confront. India, the largest democracy in the world and a country with a variety of geographical, demographic, and socioeconomic situations, offers an excellent case study to look at how collaborative governance is used in SDG Localisation. (Silva et al., 2023).

The study explores areas of governance beyond the scope of the conventional government-centric framework. The collaborative governance approach encourages inclusive decision-making by including community leaders, non-government organisations, civil society groups, and business sector entities in the policy development process. Knowing the model's potential is essential because it can mobilise the skills, resources, and viewpoints of several stakeholders to tackle the complexity and interconnections of sustainable growth at the local level.

The broad scope of this study includes multi-dimensions of the governance model as well as studies of the consequences of achieving last-mile delivery of SDGs in India. (Lima, 2021). By focusing on impact assessment reports of corporate social responsibility (CSR) activities by public sector undertakings (PSUs) and publicly listed companies, welfare programmes by non-governmental organisations (NGOs) and civil society organisations (CSOs), and government schemes, the study examines the potential of collaborative governance in driving sustainable development efforts across diverse sectors.

The research also examines the difficulties and chances that come with putting collaborative governance efforts into practice. It clarifies the part that communication, consciousness, and stakeholder involvement play in fostering teamwork for SDG localisation. The study also looks at how political factors, resource availability, and power dynamics affect how successful collaborative governance is in attaining the SDG 2030 Agenda.

The results of this study have significant significance for anyone working on sustainable development programmes in India and elsewhere, including

policymakers, practitioners, and stakeholders. The study helps in the formulation of more efficient, equitable, and sustainable development plans by offering an evidence-based understanding of the benefits and drawbacks of collaborative governance. Additionally, it adds to the larger scholarly discussion on collaborative governance as a revolutionary method for addressing the world's difficult development concerns.

The relevance and scope of this study, then, rests in its effort to comprehend the collaborative governance framework's ability to realise SDG 2030 localisation in India at the final mile. The project intends to provide practical advice and insights for promoting cooperative efforts among governing bodies, civil society groups, commercial sector entities, and local communities by analysing qualitative evidence from impact analysis reports and interacting with real-world case studies. The research imagines a day where SDGs are actively pursued with more inclusion, cooperation, and group action, paving the road for a more just and sustainable society.

Literature Review

In recent decades, a new style of governance has replaced administrative and adversarial methods of formulating and enacting policy. As it has come to be recognised, collaborative governance brings together stakeholders from all sectors in group settings with government agencies to participate in consensus-based decision-making (Ansell & Gash, 2008). Although the phrase "collaborative governance" is now often used in public administration literature, its meaning is still unclear and its application is not uniform (Emerson et al., 2012). Collaboration also means that nongovernmental stakeholders will be held accountable for the results of policies (Bendell, 2013). As a result, we require that stakeholders actively participate in decision-making. In a lot of the collaborative governance literature, this requirement is implied.

"Governance", as a broad phrase, refers to the act of administering, whether it be in the public or private sector. (Ostrom, 1990) Views governance as a component of collectively decided norms and regulations intended to control both individual and group behaviour within the framework of collective activity. Governance is described as the "means to steer a system that influences choices and behaviours within the public, private, and civic sectors" by (O'Leary, Rosemary, Bingham, & Gerard, 2006). The definition of (Emerson et al., 2012) Includes "multi-partner governance," which can refer to collaborations between the public and private sectors, civil society, and the community, as well as joined-up government and hybrid arrangements like co-management regimes and partnerships between the commercial and public sectors (Agrawal et al., 2007; Emerson et al., 2012). Among other types of collaborative arrangements started in the private or civic sectors, it also includes the plethora of community-

based collaboratives involved in collective resource management (which frequently invite the participation of public agencies), as well as intergovernmental collaborative structures like interstate river basin commissions governed by state and federal government representatives, and federal interagency collaboration on public health policy or climate change science. (Cooper et al., 2006; Emerson et al., 2012).

Local governments are in a better position to comprehend and address the concerns of the people since they are located closer to them. Connecting regular people or community leaders with service providers has so become essential. (Guha & Chakrabarti, 2019). The most promising approaches for realising a collaborative public management that is focused on citizens and involves the public are those involving civic engagement. A type of governance that goes beyond “the process of supporting and working in multi-organisational arrangements to address issues that cannot be handled, or solved easily, by single organisations” is represented by collaborative public management. (McGuire, 2006; Meuleman, 2021).

The top-down strategy is used in India to execute the SDGs; however, the bottom-up approach is necessary to meet the objectives (Bilsky et al., 2021; Reuter, 2023). For some local administrations, the SDGs are not a top priority. For cities to embrace and carry out these SDGs, they require encouragement and national assistance. The implementation of SDG-oriented urban planning and infrastructure can also be prioritised by municipalities through the inclusion of SDGs in their outcome-based budgets (Bradley et al., 2022; Tiwari et al., 2021). Clear priorities and criteria are crucial for ensuring that the SDGs are accomplished (Sarvajayakesavalu, 2015). To ensure the adoption, execution, and oversight of the SDG agenda, NITI Aayog collaborates closely with MoSPI, all central ministries, state/union territory (UT) administrations, think tanks, and civil society groups (NITI Aayog, 2019).

The SDGs’ insistence on multistakeholder partnerships as a crucial means of implementation stems from the growing consensus that governments acting alone are ill-equipped to tackle today’s immense challenges. Though, as previously demonstrated, the particular set of partnerships centred around the MDGs mainly fell short of expectations, those were only a fraction of the thousands of cross-sector alliances that have formed in recent decades, tackling everything from social issues to health to energy to the environment (Florini & Pauli, 2018).

To execute a governmental objective that could not otherwise be achieved, collaborative governance refers to the processes and structures of the formulation and execution of public policy that engage people effectively across boundaries of public agencies, levels of administration, and/or the public, private, and civic spheres. (Emerson, 2018).

Methodology

Research Question

The methodology aims to fulfill the following research question: Can the Collaborative Governance Model Help Achieve Last-Mile Delivery of SDG 2030 Localisation? The research aims to investigate the effectiveness of the Collaborative Governance Model in facilitating the last-mile delivery of Sustainable Development Goals (SDG) Localisation by assessing how collaborative approaches involving diverse stakeholders, such as government bodies, NGOs, and local communities, contribute to the successful implementation of SDG targets at the grassroots level. It explores whether collaborative governance enhances coordination, resource-sharing, and community engagement to achieve SDG objectives.

Research Methodology

This research intends to analyse the potential of the collaborative governance model in enabling last-mile delivery of the SDG 2030 localisation process. To address the above-mentioned research question, comprehensive qualitative research employing the technique of thematic analysis has been undertaken to find evidence of the relationship between collaborative governance and attainment of SDG Localisation ensuring 'Leaving No One Behind'.

Research Design

The intricacy of collaborative governance and its influence on the localisation of SDG 2030 are investigated using qualitative methods. It utilises the benefits of the established thematic analysis technique for finding, deciphering, and reporting themes in qualitative data. The study goals are well-aligned with this technique, enabling a methodical investigation of recurring themes and concepts in textual data.

Data Collection

A purposive sampling technique is used to select 20 impact assessment reports of welfare activities undertaken by diverse sectors in India. The reports are specifically chosen with the consideration of the Indian context as the model has not yet gained formal recognition in India but the evidence of the aspects of collaborative governance are present in various welfare activities carried out in India. Impact assessment reports are considered for this study as they are prepared by a third party and give an almost neutral overview of the activities undertaken, their objectives, challenges faced, scope of improvement, sustainability etc. The selected sample included

A.5 Reports of Corporate Social Responsibility (CSR) activities by Public Sector Undertakings (PSUs) – THDC Rishikesh, BPCL Mumbai, ONGC, BHEL, GAIL India Ltd.

B.5 Reports of CSR activities by Public Listed Companies – Ambuja Cement, Bandhan Bank, Exide, Mahindra and Mahindra, Wipro.

C.5 Reports of welfare initiatives by Civil Society Organisations (CSOs) and Non-Governmental Organisations (NGOs) – The Akshay Patra Foundation, CARE India, Pradan, SEWA India, Yuvaroshni

D.5 reports of government schemes – Dharavi Slum Covid-19 management, MGNREGS MP, NRLP-NRLM, Smart Pune, SBA Jharkhand.

Data Analysis

Thematic analysis was carried out completely in MS Excel to deduce the qualitative evidence into specific themes in the following manner:

Familiarising with the Data: It is imperative that researchers fully immerse themselves in the data, whoever obtained the data, to become familiar with the depth and scope of the information. (Braune & Clarke, 2006).

Initial Coding: This stage includes the initial generation of codes from the data, a theoretical activity that necessitates frequent re-examination of the data by researchers. Qualitative coding is a method of interacting with and evaluating data that involves reflection. (Savage, 2000). Coding enables the researcher to streamline and concentrate on particular data qualities. Codes were developed by taking inspiration from knowledge of (Allen et al., 2018; González et al., 2023; Masuda et al., 2022; Vij, 2011).

Table-I: Description of Categories and Codes along with Code Description

Category	Initial Codes	Code Description
Stakeholder Engagement	Level of Engagement: Low	Limited participation and interaction of involved stakeholders
	Level of Engagement: Moderate	Balance but insufficient participation among involved stakeholders
	Level of Engagement: High	Active and fruitful participation of involved stakeholders
	Diversity: Govt. and Non-Govt.	Both governmental and non-governmental actors are involved
	Diversity: Only Non-Govt.	Only non-governmental actors are involved
	Diversity: Only Govt.	Only Governmental actors are involved
Resource Allocation & Utilisation	Financial Resources Sources (*)	Sources of finances employed in the process
	Human Resources Sources(*)	Sources of human resources employed in the process
	Utilisation & Mobilisation(*)	How well have the resources been utilised and mobilised among the beneficiaries?

Governance Structure	Multi-stakeholder forum	Institutionalisation of collaborative governance
	Collaboration with Govt.	Involvement and partnership with government entities
	Partnership	Cooperative but not participatory relationship among diverse stakeholders
Decision-making	Participatory	Inclusive governance, shared goals and ownership, collaborative interaction
	Consultative	Seeking inputs from all stakeholders but the final decision rests with the governing entity
	Consensus-oriented	Seeking unanimous agreement among all stakeholders, requiring mutual compromise
Implementation Mechanism	Direct Service Delivery	Direct delivery of welfare services by implementing entities through personnel or infrastructure
	Public-Private Partnerships	A formal traditional model of collaboration between government and private entities with defined distribution of roles
	Community-based Approach	Empowers communities to actively participate in formulating and executing welfare activities
	Tech-enabled Solutions	Technology is used as a medium for service delivery and also as a solution to the defined needs.
	Capacity Building & Skill Development	Empowers individuals and communities by upgrading their current level of knowledge and skills for long-term progress
	Behavioural Change Communication	Increasing the spread of awareness and boosting behavior change for long-term impact
Last-mile Delivery Toolkit	Communication & Awareness	Usage of different media to deliver services to every person in the targeted population
	Participation & Feedback	Whether beneficiaries were made to participate in the planning and implementation and whether their voices were heard and considered?
	Beneficiaries as Stakeholders	Making beneficiaries (community) the prime stakeholders and formulating a customized execution plan
Last-mile Delivery Toolkit	Responsiveness & Accountability	Whether the governing entity is responsive to the needs and accountable for their actions?
	Alignment & SDG	Assessing whether welfare activities align with any of the SDGs
Last-mile Delivery Toolkit	Accessibility & Reach	The extent of the reach of welfare activities, accessibility issues for marginalised sections, geographical coverage
	Inclusion and Equality	Consideration of all sections and strata of society, equality in terms of opportunities social inclusion, decision-making

Impact	Social Impact	Improved access to basic services, social inclusion, gender transformative impact, social capacity building, etc.
	Education Impact	Increased enrolment and retention rates, gaining literacy in various aspects, improved access to quality education, etc.
Impact	Economic Impact	Improved quality of life, creating local employment opportunities, better local economies etc.
	Health Impact	Increased health awareness, improved access to quality health care facilities, decrease in diseases & mortality rates etc.
	Environmental Impact	Preservative and sustainable usage of natural resources, boosting green energy ecosystems, climate change mitigation etc.
	Behavioural Change	Improved perceptions towards topics like diseases, taboos, orthodox beliefs, hygiene practices, financial literacy etc.
Lessons Learned	Best Practices(*)	Mention any one-of-the kind successful approach/practice
	Challenges(*)	Identify the challenges & shortcomings
	Recommendations(*)	Assess what could've been done better
Assessing Sustainability	Measurable Progress in SDGs at local level	Assessing the impact of welfare activities in SDG attainment through some measurable parameters
	Impact on sustainable development	Whether the impact is self-sustainable or needs constant help, impact on long-term development
	Sustainability of the respective governance structure	Whether the adopted governance structure is sustainable for related activities and its impact on long-term vision

Source: Author

Identifying Themes: The importance of a topic in connection to the overarching research issue is more essential than whether it is dependent on quantitative measurements (Braune & Clarke, 2006). Themes seem to be important ideas that connect a sizable amount of the data after they have been recognised (DeSantis & Ugarizza, 2000).

Reviewing Themes: The identified initial themes are reviewed, and iterative process is carried out to determine its relativity with the research question.

Defining Substantial Themes: The prominent themes are filtered, and the relationships are visualised, capturing the essence of each concept.

Findings and Discussion

The 20 impact assessment reports' theme analysis provided deep insights into the function of collaborative governance in attaining Localisation of the

SDG 2030 across multiple industries for the final mile. The research findings are grouped into major topics that arose from the analysis, emphasising how collaborative governance affects stakeholder participation, decision-making procedures, sustainability, and the achievement of SDGs.

The findings highlighted the following themes and sub-themes:

Successful contributing aspects of Collaborative Governance Structure:

The thematic analysis provided evidence of four common factors that led to the attainment of parameters of collaborative governance contributing to sustainable development.

