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Message from the Editor's Desk!

"Knowledge is like a garden; if it is not cultivated, it cannot be harvested."

African Proverb

*It gives me immense pleasure to present the **July–December 2025** issue **(Vol. 14, Issue 2)** of the Guru Nanak Journal of Multidisciplinary Research, a peer-reviewed platform dedicated to fostering scholarly inquiry and knowledge exchange across diverse fields. Each article in this issue reflects thoughtful research, analytical insight, and the commitment of scholars to address questions that shape our understanding of society, science, and human progress.*

This volume exemplifies the journal's ethos of promoting interdisciplinary discourse—where the humanities, sciences, and social sciences converge to inspire innovation and sustainable thinking. From studies exploring digital activism and mental well-being to research on AI-driven technologies and molecular biology, this issue mirrors the vibrant breadth of contemporary scholarship at Guru Nanak College (Autonomous), Chennai.

As Editor-in-Chief, I extend my heartfelt appreciation to the contributing authors, diligent reviewers, and the editorial team for their dedicated work in upholding the rigour and standards of this publication. May this issue continue to serve as a catalyst for new ideas, collaborations, and a deeper pursuit of truth through research.

Warm regards,

Dr. L.R.S.Kalanithi

Associate Professor of English & Dean Languages

Editor-in-Chief

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தமிழகம், ஆந்திரா மக்களின் நாட்டுப்புறக் கலைகள்

ப. சசிரேகா

உதவிப்பேராசிரியர், தமிழ்த்துறை,

குரு நானக் கல்லூரி, சென்னை-42.

முன்னுரை

நாட்டுப்புறவியல் என்பது மக்களின் பழக்கவழக்கங்கள், நம்பிக்கைகள், கலைகள், பாடல்கள் மற்றும் சகுனங்களை உள்ளடக்கியது. நாட்டுப்புற மக்களின் அறிவு, ஒழுக்கம், கலைகள், பழக்க வழக்கங்கள் போன்றவை கலாச்சாரமாக மலர்கின்றன. மனிதன் பழங்குடியிலிருந்து நாகரிகம் அடைந்துவிட்டாலும், அவன் பண்பாட்டோடு தொடர்புடைய கலைகளை விட்டுவிடவில்லை. உலகின் எல்லா இடங்களிலும் வாழும் பழங்குடி சமூகங்களின் வரலாற்றைப் பார்த்தால், இயற்கை மீதான நம்பிக்கையும் மனித வாழ்க்கையின் மீதான நம்பிக்கையும் கலைகளாக வெளிப்படுகிறது.

தலைமுறை தலைமுறையாக நகரத்தை விட்டு கிராமத்தில் வாழக்கூடிய பாமர மக்களின் அறிவார்ந்த அனுபவத்தில் உருவான சிந்தனைகளே, குடும்ப விழாக்களிலும் சமூக விழாக்களிலும் கோவில் விழாக்களிலும் கலைகளாக நிகழ்த்தப்படுகின்றன. நாட்டுப்புற கலைகள், நிகழ்த்து கலை, கதை தழுவிய நிகழ்த்து கலை மற்றும் தற்காப்பு கலை ஆகும். இக்கலைகள் தமிழகம், ஆந்திரம் பகுதியில் நிகழ்த்தப்படும் நிகழ்த்துக் கலைகளை மையமாகக் கொண்டே இவ்வாய்வு அமைக்கப்பட்டுள்ளது.

தமிழ்நாட்டில் கோடங்கி ஆட்டம், பொய்க்கால் குதிரை ஆட்டம், கரகாட்டம், காவடியாட்டம், பூத ஆட்டம், காளையாட்டம், புலியாட்டம், கரடி ஆட்டம், உடுக்கடி பாட்டு போன்றவைகள் நிகழ்த்துக் கலைகளாகக் கூறப்படுகின்றன. தேவராட்டம், கோலாட்டம், ஒயிலாட்டம், மரப்பாவை கூத்து, வில்லுப்பாட்டு, பள்ளு நாடகம், குறவஞ்சி நாடகம், நொண்டி நாடகம் போன்றவைகள் கதை தழுவிய கலைகளாகக் கூறப்படுகின்றன.

ஆந்திர பிரதேசத்தின் பாரம்பரிய கலை வடிவங்கள் பல உள்ளன. கோலாட்டம், பெரிணி, ஆந்திரா நாட்டியம், தப்பெடா குல்லு, லம்பாடி, குச்சிப்புடி, தோல் பொம்மலாட்டம் குறிப்பிடத்தக்கவை ஆகும். கலைகளை நிகழ்த்தும் பொழுது, பல வண்ண உடைகளை அணிந்திருப்பர். மேலும் கலைகள் நிகழ்த்தப்படும் பொழுது பல்வேறு இசைக்கருவிகள் இசைக்கப் படுகிறது.

இக்கலைகள் கலாச்சாரத்தை உணர்த்துவதாக அமையப்பெற்றது. எந்த மாவட்டமாக இருந்தாலும் சரி, அவரவர்களின் கலாச்சாரத்தை மையப்படுத்தியே கலைகள் அமைந்திருக்கும். சிறு சிறு மாற்றங்கள்

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மட்டுமே இருக்குமோ தவிர, பெரிதான வித்தியாசங்கள் இருப்பதாகத் தோன்றவில்லை. அதற்கு சான்றாக ஆந்திரா மற்றும் தமிழ்நாடு மாநிலத்தில் இருக்கக்கூடிய கலைகளைக் கொண்டு நாம் அறியமுடிகிறது.

திறவுச்சொற்கள்: பொய்க்கால், உடுக்கடி, பெரிணி, தப்பெடா குல்லு, லம்பாடி.

நாட்டுப்புறக் கலைகள் அறிமுகம்:

நாட்டுப்புற மக்களின் பண்பாடு, கலாச்சாரம், பழக்கவழக்கங்கள், நம்பிக்கைகள், சடங்குகள் சார்ந்த அனைத்துக் கூறுகளும் ஆராயப்படுகிறது. டாக்டர் சு.சக்திவேல் அவர்கள் நாட்டுப்புற வழக்காறுகளை, அறிவியல் அடிப்படையில் ஆராயும் இயல் நாட்டுப்புறவியல் என்கிறார். அது மட்டுமின்றி நாட்டுப்புறவியல் என்பது கிராமப்புறத்தில் வாழ்கின்ற மக்களின் உள்ளார்ந்த அனுபவங்கள் மற்றும் அவர் வழிகளில் வந்த மரபு வழியான உணர்வுகளை உள்ளடக்கிய ஒரு தொகுப்பு என்று கூறப்படுகிறது. தலைமுறை தலைமுறையாக நகரத்தை விட்டு கிராமத்தில் வாழக்கூடிய பாமர மக்களின் அறிவார்ந்த அனுபவத்தில் உருவான சிந்தனைகளே பழமொழி, விடுகதை, கதைப்பாடல், கலைகள், நம்பிக்கைகள், நாட்டுப்புற பாடல்கள் என பல்வேறு வகைகளாக வழங்கப்படுகிறது.

நாட்டுப்புறங்களில் குடும்ப விழாக்களிலும் சமூக விழாக்களிலும் கோவில் விழாக்களிலும் நிகழ்த்தப் பெறுகின்ற நாட்டுப்புற கலைகள், நிகழ்த்து கலை, கதை தழுவிய நிகழ்த்து கலை மற்றும் தற்காப்பு கலை ஆகும். தமிழகம், ஆந்திரம் பகுதியில் நிகழ்த்தப்படும் நிகழ்த்துக் கலைகளை மையமாகக் கொண்டு இவ்வாய்வு அமைக்கப்பட்டுள்ளது.

