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The Influence of National Culture on the Spread and Management of Covid-19 in India

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Abstract: *This study explores the intricate role of national culture in the spread and management of COVID-19 in India using a mixed-methods approach. We drew from Hofstede's Cultural Dimensions, additional cultural indices, and pandemic outcome data. Our findings reveal that high uncertainty and inconsistent information accelerate transmission, whereas strong collectivist values improve adherence to health guidelines. Effective governance and cultural adaptability have emerged as vital factors in mitigating the impact of the virus. These insights highlight the importance of incorporating cultural dimensions into public health strategies to enhance intervention effectiveness and outcomes during future health crises.*

Keywords: *India, National Culture, Covid-19, Covid-19 Performance Index (CPI), Hofstede's Cultural Dimensions.*

1. Introduction

The COVID-19 pandemic has been a global crisis, affecting millions of lives and economies worldwide. While the virus itself knows no borders, its impact has varied significantly across different countries. The COVID-19 pandemic has reverberated through India, much like the rest of the world. By the end of May 2024, the virus had permeated almost all countries and territories, leaving in its wake nearly 775million confirmed cases and 7million deaths globally. The COVID-19 pandemic has had a profound effect on India. The Ministry of Health and Family Welfare reported 45million confirmed cases, and 533,599 fatalities (WHO, 2024), making it the country with the second-highest number of cases of covid 19 globally. However, beyond these stark statistics lies a complex interplay of cultural norms, practices, and beliefs that significantly shape the pandemic's trajectory. One crucial factor that shapes the outcomes of the pandemic is national culture**.** National culture encompasses a wide range of dimensions, including values, beliefs, norms, and behavioural patterns shared by a group of people within a specific country. In the context of India, a nation with a rich and diverse cultural heritage, understanding how cultural factors influence the spread of COVID-19 becomes essential.

1.1 Covid-19 Performance Index (Cpi)

India was ranked 86th out of 98 countries in the COVID-19 Performance Index (CPI) by the Sydney based Lowy Institute, which evaluates pandemic responses based on six indicators: confirmed cases, deaths, cases per million people, deaths per million, cases as a proportion of tests, and tests per thousand people. Despite proactive measures and vaccinations, challenges such as population density and healthcare issues exacerbated the pandemic (Krishnan, 2021). The COVID-19 Performance Index (CPI) evaluates pandemic responses across Indian states and UTs by assessing cases, deaths, and testing rates both in total and per capita. With an average CPI of 52.69 (excluding Lakshadweep), 21 of 35 regions fall below this average. The CPI correlates with economic factors and population size, indicating a need for targeted strategies in densely populated and economically advanced regions. Despite initial threats, preventive measures effectively curbed the virus's spread in India (Shelar, Kurade, & Ade, COVID-19 performance index for spatial assessment of pandemic management in India, 2021).

2. Literature Review

Three cross-national studies by Huang et al. (2022) analyse national culture's role in COVID-19 spread. Study 1 (60 countries) investigates Hofstede's dimensions, Study 2 (55 countries) explores GLOBE

dimensions, and Study 3 (31 countries) examines cultural tightness. Findings show that power distance and uncertainty avoidance influence initial spread, while human orientation, in-group collectivism, and cultural tightness affect spread rates. In 2020, research by Bayeh, Yampolsky, & Ryder (2021) stressed cultural psychology's role in understanding COVID-19, noting varied mortality, transmission, and behaviour influenced by cultural context and health inequities. Chen & Biswas (2023) analysed data from 92 countries using Hofstede's dimensions, finding individualism, masculinity, and uncertainty avoidance linked to higher COVID-19 cases and deaths.

3. METHODOLOGY

3.1. Research Design

This study employs a mixed-methods approach, integrating quantitative and qualitative data to examine how cultural dimensions influence COVID-19 outcomes in India, providing a detailed analysis of cultural impacts on pandemic management.

Hofstede's Cultural Dimensions: Data on Power Distance, Uncertainty Avoidance, In-Group Collectivism, Long Term Orientation, and Masculinity of India were obtained from Hofstede Insights.

Additional Cultural Dimensions: Data on Human Orientation, Religiosity, Government Effectiveness Index, and Cultural Tightness were gathered from publicly available databases such as the Global Leadership and Organisational Behaviour Effectiveness (GLOBE), World Bank, and academic research papers.

Pandemic Outcome Data: COVID-19 case numbers, mortality rates, and vaccination rates were sourced from official reports by the Indian Ministry of Health and Family Welfare, as well as the World Health Organization.