- High Level of Engagement among all stakeholders – which led to well-utilised financial and human resources.
- Presence of non-govt. stakeholders – which ensured inclusion, equality, accessibility and reach to the communities belonging to the marginalised and geographically remote areas.
- Participatory Decision-making – which helped enhance communication, increasing the spread of awareness and involving communities through participation and feedback.
- Multi-stakeholderforum

Factors Ensuring Sustainability

The analysis revealed three major aspects that ensured the sustainability of the welfare activities that could achieve their objectives. They are:

- Assessing Needs & Impact – which contributed to ensuring that the objectives alignwith SDGs
- Measurable Progress towards SDG – which assures a long-term sustainable impact ultimately leading to assessing the long-term sustainability of the respective governance structure
- Adopting Appropriate Implementation Mechanism – Evidence showed that community-based approach, tech-enabled solutions, capacity building & skill development and Behavioural change communication led to ensuring the long-term sustainability of the respective governance structure

Best Practices Observed

- Adoption of approaches by the Government indicating that the Government accepts the significant role of organisations working at the local level.
- Making communities self-dependent
- Capacity Building for Last-mile delivery
- Far-reaching impact through CSOs and NGOs

Discussion

While collaborative governance has often produced positive outcomes, there are certain gaps, flaws, or reasons why it hasn't worked in India. Among the principal difficulties are (O'Flynn & Wanna, 2008):

Power Asymmetry When there is an imbalance in power among stakeholders, dominant actors may override the concerns of marginalised groups. As a result, policies may not fully meet the requirements of all stakeholders and may impede successful collaboration (Purdy, 2012).

A Lack of Communication and Trust Successful collaboration requires building trust among a variety of stakeholders. Ineffective communication and openness can breed mistrust, prevent the exchange of information, and make it challenging to reach an understanding (Ansell & Gash, 2008).

Issues with Fragmentation and Coordination The engagement of several parties may occasionally result in fragmentation and poor coordination. Decision-making can be delayed and execution hampered by conflicting interests and agendas among several agencies and organisations (Taghiyeva & Hashimova, 2019)

Institutional and Bureaucratic Restrictions India's administrative framework can occasionally be stiff, making it difficult to incorporate cooperative techniques into current governance structures. The efficient operation of collaborative efforts might be hampered by institutional hurdles and administrative challenges (Khalid et al., 2021).

Short-term Political Considerations The long-term viability and effectiveness of joint ventures may be harmed by policy decisions based on short-term political considerations.

Changing political agendas and leadership changes can sabotage current initiatives (Kim, 2010).

Lack of Resources and Capacity Some stakeholders might not have the resources, knowledge, or capacity to actively engage in collaborative governance procedures. This can result in uneven contributions and reduce the model's usefulness.

Cultural and Social Factors Finding mutually beneficial agreements and shared ideals among stakeholders from various viewpoints and backgrounds might be difficult due to India's varied cultural and social environment.

Resistance to Change Some industries may have strong traditions of top-down decision-making, which makes it difficult to implement collaborative governance models.

Insufficient Inclusivity Despite initiatives to include a variety of stakeholders, it's possible that certain vulnerable or disadvantaged groups are still left out of the decision-making process, resulting in policies that fall short of meeting their requirements.

Lack of Clearly Defined Accountability The collaborative governance approach can occasionally make it challenging to assign blame for results, which makes it difficult to keep stakeholders responsible for their promises.

Despite these difficulties, collaborative governance is still a vital strategy for dealing with complex problems and encouraging a more inclusive and efficient government. It is imperative to fortify the institutional structure, encourage transparency, improve communication, and guarantee the active participation of all stakeholders in the formulation of decisions to address these weaknesses.

Addressing Challenges

Collaboration between policymakers and practitioners is necessary to successfully implement collaborative governance and overcome its problems. Here are some tactics to deal with the problems identified and raise the likelihood that they will be implemented successfully:

Inclusivity and Representation Decision-makers should make sure that all pertinent parties are involved in the process. It is important to make an extra effort to include disadvantaged or vulnerable populations. Practitioners can lead dialogues that give other viewpoints a chance to be heard and considered.

Capacity building Giving stakeholders who may lack the necessary tools, and training might enable them to take an active part in collaborative processes. Investing in capacity-building initiatives can help stakeholders better understand and participate in group decision-making.

Trust-building Encourage open and transparent communication among stakeholders. Relationships may be strengthened, and trust can be fostered through regular meetings, information exchange, and feedback methods.

Clearly Defined Roles and Responsibilities Policymakers need to spell out exactly what each stakeholder's role and responsibility is in the collaborative process. By doing so, accountability is ensured, and unnecessary work is avoided.

Long-term Ambition and Consistency Despite shifts in political leadership, policymakers should work for a long-term perspective and uniformity in policy objectives. This will stop priorities from changing suddenly and from being implemented improperly.

Adaptability and Flexibility Collaborative governance necessitates flexibility to consider changing circumstances and input. Practitioners and policymakers should be willing to modify their plans and methods considering new information and results of evaluations.

Institutional Strengthening Policymakers can seek to provide supportive institutional frameworks for cooperative governance. This involves encouraging inter-agency collaboration and simplifying bureaucratic

procedures (Wood & Gray, 1991).

Addressing Power Asymmetry Practitioners and policymakers alike should be conscious of and actively endeavor to address power disparities. Creating forums for discussion and negotiation can aid in guaranteeing that the opinions of all parties involved are taken into account.

Monitoring and Assessment Consistent monitoring and assessment of joint activities can assist in spotting problems before they become serious and allow for the required corrections to be made to guarantee effective implementation.

Community Involvement Include beneficiaries and nearby communities in the decision-making process right away. Their participation in project development and execution enhances ownership and dedication to its success.

Using Technology Make use of technology to help stakeholders communicate and work together, particularly in geographically remote places. Sharing information and making decisions may be streamlined via digital platforms.

Learning from prior Experiences Practitioners and policymakers should draw lessons from prior collaboration projects that have been successful and unsuccessful in India and other nations. Future strategies can be influenced by comprehending what worked and what did not.

Policymakers and practitioners may increase the likelihood of effective implementation and generate favourable results in collaborative governance efforts by putting these ideas into practice and encouraging a culture of cooperation and inclusion.

Recommendations

Through the collaborative governance approach, the last-mile delivery of the SDG 2030 localisation in India requires a comprehensive plan that incorporates several stakeholders and solves particular issues (O'Leary & Vij, 2012). Here is a thorough plan to make sure that this model is used correctly:

Identifying Local Stakeholders Determine and plot all important local stakeholders, such as government agencies, local governments, non-governmental organisations (NGOs), community-based groups, academic institutions, businesses, and individuals. For the purpose of facilitating communication and collaboration, create a record of these stakeholders (Zadek & Radovich, 2006).

Identifying and Prioritising Needs To determine the most important SDG objectives and indicators that require immediate attention, do an evaluation of needs at the local level. Rank the SDGs in order of importance and influence on the neighborhood.

Establishing Collaborative Platforms At the local level, develop committees or platforms specifically for collaboration with the stakeholders you've identified. These venues may be used for ongoing meetings, deliberations, and decision-making (Emerson& Nabatchi, 2015).

Capacity Building Arrange training courses and seminars for stakeholders to help them better grasp the SDGs and the concepts of collaborative governance. teach students about things like data gathering, monitoring, and assessment.

Community Involvement Give citizens and local communities authority by including them in the decision-making process. To guarantee that community opinions are heard and taken into consideration, conduct education initiatives and public dialogues (Bianchietal.,2021; Khan et al., 2018).

Information Sharing and Data Share data and information across stakeholders by making it easier for them to do so. To support decision-making based on evidence, create a single repository for pertinent data and make sure that all stakeholders can access it.

Localising SDGs Consider local possibilities and constraints while adapting the global SDG objectives to the local environment. Create regional metrics and plans of action that are inline with the overall SDG framework(Stockholm Environment Institute et al., 2021).

Public-Private Partnerships Promote PPPs to make use of each sector's advantages in attaining SDG objectives. Engage corporations and businesses in social responsibility programmes that support the SDGs.

Monitoring and Evaluation Establish an effective monitoring and evaluation mechanism to evaluate local progress toward SDG objectives. regularly evaluate the results of joint efforts and use the findings for continuous improvement.

Resource Mobilisation Investigate creative finance strategies and partnerships to raise funds for SDG implementation. Crowdfunding, impact investing, and using corporate social responsibility funds are some examples of this.

Policy Integration: At the municipal, state, and federal levels, incorporate SDG Localisation initiatives into current policies and programmes. Make sure that the frameworks for collaborative governance are included (Ansell et al., 2020).

Information Sharing and Learning Encourage information sharing and learning amongst diverse groups and regions so that they may share best practices, difficulties, and triumphs. Make networks and alliances to enable such interactions.

Through this detailed strategy, India can successfully use the collaborative governance approach to complete Localisation of the SDG

2030. This strategy will guarantee that all stakeholders are included, that local goals are considered, and that grassroots sustainable development is accomplished.

Conclusion

A unified narrative about the transformational capacity of collaborative governance in ensuring last-mile execution of SDG 2030 Localisation emerged from the thematic analysis of the impact evaluation reports. Enhanced stakeholder participation, effective final-mile delivery, shared decision-making, long-term viability and the identification of difficulties and solutions are just a few of the themes that collectively offer a thorough picture of the effects of collaborative governance spanning several sectors.

These findings provide a path for administrators, professionals, and stakeholders to improve their collaborative efforts in addition to reaffirming the critical role that collaborative governance plays in achieving the SDGs. Future research in the Indian context should explore the capacity of the collaborative governance model, employing a mixed-method approach to assess its merits and challenges. This research could lead to the development of a comprehensive framework for implementing collaborative governance in the last-mile delivery of SDG Localisation and broader public services.

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Trend, Pattern, Direction, Diversification and Competitiveness of Spices Export in India Since 1991

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Abstract

Principal export commodities in agriculture are tea, coffee, spices, cashew, tobacco etc. In recent years export of India shows a significant increase and diversion to destination countries like OECD, OPEC and developed countries. The study tries to examine the trend, pattern, direction and diversification of spices and since 1991. This analysis will give a clear picture about the performance and diversification of these products and hence help the policy makers to make appropriate policies in the light of findings. Trade share as percentage, compound annual growth rate and Herfindahl-Hirschman Index (HHI), Nominal Protection Coefficient (NPC) are used to assess export performance, competitiveness and diversification of these products since 1991. Furthermore, commodity-wise destination and HHI calculation also observed that export of these commodities is diversifying from traditional markets to new markets. The better foreign relation, stiff competition from other producing countries, the impact of reforms and the formation of new FTA are the reasons behind the diversification of Indian export. The analysis of competitiveness indicates that spices export is competitive under the study period in the world market.

Keywords: Cashew, Diversification, Exports, Pattern, Spices, Trend

Introduction

The decade of the 1990s witnessed very significant development in the Indian economy in terms of trade liberalization and formation of WTO, which has an impact on agricultural trade. Indian agriculture export was \$ 3.2 billion in 1992-93, it jumped to \$4 billion in 1993-94 and witnessed

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a further increase to \$6.3 billion in 1995-96 (Ramesh 2011). During early 1990s marine product topped the list of agricultural export followed by oil meals, tea, coffee, basmati rice, spices, cashew nut and tobacco. The composition of trade of a country implies the types of goods and services that are exported and imported. At the time of independence commodities like jute, tea and cotton contributed more than 50 per cent of total export earnings but in recent years gems and jewellery and crude petroleum emerged as major export items in India. Principal export commodities in agriculture are tea, coffee, spices, cashew, tobacco etc. In recent years export of India shows a significant increase and diversion to destination countries like OECD, OPEC and developed countries. The group of developing countries accounts for 29.98 percent in 1996-97 whereas 41.4 percent 2013-14. Similarly, OECD countries share was 55.57 percent in 1996-97 and 34.75 percent in 2013-14. The OPEC account for 9.64 percent in 1996-97 and its share went up to 19.35 percent in 2013 -14.

Export diversification leads to export-led growth, lower instability in export earnings and expand export revenue (Seema 2011). Therefore in this context, the study tries to examine the trend, pattern, direction and diversification of spices since 1991. This analysis will give a clear picture about the performance and diversification of spices products and hence help the policy makers to make appropriate policies in the light of findings.

Trade share as percentage, compound annual growth rate and Herfindahl-Hirschman Index (HHI) are used to assess export performance and diversification of these products since 1991. NPC is estimated for spices in India for the period from 1991 to 2013. If NPC is greater than one, the commodity is not competitive, if it is less than one it is said to be competitive in the export market.

Table-I: Spices share to agriculture export in India

Year	Spices (v)
1991	4.75
1992	4.35
1993	4.86
1994	6.00
1995	5.89
1996	5.83
1997	6.57
1998	6.93
1999	6.39
2000	6.17
2001	5.44
2002	4.32
2003	4.44
2004	3.71

Year	Spices (v)
2005	3.83
2006	3.39
2007	4.00
2008	5.02
2009	7.09
2010	5.06
2011	4.20
2012	5.69
2013	5.86

Source: Computed from Ministry of Agriculture Govt. of India

Table-1 shows that the export shares of spices to total agricultural export. Spices export share to total agricultural export is fluctuating year after year under the study period.

Direction and Diversification of Spices Export from India

This section provides region direction and diversification of spices export from India.

Table-2: Major region wise export of spices from India

Regions	1991		2001		2013	
	Quantity	Value	Quantity	Value	Quantity	Value
America	18	28	26	31	12	25
European Union	17	25	21	20	10	17
Asia	52	36	55	42	66	48

Source: Estimated from DGCI&S Kolkata

From the region-wise export data for various periods (Table .2), the Asian zone is fast emerging as the major destination for Indian spices with 66 percent in quantity and 48 percent in value followed by American zone and European Union countries during the year 2013. Share further, reveals that spices export destination to the American zone and the European Union is low in 2013 as compared to 1991 and 2001. It may be attributed to the emergence of new exporters by providing low price with good quality. Countries like Vietnam and Guatemala are capable to produce more effectively than India and to export to the global market (George 2015).

Country wise Diversification of Export Spices Export

In this section, discusses major country wise destinations of spices export in India. Major destination countries for spices are USA, Malaysia, Saudi Arabia, Germany, Singapore and UAE.