கோடங்கி ஆட்டம், பொய்க்கால் குதிரை ஆட்டம், கரகாட்டம், காவடியாட்டம், காளையாட்டம், பூத ஆட்டம், புலியாட்டம், கரடி ஆட்டம், உடுக்கடி பாட்டு போன்ற பல கலைகள் நிகழ்த்து கலைகளாகக் கூறப்படுகின்றன. கதை தழுவிய நிகழ்த்து கலைகளாகத் தேவராட்டம், கோலாட்டம், ஒயிலாட்டம், கும்மியாட்டம் போன்றவை கதை தழுவிய கலைகளாகக் கூறப்படுகின்றன.

கோடாங்கி ஆட்டம்:

வினோதமான முறையில் ஆடைகளை அணிந்து கொண்டு உடுக்கை அடித்துக் கொண்டு பாட்டு பாடிக்கொண்டு அருள் வாக்கு கூறிக்கொண்டு ஆடுகின்ற ஆட்டத்தை கோடாங்கி ஆட்டம் என்று கூறுவர்.

பொய்க்கால் குதிரை ஆட்டம்:

குதிரையின் உருவத்தை அட்டையாலும் மூங்கில் கீற்றாலும் செய்து, அதில் பல வண்ணங்கள் தீட்டிய துணிகளால் ஒப்பனை செய்யப்பட்டிருக்கும். குதிரை உருவின் முதுகு புறத்தில் உள்ள துளையில் ஒரு ஆள் நின்று கொண்டு, கால்களில் மரக்கட்டைகளால் செய்த கால்களை கட்டிக்கொண்டு ஆடுகின்ற ஒரு ஆட்டம்

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தான் பொய்க்கால் குதிரை ஆட்டம் ஆகும். இந்த ஆட்டத்தை புரவி ஆட்டம் என்றும் கூட அழைப்பார்கள். இதை சிலப்பதிகாரத்தில் மரக்கால் கூத்து என்று இளங்கோவடிகள் குறிப்பிட்டுள்ளார். பொய்க்கால் குதிரை ஆடுகின்ற கலைஞர்கள் தங்கள் காலோடு இணைத்து கட்டிக் கொண்டு அம்மரக்கட்டையில், குதிரையின் குழம்பு ஒலி போல சத்தம் எழுப்பி ஆடுவார்கள். இவ்வாட்டம் தமிழகம், ஆந்திரம் பகுதியில் ஒன்று போலவே நிகழ்த்தப்படுகிறது.

கரகாட்டம்:

ஆண்கள் அல்லது பெண்கள் தலையில் குடத்தை வைத்து ஆடும் ஆட்டத்தை கரகாட்டம் என்று அழைப்பார்கள். இவ்வாட்டத்தை சிலப்பதிகாரத்தில் குடக்கூத்து என்று இளங்கோவடிகள் குறிப்பிடுகிறார். மழை பெய்து நாட்டில் வளம் கொழிக்க வேண்டும் என்ற காரணத்திற்காக ஆண்டுதோறும் மாரியம்மன் தெய்வத்தை மனதில் நினைத்து, கோயிலில் நடைபெறும் தீமிதி திருவிழாவின்போது ஆடக்கூடிய ஆட்டம். கும்பத்திலோ அல்லது குடத்திலோ தண்ணீரை நிரப்பி அதுக்கு மேல் வேப்பிலையும், நடுவே தேங்காயும் வைத்து கும்பத்தை சுற்றி நூல் சுற்றி ஆடுவது. பொது விழாக்களில் நடைபெறும் கரகாட்டத்தில் கும்பத்தினுள் அரிசியை நிரப்பி அதன் மேல் கிளி பொம்மையை வைத்து ஆடுவார்கள். தொடக்கநிலை, வேகநிலை, அதிவேக நிலை என மூவகை நிலைகளில் சுழன்று ஆடக்கூடிய ஆட்டம். இவ்வாட்டத்தில் நையாண்டி மேளம் இசைக்கப்படுகிறது. இது தஞ்சை மாவட்டத்தில் மிகச் சிறப்பாக ஆடப்படுகிறது.

காவடியாட்டம்:

ஒன்றரை அடி நீளம் உள்ள ஒரு உருண்டையான தடியின் மேல் சிறிய குறுந்தடியை அரைவட்ட வடிவில் வளைத்து கட்டி, அதன்மேல் பல வண்ண காகிதங்களால் அலங்காரம் செய்து, இரண்டு முனைகளிலும் மயில் தோகைகளை கட்டி காவடியை சுமந்து கொண்டு ஆண்கள் அல்லது பெண்கள் ஆடுகின்ற ஆட்டம் காவடியாட்டம் ஆகும். காவடிகளில் சந்தன காவடி, சேவல் காவடி, பால் காவடி, பன்னீர் காவடி, மச்ச காவடி, வில் காவடி, வேல் காவடி என்று பல வகைகளாக வகைப்படுத்துகின்றனர்.

காளையாட்டம்:

காளை போன்று வேடம் அணிந்து கொண்டு, ஆடும் ஆட்டம் காளையாட்டம் என்று அழைக்கப்படுகின்றனர். சிவன் கோயில்களில் திருவிழாக்களின் பொழுது சிறப்பாக ஆடப்படுகிறது. நையாண்டி மேளத்திற்கு ஏற்ப ஆடக்கூடிய ஒரு ஆட்டம் ஆகும்.

பூத ஆட்டம்:

பூதம் போன்ற கோரமான முகம் உள்ள பொம்மை உருவங்களை தூக்கிக் கொண்டு ஆடுகின்ற ஆட்டத்தை பூத ஆட்டம் என்று சொல்வார்கள். இது காளியம்மன் கோவில்களில் நையாண்டி

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மேளத்திற்கு ஏற்ப ஆடப்படும். இவைகள் யாவும் கதைத்தழுவாத நிகழ்த்து கலையாக உள்ளது.

தேவராட்டம்:

ஒரே மாதிரியான ஆடைகளை அணிந்து கொண்டு ஜரிகை சுற்றிய, தலைப்பாகையைத் தலையில் சூடிக்கொண்டு ஆண்கள் எட்டு பேர் பாடிக்கொண்டு, பாடலுக்கு ஏற்றவாறு ஆடுகின்ற ஆட்டத்தை தேவராட்டம் என்று சொல்வார்கள்.

கோலாட்டம்:

இரண்டு கோல்களை பயன்படுத்தி ஒன்றுடன் ஒன்று மோதி ஒலி எழுப்புகின்ற வகையில் அடித்து ஆடுவதை கோலாட்டம் என்பர். மட்டமாக நின்று முன்னும் பின்னும் திரும்பி, மாறி மாறி கோல்களை அடித்து, குனிந்தும் நிமிர்ந்தும் கைகளை உயர்த்தியும் தாழ்த்தியும், சுற்றி சுற்றி வந்து கோலடித்து, தாளத்திற்கு ஏற்றார் போல ஆடும் ஆட்டம். ராஜஸ்தானில் கர்பா நடனம், சுண்டியராஸ் என்றும், உத்தரப்பிரதேசத்தில் தண்டல் என்றும் சொல்லப்படுகிறது. ஆந்திர பிரதேசத்தின் கிராமப்புறங்களில் நிகழ்த்தப்படும் நாட்டுப்புற நடனமாக உள்ளது. ஆந்திராவில் கோலாட்டத்தை அறுவடை நடனம் என்றும் குறிப்பிடுவர்.

கும்மியாட்டம்:

கும்மியாடும் பெண்கள் வட்டமாகச் சுற்றி கைகொட்டி அடிப்பதை கும்மியாட்டம் என்று சொல்வார்கள். இவ்வாட்டத்தின் நடுவில் முளைப்பாரி வைத்து கும்மியடித்து மகிழ்வார்கள். கையால் ஒலி எழுப்பி, காலில் வட்டமாகச் சுற்றியவாறு ஆடக்கூடிய ஆட்டமாகும். அரிச்சந்திரன் கும்மி, வள்ளி கும்மி, பிள்ளையார் கும்மி ஆடப்படுகிறது. தற்காலத்தில் கொங்கு வட்டாரத்தில் வள்ளி கும்மி மிகவும் சிறப்பாக நடைபெற்று வருகிறது.