3.2. Hypothesis of the Present Paper

This study examines how cultural dimensions affect COVID-19 spread and management in India by testing hypotheses on the interplay between culture and pandemic outcomes, revealing cultural impacts on COVID-19's trajectory.

1. Power distance of India is negatively associated with the speed of covid 19 transmission.
2. Uncertainty Index of India is positively associated with the speed of covid 19 transmission.
3. In-group collectivism in India has both accelerating and mitigating effects on the spread of COVID-19.
4. Masculinity index of India is positively associated with the risk of infection of man than woman.
5. India's long-term orientation positively influenced its COVID-19 response.
6. The level of human orientation in India correlates with the rate of COVID-19 transmission.
7. Government effective index of India is negatively associates with the spread of covid 19.

3.3. Power Distance Index

Power distance refers to the extent to which less powerful individuals "accept and expect that power is distributed unequally" (Hofstede, Hofstede, & Minkov, 2010)**.** In high power distance countries (e.g., Vietnam, Russia, China), compliance with authorities and preventive measures (early lockdowns, mask wearing) effectively mitigated COVID-19 spread. Conversely, small power distance cultures (France, Italy) faced challenges due to skepticism and decentralization (Huang & et al, 2022).

In India, significant power differences exist across socio-economic status, education, and jobs, with a power distance index of 77, surpassing the global average of 59. Indians accept authority, emphasizing clear, jargon-free safety communication that leverages soft power, leadership charisma, expert opinions, and respect for obligations (Tripathi & Vijayan, 2020).

Despite India's high Power Distance Index (PDI) of 77, our hypothesis shows no direct correlation with COVID-19 spread. This finding contrasts sharply with earlier studies, indicating a different outcome for India (Huang & et al, 2022).

Notwithstanding its high-Power Distance Index (PDI), India experienced a COVID-19 surge due to various factors. First, high population density accelerated virus spread, with research showing a

moderate link between density and COVID-19 transmission at the district level. (Bhadra, Mukherjee, & Sarkar, 2020). Informal settlements, crowded public transport hubs, and inadequate access to water contributed to the spread of COVID-19 in cities (Kedia, Shah, & Agrawal, 3 pressing urban problems Indian cities must solve in the post-COVID recovery, 2021). Second, India's informal economy, where many rely on daily wages. Labourers face economic risks due to disruptions in essential health services and limited access to support programs (Biswas, 2022). Third, the strain on health infrastructure exacerbated the crisis-overwhelmed hospitals, oxygen shortages, and stretched medical personnel (Ravichandran, 2021). The pandemic exposed gaps in India's urban public health infrastructure, which accounts for 75% of the country's healthcare system (Kedia & Agrawal, World Economic Forum, 2021). Fourth, deeply ingrained social norms persisted, with social gatherings, festivals, and religious events continuing despite the pandemic. The communal hearth beckoned, even as the virus circled (Tripathi & Vijayan, 2020).

3.4. Uncertainty Avoidance

Hofstede's Uncertainty Avoidance Index measures the extent to which members of a culture feel threatened by ambiguous or unknown situations (Hofstede, Hofstede, & Minkov, 2010). The Uncertainty Avoidance Index (UAI) significantly influences a country's approach to combatting the COVID-19 pandemic. Cultures with high uncertainty avoidance tend to have strict rules and regulations to minimize unpredictability, and they often have a low tolerance for unconventional behaviour and ideas. Conversely, cultures with low uncertainty avoidance are more relaxed about ambiguity, have fewer regulations, and are more open to change and innovation (Lonner, Berry, & Hofstede, 1980). In low uncertainty avoidance (UAI) countries like Singapore, strict measures are meticulously followed. The populace embraces novel methods and technologies to confront the virus head-on, potentially curtailing its spread. Conversely, in high UAI countries like France, reliance on established systems and reluctance to adopt new rules prevail, yielding varied outcomes in managing the pandemic (Huang & et al, 2022).

India's Hofstede Uncertainty Avoidance Index score of 40 indicates moderate comfort with uncertainty and ambiguity. This cultural trait may have influenced COVID-19 spread. Relaxed adherence to guidelines, social practices, communication challenges, and economic necessities. India's diverse society embraces varied perspectives, blending traditional norms with modern innovations. However, this adaptability can lead to inconsistent compliance with safety protocols. The informal workforce's need for proximity work, coupled with ambiguous information dissemination, further complicates pandemic management. While resilience and self-organization emerge, strain on healthcare systems persists. India's cultural flexibility remains both an asset and a challenge.

Based on the above explanation, India's Uncertainty Index positively correlates with the speed of COVID-19 transmission.