Table-3: Major country wise export destination of spices from India

Year	USA	Malaysia	Saudi Arabia	UK	Germany	Singapore	UAE	Total
1991	33.51	1.87	5.24	6.13	5.23	7.23	8.39	59.21
1992	32.01	2.18	5.3	7.12	4.4	8.84	9.27	67.6
1993	29.24	1.85	4.89	6.08	2.57	6.71	7.56	69.12
1994	29.42	1.8	6.02	6.05	3.5	5.94	10.38	58.9
1995	23.99	2.94	5.13	5.83	5.31	6.94	11.06	63.11
1996	33.34	4.61	4	5.1	2.42	8.26	11.35	61.2
1997	31.74	2.73	4.04	5.49	2.54	8.32	14.35	69.08
1998	35.72	2.44	4.09	6.05	2.81	5.64	14.88	69.21
1999	35.98	3.33	3.37	5.09	2.63	2.87	17.6	71.63
2000	23.29	6.04	6.26	7.4	2.73	3.51	13.59	70.87
2001	21.67	7.24	5.02	7.92	3.27	3.35	11.25	62.82
2002	22.33	6.09	5.82	7.82	2.57	3.2	11.36	59.72
2003	17.88	9	5.5	7.83	3.11	2.63	11.66	59.19
2004	18.96	13.92	4.26	6.22	2.35	2.77	12.87	57.61
2005	19.31	14.81	5.03	8.31	2.8	2.44	13.66	61.35
2006	17.23	16.42	4.31	5.56	2.19	2.52	16.25	66.36
2007	18.82	15.07	4.39	5.12	2.14	3.01	11.42	64.48
2008	16.46	12.15	4.62	5.51	1.86	2.11	10.59	59.97
2009	13.3	13.67	7.11	5.79	1.54	2.57	11.37	53.3
2010	13.67	15.48	6.52	5.6	1.67	2.11	11.11	55.35
2011	14.38	14.55	8.29	4.78	1.58	2.77	12.73	56.16
2012	14.29	15.69	7.05	3.96	1.47	2.23	12.47	59.08
2013	13.08	19.29	6.2	3.79	1.31	2.33	12.28	57.16

Source: Estimated by using FAOSTAT

Table-3 explains the major country -wise export of spices from India to other countries. During the period 1991 USA registered largest share (33.51 percent) followed by UAE (8.39), Singapore (7.53) UK (6.13), Saudi Arabia (5.24) and Germany (5.23). It is a fact that USA was the major exporting partner with regard to spices up to 2008, thereafter Malaysia become the largest exporting partner to India. It may be due to the financial crisis that occurred in USA. Similarly, most of the Malaysian export was used to re-export to the world market, a phenomenon called trade deflection in trade theory (Park 2013). Moreover export to UK, Germany and Singapore have registered a declining trend whereas UAE and Saudi Arabia recorded a positive trend. In the years 1991, 1992 and 1993 export of spices from India to the countries apart from once mentioned above constituted less than 30 percent of total export whereas in the recent years it went up to more than 40 percent, clearly indicating the diversification of spices export from Indian traditional markets to new markets. Protective measures imposed by developed countries following global uncertainty,

changes due to the WTO regime and stiff competition from new players were the major reasons behind this trend. The Economic Survey 2012 also pointed out that export to USA and Europe is declining but India is able to find out or substitutes new markets with inAsia.

For the purpose of Compound Annual Growth Rate (CAGR) analysis, the entire period is divided in to two sub-periods from (1991 to 2001), (2002 to 2013) and over all period (1991 to 2013). The first period witnessed new economic reforms in 1991, the establishment of WTO, ESAT ASIAN crises in 1997 and semi-recession in 2001. The second period is generally considered to be a smooth period except for the financial crisis in 2008.

It is clear from the CAGR analysis during the period of 1991-2001 among major destination countries, Singapore registered the highest growth rates while UK recorded the lowest growth rate. In the second phase (2002-13) Malaysia registered the highest growth followed by UK and UAE. The fact is that Malaysia registered the highest growth in the overall period and followed by UAE. It reflects that the spices market is diversifying in favour of Asian countries.

Table-4: Selected commodity share to total spices

Year	Fennel & Coriander	Pepper & Chilli	Ginger	Cardamom (Large & Small	Turmeric, garlic, cumin
1991	17.93	1.17	16.14	15.21	9.19
1992	27.23	1.76	10.86	9.48	9.76
1993	22.5	4.42	12.88	14.13	8.82
1994	26.83	1.77	9.39	8.88	7.77
1995	21.59	3.1	17.86	9.63	6.1
1996	25.99	18.77	18.96	6.04	12.733
1997	38.07	9.2	16.14	4.91	13.2
1998	23.34	2.82	9.84	7.48	13.82
1999	16.79	9.66	6.9	10.04	13.66
2000	29.99	2.04	3.94	15.78	12.04
2001	29.87	2.74	3.57	12.34	13.74
2002	23.45	3.48	4.21	14.24	12.21
2003	23.04	3.44	3.68	12.01	14.44
2004	30.39	3.22	9.45	9.03	10.22
2005	27.9	4.72	6.59	9.65	11.72
2006	38.18	6.34	5.1	8.23	13.44
2007	37.87	8.75	2.61	5.01	12.75
2008	39.98	6.87	2.55	6.19	11.43
2009	35.52	7.33	3.52	13.29	12.89
2010	28.64	4.98	4.73	11.21	11.54
2011	25.91	5.84	7.41	15.52	12.21
2012	39.17	6.57	5.91	14.3	12.57
2013	40.65	8.9	3.87	13.02	11.9

Source: Estimated from FAOSTAT, (DGCI&S), Spices Board of India

Table-4 represent selected spices share to total spices export in India. Fennel and coriander recorded the highest share among selected spices over the years. During the year 1991 fennel and coriander share was 17.93 percent while in 2013 it went up to 40.60 percent. Ginger registered 16.14 percent in 1991 whereas only 3.87 percent in 2013, it has shown a declining trend over the years which may be attributed to falling in production and stiff competition from low cost producing countries. Product like turmeric, garlic and cumin together registered 9.19 percentage in 1991 whereas 11.9 in 2013. During the year 1991 papper and chilli registered 1.17 percent while in 2013 it has registered 8.90 percent. In the case of cardamom 15.21 percent registered in 1991, similarly, 14.30 percent in 2013. It has maintained its share throughout the year.

Growth rate of selected spices in India

To assess the export performance of spices products like fennel, coriander, ginger, pepper, chilli and cardamom, the exponential growth rate is calculated for the period 1991-2013. For the purpose of analysis, the entire period is divided in to sub-periods from (1991 to 2001) and (2002 to 2013). During the first period, cardamom registered highest CAGR (15.59), followed by fennel (11.14), coriander (10.13) and pepper (5.59) It has been noticed that ginger recorded negative growth during the first period. During the period 2002 to 2013 export of all commodities performed better than that of the first period. It is because of growing demand in the world market and export promotion methods adopted by the government. In the case of the whole period, chilli registered the highest growth rate followed by cardamom, fennel and coriander. Chilli emerged as a leading export product among selected spices because of the fall of production in other exporting countries and growing demand to cover the shortage of production in these countries.

Country wise diversification of export of selected spices

This section provides country wise direction of selected spices in India. Selected spices are fennel, coriander, ginger, cardamom, chilli and pepper.

Table-4.5 depicted country wise export of fennel and coriander from India since 1991. The year 1991 UAE recorded the highest percentage share (15.07 percent), followed by the USA (12), Malaysia (11.16), Singapore (10.34), UK (6.12) and Saudi Arabia (5.30). During the year 2013 UAE share increased to (18.55) percent from (15.070) in 199. But at the same time percentage share from UK, USA and Singapore has shown a declining trend which shows export is diverted to new destinations.

Table-5: Country wise export of fennel and coriander

Year	Malaysia	South Africa	UK	UAE	USA	Saudi Arabia	Singapore	Total
1991	11.16		6.12	15.07	12.60	5.30	10.34	60.58
1992	11.23		8.64	13.28	11.08	10.37	16.77	71.37
1993	12.90	0.94	10.68	7.96	14.31	5.34	12.40	64.53
1994	11.45	6.09	8.66	7.47	13.47	2.57	10.62	60.33
1995	13.54	6.05	8.53	8.35	8.69	3.66	8.52	57.33
1996	14.71	4.13	5.47	8.66	9.60	2.12	8.43	53.12
1997	10.29	4.94	5.02	10.08	12.52	2.15	22.69	67.69
1998	15.06	6.88	7.42	7.73	13.20	2.95	9.34	62.58
1999	22.42	6.75	8.04	7.12	8.72	1.23	3.38	57.65
2000	14.10	4.24	6.76	8.14	11.50	1.62	9.10	55.46
2001	20.16	4.17	5.19	4.74	12.40	1.43	10.92	59.00
2002	22.36	4.03	8.83	3.65	14.41	1.51	8.17	62.96
2003	26.36	3.94	8.58	7.11	8.53	4.70	4.29	63.50
2004	17.01	3.16	8.45	10.90	9.35	5.60	7.01	61.48
2005	20.34	3.82	6.87	8.75	10.41	3.76	2.34	56.28
2006	16.04	2.11	5.71	10.52	12.62	2.79	3.13	52.92
2007	11.06	2.65	4.63	10.77	12.40	4.88	4.26	50.65
2008	10.26	1.54	3.54	16.42	8.23	4.60	4.26	48.86
2009	10.13	2.48	4.75	13.08	8.82	4.06	2.00	45.32
2010	11.94	3.16	6.11	9.52	15.12	3.68	1.40	50.93
2011	12.39	2.36	5.45	13.37	10.97	5.61	2.07	52.22
2012	12.96	1.34	4.25	15.02	10.35	4.95	0.72	49.60
2013	15.77	1.37	3.54	18.55	8.98	5.65	2.30	56.16

Source: Estimated from FAOSTAT

Table-6: Country wise export of pepper and chilli

Year	Malaysia	UAE	SA	UK	USA	Total
1991	25.76	18.79	0.00	45.63	0.00	90.18
1992	20.96	15.77	0.00	54.34	0.00	91.07
1993	35.60	22.65	2.29	7.63	0.00	68.18
1994	20.56	13.93	20.07	15.87	26.59	97.02
1995	13.59	9.71	6.80	56.31	0.00	86.41
1996	11.37	1.03	6.79	1.33	32.79	53.32
1997	16.55	3.83	9.88	14.11	25.60	69.97
1998	9.46	45.06	11.11	27.78	2.47	95.88
1999	10.40	5.28	1.16	69.47	3.80	90.10
2000	8.66	5.59	5.73	26.28	6.24	52.50
2001	7.25	8.07	7.96	18.35	9.67	51.30
2002	6.52	27.20	15.19	13.40	2.79	65.09
2003	5.17	36.50	10.41	3.60	2.10	57.79
2004	3.40	35.86	1.10	5.27	0.57	46.21
2005	5.81	52.02	1.36	5.10	0.10	64.38
2006	4.02	55.12	1.90	1.67	4.19	66.91

Year	Malaysia	UAE	SA	UK	USA	Total
2007	3.51	78.94	1.34	1.54	2.57	87.91
2008	5.59	74.65	0.97	7.17	0.46	88.84
2009	3.59	81.99	1.74	5.69	0.49	93.50
2010	4.63	75.45	5.86	5.83	0.18	91.96
2011	3.50	66.94	2.45	5.68	0.25	78.82
2012	3.66	70.01	11.39	13.81	0.21	99.08
2013	4.76	50.42	7.90	23.67	0.17	86.92

Source: Estimated from FAOSTAT

Table-6 represent country wise destination share of pepper and chilli from India. Major markets for these products are Malaysia, UK, USA, UAE and Saudi Arabia. During 1991 USA registered highest share (45), followed by Malaysia (25) and UAE (18.79). In the year 2013 UAE registered 50 percent of total share followed by UK (23), Saudi Arabia (7) and Malaysia 4.76.

Table-7: Country wise export of ginger

Year	Bangla- desh	Japan	Nether- lands	Saudi Arabia	UAE	UK	USA	Total
1991	11.50	1.08	2.57	15.74	3.46	3.73	17.07	55.16
1992	13.24	1.81	1.45	14.74	2.65	4.83	20.71	59.44
1993	14.70	1.29	3.87	13.48	2.89	4.10	15.51	55.84
1994	20.94	2.20	3.98	13.49	1.44	4.13	4.74	50.92
1995	15.38	2.53	3.11	18.79	3.51	3.02	5.05	51.39
1996	14.94	2.39	4.02	8.10	4.46	2.33	9.21	45.45
1997	12.80	3.51	2.43	8.27	11.84	2.35	11.43	52.62
1998	11.32	4.59	3.63	13.56	11.66	5.08	20.03	69.87
1999	9.94	5.90	3.82	25.19	9.82	4.42	3.95	63.04
2000	6.19	5.83	4.55	21.09	8.62	5.97	9.71	61.95
2001	11.01	3.25	8.83	16.79	7.05	14.81	5.49	67.24
2002	13.17	4.55	8.50	14.97	5.32	10.24	9.47	66.21
2003	6.21	4.34	4.20	13.07	8.02	11.15	8.94	55.92
2004	8.80	3.88	4.52	10.86	6.22	4.43	12.37	51.09
2005	13.13	5.18	5.70	12.80	2.06	12.51	11.87	63.24
2006	6.23	3.72	4.98	10.98	2.98	12.92	9.42	51.22
2007	12.41	3.68	4.22	5.61	1.11	10.77	12.71	50.51
2008	7.77	3.07	5.07	10.26	4.91	13.72	6.78	51.58
2009	16.94	2.47	3.86	11.11	4.36	9.25	10.40	58.40
2010	22.76	3.10	3.62	7.52	5.12	8.05	11.64	61.81
2011	9.87	1.06	3.09	9.92	8.09	4.38	14.99	51.40
2012	6.10	0.69	1.82	5.84	6.26	3.99	15.67	40.37
2013	15.43	1.01	2.57	7.62	4.88	6.21	13.91	51.63

Source: Estimated from FAOSTAT

Table-7 shows the country wise destination of ginger export in India. Major destination markets are Bangladesh, Saudi Arabia, Japan, UAE, UK and USA. During the year 1991 UAS registered highest share (17%) followed by Saudi Arabia (15%), Bangladesh (11%), UK (3.78%) and UAE (3.4%). In 2013 Bangladesh registered the highest share followed by USA, Saudi Arabia, UK and UAE.

Table-8 shows the country wise share of cardamom export in India. During the year 1991, Pakistan recorded the highest share (22%), followed by Japan, UAE and UK. In 2013 UAE registered highest share, followed by Pakistan and USA. It is clear from the table that Pakistan and UAE consumed major share among destination countries over the years.