ஒயிலாட்டம்:

ஆண்கள் தலையில் முண்டாசு, கழுத்தில் பூமாலை, கால்களில் சலங்கையும், கைகளில் கைகுட்டைகளையும், வைத்துக் கொண்டு ஒரு அணியாகவே, இரு அணியாகவே பிரிந்து ஆடக்கூடிய ஆட்டம் ஆகும். கோயில் விழாக்களில் ஆடக்கூடிய ஆட்டமாக உள்ளது. மேலும் மரப்பாவை கூத்து, சக்கையாட்டம், வில்லுப்பாட்டு, தோற்பாவை கூத்து, பள்ளு நாடகம் என்றெல்லாம் மக்கள் பல பாரம்பரிய கலைகளோடு ஒன்றி ஆடி மகிழ்கின்றனர்.

ஆந்திர பிரதேசத்தின் பாரம்பரிய கலைகள்:

ஆந்திர பிரதேசத்தின் பாரம்பரிய கலை வடிவங்கள் பல உள்ளன. அவற்றில் சில கோலாட்டம், பெரிணி, ஆந்திரா நாட்டியம், தப்பெடா குல்லு, லம்பாடி, குச்சிப்புடி, தோல் பொம்மலாட்டம் குறிப்பிடத்தக்கவை ஆகும். ஆந்திர பிரதேசத்தில் கலைகளை நிகழ்த்தும்பொழுது பல வண்ண உடைகளை அணிந்திருப்பர். இக்

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கலையில் பல்வேறு இசைக்கருவிகள் இசைக்கப்படுகிறது.

குச்சிப்புடி நடனம்:

ஆந்திர பிரதேசத்தின் கிருஷ்ணா மாவட்டத்தில் தீவி வட்டத்தில் உள்ள குச்சிபுடி என்னும் கிராமத்தின் பிராமண சமூகத்தினர் தோற்றுவித்த நடனம்.

பெரிணி:

போர் நடனம் போன்றது. இதை சிவபெருமானின் நடனம் என்று கூறப்படுகிறது.

ஆந்திர நாட்டியம்:

ஆந்திராவின் பாரம்பரிய நடன வடிவம் ஆகும். ஆந்திர பிரதேச நடன வடிவங்கள் பல விதமான வண்ணங்களையும், உடைகளையும் வகைகளையும் பெறுகின்றன. மேலும் பல்வேறு இசைக் கருவிகளை உள்ளடக்கியதாக உள்ளது. இந்த நடனம் பெரும்பாலும் பாரம்பரிய இசையுடன் நிகழ்கிறது. தலையில் நெருப்புடன் நடனம் ஆடுவது அல்லது மண்பானையில் நடனம் ஆடுவது போன்ற பலவிதமாக நிகழ்கிறது.

தப்பேடா குல்லு:

தப்பேடா குல்லு என்பது ஸ்ரீ காகுளம் விஜயநகரம் மாவட்டங்களில் பிரபலமாக உள்ளது. திருவிழாக்களில் நிகழ்த்தப்படும் இந்த நடனத்தில் துடிப்பான கலைஞர்கள் கழுத்தில் மேளத்தை கட்டிக்கொண்டு இசை அமைத்து ஆடுவர்.

லம்பாடி நடனம்:

லம்பாடி நடனம் என்பது அறுவடை செய்தல், நடவு செய்தல், விதைத்தல் போன்ற அன்றாட பணிகளுடன் தொடர்பு உடையதான நடனம் ஆகும். ஆந்திர பிரதேசம் முழுவதும் காணப்படும். நாடோடி பழங்குடியினரான லம்பாடிகளால் ஆடப்படுகிறது. கண்ணாடி மணியால் அலங்கரிக்கப்பட்ட நகைகள், தந்த வளையல்கள், கணுக்கால் நகைகள், பூ தையல் செய்யப்பட்ட ஆடைகள் அணிந்து இந்த நடனத்தை மகிழ்ச்சியாக விழா நடைபெறும் நாட்களில் ஆடி மகிழ்வர்.

குச்சிப்புடி:

குச்சிப்புடி பாரம்பரிய கலை வகைகளில் ஒன்று. இது ஆந்திராவில் கிருஷ்ணா மாவட்டத்தில் உருவானது. நடனம், இசை மற்றும் நாடகம் ஆகியவற்றின் கலவையாகும். யட்சகானா என்ற பழைய நாடகத்தின் ஒரு வடிவம். ஆந்திர பிரதேசத்தின் புகழ் பெற்ற நடனமான குச்சிப்புடி வைணவ கவிஞரான சித்தேந்திர யோகியால் உருவாக்கப்பட்ட யட்சகானா வடிவமாகும்.

வீர நாட்டியம்:

வீர நாட்டியம் என்பது ஆந்திர பிரதேச மாநிலத்தில் உள்ள ஒரு மிகப் பழமையான கண்கவர் நடன வடிவம். வீராங்கம் எனவும் வீரபத்ர நிருத்யம் என்றும் அழைக்கப்படுகிறது. வீரா என்ற சொல்லுக்கு வீரம் என்றும் பொருள். எனவே துணிச்சலானவர் ஆடக்கூடியது. இவ்வாட்டம் சிவபெருமானின் கோபத்தை

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மையமாக வைத்து ஆடப்படுகிறது என்று கூறுவர்.

தோல் பொம்மலாட்டம்:

ஆந்திர பிரதேச மாநிலத்தில் உருவான பொம்மலாட்டத்தின் ஒரு வடிவமாகும். இது முக்கியமான காவியங்களின் கதையை கொண்டு ஆடும் ஆட்டம் ஆகும். தமிழகம், ஆந்திரம் பகுதியில் ஒரே மாதிரியாகவே நிகழ்த்தப்படுகிறது.

முடிவுரை

நாட்டுப்புற கலைகள் கலாச்சாரத்தை உணர்த்துவதாக அமையப்பெற்றது. கலைகள் மக்களின் பண்பாட்டு களஞ்சியமாகும். கலைகள் என்பதும் அவர் அவர்களின் கலாச்சாரத்தை மையப்படுத்தியே அமையப்பெற்றதாகும். கோலாட்டம், பொம்மலாட்டம், பொய்க்கால் குதிரையாட்டம் போன்றவை ஒரேமாதிரியாக தமிழகம் ஆந்திரம் பகுதியில் நிகழ்த்தப்படுகிறது. ஆந்திர பிரதேசத்தின் முக்கிய பாரம்பரிய நடன வடிவங்களாக பெரிணி, ஆந்திரா நாட்டியம், தப்பெடா குல்லு, லம்பாடி, குச்சிப்புடி ஆகும். கோடங்கி ஆட்டம், கரகாட்டம், காவடியாட்டம், காளையாட்டம், பூத ஆட்டம், தேவராட்டம், ஒயிலாட்டம், கும்மியாட்டம் போன்றவை தமிழகத்தில் நிகழ்த்தப்படும் கலைகளாகும். தமிழ்நாடு ஆந்திரா மாநிலத்தில் இருக்கக்கூடிய கலைகள் அந்தந்த பகுதி மக்களின் பண்பாட்டோடு பிணைந்திருப்பதை நம்மால் அறியமுடிகிறது.

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இனவரைவியல் நோக்கில் கம்மாளர்

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சுருக்கம்

மாந்த இனம் பண்பாட்டை முதன்மையாகக் கொண்டு அமைந்த ஒரு குழுவாகும். மாந்த வாழ்க்கையில் பலவகையான வாழ்வியல் நெறிகள் காணப்பட்டாலும் பண்பாடு முதன்மையானதாகும். ஒரு குறிப்பிட்ட இனத்தவரின் வாழ்க்கை முறைகளை விளக்குவது இனவரைவியலாகும். இங்கு கம்மாளர் இன மக்களை பற்றி கூறுவதாக இக்கட்டுரை அமைகிறது.