3.5. In Group Collectivism

India's low score on Individualism (High In Group Collectivism index) (GLOBE, 2020), reflecting strong group cohesion and interdependence, significantly affects COVID-19 spread and management. The country's collectivism is marked by strong family ties, community bonds, and prioritizing collective well-being. A study found that countries with higher collectivism scores had a lower COVID-19 spread rate. Specifically, a one standard deviation increase in the collectivism score was associated with a 1.38% reduction in the weekly growth rate of COVID-19 cases. This effect became stronger during national or regional lockdowns, suggesting that cultural norms play a crucial role in managing outbreaks (Liu, Wu, Lin, & Zhang, 2023). But high in group collectivism countries like India and Phillipians accelerated the spread of covid 19 (Huang & et al, 2022). In-group collectivism in India has both accelerating and mitigating effects on the spread of COVID-19. Let us check our hypothesis,

a) Accelerates the virus spread: In collectivist societies such as India, cultural and religious gatherings have significantly contributed to COVID-19 transmission, particularly in densely populated areas and joint family structures, where maintaining physical distancing is challenging, increasing virus spread risks. Misinformation and stigma further exacerbate the situation. Rumours and myths can hinder public health efforts, while stigmatization of infected individuals may lead to reluctance in seeking medical help or disclosing symptoms.

b) Helps in management of Covid 19: In collectivist societies, community support played a crucial role during the pandemic, providing food, medical supplies, and services to vulnerable populations. Word of mouth and community networks effectively spread health information, improving adherence to lockdowns, mask mandates, and social distancing. Thus, the hypothesis is supported: In-group collectivism in India has both accelerating and mitigating effects on the spread of COVID-19.

4. MASCULINITY

The Masculinity Index measures the degree to which a society enforces distinct roles and expectations for men and women. Initial figures indicated a marginally higher propensity for males to acquire COVID-19 compared to females. Around 66.8% of the cases documented in India by May 2020 were among men (Chanda, 2020). Epidemiological evidence shows that while men and women are equally likely to contract COVID-19, men tend to experience more severe health outcomes (Roccato, Pacilli, Orlando, & Russo, 2022). In India, cultural views on masculinity can significantly impact behaviours and health outcomes, particularly where traditional masculine traits are emphasized. These norms may encourage riskier behaviours, delayed healthcare, and strict adherence to gender roles, which can increase exposure to COVID-19 and hinder compliance with public health measures like mask-wearing and social distancing.

Thus, the hypothesis is true: The Masculinity Index of India is positively associated with a higher risk of infection for men than women.

5. LONG TERM ORIENTATION

Long-Term Orientation (LTO) from Hofstede's cultural dimensions theory explains how societies balance short-term and long-term priorities, influencing their COVID-19 responses. Cultures with high long-term orientation (LTO) emphasize future rewards, resulting in strong pandemic preparedness, adherence to health measures, and public education. For instance, China's acceptance of strict lockdowns and extensive testing reflects this. In contrast, short-term orientation cultures, like the United States, prioritize immediate gains, leading to resistance to prolonged restrictions and economic over health priorities. During COVID-19, India's high LTO index of 61 shaped its strategies, the government focused on enhancing healthcare, advancing research, and speeding vaccine development, with public compliance and balanced economic policies aiming for long-term recovery (Press Information Bureau, 2021).

Our hypothesis is true: India's long-term orientation positively influenced its COVID-19 response, leading to robust healthcare infrastructure, vaccine development, and high public compliance.

6. HUMAN ORIENTATION

In India, human orientation reflects values and practices guiding social interactions, deeply rooted in cultural and religious traditions emphasizing humanity's interconnectedness. This high human orientation value influenced the speed of COVID-19 transmission in India, affecting how people responded and managed the pandemic, highlighting the role of cultural values (GLOBE, 2020). India's focus on family and community affects COVID-19 transmission in mixed ways. Close-knit communities offer support to vulnerable members but also enable virus spread through social gatherings and shared spaces. Respect for elders and concern for others can promote adherence to health guidelines like mask-wearing and social distancing.

Our hypothesis holds good that there appears to be a correlation between the degree of human orientation in India and the rate of COVID-19 transmission in the Indian framework.

7. GOVT EFFECTIVENESS INDEX

India enhanced healthcare infrastructure and local resource production, launching the world's largest vaccination campaign. Eleven Empowered Groups managed the pandemic, aligning with its 57th Global Health Security Index rank (Press Information Bureau, 2021).

In 2022, the World Bank's Government Effectiveness estimate for India was 0.37033, reflecting the quality of public services and overall governance (World Bank Group, 2024). This score places India in the 63.21st percentile globally, indicating better performance than about 63% of other nations. Despite this relatively high ranking, COVID-19 spread rapidly in India due to several factors. High population density complicated social distancing, and the healthcare system was overstretched.