Table-8: Country wise share of cardamom export

Year	Japan	Kuwait	UAE	UK	Pakistan	UAS	Total
1991	17.82	0.48	5.77	4.82	22.78	2.01	53.69
1992	26.20	0.43	7.03	3.14	46.50	4.48	87.79
1993	15.76	1.15	11.68	1.96	36.35	0.38	67.28
1994	25.22	4.19	6.19	4.74	31.78	4.13	76.26
1995	21.36	0.08	7.67	1.37	37.50	1.44	69.41
1996	29.50	0.93	14.45	4.64	37.37	2.04	88.92
1997	17.76	1.69	16.42	2.93	31.03	0.64	70.46
1998	32.87	1.67	22.85	2.57	24.00	1.26	85.22
1999	18.63	10.01	16.35	1.58	26.73	2.01	75.30
2000	9.29	2.93	21.37	1.79	16.23	2.81	54.41
2001	15.27	1.01	20.63	3.09	11.11	3.32	54.43
2002	13.36	0.72	13.38	0.51	14.77	7.25	49.99
2003	10.74	0.70	19.09	2.49	11.33	3.54	47.89
2004	13.45	0.63	18.28	3.52	14.31	7.43	57.61
2005	7.82	0.80	25.06	3.69	9.70	5.24	52.31
2006	1.15	2.41	24.45	2.13	14.76	3.47	48.36
2007	1.02	0.60	16.99	3.46	22.19	3.88	48.14
2008	1.84	6.07	22.32	1.89	16.30	2.79	51.21
2009	1.37	5.52	22.10	2.48	6.13	3.03	40.63
2010	0.94	5.83	22.55	3.09	9.42	4.49	46.32
2011	0.70	2.15	22.07	5.80	9.47	4.63	44.81
2012	0.88	1.93	18.20	5.59	10.42	4.48	41.51
2013	0.94	2.05	22.29	1.42	9.37	4.26	40.34

Source: Estimated from FAOSTAT

Herfindahl - Hirschman Index (HHI) reveals that spices export from India is not concentrated in a small market. During the period 1990s, spices export mainly concentrated in the markets like USA, Germany and UK while in 2000s especially after 2009 share of these countries went down and new markets such as Malaysia, UAE, Saudi Arabia, China, Sri Lanka, Bangladesh, Brazil, Indonesia, Bahrain and Kuwait (FAOSTAT 2013),

have been developed. It is because these countries have substituted spices by exporting from a new partner which may be due to price and non-price competition.

Table-9: Export competitiveness of spices in India

Year	NPC
1991	0.52
1992	0.52
1993	0.62
1994	0.66
1995	0.70
1996	0.70
1997	0.70
1998	0.66
1999	0.69
2000	0.66
2001	0.67
2002	0.69
2003	0.70
2004	0.70
2005	0.70
2006	0.68
2007	0.73
2008	0.70
2009	0.71
2010	0.72
2011	0.81
2012	0.81
2013	0.81

Source: Calculated from Spices Board of India, DGCI, ITC Trade Map

Table-9 clearly shows that the value of NPC is less than one throughout the study period, which reveals that spices in India have a competitive edge in the world market. An interesting fact is that the degree of competitiveness in the export market is continuously declining. For instance in 1991 NPC value was 0.52, it went up to 0.81 in 2013. Between 2010 and 2011 there is an increase of 0.09 in the NPC value. There are several factors behind this trend, such as declining productivity and high price in the export market as compared to other players.

Conclusion

This paper analyzed the trend, pattern, direction diversification and competitiveness of spices export since 1991. Trade share as percentage, compound annual growth rate and Herfindahl-Hirschman Index (HHI) are used to assess export performance and diversification of these products

since 1991. Indian spices share to world market was 12.45, in 1991 and 26.88 in 2013. It has been noted that Asian countries have registered as a major destination with regard to spices export. USA was the major exporting partner with regard to spices up to 2008, thereafter Malaysia become the largest exporting partner to India. It may be due to the financial crisis that occurred in USA. Similarly, most of the Malaysian export was used to re-export to the world markets. Furthermore, commodity-wise destination and HHI calculation also observed that export of this commodities is diversifying from traditional markets to new markets. The analysis of competitiveness indicates that spices export is competitive under the study period in the world market but degree of competitiveness eroding over the years. The better foreign relation, stiff competition from other producing countries, the impact of reforms and the formation of new FTA are the reasons behind the diversification of Indian export.

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An Empirical Analysis of MSMEs Growth, Production and Employment Trends

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Rukmani Devi²

Abstract

The economic reforms in India were envisioned to increase productivity, growth, employment and competitiveness in the industrial sector. The changing policy with the onset of reforms of 1991 necessitated a different engendering the growth of MSMEs. Thus, the focus of fiscal efforts shifted from an isolationist regime to a promotional campaign. The four main features of MSMEs include technological improvement, increase labour skill, improve their product offerings and try to find out new market. With these concerns the ensuing study attempt to examine the MSMEs growth, production and employment of India in general and particularly in Uttar Pradesh. The research paper based upon secondary data sources includes various government publications includes Annual report of the ministry of Micro, Small and Medium Enterprises of Government of India, Uttar Pradesh State Industrial Profile etc. We used the period 1980 to 2022-23 as the reference period of the study. The descriptive statistics, tabular methods, Multiple Regression and Compound Annual Growth Rate (CAGR) have been used to data analysis. The positive growth trend has been consistent and significant only in terms of units and employment but not in terms of production and exports. This can be attributed to factor includes the size of MSMEs increased significantly in all years after 1980s but growth of export not risen significantly. This is not largely attributed to the increasing dependence of MSMEs production on the export market. How to ensure steady growth of MSMEs production and exports in the market is a major challenge? The paper analyses the major challenges to ensure steady growth of MSMEs production and exports in the Market.

Keywords: CAGR, Employment, Export, Growth, MSME, Production, Uttar Pradesh

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Introduction

The industrial base of India, a labour surplus and vast domestic market based economy, has been marked by the majority of Micro, Small and Medium Enterprises (MSMEs) which have dominated in terms of number of units, employment and product types. There has been no relenting in the growth of these enterprises over the decades at least since the early 1980s. In general, India's GDP growth is driven by service sector more than that of industry and agriculture. However, the increase of employment was not proportionate with the growth of the units. Micro entrepreneurs, apart from being low in technical and marketing knowledge, are also unfamiliar with contemporary marketing issues like quality, delivery schedule, packaging, pricing, market research, promotion and advertising etc. Consequently, they have failed to sustain in the market, featured with stiffed competition and the advent of large scales retailers and Multi-National Companies (MNCs).

Micro, Small, and Medium Enterprises (MSMEs) are a critical driver of economic growth, particularly in developing economies. An empirical analysis of their growth, production, and employment trends highlights their significant contributions to GDP, innovation, and job creation. Over time, MSMEs have shown resilience in adapting to market challenges, leveraging technology, and responding to evolving consumer demands. Despite these strengths, they face persistent barriers, including limited access to finance, inadequate infrastructure, and regulatory hurdles. Employment trends reveal that MSMEs are a primary source of jobs, particularly in rural and semi-urban areas, helping to reduce unemployment and improve livelihoods. However, the sector's growth potential is often constrained by skill shortages and market volatility. Addressing these challenges through policy interventions, capacity building, and financial inclusivity is essential for sustaining MSMEs' role in economic development and ensuring equitable growth.

The growth, production, and employment trends of MSMEs are closely interlinked with the broader economic, regulatory, and technological environment in which they operate. As these enterprises strive to expand and compete in increasingly globalized and digitized markets, they face numerous challenges, including limited access to finance, outdated technologies, regulatory hurdles, and labor constraints. Despite these challenges, MSMEs remain a critical source of employment, especially in rural and underserved areas, where they contribute substantially to job creation and economic diversification. This empirical analysis aims to explore the growth patterns, production processes, and employment trends within the MSMEs sector, focusing on understanding how these enterprises evolve and contribute to overall economic development.

Theoretically, three important factors can be attributed to the spring-up, survival and growth of MSMEs includes locational influences, process influences and market influences (Anderson, 1982). When the level of income is low, infrastructure is underdeveloped, market is small and dispersed, small scale production to make use of local resources and local skills to meet local's needs is an efficient option. It is these locational influences which cause the generation of multiple small scale firms in rural, semi urban and urban areas. Some production activities can be efficiently undertaken if the production processes are segmented and different production tasks are undertaken by firms of different sizes. With the advent of ICT revolution, technology is assuming growing prominence in the generation of technology based start-ups, which led to the fourth factor namely technological influences. These are technological influences which promote technology based start-ups (Bailetti, 2012). People from middle income / high income groups with techno-managerial qualifications and wider exposure to national and international contexts, make use of ICTs leading to technology/innovation led entrepreneurship to exploit technological influences for technology based start-ups (Subrahmanya, 2015). Akpan et al. (2020) conducted a comprehensive study on MSMEs, emphasizing their pivotal role in economic development through job creation and poverty alleviation. The study highlighted key challenges faced by MSMEs, including limited access to financing and regulatory constraints, while underscoring the need for supportive policies to foster sustainable growth. The Reserve Bank of India's (RBI) 2019 report on MSMEs underscored their critical contribution to the Indian economy, particularly in terms of GDP, exports, and employment generation. RBI identified key challenges such as access to credit, infrastructure gaps, and delayed payments, while recommending measures like streamlined financing mechanisms, enhanced digital platforms, and regulatory reforms to bolster the MSME sector's growth and resilience (RBI 2019). The Ministry of Micro, Small and Medium Enterprises (2021) highlighted the pivotal role of MSMEs in driving economic growth, employment generation, and regional development in India. The report emphasized that the sector accounts for a significant portion of GDP and exports, contributing to economic diversification and innovation. (Ministry of Micro, Small and Medium Enterprises 2021).

According to Ministry's annual report of 2020-21, Uttar Pradesh has 90-lakh total MSMEs which is the highest in the country. With such huge involvement of MSMEs in UP raises a question that what is the performance and contribution of this sector to promote growth, production, employment and exports of Uttar Pradesh?

Sector-wise summary table of MSMEs in Uttar Pradesh

Sector	Key Industries	Contribution	Major Regions in UP
Agriculture-based	Food processing, dairy, sugar, and agri-machinery	Supports rural economy and provides value addition to crops	Western UP (Meerut, Muzaffarnagar), Gorakhpur, Bareilly
Textiles and Apparel	Handlooms, khadi, carpets, readymade garments	Contributes significantly to exports	Varanasi, Bhadohi, Kanpur, Lucknow
Leather and Footwear	Leather goods, footwear manufacturing	One of the largest leather clusters in India	Kanpur, Agra, Unnao
Engineering	Auto parts, light engineering, tools, machinery	Supports large-scale manufacturing and exports	Kanpur, Lucknow, Ghaziabad, Noida
Chemicals and Pharmaceuticals	Fertilizers, pesticides, basic chemicals, pharmaceuticals	Meets industrial and domestic demands	Kanpur, Lucknow, Ghaziabad
Electronics	Mobile manufacturing, IT hardware	Emerging sector with government incentives	Noida, Greater Noida
Handicrafts	Woodwork, brassware, glassware, terracotta	High export potential and cultural significance	Moradabad, Firozabad, Khurja
Tourism and Hospitality	Small hotels, travel agencies, local crafts	Enhances tourism-driven economic activity	Agra, Varanasi, Lucknow
Information Technology (IT)	IT services, startups	Boosts employment and digital growth	Noida, Lucknow, Greater Noida

Source: <https://invest.up.gov.in>

Growth, Employment and Production of MSMEs Sector

MSMEs have been acknowledged as crucial drivers of production and employment generation since the early days of Indian independence. With low capital and technology requirements, they leverage traditional or inherited skills and local resources, while also producing goods with significant export potential. Bargal et al. (2009) examined the performance of MSMEs, highlighting their crucial role in employment generation, economic diversification, and regional development. The study emphasized the challenges faced by MSMEs, including financial constraints and policy hurdles, while advocating for targeted support to enhance their growth and competitiveness. Nagraj (1994) analyzed the performance of MSMEs, focusing on their role in employment generation and industrial development in India. The study highlighted structural and policy challenges faced by the sector, emphasizing the need for reforms to enhance productivity and

sustainability. Sen et al. (2006) explored the growth dynamics of MSMEs, emphasizing their contribution to employment, innovation, and economic resilience. The study identified challenges such as inadequate financing and technology gaps, advocating for supportive policies to sustain their growth trajectory.

Mitra and Pandey (2013) investigated the role of MSMEs in promoting inclusive economic growth, with a focus on employment generation and regional development. The study highlighted barriers such as financial constraints and infrastructural deficits, recommending targeted interventions to enhance the sector's performance. Singh et al. (2012) analyzed the impact of MSMEs on economic development, emphasizing their role in fostering entrepreneurship and job creation. The study highlighted challenges like inadequate credit access and market competition, recommending policy reforms to strengthen the sector's growth. Goldar and Mitra (2013) examined the productivity growth of MSMEs, focusing on factors influencing their performance, such as technology adoption and labor efficiency. The study revealed that although MSMEs play a vital role in driving economic growth, their potential is often constrained by challenges such as inadequate access to finance and infrastructure.

Garg (2012) explored the challenges and opportunities for MSMEs in India, emphasizing their role in job creation and economic development. The study highlighted issues like financing difficulties, regulatory burdens, and the need for policy reforms to enhance the sector's competitiveness and growth potential. Chaturvedi et al. (2021) analyzed the post-pandemic recovery of MSMEs, focusing on their resilience and adaptive strategies in a changing economic environment. The study emphasized the need for targeted financial support, digital integration, and policy reforms to facilitate the sector's sustainable growth and long-term competitiveness. Waseem Khan (2020) examined the role of MSMEs in fostering economic recovery and growth, particularly during times of crisis. The study emphasized the sector's resilience but highlighted challenges such as financial instability, limited access to technology, and the need for comprehensive government support to drive sustainable development.

Objectives

The core objective is the study to analyze the performance of MSMEs in promoting the employment, productivity and export. The specific objectives of this study are:

- To examine the growth and employment opportunities essential for the success of the MSME sector in India.
- To explore the production capabilities and strategies for promoting exports within the MSME sector.

Hypotheses

It is hypothesized that the MSMEs accelerate the growth through their contributions in terms of production, employment and exports made. Presuming the existence of positive relationship between registered MSMEs, Production, Employment and Export.