மாந்த பண்புகளை ஆராய்வதாக மானிடவியல் அமைகிறது. "இனவரைவியலை முதன்மை அங்கமாகக் கொண்டுள்ள மானிடவியல் (Anthropology) அறிவுத் துறையிலேயே கலை, அறிவியல் இரண்டையும் கொண்ட ஒரு பல்துறையாக விரிந்து நிற்கிறது. மாந்தக் குலத்தைச் சமூகப் பண்பாட்டு நிலையிலும், உயிரியல் நிலையிலும், கடந்தகால மக்களையும் சமகால மக்களையும் ஆராயும் பரந்து விரிந்த இலக்குடையதாக அமைந்திருப்பது குறிப்பிடத்தக்கதாகும்" என்பது மக்களோடு மக்களை ஒப்புநோக்குவதாக இருப்பதைக் காணமுடிகிறது.

மானிடவியல் மாந்த இனம் பற்றிய கல்வித்துறை ஆகும். மானிடவியல் எல்லாக் காலங்களையும் சேர்ந்த எல்லா

மாந்தர்களையும், மாந்த இனத்தின் எல்லா அம்சங்களையும் பற்றிக் கருத்தில் கொள்கிறது. பண்பாடு பற்றிய எண்ணக்கருவும், மாந்த இயல்பு, பண்பாடே என்னும் கருத்தும்; அதாவது மாந்த இனம் உலகத்தைக் குறியீட்டு முறையில் விளங்கிக் கொள்வதற்கும், சமுதாய ரீதியில் குறியீட்டு முறையில் பயிலவும் பயிற்றுவிக்கவும், அக்குறியீடுகளின் அடிப்படையில் உலகத்தையும் மாந்தனையும் மாற்றிக்கொள்வதற்கும் ஏதுவாக முழுமையான தகுதியை வளர்த்துக் கொண்டுள்ளது என்னும் கருத்துமே மானிடவியலின் அடிப்படையாகும்.

இனவரைவியல் (Ethnography) என்பது களஆய்வுகளின் அடிப்படையில், மாந்த சமூகத் தோற்றப்பாடுகள் தொடர்பான பண்புநிலை விளக்கமாக அமையும் ஒருவகை எழுத்தாக்கம் ஆகும். தனிப்பட்ட இனக்குழு அல்லது மக்களைப் பற்றி எழுதுவது இனவரைவியல் எனலாம்.

'இனக்குழுவியல்' என்னும் பொருளுடைய ''Ethnography' என்னும் ஆங்கிலச் சொல். ''ethnos', 'graphein' ஆகிய கிரேக்கச் சொற்களின் மூலங்களைப் பெற்றது. 'ethnos' என்பதற்கு இனம் (race), இனக்குழு (ethnic group), மக்கள் (people) என்பது பொருள். 'graphein' என்பதற்கு 'எழுதுவது' அல்லது 'வரைதல்' (to write) என்பது பொருள். ஆகையால், இனவரைவியல் என்பது ஒரு

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தனிப்பட்ட இனக்குழு அல்லது மக்களைப் பற்றி எழுதுதல் என்னும் பொருளை உணர்த்துகிறது (பக்தவத்சல பாரதி, 2003:117) என்று விளக்கமளித்துள்ளார்.

இலக்கியம் பண்பாட்டுக் கூறுகளைத் தன்னகத்தே கொண்டுள்ளது. அதனால், இனவரைவியல் ஆதாரங்களில் ஒன்றாக இலக்கியம் காணப்பெறுகிறது.

'ஒரு பண்பாட்டைப் பற்றி ஆராய முற்படும்பொழுது, அந்தப் பண்பாட்டைச் சேர்ந்த மக்கள் குழுவினர் பின்பற்றும் உறவுமுறைகள், ஒழுங்கு அமைப்புகள், அவர்களின் உணவுமுறைகள், உணவைச் சமைக்க அவர்கள் கையாளும் முறைகள், வாழ்க்கை வட்டச் சடங்குகள் போன்ற பண்பாட்டுக் கூறுகளை ஆராய்வது எவ்வளவு முக்கியமோ அது போன்று, இனவரைவியலார், இலக்கியத்தையும் ஆராய்வது அவசியமானது' (தனஞ்செயன், ஆ. 2006:12) ஆகும்.

கம்மாளர், கொல்லர், தச்சர், கன்னார், பொற்கொல்லர், சிற்பிகள் குறித்து விளக்குவதாக இக்கட்டுரை அமைகிறது,

முன்னுரை

மாந்த இனம் பண்பாட்டை முதன்மையாகக் கொண்டு அமைந்த ஒரு குழுவாகும். மாந்த வாழ்க்கையில் பலவகையான வாழ்வியல் நெறிகள் காணப்பட்டாலும் பண்பாடு முதன்மையானதாகும். ஒரு குறிப்பிட்ட இனத்தவரின் வாழ்க்கை முறைகளை விளக்குவது இனவரைவியலாகும். இங்கு கம்மாளர் இன மக்களை பற்றி கூறுவதாக இக்கட்டுரை அமைகிறது.

மானிடவியல்

மாந்த பண்புகளை ஆராய்வதாக மானிடவியல் அமைகிறது. "இனவரைவியலை முதன்மை அங்கமாகக் கொண்டுள்ள மானிடவியல் (Anthropology) அறிவுத் துறையிலேயே கலை, அறிவியல் இரண்டையும் கொண்ட ஒரு பல்துறையாக விரிந்து நிற்கிறது. மாந்தக் குலத்தைச் சமூகப் பண்பாட்டு நிலையிலும், உயிரியல் நிலையிலும், கடந்தகால மக்களையும் சமகால மக்களையும் ஆராயும் பரந்து விரிந்த இலக்குடையதாக அமைந்திருப்பது குறிப்பிடத்தக்கதாகும்" என்பது மக்களோடு மக்களை ஒப்புநோக்குவதாக இருப்பதைக் காணமுடிகிறது.

"உயிரியல் வேறுபாடுகளிலும், பண்பாட்டு வேறுபாடுகளிலும் ஓர் இனம் மற்றொரு இனத்தினை இழித்தல், இன அழிப்பு, இன ஒதுக்கல், நிற ஒதுக்கல், தீண்டாமை அடிமைமுறை, தன்னின உயர்வு வாதம், உயர்வு தாழ்வு எண்ணம், வர்க்க அமைப்பு, வகுப்பு வாதம், சுரண்டல், அடக்குமுறை, மொழி – சமயம் இனப்போராட்டம், அதிகாரக் குவிப்பு மோதல் போன்ற எண்ணற்ற முரண்பாடுகள் நிகழ்கின்றன" என்பது மாந்தர்களைப் பற்றி அறிந்துகொள்வதில் மானிடவியல் ஆர்வமுடனும் அதிக ஈடுபாடுகளுடனும் செயல்படுகின்றது. மாந்தகுலம் பண்பாட்டு நிலையிலும், உயிரியல் நிலையிலும் எவ்வாறு வேறுபடுகின்றது என்பதை விளக்கும் ஒரே துறை. மாந்தன் மாந்தனைப் பற்றிப் புரிந்துகொள்ள மானிடவியல்

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துறையே ஏதுவாக உள்ளது என்பதையும் தெரிந்துகொள்ள வாய்ப்பளிக்கிறது.