Economic inequalities led to inadequate access to healthcare and sanitation for many. Inconsistent public adherence to health guidelines, misinformation, emerging variants, mass migration, and uneven policy enforcement worsened the crisis.

Therefore, the hypothesis that the Government Effectiveness Index in India negatively correlates with the speed of COVID-19 transmission is not supported.

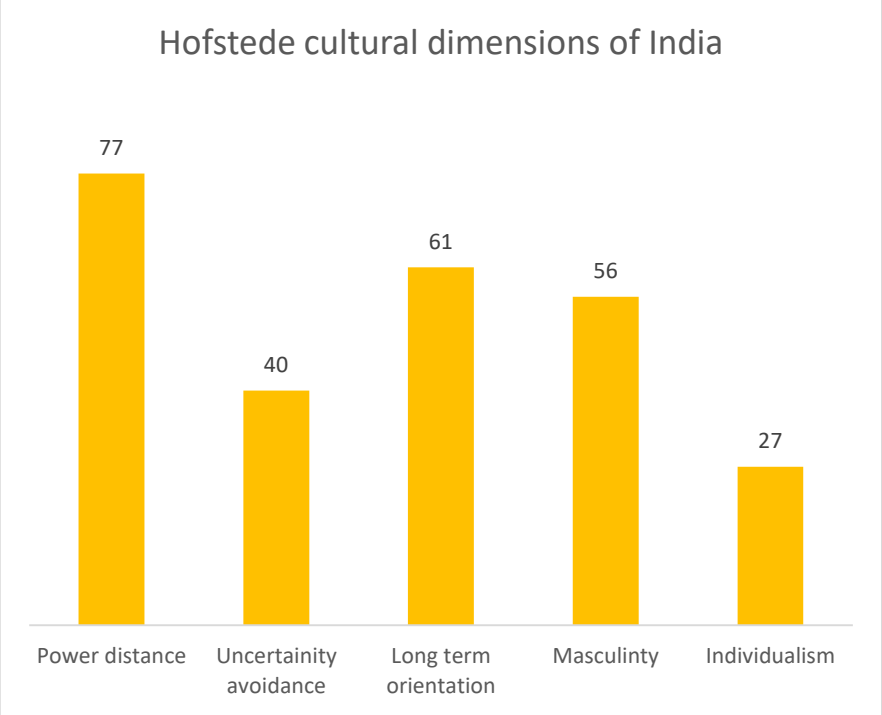

Figure 1. *Hofstede Cultural Dimensions of India (Country comparision tool: Hofstede Insights, 2024)*

8. Conclusion

India's cultural fabric, characterized by intricate social norms, beliefs, and practices, significantly influenced the spread and management of COVID-19. High uncertainty and inconsistent information dissemination hindered effective preventive measures, accelerating transmission. Collectivist values and strong interpersonal bonds aided in compliance with health guidelines, while religious and cultural practices posed dual challenges of community cohesion and increased transmission risk. Effective governance, reflected in robust healthcare infrastructure and efficient testing, emerged as crucial for mitigating the crisis. Gender disparities highlighted by the Masculinity Index also played roles in pandemic outcomes. Long-term orientation, emphasizing resilience and planning, positively influenced pandemic management.

Understanding the role of national culture is crucial in addressing public health crises like COVID-19. India's cultural dimensions, such as collectivism, religiosity, and long-term orientation, significantly influenced the spread and management of the pandemic. Effective governance and cultural adaptability proved essential in mitigating the virus's impact. Acknowledging and integrating these cultural factors into public health strategies can enhance the effectiveness of interventions and ensure better outcomes in future health emergencies.

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Nayana's area of expertise lies in physical anthropology, with a deep interest in human biology, epidemiology, and public health from a socio-cultural perspective. She combines scientific

understanding with ethnographic methods to explore how individuals and communities perceive illness, cope with symptoms, and respond to long-term health complications.

2. Dr. J Sandeep

Dr. J. Sandeep is an accomplished academician with a PhD in Anthropology, his research is rooted in rural governance, social justice, and the empowerment of marginalized communities, especially Scheduled Tribes. His scholarly contributions span topics such as developmental anthropology, grassroots political participation, and tribal leadership.

Dr. Sandeep has worked in several ICSSR, ASI and UGC-funded projects and regularly participates in national seminars and policy dialogues. His approach to research combines empirical fieldwork with policy advocacy, and he is known for promoting participatory methodologies that centre the voices of rural and tribal populations. His work continues to influence the discourse on inclusive development and equitable governance in India.

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