Data Set and Methodology

In view of the above-mentioned importance of MSMEs in the economic growth of an emerging economy like India, we now turn to examine the co-integrating relationship between MSMEs production, exports, employment and number of MSMEs over the sample period spanning from 1980-81 to 2022-23. This sample period includes the pre-liberalization, liberalization and post MSMEs development Act period. The present study is entirely based on secondary data collected from various Government publications includes Annual report of the ministry of Micro, Small and Medium Enterprises of Government of India, Uttar Pradesh State Industrial Profile etc. The study utilized simple statistical tools such as averages, Compound Annual Growth Rate (CAGR), and regression analysis to evaluate the growth of MSMEs in terms of registered units, productivity, employment, and exports. The empirical study covered period between 1973 to 2023 both at the India and Uttar Pradesh. The study used multiple regression to analyses the relationship between growth of registered MSMEs unit, production, employment and export of MSMEs in India. The multiple regression measures the influence of four variables: Registered MSMEs unit, Production, Employment and Export of MSMEs.

Table-2: Compound Annual Growth Rate of MSMEs Units, Production, Employment and Export in India

Year	MSMEs Unit (Million Number)	Average Annual Growth	Production (Rs. in Million)	Average Annual Growth	Employment (Million Number)	Average Annual Growth	Export (Rs. in Million)	Average Annual Growth
1981-82	0.96	-	326000	-	7.5	-	21000	-
1982-83	1.06	10.41	350000	7.36	7.9	5.33	20000	-4.76
1983-84	1.16	9.43	416000	18.85	8.42	6.58	22000	10.00
1984-85	1.24	6.89	505000	21.39	9.0	6.88	25000	13.63
1985-86	1.35	8.87	612000	21.81	9.6	6.66	28000	12.00
1986-87	1.46	8.14	723000	18.13	10.14	5.62	36000	28.57
1987-88	1.58	8.21	873000	20.74	10.7	5.52	44000	22.22
1988-89	1.71	8.22	1064000	21.87	11.3	5.60	55000	25.00
1989-90	1.82	6.43	1323000	24.34	11.96	5.84	76000	38.18
1990-91	6.79	273.07	788020	-40.43	15.83	32.35	96640	27.15
1991-92	7.06	3.97	806150	2.30	16.60	4.86	138830	43.65
1992-93	7.35	4.10	844130	4.71	17.48	5.30	177840	28.09
1993-94	7.65	4.08	987960	17.03	18.26	4.46	253070	42.30
1994-95	7.96	4.05	1221540	23.64	19.14	4.81	292680	15.65

Year	MSMEs Unit (Million Number)	Average Annual Growth	Production (Rs. in Million)	Average Annual Growth	Employment (Million Number)	Average Annual Growth	Export (Rs. in Million)	Average Annual Growth
1995-96	8.28	4.02	1477120	20.92	19.79	3.39	360470	23.16
1996-97	8.62	4.10	1678050	13.60	20.59	4.04	392840	8.97
1997-98	8.97	4.06	1872170	11.56	21.32	3.54	444420	13.13
1998-99	9.34	4.12	2104540	12.41	22.06	3.47	489790	10.20
1999-00	9.72	4.06	2337600	11.07	22.91	3.85	542000	10.65
2000-01	10.11	4.01	2612970	11.78	24.09	5.15	697970	28.77
2001-02	10.52	4.05	2822700	8.02	24.93	3.48	712440	2.07
2002-03	10.95	4.08	3667710	29.93	26.02	4.37	860130	20.73
2003-04	11.40	4.10	3363440	-8.29	27.14	4.30	976440	12.99
2004-05	11.86	4.03	3729380	10.87	28.26	4.12	1244170	27.41
2005-06	12.34	4.04	4188840	11.32	29.49	4.35	1502420	20.75
2006-07	36.18	193.19	11988180	186.19	80.52	173.04	1825380	21.49
2007-08	37.74	4.31	13227770	10.31	84.20	4.57	2020170	10.67
2008-09	39.37	4.31	13755890	3.99	88.08	4.60	-	-
2009-10	41.08	4.34	14883520	8.19	92.18	4.65	3911590	39.14
2010-11	42.87	4.35	16536220	11.10	96.52	4.70	5077390	29.80
2011-12	44.76	4.40	17885840	8.16	101.17	4.81	6301050	24.10
2012-13	46.75	4.44	18099760	1.19	106.14	4.91	6981660	10.80
2013-14	48.86	4.51	-	-	111.43	4.98	8068780	15.57
2014-15	51.06	4.50	-	-	117.13	5.11	8492480	5.25
2015-16	-	-	-	-	-	-	8553520	0.71
CAGR	17.23	-	19.08	-	11.62	-	26.00	-

Source: <https://www.indiastat.com/data/industries/growth-of-micro-small-and-medium-enterprises-msmes/data-year/all-years>

Table-1 indicates the compound annual growth rate of micro, small and medium enterprises after the 1981 in terms of number of registered units, level of investment, production and employment of India. There has been a continuous growth in the number of registered unit in the country during 1981-82 to 2014-15. The number of registered units which was 0.96 million in 1981-82 increased significantly to 51.06 in 2014-15. This was made possible due to the business friendly policies and proactive initiatives of the country. Above table also reveals the progress of production by MSMEs during 1981-82 to 2012-13. The value of production has increased substantially from 326000 million in 1980-81 to 1809960 million in 2012-13 with a 19.08 percent of CAGR. This growth resulted from an increase in production that outpaced the growth of MSME units. Employment has consistently risen from 1981-82 to 2014-15, with a Compound Annual Growth Rate (CAGR) of 11.62 percent. In the year of 1990-91, the average annual growth rate of MSMEs unit increased 273.07 percent with has been highest among during the 1981 to 2016. In the same year average growth rate of production found to be -40.43 percent. In the year of 2006-07 the average growth rate of production found to be 186.19 which are highest during the year of 1981 to 2016. In the same year, employment also found

to be 173.04 percent which is found highest among all years. There has been significant growth in exports between 1981-82 and 2015-16, with a Compound Annual Growth Rate (CAGR) of 26 percent.

Multiple Regressions Results

The regression carried out in this study reveals the impact of production, employment and export on the overall growth of registered MSMEs units in the country.

The multiple regression function can be written as:

$$Y = f(P, E, Ex.)$$

Where,

Y = Growth of MSMEs Unit

P = Production

E = Employment

Ex. = Export

Dependent Variable = Growth of MSMEs unit

Independent Variable = Production, Employment and Export of MSMEs

And can be estimated using a multiple regression equation form:

$$Y = a + b(P) + c(E) + Ex.$$

Where a is a constant

b & c are regression coefficient

The value of R square measures the how much of the variability in the outcomes is accounted by predictor.

Table-3: Model Summary

Model	R	R ²	Adjusted R ²	Standard Error of the Estimate	Mean of Dependent Variable	S D of Dependent Variable
	0.998	0.996	0.996	0.000	14.678	16.796

Source: <https://www.indiastat.com/data/industries/growth-of-micro-small-and-medium-enterprises-msmes/data-year/all-years>

The regression results presents that the production, employment and export explain only about 0.996 percent (R² value) variation in growth of registered MSMEs. The Adjusted R² gives us the idea of how well our model generalizes and ideally we would like its value to be the same or very close to R². In the study, there is no difference between value of R² and adjusted R². It means the model is almost suitable for study.

Table-4: Regression Coefficients

Variable	Coefficient	B	Std. Error	t-statistic	P Value
Constant		1.529	0.249	6.151	0.000
Production	0.025	7.564	0.000	1.683	0.102
Employment	0.970	0.445	0.009	48.381	0.000
Export	0.018	1.118	0.000	1.110	0.276

Source: <https://www.indiastat.com/data/industries/growth-of-micro-small-and-medium-enterprises-msmes/data-year/all-years>

As a first step of analysis in the regression results, it is observed that the coefficients are positive implying that production, employment and export had a positive effect on the growth of MSMEs.

Multiple Regression Equation

$$F(Y) = 1.529 + (7.564) P + (0.449) E + 1.118 (Ex)$$

Model shows the predictor variables (constant, production, Employment, Export). The relationship between production and growth of MSMEs has not significant. There is a no significant association between growth and production of MSMEs. However, increases in production are not continually increases with growth of MSMEs units. Likewise, the relationship between employment and growth of MSMEs found to be significant at 5 percent level. The coefficients for employment are also reported to be 0.445. So every unit increases in growth of MSMEs, employment increases 0.445 is predicted holding all other variable constant. There is a positive association between growth and employment of MSMEs. It is accepted our hypothesis. The relationship between export and growth of MSMEs has not found to be significant. This can be attributed to factor includes the size of MSMEs increased significantly in all years after 1980s but growth of export not risen significantly. The positive growth trend has been consistent and significant only in terms of units and employment but not in terms of production and exports. This is not largely attributed to the increasing dependence of MSMEs production on the export market.

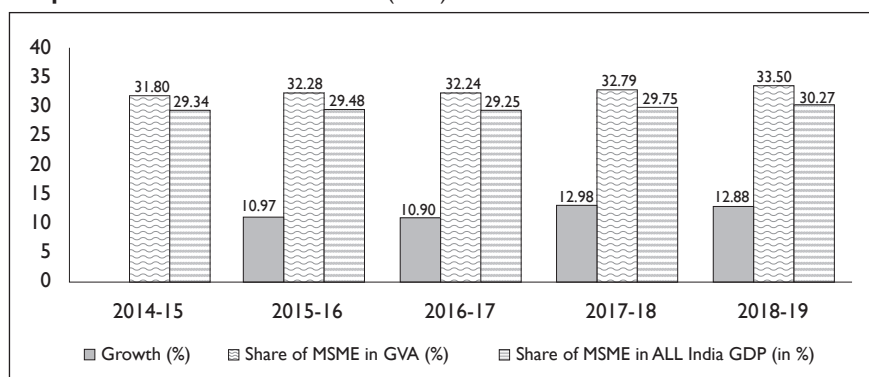
Table-5: Share of Gross Value Added (GVA) of MSME in all India GDP

Figures in Rs. Crores adjusted for FISIM at current prices

Year	Total MSME GVA	Growth (%)	Total GVA	Share of MSME in GVA (%)	All India GDP	Share of MSME in All India GDP (in %)
2014-15	3658196		11504279	31.80	12467959	29.34
2015-16	4059660	10.97	12574499	32.28	13771874	29.48
2016-17	4502129	10.90	13965200	32.24	15391669	29.25
2017-18	5086493	12.98	15513122	32.79	17098304	29.75
2018-19	5741765	12.88	17139962	33.50	18971237	30.27

Source: Central Statistics Office (CSO), Ministry of Statistics and Programme Implementation

Graph-1: Share of Gross Value Added (GVA) of MSME in all India GDP



It can be clearly shown that an increasing trend in share of total MSME in GVA. The gross values added of MSMEs have massive growth during 2014-15 to 2018-19. The share of MSMEs in GVA has also increased 31.80 to 33.50 between the 2014-15 to 2018-19. Likewise, the share of MSMEs in all India GDP has also increased during the year of 2014-15 to 2018-19 (Table-4).

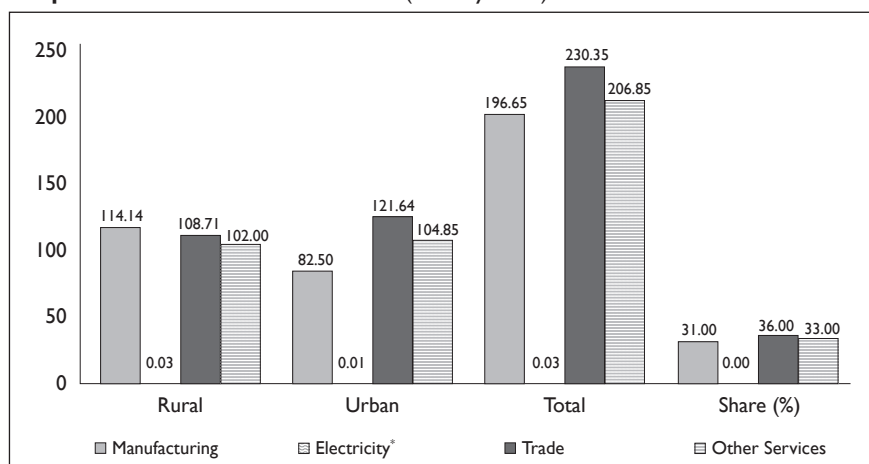
Table-6: Estimated Number of MSMEs (Activity Wise)

Activity Category	Estimated Number of MSMEs in 2020-21 (in Lac)			Share (%)
	Rural	Urban	Total	
Manufacturing	114.14	82.50	196.65	31.00
Electricity*	0.03	0.01	0.03	0.00
Trade	108.71	121.64	230.35	36.00
Other Services	102.00	104.85	206.85	33.00
All	324.88	309.00	633.88	100.00

Source: Government of India Ministry of Micro, Small and Medium Enterprises, 2022-23

*Non-captive electricity generation and transmission

Graph-2: Estimated Number of MSMEs (Activity Wise)



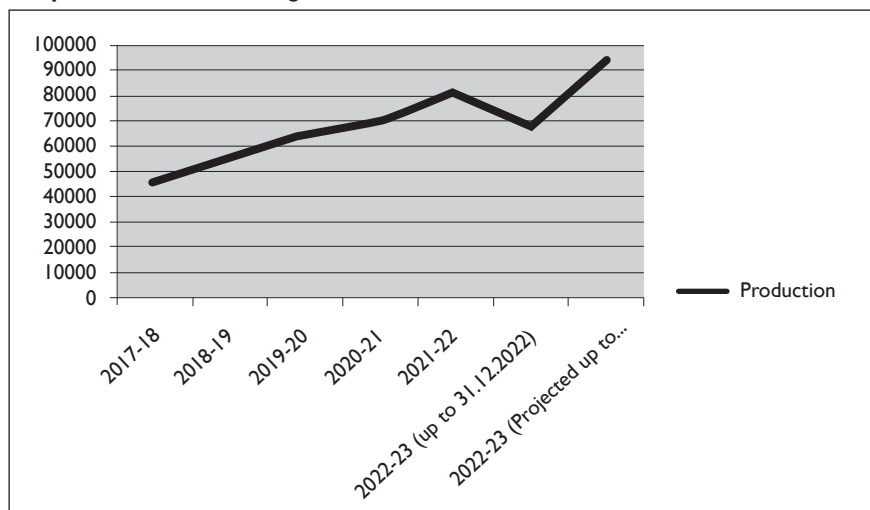
It is discernible from table 4 that the number of MSMEs unit in rural and urban areas in the activities includes manufacturing, Electricity, Trade, Other Services. Total 633.88 lac total MSMEs has estimated where, 324.88 lac MSMEs found to be rural areas and 309lac MSMEs in urban areas in India. The higher numbers of MSMEs are in trade activities than the other services, manufacturing and electricity. However, 0.03 lac MSMEs estimated in electricity facility which is lower among all activity category.