மானுடவியல் கோட்பாடுகள்

மானிடவியல் மாந்த இனம் பற்றிய கல்வித்துறை ஆகும். மானிடவியல் எல்லாக் காலங்களையும் சேர்ந்த எல்லா மாந்தர்களையும், மாந்த இனத்தின் எல்லா அம்சங்களையும் பற்றிக் கருத்தில் கொள்கிறது. பண்பாடு பற்றிய எண்ணக்கருவும், மாந்த இயல்பு, பண்பாடே என்னும் கருத்தும்; அதாவது மாந்த இனம் உலகத்தைக் குறியீட்டு முறையில் விளங்கிக் கொள்வதற்கும், சமுதாய ரீதியில் குறியீட்டு முறையில் பயிலவும் பயிற்றுவிக்கவும், அக்குறியீடுகளின் அடிப்படையில் உலகத்தையும் மாந்தனையும் மாற்றிக்கொள்வதற்கும் ஏதுவாக முழுமையான தகுதியை வளர்த்துக் கொண்டுள்ளது என்னும் கருத்துமே மானிடவியலின் அடிப்படையாகும். மானிடவியல் நான்கு துறைகளாக வகுக்கப்படுகிறது. அவை :

உடல்சார் மானிடவியல் : இது உயர்பாலூட்டி நடத்தைகள், மாந்த பரிணாமத்தில், குடித்தொகை மரபியல் என்பவை பற்றி ஆராய்கின்றது; இத்துறை சில சமயங்களில் உயிரியல்சார் மானிடவியல் எனவும் வழங்கப்படுகின்றது.

பண்பாட்டு மானிடவியல் : சமூக மானிடவியல் அல்லது சமூகப் பண்பாட்டு மானிடவியல் எனவும் அழைக்கப்படும். பண்பாட்டு மானிடவியலாளரின் ஆய்வுக் களம் சமூக வலையமைப்பு, சமூக நடத்தைகள், உறவுமுறை வடிவங்கள், அரசியல், நம்பிக்கைகள், உற்பத்தி வடிவங்கள், பரிமாற்றம், நுகர்வு மற்றும் ஏனைய பண்பாட்டு வெளிப்பாடுகள் என்பவற்றை உள்ளடக்கும்.

மொழிசார் மானிடவியல் : இது காலம் மற்றும் இடம் சார்ந்த நிலையில் மொழிகளின் வேறுபாடுகள், மொழியின் சமூகப் பயன்பாடு, மொழிப் பண்பாடு என்பவற்றுக்கிடையிலான தொடர்பு என்பவை பற்றி ஆய்வு செய்கின்றது.

தொல்பொருளியல் : இது மாந்த சமூகங்களின் பொருள்சார் எச்சங்களை ஆராய்கிறது.

தமிழ்ச் சமூகக் களங்களில் இடம்பெறும் மானிடவியல் ஆய்வுகள் தமிழர் மானிடவியல் ஆகும். இத்துறையில் முன்னோடியாக விளங்கியோர் ஐரோப்பியர்களே ஆவர். ஆய்வுகள் பெரும்பாலும் ஆங்கிலத்திலோ அல்லது பிற ஐரோப்பிய மொழிகளிலோ இருந்தன. பின்னர் தமிழர்களும் மானிடவியல் அணுகுமுறைகளையும், இத்துறையின் கோட்பாடுகளையும் தமிழ்ச் சூழல் களஆய்வுகளுக்குப் பயன்படுத்தினர். முதலில் தமிழியல், நாட்டார் வழக்காற்றியல் துறைகளிலும் பின்னர் சாதி, சாதியம், சமூக அசைவியக்கம் எனப் பலமுனைகளிலும் மானிடவியல் பயன்படுகின்றது.

இனவரைவியல் தோற்றமும் வளர்ச்சியும்

இனவரைவியல் (Ethnography) என்பது களஆய்வுகளின் அடிப்படையில், மாந்த சமூகத் தோற்றப்பாடுகள் தொடர்பான பண்புநிலை விளக்கமாக அமையும் ஒருவகை எழுத்தாக்கம் ஆகும். தனிப்பட்ட இனக்குழு அல்லது மக்களைப் பற்றி எழுதுவது இனவரைவியல் எனலாம்.

இனவரைவியல் நோக்கில் கம்மாளர்

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மானிடவியல் கலைச் சொல்லகராதி ''Ethnography' எனும் சொல்லுக்கு 'மனிதவினப் பரப்பு விளக்கவியல்' (சக்திவேல்.1972:25) என்றும், பிரிட்டானிக்கா தகவல் களஞ்சியம் 'குறிப்பிட்ட மானிடச் சமுதாயம் ஒன்றினைப் பற்றிய விரிவான ஆராய்ச்சி, விவரிப்பு இனவரைவியலாகும்' (அன்பரசன்.2011:15) என்றும், 'இனக்குழுவியல் என்பது பண்பாட்டு மானிடவியலின் அடித்தளமாக அமைவது, இது ஓர் இனக்குழு அல்லது ஒரு சமூகத்தைப் பற்றிய விரிவான, முழுவதுமான அறிவினை எடுத்தியம்புகிறது. பழங்குடிச் சமூகம், கிராமச் சமூகம் முதலான சிறு சிறு சமூகங்களின் இடவியல்பு விளக்கம், மக்களின் உருவத் தோற்றம், வாழிட அமைப்பு, வாழ்க்கை முறை, பேசும் மொழி, சமூக அமைப்பு, பொருளாதாரம், சமயம், சட்ட முறைகள், தொழில்நுட்பம், கலை மற்றும் பண்பாட்டின் அனைத்துக் கூறுகளையும் தனித்தனியாக ஆராய்ந்து அப்பண்புகளை முறைப்படுத்தி இனக்குழுவியல் விளக்கும் ஒவ்வொரு சமூகத்தின் அக, புறப் பண்பாடுகளை அறிவியல் நோக்கில் இது ஆராயும்' (வாழ்வியல் களஞ்சியம், தொகுதி - 4. 1991:561) என்றும் விளக்கம் தருகின்றன.

'இனக்குழுவியல்' என்னும் பொருளுடைய ''Ethnography' என்னும் ஆங்கிலச் சொல். ''ethnos', 'graphein' ஆகிய கிரேக்கச் சொற்களின் மூலங்களைப் பெற்றது. 'ethnos' என்பதற்கு இனம் (race), இனக்குழு (ethnic group), மக்கள் (people) என்பது பொருள். 'graphein' என்பதற்கு 'எழுதுவது' அல்லது 'வரைதல்' (to write) என்பது பொருள். ஆகையால், இனவரைவியல் என்பது ஒரு தனிப்பட்ட இனக்குழு அல்லது மக்களைப் பற்றி எழுதுதல் என்னும் பொருளை உணர்த்துகிறது (பக்தவத்சல பாரதி, 2003:117) என்று விளக்கமளித்துள்ளார்.

இனவரைவியல் என்னும் சொல் ethnography என்று ஆங்கிலத்தில் அழைக்கப்படுகிறது. ethnograp என்னும் ஆங்கிலச் சொல்லின் மூலவடிவத்தை ஆராயும் மெர்ரியம் வெப்ஸ்டர் அகராதி, பயன்படுத்தப்பட்ட ஆண்டு கி.பி. 1834 ஆகும் (அன்பரசன், 2011:9).

பால்அட்கின்ஸன் 'இனவரைவியல் என்பது ஓர் ஆய்வு முறையைக் குறிப்பிடும் அதே வேளையில், அந்த ஆய்வுச் செயற்பாட்டின் விளைவாக அமையும் எழுத்து வடிவப் படைப்பான தனி ஒரு கலை வடிவத்தை அப்பதம் சுட்டிக் காட்டுகிறது' (தனஞ்செயன்.ஆ, 2006:9) என்றும் விளக்கம் அளித்துள்ளார்.

மேலே குறிப்பிட்ட வரையறைகளின்படி, இனவரைவியல் என்பது குறிப்பிட்ட மாந்த சமூகத்தின் அல்லது இனத்தின் ஒட்டுமொத்த வாழ்வியல் கூறுகளையும் விரிவாக விளக்குவதே என்னும் பொருளில் அமைகின்றது.

மாந்த இனத்தின் சமூக பின்னணியை விளக்கப்படுவதாக அமைந்த இனவரைவியல் மானிடவியலோடு பிணைக்கப்பட்டதாகும். "மானிடவியலின் முதன்மையான பிரிவுகளுள் ஒன்றான இனவரைவியல் ஒரு குறிப்பிட்ட மக்கள் குழு, பண்பாட்டை விவரிக்கும் கலை அல்லது அறிவியலே இனவரைவியல் என்பர்". ஒரு

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குறிப்பிட்ட சமூகத்தின் பண்பாட்டை முழுமையாகப் புரிந்துகொண்டு அவற்றை முறையாகத் தொகுத்து வழங்குதல் என்னும் பணிகளை இனவரைவியல் மேற்கொள்கிறது. எனினும் அடிப்படையில் வருணனைத் தன்மை கொண்டதாகவே அமையும். ஏனெனில், ஒவ்வொரு இனத்தவரும் இனத்தின் மீது கொண்டுள்ள பற்றும், தம் இனமே உயர்ந்ததென்று எண்ணுகின்ற மனப்போக்கும் வர்க்கப் போராட்டத்தை ஏற்படுத்தியது. இனவரைவியலின் வாயிலாக ஓர் சமூகத்தின் பழக்கவழக்கங்கள், பிற நிகழ்வுகள் மற்ற இனத்தவரிடமிருந்து எவ்வாறு வேறுபட்டுக் காணப்படுகின்றன என்பதைப் பற்றி அறியவும் ஏதுவாக இருப்பதைக் காணலாம்.

இனவரைவியல் என்ற ஆய்வு முறையின் தோற்றத்திலிருந்து இன்றைய காலகட்டம் வரையில், அதன் வளர்ச்சி நிலைகளை அடிப்படையாகக் கொண்டு, பழைய இனவரையியல் புது இனவரைவியல் என்று அதனை இரண்டாகப் பகுப்பதற்கு பத்தொன்பதாம் நூற்றாண்டின் தொடக்கத்தில்தான் பழைய அல்லது மரபான, இனவரைவியல் பதிவுகள் தோன்றி, இரண்டாம் உலகப்போர் வரை நீடித்தது. 1970 – வரையிலும், அதனைத் தொடர்ந்தும் புதிய இனவரைவியல் தோன்றி வந்திருக்கிறது. குறிப்பிட்ட பண்பாட்டைச் சேர்ந்த உறுப்பினர், தன்னுடைய பண்பாட்டை எப்படிப் பார்க்கிறானோ, அந்தப் பார்வைத் தளத்திலிருந்தே அப்பண்பாட்டை நோக்கும் அணுகுமுறையைக் கொண்டதுதான் புதிய இனவரைவியல் என்பதாகிறது.

புதிய இனவரைவியலுக்குக் கூறப்பட்டுள்ள பார்வையானது அப்படி ஒன்றும் புதிதல்ல என்றும், தொடக்ககால மானிடவியலில் காணப்பட்ட ஓர் அம்சம்தான் என்றும் அறிஞர்கள் விளக்குவர். இருப்பினும், பல்வேறு அம்சங்கள் பழைய இன வரைவியலிலிருந்து புதிய இனவரைவியலை வேறுபடுத்திக் காட்டுகின்றன. அவற்றுள் முதலாவதாக மக்கள் மொழி பற்றிய அணுகுமுறையைக் குறிப்பிடவேண்டும். தங்கள் இனவரைவியல் ஆதாரங்களைத் தொகுப்பதற்கானச் சாதனமாக, அம்மக்களுடைய மொழியைப் பயன்படுத்திக் கொள்வதிலிருந்து வேறுபடும் இரண்டாவதாக மொழி சாராத பண்பாட்டினை ஒதுக்கிவிட்டு. அந்தப் பண்பாட்டுக்குரிய மக்கள் தங்களுடைய மொழி சாராத நடத்தைகள் பற்றி என்ன விளக்கங்களை எடுத்துக்கொள்கிறார்களோ அவற்றை மட்டும் தகவல்களாக எடுத்துக்கொள்கிறார்கள். மூன்றாவதாக தகவல்கள் சேகரிக்கும்போது, அவற்றைத் துல்லியமாகப் பதிவு செய்து கொள்ளுதலாகும். தரவுகள் சேகரிப்பதில் துல்லியம் வேண்டுமெனில், மானிடவியலாளர்கள், தகவலாளிகளுடைய பதில்களை மட்டும் பதிவு செய்வதோடு நில்லாமல் அவற்றை வெளிப்படுத்த காரணமான தூண்டல்கள் அல்லது கேள்விகளையும் பதிவு செய்வது அவசியமானதாகிறது.

இனவரைவியல் நெறிகள்

ஒரு குறிப்பிட்ட சமூகத்தை எடுத்துக்கொண்டால் அதற்காகப் பல தரவுகளைச் சேரிக்க வேண்டும். இங்கு கம்மாளர் சமூகத்தின் முதன்மையான தரவுகள் பற்றிக் குறிப்புகள் தரப்படுகின்றன.

இனவரைவியல் நோக்கில் கம்மாளர்

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1.புவிச்சூழலியல், 2.சுற்றுச் சூழல், 3.காலநிலை, 4.குடியிருப்பு நிலை, 5.பொருள்சார் பண்பாடு, 6.குடும்ப அமைப்பு, 7.திருமண முறை, 8.உறைவிட முறை, 9.வாழ்வியல் சடங்குகள், 10.குழந்தை வளர்ப்பு முறை, 11.பண்பாட்டு மயமாக்கும் முறை, 12.மக்களின் உளவியல் பாங்குகள், 13.மணக்கொடை, 14.மனவிலக்கு, 15.வாழ்க்கைப் பொருளாதாரம், 16.தொழிற் பகுப்பு முறை, 17.உற்பத்தி, 18.நுகர்வு முறை, 19.பங்கீட்டு முறை, 20.பரிமாற்ற முறை, 21.கைவினைத் தொழில்கள், 22.அரசியல் முறை, 23.அதிகார உறவுகள், 24.சமூகக் கட்டுப்பாடு, 25.மரபுசார் சடங்குகள், 26.சமய நம்பிக்கைகள், 27.சடங்குகள், 28.வழிபாட்டு முறைகள், 29.மந்திரம், 30.சூனியம், 31.விழாக்கள், 32.இசை, 33.விளையாட்டுகள், 34.அழகியல் சிந்தனைகள், 35.வழக்காறுகள், 36.ஈமச்சடங்குகள், 37.பிற தொடர்புடைய செய்திகள் எனும் வகையில் இனவரைவியல் நெறிகள் அமையப் பெறுகின்றன.

இந்த விவரங்களைச் சேகரிக்க வெறும் எழுத்துச் சான்றுகளையும், புள்ளி விவரங்களையும் மட்டும் இனவரைவியலாளர்கள் நம்புவதில்லை. நேரடியான கள ஆய்வின் வழியாக மேற்கூறிய தரவல்களை அவர்கள் சேகரிக்கலாம். இச்சேகரிப்பின்போது குறிப்பிட்ட குழு அல்லது சமூகத்துடன் நெருக்கமான உறவும், மக்கள் பேசும் மொழியை அறிதலும் அவசியமாகிறது.

இலக்கியமும் இனவரைவியலும்

இலக்கியம் பண்பாட்டுக் கூறுகளைத் தன்னகத்தே கொண்டுள்ளது. அதனால், இனவரைவியல் ஆதாரங்களில் ஒன்றாக இலக்கியம் காணப்பெறுகிறது.

‘ஒரு பண்பாட்டைப் பற்றி ஆராய முற்படும்பொழுது, அந்தப் பண்பாட்டைச் சேர்ந்த மக்கள் குழுவினர் பின்பற்றும் உறவுமுறைகள், ஒழுங்கு அமைப்புகள், அவர்களின் உணவுமுறைகள், உணவைச் சமைக்க அவர்கள் கையாளும் முறைகள், வாழ்க்கை வட்டச் சடங்குகள் போன்ற பண்பாட்டுக் கூறுகளை ஆராய்வது எவ்வளவு முக்கியமோ அது போன்று, இனவரைவியலார், இலக்கியத்தையும் ஆராய்வது அவசியமானது’ (தனஞ்செயன், ஆ. 2006:12) ஆகும்.