Table-7: Production of Village Industries in India

Year	Production (in Crore)	Annual Growth Rate of Production
2017-18	46454.75	-
2018-19	56167.04	20.90
2019-20	65343.07	16.33
2020-21	70330.66	7.63
2021-22	81731.62	16.21
2022-23 (up to 31.12.2022)	67746.19	-17.11
2022-23 (Projected up to 31.03.2023)	94162.13	38.99
CAGR	10.62	-

Source: Government of India Ministry of Micro, Small and Medium Enterprises, 2022-23

Graph-3: Production of Village Industries in India



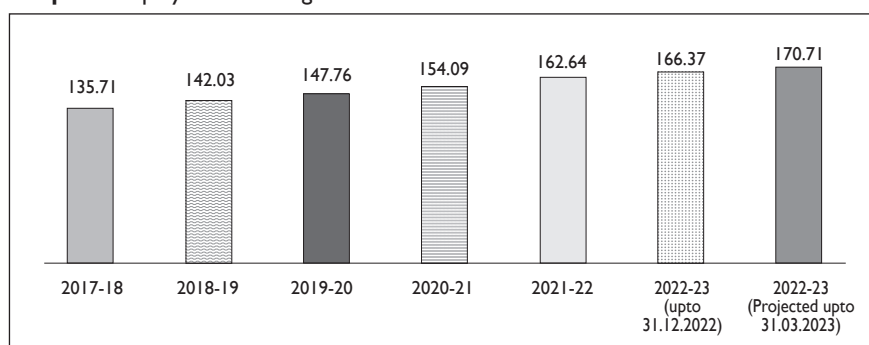
The production of output by village industry in India has shown an increasing trend during 2017-18 to 2022-23. The CAGR of village industry production has calculated 10.62 percent for the same period. The annual growth rate of production in in the 2022-23 reported to be -17.11 which has been lowest growth rate of production during the year of 2017-18 to 2022-23.

Table-8: Village Industries: Employment

Year	Employment (in Lac)	Annual Growth Rate
2017-18	135.71	-
2018-19	142.03	4.65
2019-20	147.76	4.03
2020-21	154.09	4.28
2021-22	162.64	5.54
2022-23 (up to 31.12.2022)	166.37	2.29
2022-23 (Projected up to 31.03.2023)	170.71	2.60
CAGR	3.89	-

Source: Government of India Ministry of Micro, Small and Medium Enterprises, 2022-23

*Non-captive electricity generation and transmission

Graph-4: Employment of Village Industries

In India, the manpower employment contribution of MSMEs sector to total employment in the country is very significant. A sustained upward trend of employment in MSMEs sector is observed during 2017-18 to 2022-23. Overall, the number of employment has increased from 135.71 lac in 2017-18 to 170.71 percent in 2022-23. During the corresponding period, the CAGR of employment has found to be 3.89 percent.

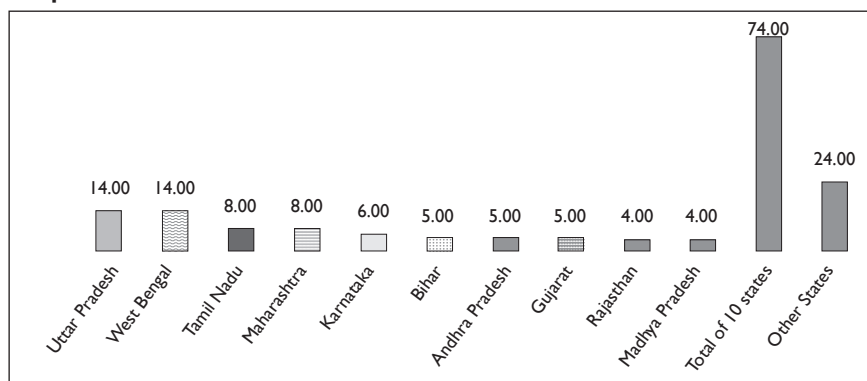
Table-9: State wise Distribution of MSMEs

Sl. No.	State	Number of MSMEs	
		No. (in Lac)	Share (in Percentage)
1	Uttar Pradesh	89.99	14.00
2	West Bengal	88.67	14.00
3	Tamil Nadu	49.48	8.00
4	Maharashtra	47.78	8.00
5	Karnataka	38.34	6.00
6	Bihar	34.46	5.00
7	Andhra Pradesh	33.87	5.00
8	Gujarat	33.16	5.00

Sl. No.	State	Number of MSMEs	
		No. (in Lac)	Share (in Percentage)
9	Rajasthan	26.87	4.00
10	Madhya Pradesh	26.74	4.00
11	Total of Above ten states	469.36	74.00
12	Other State	164.52	24.00
13	All	633.88	100.00

Source: Annual Report, Ministry of MSMEs, 2021-23

Graph-5: State wise Distribution of MSMEs



The table represents State wise Distribution of MSMEs in Uttar Pradesh. In the Uttar Pradesh total number of MSMEs found to be 89.99 lac which is highest among all Indian states. The total 633.88 lac MSMEs are in all Indian states. In which 469.36 percent are in top ten states and 164.52 percent in other states.

Table-10: Numbers, Employment and Production of MSMEs in Uttar Pradesh

Year	Unit (Lac)	CAGR	Employment (lac)	CAGR	Production (Million)	CAGR
1972-73	0.13	-	1.60	-	2226.7	-
1987-88	0.53	10.56	3.50	5.75	37270.4	22.29
2001-02	17.08	30.62	40.00	20.61	274243	16.59
2006-07	44.03	26.71	92.40	23.28	1110896.9	41.86
CAGR	18.10	-	12.29	-	19.42	-

Source: <https://www.indiastat.com/data/industries/growth-of-micro-small-and-medium-enterprises-msmes/data-year/all-years>

Table shows the segregated data of the number of MSMEs, Employment and production of MSMEs in Uttar Pradesh. There has been a continuous and considerable growth in MSMEs registered unit with 18.10 percent CAGR during 1972-73 to 2006-07. The employment and growth in MSMEs has also increased with 12.29 and 19.42 percent CAGR.

Table-I I: MSMEs Registered Udyog Adhaar Memorandum in Uttar Pradesh

State	Micro	Annual Growth Rate	Small	Annual Growth Rate	Medium	Annual Growth Rate	Total	Annual Growth Rate
Oct. 2015-March 2016	41352	-	3535	-	134	-	45021	-
2016-17	380828	820.94	18935	435.64	772	476.11	400535	853.17
2017-18	108536	-71.50	9484	-49.91	486	-37.04	118488	-70.41
2018-19	110256	1.58	12965	36.70	655	34.77	123876	4.54
2019-20	148369	34.56	17739	36.79	792	20.91	166900	34.73
30 June 2021	884610	496.22	82183	363.36	3478	339.14	970271	481.34
2021-22	398479	-54.95	14769	-82.09	920	-73.54	414168	-57.31
2022-23	395282	-0.80	7051	-52.25	299	-67.50	402632	-2.78
CAGR	32.60	-	9.01	-	10.55	-	31.50	-

Source: Annual Report, Ministry of MSMEs 2015-16 to 2022-23

The above table shows the segregated data of the number of registered micro, small and medium enterprises in Uttar Pradesh. In the year of 2016-17, total registered MSMEs variation found to be 853.17 percent which are highest among all years. However, -70.41 percent registered MSMEs variations found to be 2017- 2018 which has been lowest as compare to all years. There has been a significant growth in all three forms of MSMEs. But among them the micro MSMEs have registered a massive growth of the 41352 in 2015-16 to 395282 MSMEs in 2022-23 with the CAGR of 32.60 percent. During the corresponding period, the small and medium MSMEs registered a CAGR of 10.55 and 31.50 percent respectively.

Table-I 2: Total year-wise Employment of MSMEs in Uttar Pradesh

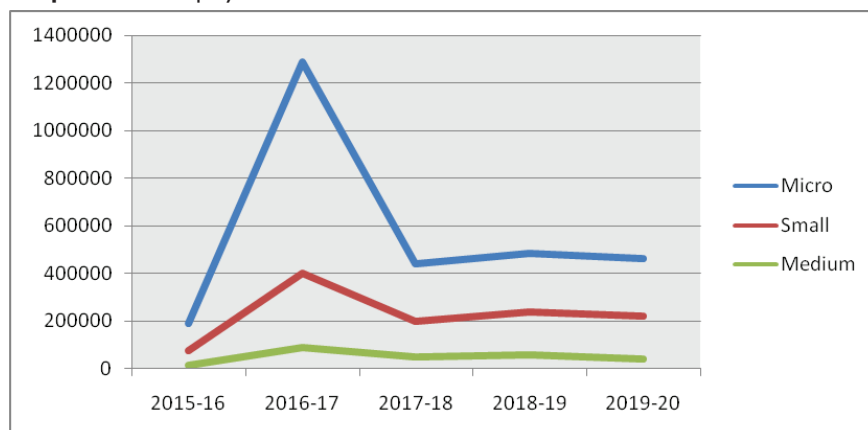
Year	Micro	Annual Growth Rate	Small	Annual Growth Rate	Medium	Annual Growth Rate	Total	Annual Growth Rate
2015-16	192024	-	74215	-	14583	-	280822	-
2016-17	1288421	570.96	398995	437.62	89777	515.62	1777193	532.85
2017-18	442386	65.66	198375	-50.28	51507	-42.62	692268	-61.04
2018-19	484271	9.46	235929	18.93	59219	14.97	779419	12.58
2019-20	463119	4.36	219997	-6.75	42218	-28.70	725334	-6.93
CAGR	19.25	-	24.27	-	23.69	-	20.89	-

Source: Annual Report, Ministry of MSMEs 2015-16 to 2019-20

There has been a notable growth in the level of employment during 2015-16 to 2019-20. The total number of employment which was 280822 in 2015-16 increased to 725334 in 2019-20 with the 20.89 percent CAGR. The highest 23.69 percent found to be medium MSMEs and lowest 19.25 percent CAGR found to be micro MSMEs. In the year of 2016-17, total employment variation found to be 532.85 which are highest among all

years. However, -61.04 percent employment variations found to be 2018 which has been lowest as compare to all years.

Graph-6: Total Employment of MSMEs in Uttar Pradesh



Conclusion

On the whole, in spite the various problems that come in way of progress, the MSMEs sector has performed exceptionally well and has made significant contribution to employment generation, production, and export of Uttar Pradesh and also for India. There is a significant association found to be growth and employment of MSMEs sector in India. Though on an average, MSMEs growth performance during 2006-07 to 2015-16 was better than that the SSIs during 1881-82 to 2005-06, the positive growth trend has been consistent. This can be attributed to factor includes the size of MSMEs increased significantly in all years after 1980s but growth of production export not risen significantly. The positive growth trend has been consistent and significant only in terms of units and employment. This is not largely attributed to the increasing dependence of MSMEs production on the export market. The performance of MSMEs in the export sphere has often been highlighted as a bright spot of the sector implying major improvements in the product quality and a rise of firm competitiveness. But among them the micro MSMEs have registered a massive growth in 2015-16 to 2022-23. This clearly indicates the development of skill, influence of technological progress, benefits of division of labour and specialization, favorable working environment, positive effects of government rules and regulations concerning the growth of MSMEs sector in India. However, MSMEs sector contributes remarkably in providing employment opportunities in the country and specifically in Uttar Pradesh.

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Assessing the Social Impact of Urban Infrastructure Development in Hyderabad: A Multidimensional Analysis

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Abstract

The development of urban infrastructure has a significant influence on the social fabric of cities and has a wide range of effects on the lives of its citizens. The social effects of urban infrastructure development in Hyderabad, Telangana, an Indian metropolis that is expanding quickly, are examined in this study. This study investigates how Hyderabad, India's growing urban infrastructure affects people's ability to receive basic services. The study assesses the relationship between infrastructure improvements and access to services like water, sanitation, healthcare, and education through statistical analysis, including correlation, regression, and hypothesis testing. Significant relationships have been found between some elements of urban infrastructure and accessibility to essential services. While some factors, such as the availability of water and public transit, have favorable relationships with service accessibility, other factors have very weak correlations. The findings of the study have implications for policy development and urban planning, emphasizing the value of focused infrastructure expenditures to enhance service delivery in metropolitan regions that are expanding quickly. The results add to the conversation about sustainable urban development and provide guidance for improving Hyderabad's quality of life.

Keywords: Access to Basic Services, Community Development, Economic Opportunities, Environmental Sustainability, Social Impact, Urban Infrastructure Development

Introduction

Urban infrastructure development is a fundamental aspect of urbanization, playing a crucial role in shaping the social, economic, and environmental

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fabric of cities. As urban populations continue to grow rapidly worldwide, the demand for efficient infrastructure becomes increasingly imperative. In the Indian context, cities like Hyderabad, located in the state of Telangana, are experiencing rapid urbanization and are confronted with the challenge of meeting the diverse needs of their inhabitants while ensuring sustainable and inclusive development (Goswami et al., 2022; Swerts et al., 2014).

Hyderabad, known for its historical significance and rapid economic growth, has witnessed substantial investments in urban infrastructure in recent years. From transportation networks to water supply systems and housing developments, infrastructure projects have been instrumental in facilitating the city's expansion and modernization. However, the social implications of these infrastructure interventions are complex and multifaceted, encompassing aspects such as access to basic services, economic opportunities, community development, and environmental sustainability (Bholey, 2016; Samal, 2021).

Urban infrastructure development is a dynamic process that involves the planning, construction, and maintenance of physical assets and systems to support the functioning of cities. It encompasses a wide range of sectors, including transportation, water supply, sanitation, energy, telecommunications, and public facilities. The development of robust urban infrastructure is essential for ensuring the efficient operation of urban areas, enhancing the quality of life for residents, and fostering economic growth and social development (Kapucu et al., 2023a, 2023b).

Historically, urban infrastructure development has been closely linked to the growth and evolution of cities. As urbanization has accelerated worldwide, particularly in the last century, the demand for infrastructure has surged to accommodate the needs of growing urban populations. In response to this demand, governments, urban planners, and private sector entities have embarked on ambitious infrastructure projects aimed at expanding and modernizing urban infrastructure systems (L. R. Cirolia, 2020; Fernández-Alvarado & Fernández-Rodríguez, 2023).

The evolution of urban infrastructure can be traced through different phases of development

In ancient civilizations, rudimentary infrastructure systems such as roads, bridges, and water supply networks were constructed to support urban settlements. These early infrastructure systems laid the foundation for urban development and facilitated trade, communication, and social interaction. The advent of the Industrial Revolution in the 18th and 19th centuries brought about significant changes in urban infrastructure. Cities experienced rapid industrialization and population growth, leading to the expansion of infrastructure networks to support industrial activities,

transportation, and housing (Sainati et al., 2023; Toutain & Srinivasan, 2006; Willis & Nold, 2022; Xenou et al., 2023).

In the 20th and 21st centuries, urban infrastructure development entered a new era characterized by technological advancements and innovations. The introduction of electricity, automobiles, telecommunications, and modern sanitation systems revolutionized urban living and transformed the built environment of cities. With growing concerns about environmental sustainability, climate change, and resilience, contemporary urban infrastructure development is increasingly focused on integrating green technologies, renewable energy sources, and climate-resilient design principles. Sustainable infrastructure initiatives aim to minimize environmental impact, enhance resource efficiency, and promote long-term viability (Pratap & Chakrabarti, 2017; Schmitt, 2023; Tiwari, 2016; Xia et al., 2021).

In the context of developing countries like India, urban infrastructure development faces unique challenges arising from rapid urbanization, population growth, and resource constraints. Cities are grappling with issues such as inadequate infrastructure capacity, informal settlements, traffic congestion, pollution, and inadequate access to basic services. Addressing these challenges requires concerted efforts from government agencies, urban planners, private sector entities, and civil society organizations to plan, finance, and implement infrastructure projects that are inclusive, sustainable, and resilient (Brueckner, 1997; L. Cirolia & Rode, 2019; Jarvenpaa & Essén, 2023).

The urban infrastructure development is a dynamic and multifaceted process that has evolved over time in response to changing urban dynamics and societal needs. Understanding the historical context and contemporary challenges of urban infrastructure development is essential for designing effective strategies and interventions to build livable, resilient, and sustainable cities (Dashkevych & Portnov, 2023; Zhu et al., 2023).

This study seeks to explore the social impact of urban infrastructure development in Hyderabad, Telangana. By examining the perceptions, experiences, and outcomes of infrastructure projects on different segments of the population, this research aims to shed light on the opportunities and challenges associated with infrastructure development in urban contexts. Through a combination of quantitative and qualitative methods, including surveys, interviews, and spatial analysis, this study seeks to elucidate the intricate interplay between infrastructure, society, and governance in Hyderabad (Bar-ner & Marom, 2024; Shamsuzzoha et al., 2021).

The significance of this study lies in its potential to inform policy and planning decisions aimed at promoting inclusive and sustainable urban development in Hyderabad and beyond. By understanding the social

dynamics of infrastructure development, policymakers, urban planners, and stakeholders can design interventions that not only address infrastructure deficits but also contribute to enhancing the well-being and prosperity of urban residents. Through this research, we aspire to contribute to the discourse on urban development in India and offer insights that can guide future efforts towards building more resilient, equitable, and livable cities.

Objectives of the Study

- Assess the social impact of urban infrastructure development in Hyderabad, Telangana.
- Identify positive impacts such as improved quality of life, economic opportunities, and community development.
- Explore challenges and concerns, including displacement, inequality, and environmental degradation.
- Examine policy implications and recommend interventions for inclusive and sustainable urban development.
- Contribute to knowledge by providing empirical evidence and insights into the complex interactions between infrastructure, society, and governance.

The Hypothesis of the Study

H01: There is no significant association between urban infrastructure development and improved access to basic services such as water supply, sanitation, healthcare, and education in Hyderabad.

Need of the Study

The study on the social impact of urban infrastructure development in Hyderabad, Telangana, is crucial due to rapid urbanization and significant infrastructure investment. Understanding how infrastructure projects affect communities is vital for promoting social equity, community well-being, and sustainable development. By assessing the social implications of infrastructure development, policymakers and planners can ensure that investments benefit all residents and mitigate social inequalities. Evidence-based research guides decision-making, informs policy formulation, and promotes stakeholder engagement, fostering transparency and accountability in urban development. Ultimately, the study provides valuable insights to create inclusive, resilient, and livable cities that enhance the quality of life for all inhabitants amidst the dynamic urban landscape of Hyderabad.

Scope of the Study

The scope of the study encompasses an in-depth examination of urban infrastructure development in Hyderabad, Telangana, focusing on diverse sectors such as transportation, water supply, sanitation, and energy. It considers a broad range of social indicators including access to basic services, economic opportunities, community development, and environmental sustainability. Stakeholder perspectives, including those of residents, government officials, urban planners, and civil society organizations, are incorporated to provide a comprehensive understanding of the social impact of infrastructure projects. The study may involve a comparative analysis with other cities or regions and consider historical trends to assess long-term impacts. Methodologically, it employs a mixed-method approach, combining quantitative analysis, qualitative research methods, and stakeholder consultations. Ultimately, the study aims to offer actionable recommendations for policymakers and stakeholders to promote inclusive and sustainable urban development in Hyderabad, while acknowledging potential limitations such as data constraints and contextual factors.

Literature Review

Urban infrastructure development is a multifaceted process that significantly influences the social, economic, and environmental dynamics of cities. A review of existing literature provides valuable insights into the various dimensions and implications of infrastructure development in urban contexts.

(Wan et al., 2024) This study compares the effects of transportation infrastructure investments on urban development in cities of different sizes, highlighting the importance of connectivity and accessibility in shaping urban growth patterns. This paper examines the impact of transportation and information infrastructure on urban productivity in China using panel data from 256 cities over a decade. Findings reveal that both types of infrastructure enhance productivity, particularly in eastern regions and megacities. The study underscores the importance of coordinated investment in transportation and information infrastructure to boost economic development.

(Ghosal & Ruj, 2023) This research examines the social impact of water supply infrastructure projects in developing countries, emphasizing the importance of community engagement and participatory approaches in project implementation. This paper addresses the challenge of safe and affordable drinking water in achieving sustainable development goals. It investigates the impact of community-based water management on socioeconomic upliftment in Porapara village, West Bengal, India.

Findings highlight the role of community participation in governance for achieving socioeconomic well-being, aiding policymakers in assessing societal impact.

(Cheong et al., 2019) Using econometric analysis, this study evaluates the economic benefits of urban infrastructure development in an Asian city, emphasizing the role of infrastructure investments in stimulating economic growth and creating employment opportunities. This paper reviews empirical literature on empowering leadership, proposing a framework to reconsider its effectiveness. The framework addresses non-linear effects, reverse causation, contradictory mediating mechanisms, boundary conditions, and multilevel issues. It offers a comprehensive approach for advancing research on empowering leadership and understanding its multifaceted nature.

(Xu et al., 2024) This study investigates the social equity implications of urban infrastructure development in low-income neighborhoods, highlighting disparities in access to infrastructure services and the need for targeted interventions to address inequities. Extended natural and artificial selection have shaped pronounced differences in genomes, morphology, and distribution of *Oryza sativa* Xian/indica (XI) and *O. sativa* Geng/japonica (GJ) rice strains. Studying inbreeding populations from F2 generation, we characterized artificial and natural selection. Our findings reveal preferences between selection types, influencing grain traits and strain divergence.

(Ferrer et al., 2018a) This review synthesizes existing literature on the environmental sustainability of urban infrastructure projects, identifying key challenges and opportunities for integrating sustainability principles into infrastructure planning and design. Sustainable urban infrastructure is a multifaceted concept rooted in governance, economic growth, and climate change. This paper conducts a systematic literature review, identifying key themes such as storm-water management, environmental impact, and urban vulnerability. It traces the evolution of these themes from urban modernity to ecological perspectives, highlighting a research agenda for disaster mitigation and urban sustainability.

(Liao et al., 2024) Drawing on case studies from India, this research explores governance challenges in urban infrastructure development, including issues related to institutional capacity, regulatory frameworks, and stakeholder coordination. This longitudinal double-blind study investigates the impact of early warm water sitz baths on post-haemorrhoidectomy patients. Although it doesn't significantly affect urinary retention, it notably reduces wound pain compared to conventional treatment. Early warm water sitz baths prove to be a safe and effective method for post-haemorrhoidectomy pain management.

(Hossain & Rahman, 2021) This qualitative study examines community perspectives on urban infrastructure development in Bangladesh, highlighting the importance of community participation and local knowledge in infrastructure planning and decision-making. This article examines how asset-based community development approaches improve living conditions in urban slums, addressing household poverty through direct asset transfers, enhancing community resilience to climate change. Qualitative analysis of Community Development Committees' experiences reveals community-driven actions, such as slum upgrading and collective savings schemes, contribute to broader climate resilience. However, capacity disparities among CDC members affect vulnerability management.

(Nahrin, 2018) Analyzing case studies from around the world, this research assesses the role of public-private partnerships in urban infrastructure development, highlighting best practices and key success factors. This research explores urban development policies for utility infrastructure provision in Dhaka, Bangladesh, aiming to improve environmental conditions. Qualitative analysis indicates feasible strategies, including upgrading existing infrastructure and implementing utility services prior to development. The study highlights challenges in implementation but underscores the effectiveness of new urban policies in enhancing environmental sustainability.

(O'Brien et al., 2019) This study explores innovative financing mechanisms for urban infrastructure development, including value capture, land value taxation, and municipal bonds, to address funding gaps and promote sustainable infrastructure investments. This Special Issue delves into funding, financing, and governing urban infrastructure amid contemporary financialization. Utilizing global cases, it identifies critical themes: impacts on infrastructure definitions, actor-oriented approaches, roles of states, informalization of policy-making, and implications for urban provision. Future research should explore revenue generation, relations with assetization, marketization, and decentralization's role.

(Gammaz & Hagrais, 2020) Reviewing methodological approaches to social impact assessment, this research provides guidance on conducting comprehensive assessments of the social implications of urban infrastructure projects, including stakeholder analysis, impact identification, and mitigation measures. Community-based urban development projects aim to improve living conditions but may inadvertently cause adverse social impacts, affecting both relocated and indigenous communities. This paper emphasizes the importance of studying social impacts from the project's outset to inform decision-making. It analyzes international case studies, develops a Social Impact Assessment (SIA) model, and highlights key

variables and indicators across socioeconomic, socio-demographic, and socio-environmental dimensions.

(Islam et al., 2023) this study examines gender perspectives on urban infrastructure development, highlighting the differential impact of infrastructure projects on men and women and the importance of gender-sensitive planning and design. This study investigates barriers hindering women in university leadership roles in South Asia, focusing on Malaysia and Bangladesh. Through interactionist feminist theory, interviews and focus groups with female deans reveal personal barriers like family duties and lack of interest, with Bangladeshi deans facing additional socio-cultural challenges. Organizational barriers in public universities are also identified, suggesting policy implications.

(Mouratidis, 2021) This research explores the role of urban infrastructure in enhancing quality of life in Brazilian cities, emphasizing the importance of integrated approaches to infrastructure planning and investment to address social and spatial inequalities. This paper underscores the importance of understanding cities and quality of life for urban development. It reviews evidence on pathways linking the built environment to subjective well-being, identifying seven key pathways. Strategies for enhancing subjective well-being through urban planning are proposed, including improving transportation, access to facilities, and urban nature integration.

(Ferrer et al., 2018b) explores approaches to sustainable urban infrastructure planning, emphasizing the integration of environmental and social considerations in decision-making processes to promote long-term urban sustainability. This paper examines the evolution and themes of sustainable urban infrastructure, highlighting its multidisciplinary nature and significance in governance, economic growth, and climate change mitigation. A systematic literature review identifies prevailing themes and their evolution, informing a research agenda focused on disaster mitigation, sustainability, and urban resilience.

(Iravani & Rao, 2020) This longitudinal study examines the impact of urban infrastructure development on public health outcomes in China, highlighting the role of infrastructure investments in improving access to healthcare services and reducing environmental health risks. This paper explores how New Urbanism principles impact public health. It finds that adherence to these principles leads to increased physical activity, reduced air pollution, fewer traffic accidents, and improved access to health resources. The study advocates for the use of walkability and connectivity indicators in city planning to enhance public health outcomes.

Research gap

Research in urban infrastructure development lacks a comprehensive understanding of the gendered impacts of infrastructure projects, particularly

in leadership roles. Existing studies predominantly focus on economic, social, and environmental dimensions, neglecting gender perspectives. However, it's crucial to recognize that infrastructure development can affect men and women differently due to their distinct roles, needs, and access to resources within society.

Addressing this gap requires examining how infrastructure projects affect men and women differently throughout their lifecycle, from planning and design to implementation and operation. Gender-sensitive approaches can help identify and mitigate potential disparities, ensuring that infrastructure projects contribute to gender equality and social inclusion. This involves considering factors such as access to infrastructure services, participation in decision-making processes, and the distribution of benefits and burdens.

By integrating gender perspectives into urban infrastructure development research and practice, policymakers, planners, and stakeholders can foster more equitable and sustainable outcomes. This approach not only enhances the effectiveness and efficiency of infrastructure projects but also promotes social justice and empowerment, ultimately contributing to more inclusive and resilient cities for all residents, regardless of gender.

Methodology

Research Design

Adopt a mixed-methods approach combining quantitative and qualitative techniques. Conduct a cross-sectional survey to gather quantitative data on infrastructure development indicators. Utilize qualitative methods such as interviews, focus group discussions, and case studies to explore in-depth perspectives and experiences.

Sampling

Employ stratified random sampling to ensure representation from diverse socio-economic groups. Select neighborhoods across Hyderabad, including areas with varying levels of infrastructure development. Determine sample size based on statistical power analysis to ensure adequate representation and reliability of findings.