படைப்பாளன் ஒரு படைப்பை உருவாக்கும்பொழுது, அவருடைய கருத்தோடு அவ்வக்கால மக்கள், அவர்களின் சூழல், வாழ்வியல் முறைகள், இயங்கும் இயங்காப் பொருட்கள் ஆகியன தெரிந்தோ, தெரியாமலோ படைப்பில் இடம்பெற்றுவிடுகின்றன என்பது மறுக்க முடியாத உண்மையாகும்.

படைப்பாளி ஒருவன் சுயசிந்தனை என்ற எல்லைக்குள் நின்று மட்டும் ஒரு இலக்கியத்தைப் படைத்துவிட முடியாது. அவனைச் சுற்றியுள்ள புறவுலகின் அசையும் பொருட்கள், அசையாப் பொருட்கள் ஆகிய அனைத்தையும் உற்றுநோக்கி, அவற்றின் தனிப்பட்ட இயல்புகளையும் இயக்கங்களையும் இணைத்து இலக்கியம் படைக்க வேண்டியிருக்கும்

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(சிவசுப்பிரமணியன், ஆ. 2009:13) என்று குறிப்பிட்டுள்ளார்.

கம்மாளர்

கம் – உலகம், ஆளர் – ஆள்கின்றவர்கள் – கம்மாளர் என்றால் உலகத்தை ஆள்கின்றவர்கள் என்று பொருள்படும். ஐந்து வகையான தொழில்களைச் செய்வதால் இவர்களை 'விஸ்வகர்மா' என்றும் அழைப்பர். விஸ்வம் – எல்லாம், கர்மா – வேலைகள் என்று பொருள்படும். எனவே விஸ்வகர்மா என்பது எல்லா வேலைகளும் செய்பவர்கள் என்று பொருள்படும்.

கம்மாளர் இன மக்கள் தொழில் அடிப்படையில் ஐந்து வகையாகப் பிரிக்கப்படுகின்றனர். 1.கொல்லன் – மனு, 2. தச்சன் – மயன், 3.கன்னான் – துவஷ்டா, 4.பொற்கொல்லர் – விசுவக்ஞன், 5.சிற்பி – சில்பி.

கம்மாளர் இன மக்கள் தொழில் சிறப்பின் அடிப்படையில் பண்டைக் காலம் தொட்டே ஐந்து பிரிவினராக உள்ளனர். இந்த வேறுபாடு தொழில் அடிப்படையிலும் பழக்கவழக்கப் பண்பாடு அடிப்படையிலும் அமைந்துள்ளது.

கொல்லர்

கம்மாளர் இனத்தில் இரும்பினைக் கொண்டு வார்த்தல், வடித்தல் முறையில் தொழிற்கருவிகள், படைக்கருவிகள் என பல்வேறு பயன்பாட்டுப் பொருட்களைச் செய்பவர்கள் கொல்லர் எனப்பட்டனர். அம்மக்கள் சேர்ந்து வாழும் பகுதியை 'கொற்சேரி' என்றும் வழங்கினர். போரின்போது பழுதான கருவிகளை உடனுக்குடன் சரிசெய்தளிக்க கொல்லர்கள் போர்களத்தின் அருகிலேயே இருந்தனர். அவ்விடம் 'கட்டூர்' எனப்பட்டது.

சங்க காலம் வீரம் நிறைந்த காலம். அக்காலகட்டத்தில் நிறைய படைக்கலன்கள் தேவைப்பட்டதால் கொல்லர்களின் தேவை,

வேல் வடித்துக் கொடுத்தல் கொல்லற்குக் கடனே

- புறநானூறு.312:3

என்று கூறுமளவிற்கு இன்றியமையாத ஒன்றாகிவிட்டது. இவர்கள் விடியற்காலையில் எழுந்து வேலை செய்தனர். படைக்கருவிகள் மட்டுமல்லாது உழவர்களின் பயிர்த்தொழில் கருவிகளையும் பழுதடைந்தவற்றையும், புதுக்கருவிகளையும் கொடுத்தமை கொண்டு இவர்களது தொழிற்திறனை அறியமுடிகிறது. கொல்லனின் சம்மட்டியில் இருந்து ஓசை வந்தது என்பதை,

கருங்கைக் கொல்லன் இரும்பு விசைத்து எரிந்த
கூடத் திண்இசை வெரீஇ மாடத்து

-பெரும்பாணாற்றுப்படை:437-438

இப்பாடலடிகள் வழியாக அறியலாம். தமிழில் கருமான் என்றுகூட ஒரு பதம் உண்டு. கருங்கொல்லர் என்ற பெயரும் வழக்கில் உள்ளது.

தச்சர்

மரங்களை அறுத்துப் பல்வேறு பயனுள்ள பொருள்களைச் சமுதாயத்திற்கு செய்து அளிப்பவர்கள் தச்சர்கள் எனப்பட்டனர். குழந்தைகள் நடைபயிலுவதற்கான நடைவண்டி முதல் பெரிய தேர்கள் வரை இவர்களது கலைப்படைப்புகள் ஏராளமானவையாகும்.

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தச்சர்களின் சிறுவர்கள் தச்சச் சிறார் என்றழைக்கப்பட்டனர். தச்சர்கள் பயன்படுத்தும் அளவுகோல் தச்சமுழம் எனப்பட்டதை,

வைகல் எண்தேர் செய்யும் தச்சன்
திங்கள் வலித்த காலன் னோனே

- புறநானூறு.82

இதன் வழியாக அறிந்துகொள்ள முடிகிறது. துண்டுதுண்டாக அறுக்கப்பட்ட மரங்களை மரசாமான்களாக தச்சர் வடிவமைக்கின்றார். கதவு, சன்னல், அலமாரி, நாற்காலி என பலவகையான பொருள்களை வடிவமைக்கிறார்கள். தச்சர்கள் உளி, சுத்தி, வாள், ஆணி, துளைக்கருவி, அரம், இழைப்புளி போன்ற பொருள்களை பயன்படுத்துகின்றனர். உடலை வறுத்தி செய்யப்படும் மிகவும் கடினமான வேலைகளில் தச்சு வேலையும் ஒன்றாகும். பழங்காலத்தில் தச்சரின் பங்கு இன்றிமையாதது. தற்பொழுது பெரும்பாலும் தச்சு வேலைக்கு இயந்திரங்கள் பயன்படுத்தப்படுகின்றன.

வண்டி, தேர் மட்டுமல்லாது படகு, கப்பல் முதலியவற்றையும் இவர்கள் செய்தனர். இவை மேகத்தால் சூழப்பட்ட மலைபோலக் கடலால் அசையும் இயல்புடையன என்பதனை, இப்பாடல்வழி அறியலாம்.

ஆடியற் பெருநாவாய்

மழை முற்றிய மலை புரைய

- மதுரைக்காஞ்சி.83 - 84

கல்லால் ஆன உரல், ஆட்டுக்கல், அம்மி, திருகை போன்ற வேலைகள் செய்பவரை கல்தச்சர் என்றும் அழைப்பர்.

கன்னார்

கன்னார்கள் செம்பு, பித்தளை, வெண்கலம் போன்ற உலோகங்களில் பாத்திரங்கள், பயன்படு பொருள்கள், விளக்குகள் முதலானவற்றைத் தயாரிப்பவர்கள் கன்னார் எனப்பட்டனர்.