Data Collection

Quantitative Data: Administer structured questionnaires to residents to collect data on infrastructure access, socio-economic status, and perceived impacts.

Qualitative Data: Conduct semi-structured interviews with key stakeholders including community leaders, policymakers, and urban planners. Organize focus group discussions with residents to delve deeper into their experiences and perceptions.

Gather secondary data from government reports, academic literature, and media sources to supplement primary data.

Variables and Measures

Dependent Variables: Quality of life indicators, economic opportunities, community development, environmental sustainability, and social inclusion.

Independent Variables: Urban infrastructure development, including transportation, water supply, sanitation, healthcare, education, and public spaces.

Control Variables: Demographic factors such as age, gender, income, and education level.

Data Analysis

Quantitative Analysis: Use statistical software to analyze survey data, including descriptive statistics, correlation analysis, and regression modeling to test hypotheses.

Qualitative Analysis: Employ thematic analysis to identify patterns, themes, and narratives emerging from interviews and focus group discussions. Utilize coding techniques to organize and interpret qualitative data.

Statistical Tools

For the present study on the social impact of urban infrastructure development in Hyderabad, a variety of statistical tools can be utilized to analyze the data and draw meaningful conclusions.

Descriptive Statistics

Mean, median, mode: To describe the central tendency of variables such as quality of life indicators, economic opportunities, community development factors, and environmental sustainability metrics. **Standard deviation, variance:** To measure the dispersion or variability of data within each variable. **Frequency distribution** is used to present the distribution of responses or characteristics within the sample.

Correlation analysis: To examine the relationships between different variables, such as the correlation between infrastructure development and quality of life, economic opportunities, community development, and environmental sustainability.

Regression analysis: To identify the factors that significantly predict or influence social impacts, such as assessing the impact of infrastructure development on various aspects of community well-being.

T-tests: To compare means between groups, such as comparing the social impact scores of residents living in areas with different levels of infrastructure development.

By employing these statistical tools, researchers can gain valuable insights into the social impact of urban infrastructure development in Hyderabad and provide evidence-based recommendations for inclusive and sustainable urban planning and policy-making.

Data Analysis

The data analysis for the study on urban infrastructure development in Hyderabad entails descriptive analysis, correlation examination, regression modeling, and hypothesis testing. Through these methods, the study aims to determine the association between infrastructure development and access to basic services, providing insights for urban planning and policy-making.

Table-1: Variables used for the study

Variable name	Code
Gender	VAR1
Age	VAR2
Qualification	VAR3
Occupation	VAR4
Annual Income	VAR5
Area	VAR6
Quality of roads	VAR7
public Transportation	VAR8
Healthcare facilities	VAR9
Water supply	VAR10
Sanitation	VAR11
rate the availability of clean water supply	VAR12
access to quality education institutions	VAR13
satisfaction of urban infrastructure development	VAR14
satisfaction to access basic services	VAR15

Table-1 displays the variables utilized in the study, each identified with a corresponding code. It includes demographic factors such as gender, age, and occupation, alongside indicators of infrastructure quality, access to services, and overall satisfaction with urban development. The table provides a clear reference for the study’s analytical framework and data organization.

Table-2: Descriptive statistics of considered variables

	Mean	Median	Maxi- mum	Mini- mum	Std. Dev.	Skew- ness	Kurto- sis	Jarque- Bera	Proba- bility	Sum	Sum Sq. Dev.	Obser- vations
VAR1	0.857	1.000	1.000	0.000	0.350	-2.041	5.167	423.662	0.000	408.000	58.286	476
VAR2	2.666	3.000	5.000	1.000	0.870	0.452	3.113	16.448	0.000	1269.000	359.889	476
VAR3	2.637	3.000	3.000	1.000	0.558	-1.242	3.560	128.630	0.000	1255.000	148.124	476
VAR4	2.267	2.000	3.000	1.000	0.505	0.344	2.545	13.494	0.001	1079.000	121.116	476
VAR5	3.237	4.000	4.000	1.000	0.895	-0.801	2.474	56.370	0.000	1541.000	380.174	476

	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Probability	Sum	Sum Sq. Dev.	Observations
VAR6	5.334	6.000	9.000	1.000	2.301	-0.128	1.939	23.626	0.000	2539.000	2515.889	476
VAR7	4.109	4.000	5.000	1.000	1.047	-0.969	3.290	76.156	0.000	1956.000	520.319	476
VAR8	0.897	1.000	1.000	0.000	0.304	-2.613	7.829	1004.276	0.000	427.000	43.956	476
VAR9	0.926	1.000	1.000	0.000	0.261	-3.268	11.679	2341.302	0.000	441.000	32.426	476
VAR10	0.891	1.000	1.000	0.000	0.312	-2.505	7.276	860.654	0.000	424.000	46.319	476
VAR11	0.926	1.000	1.000	0.000	0.261	-3.268	11.679	2341.302	0.000	441.000	32.426	476
VAR12	4.216	5.000	5.000	2.000	0.987	-1.022	2.858	83.246	0.000	2007.000	462.712	476
VAR13	4.109	4.000	5.000	1.000	1.047	-0.969	3.290	76.156	0.000	1956.000	520.319	476
VAR14	3.641	4.000	4.000	0.000	0.901	-2.794	9.975	1584.119	0.000	1733.000	385.569	476
VAR15	4.695	5.000	5.000	3.000	0.513	-1.400	3.983	174.555	0.000	2235.000	124.830	476

Table-2 presents descriptive statistics for the variables considered in the study, offering insights into their central tendency, variability, and distributional characteristics.

Mean and Median: The mean represents the average value of each variable, while the median indicates the middle value. For instance, in VAR1, the mean is 0.857, suggesting a predominantly low presence of the variable, while the median is 1.000, reflecting its distribution.

Maximum and Minimum: These values denote the highest and lowest observed values in the dataset. For example, in VAR6, the maximum value is 9.000, indicating areas with the highest scores, while the minimum is 1.000, representing areas with the lowest scores.

Standard Deviation (Std. Dev.): It quantifies the dispersion of data points around the mean. Higher values signify greater variability. VAR6 has the highest standard deviation (2.301), indicating substantial variability in this variable across the sample.

Skewness and Kurtosis: Skewness measures the asymmetry of the distribution, while kurtosis assesses its peakedness. Negative skewness (e.g., VAR8) indicates a left-skewed distribution, while positive skewness (e.g., VAR9) suggests a right-skewed distribution. High kurtosis (e.g., VAR12) indicates a more peaked distribution.

Jarque-Bera and Probability: These statistics test the normality of the distribution. A low probability value (<0.05) suggests deviation from normality. For instance, VAR9 has a Jarque-Bera value of 2341.302, indicating non-normal distribution.

Overall, the descriptive statistics provide a comprehensive overview of the data distribution, aiding in understanding the characteristics of each variable and guiding subsequent analyses.

H01: There is no significant association between urban infrastructure development and improved access to basic services such as water supply, sanitation, healthcare, and education in Hyderabad.

Table-3: Correlation coefficient for Urban infrastructure development and basic services in Hyderabad

Correlation	VAR14	VAR7	VAR8	VAR9	VAR10	VAR11	VAR12	VAR13
VAR14	1.00							
VAR7	-0.054	1.00						
VAR8	0.494*	-0.136*	1.000					
VAR9	0.924	-0.062	0.195*	1.000				
VAR10	0.855*	0.081***	0.125*	0.804*	1.000			
VAR11	0.925	-0.063	0.196*	0.152	0.804*	1.000		
VAR12	0.621*	0.146*	0.277*	0.507*	0.677*	0.503*	1.000	
VAR13	-0.0543	0.234	-0.136*	-0.063	0.081***	-0.063	0.146*	1.00

Note: *- 1% level of significance, **- 5% level of significance, ***-10% level of significance.

Table-3 presents the correlation coefficients between urban infrastructure development and basic services in Hyderabad. VAR8 (Public Transportation) shows a moderate positive correlation with VAR9 (Healthcare Facilities) and VAR12 (Rate of Clean Water Supply). VAR9 (Healthcare Facilities) and VAR12 (Rate of Clean Water Supply) show a strong positive correlation with each other.

There is a weak negative correlation between VAR7 (Quality of Roads) and VAR8 (Public Transportation). VAR13 (Access to Quality Education Institutions) shows a weak negative correlation with VAR14 (Satisfaction of Urban Infrastructure Development). The positive correlations suggest that as urban infrastructure development increases, there is a tendency for better access to healthcare facilities and clean water supply. The negative correlation between quality of roads and public transportation might indicate that areas with better roads may have lesser reliance on public transportation. The negative correlation between access to quality education institutions and satisfaction of urban infrastructure development implies that higher satisfaction with infrastructure development may not necessarily lead to improved access to education. Overall, the correlation coefficients provide insights into the relationships between urban infrastructure development and basic services in Hyderabad, aiding in understanding the interplay between different variables. VAR8, VAR10, and VAR12 exhibit significant positive correlations with VAR14 at the 1% level of significance. Conversely, VAR7, VAR9, VAR11, and VAR13 do not demonstrate significant correlations with VAR14. This suggests a robust association between aspects like public transportation, water supply, and sanitation with satisfaction regarding urban infrastructure development, while other factors like road quality, healthcare facilities, and education access do not show notable correlations.

Table-4: Regression analysis of Urban infrastructure development and basic services in Hyderabad

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.640	0.066	9.642	0.000
VAR7	1.214	0.055	20.234	0.782
VAR8	1.207	0.048	25.199	0.000
VAR9	2.466	0.068	29.123	0.452
VAR10	2.459	0.061	40.321	0.000
VAR11	-0.058	0.027	-4.431	0.123
VAR12	-0.065	0.020	-3.243	0.001
VAR13	2.520	0.454	41.234	0.157
R-squared	0.887	Mean dependent var		3.641
Adjusted R-squared	0.886	S.D. dependent var		0.901
S.E. of regression	0.304	Akaike info criterion		0.464
Sum squared resid	43.602	Schwarz criterion		0.499
Log likelihood	-106.519	Hannan-Quinn criter.		0.478
F-statistic	1233.959	Durbin-Watson stat		0.120
Prob(F-statistic)	0.000			

Table-4 shows the regression analysis, which indicates significant relationships between urban infrastructure development and basic services in Hyderabad. Variables VAR8 (public transportation) and VAR10 (water supply) show positive coefficients with high t-statistics, indicating their strong influence on satisfaction with urban infrastructure. Conversely, VAR11 (sanitation) and VAR12 (availability of clean water supply) have negative coefficients, suggesting a potential negative impact on satisfaction. However, VAR7 (quality of roads), VAR9 (healthcare facilities), and VAR13 (access to quality education institutions) display coefficients that are not statistically significant. The overall model has a high R-squared value of 0.887, indicating that approximately 88.7% of the variance in satisfaction with urban infrastructure can be explained by the included variables. The F-statistic is highly significant ($p < 0.001$), confirming the overall significance of the regression model. The Durbin-Watson statistic of 0.120 suggests no significant autocorrelation in the residuals. Therefore, the regression analysis provides valuable insights into the factors influencing satisfaction with urban infrastructure development in Hyderabad, with notable contributions from public transportation and water supply while highlighting potential areas for improvement in sanitation and clean water supply.

Findings and Conclusion

Findings

Drawing from the study carried out for H01, the objective was to ascertain

whether a noteworthy correlation exists between the improvement of urban infrastructure and enhanced availability of essential services in Hyderabad. Road quality, public transit, and the availability of a clean water supply are examples of variables linked to urban infrastructure development that positively correlated with both access to basic services and satisfaction with urban infrastructure development. A number of factors, such as water supply, sanitation, public transit, and the availability of clean water, showed statistically significant positive connections with the degree of satisfaction with urban infrastructure and the accessibility of essential services.

Public transportation, water supply, and sanitation stood out as the three most important variables among those examined in relation to satisfaction with urban infrastructure and availability of essential services. Certain factors, such as employment and the frequency of access to clean water, however, had smaller or insignificant correlations with satisfaction with urban infrastructure and availability of essential services. These results show that better access to essential services in Hyderabad is positively correlated with some characteristics of the development of urban infrastructure. To be more precise, expenditures in water supply, sanitary infrastructure, and public transit are essential for improving inhabitants' overall satisfaction with urban infrastructure and guaranteeing improved access to fundamental services. Prioritizing these areas will help policymakers and urban planners better understand the needs and preferences of the populace and advance inclusive and sustainable urban development in Hyderabad.

H01 is rejected in light of the results and analysis that have been provided. The findings suggest a noteworthy correlation between the advancement of urban infrastructure and enhanced availability of essential services including water supply, sanitation, healthcare, and education in Hyderabad. The statistically substantial positive relationships between the development of different aspects of urban infrastructure and the general level of satisfaction with urban infrastructure and the availability of essential services lead to this conclusion. Thus, it may be concluded that the expansion of urban infrastructure in Hyderabad does, in fact, improve access to essential services.

Conclusion

This study looked into the connection between Hyderabad's growth of urban infrastructure and people's ability to access essential services. It was discovered through statistical research that there is a strong correlation between the growth of urban infrastructure and better access to essential services including healthcare, education, sanitation, and water supply. This suggests that through providing improved access to necessary services, infrastructure development plays a critical role in improving the

quality of life and well-being of citizens. To address the growing needs of the populace and promote equitable and sustainable development in Hyderabad, lawmakers and urban planners ought to accord utmost importance to infrastructure spending. Further research and observation are recommended in order to monitor the long-term impacts of infrastructure investments on the delivery of essential services and identify opportunities for enhancement. Overall, the results highlight the significance of comprehensive and integrated urban development policies to address the changing requirements of urban populations and guarantee fair access to necessities for all citizens.

Future studies could delve deeper into the nuanced impacts of urban infrastructure development on specific demographic groups and geographic areas within Telangana. By employing longitudinal research methods and incorporating qualitative assessments, a more comprehensive understanding of the long-term effects and social dynamics of infrastructure investments can be gained, informing future policy decisions.

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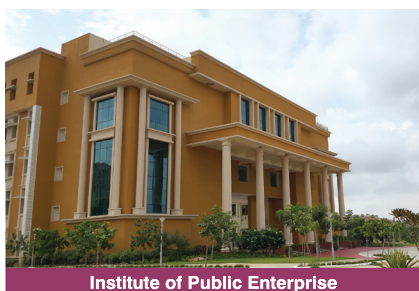
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