பொற்கொல்லர்

பொன், வெள்ளி, மணிக்கற்கள் போன்ற விலையுயர்ந்த அணிகலன்கள், ஆபரணங்கள் செய்பவர்கள் பொற்கொல்லர் எனப்படுகின்றனர். இவர்களை தட்டார் என்றும் அழைக்கப்பட்டனர். இச்சொல் வழிவழியாக நகைத்தொழில் செய்யும் சாதியினரை குறிப்பதாகும். கழகக் காலத்தில் பொற்கொல்லர்கள் 'கம்மியர்' (புறம்.353:1) என்றழைக்கப்பட்டனர். கழக இலக்கியங்களில் கொல்லன், கம்மியர் என்று அழைத்ததை,

பொன் செய் கொல்லன்
பொன் செய் கம்மியர்

இதன்வழி அறியலாம்.

பொற்கொல்லர்கள் அரம் என்ற கருவியினைப் பயன்படுத்தி அரக்கால் செய்த கருவில் அமைத்து, உலையில் வைத்து ஊதி பொன் அணிகலன்களைச் செய்தனர். பழுதான அணிகலன்களையும் புதுப்பித்துத் தந்தனர். இவர்களது நுட்பமான திறனை,

கைவினைப்பொலிந்த காசமை
பொலங்காழ்மேல்

- கலித்தொகை.85:3

செய்வினை பொலிந்த செறிகழல்

- ஐங்குறுநூறு,389:1

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புனைவிலைப் பொலிந்த பொலன்நறுந் தெரியல்

- புறநானூறு,29:3

என்ற பாடலடிகள் சுட்டிக்காட்டுகின்றன.

சிற்பிகள்

தமிழகத்தின் உன்னதக் கலைக்கருவூலமான சிலைகளை வடிவமைக்கும் சிற்பிகள் 'விஸ்வகர்மா' இனத்தின் மற்றொரு பிரிவினராவர். இவருள்ளும் சுதைச் சிற்பம், உலோகச் சிற்பம், கல் சிற்பம் செய்யக்கூடியவர்கள் எனத் தொழில் அடிப்படையிலான வேறுபாடுகள் எனப்படுகின்றன.

முடிவுரை

கழக இலக்கியப் படைப்பாளன் அவனது படைப்பை உருவாக்கும்போது அந்த கால மக்களின் பெயர்கள், அவர்களின் சூழல்கள், வாழ்க்கை முறைகள், பல்வகையான பொருட்கள் ஆகியனவற்றை தங்களது படைப்புகளில் இடம்பெறச் செய்கின்றனர். பெரும்பாணாற்றுப்படை, புறநானூறு போன்ற கழக இலக்கியப் பாடல்களில் கம்மாளர் மக்களின் வாழ்க்கை, வேட்டை, வேளாண்மை என்னும் உற்பத்தி முறையை கடந்து கைவினைசார்ந்த மக்கள் வாழ்க்கையின் இனவரைவியல் சாட்சியங்களாக உள்ளன. இது இலக்கிய இனவரைவயிலுக்கான அடிப்படையாகும்.

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பௌத்தப் பார்வையில் திருக்குறள் ஆய்வுகள்

த. சக்திவேல்

உதவிப் பேராசிரியர், தமிழ்த்துறை, குரு நானக் கல்லூரி

முன்னுரை

நீதி இலக்கியங்களில் முதன்மையானதாக கருதப்படும் திருக்குறள் பற்றியும் அதனை இயற்றிய வள்ளுவரைப் பற்றியும் பல்வகையான ஆய்வுகளை மேற்கொண்டுள்ளார். வள்ளுவரின் பிறப்பு குறித்த சர்ச்சைகளையும் குறள் எழுதப்பட்ட தன்மை பற்றியும் ஆய்வு செய்துள்ளார். மேலும், அதன் உள்ளடக்கத்தை ஆழமான ஆய்வுக்கு உட்படுத்தியுள்ளதைக் காணலாம்.

பிறப்பு

திருவள்ளுவர் பார்ப்பனர் ஒருவருக்கும் பறைச்சியர் ஒருவருக்கும் பிறந்தவர் என்ற கட்டுக்கதை அக்காலத்தில் நிலவிவந்துள்ளது. அதனை மறுத்து திருவள்ளுவரின் பிறப்பு பற்றிய உண்மையை உணர்த்த பெரிதும் முயன்றுள்ளார். சிங்கள பௌத்தர்கள் வாழும் இலங்கையைப் பறையர் ஊர் என்று இராமாயணக் கீர்த்தனையில் பாடியுள்ளதைப் போலவே திருவள்ளுவரை பறைச்சிக்கும் பார்ப்பானுக்கும் பிறந்தவர் என்ற கட்டுக்கதையைக் கூறி வந்துள்ளனர், தங்களை உயர்சாதியினர் எனக் கூறிக் கொள்ளும் பார்ப்பனர்கள் என்கிறார். மேலும், இது போன்ற கட்டுக் கதைகளை புத்தகமாக வெளியிட்டு வந்துள்ளனர். இது போல பற்பல புத்தகங்கள் வெளியிடப்பட்டுள்ளதையும் சுட்டிக் காட்டியுள்ளார்.

1847-ஆம் ஆண்டு வேதகிரி முதலியாரவர்கள் வெளியிட்ட புத்தகத்தில் பிரம்மா ஓர் யாகம் செய்து அதில் உருவாக்கப்பட்ட கலைமகளை பிரம்மா மணந்து கொண்டு, மறுபடியும் அகத்தியராகத் தோன்றி சமுத்திரக் கண்ணிகையை மணந்து பெருஞ் சாகரனென்பவரைப் பெற்றான். அப் பெருஞ் சாகரன் திருவாரூர் புலைச்சியைச் சேர்ந்து பகவன் என்பவரைப் பெற்றார் என்றும் மேலும், எந்த கால விவரமும் குறிக்காமல் முதற் சங்கம், இடைச் சங்கம், கடைச் சங்கம் என்றும் சங்கத்தார் ஒரு காலத்தில் சிவனென்பவரை அவமதித்து விட்டதாகவும் அக்கோபத்தால் சங்கத்தை அழிக்க பிரம்மாவை வள்ளுவராகவும், சரஸ்வதியை அவ்வையாராகவும் விஷ்ணுவை இடைக்காடராகவும் பூமியில் அவதரிக்கச்

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செய்தார் என்றும் ஒரு கதையை அப்புத்தகம் கூறுகிறது.

இப்பெரும் பொய்களுடன் விசாகப்பெருமாளையர் மூன்றாவது அச்சிட்டுள்ள திரிக்குறளில் நாயனார் வள்ளுவர் வீட்டில் வளர்ந்தாரென்று எழுதியிருக்கின்றார்கள்.

இத்தகையப் பொய்யிற்குப் பொய் பெரும்பொய்களை விரித்து அரசவம்மிஷ வரிசையோரும் பௌத்த பிராமண பரம்பரையோருமாகிய திருவள்ளுவ நாயனாரை பறைச்சிக்கும் பார்ப்பானுக்கும் பிறந்தாரென்னும் ஓர் கட்டுக் கதையும், திருவாரூர் புலைச்சி மகன் பகவனுக்கும், பிராமணன் பிராமணத்தி மகள் ஆதிக்கும் திருவள்ளுவநாயனார் பிறந்தார் என்னும் மற்றோர் கட்டுக் கதையும் எழுதி பாழ்படுத்தி விட்டார்கள்.

இது போன்ற கட்டுக் கதைகள் புத்தபிரான் சரித்திரமும் அவரது போதனைகளும் மறைந்திருந்த வரையிலேயே செல்வாக்குப் பெற்றிருந்தன. ஆனால், அவரது போதனைகள் பரவிய பின் வள்ளுவர் பற்றிய உண்மைகள் விளக்கம் பெற்றுள்ளன என்றும் கூறியுள்ளார். வட இந்தியாவில் சோதிடத்தில் தேர்ச்சி பெற்ற சாக்கையர் என்னும் பெயர் பெற்ற கலிவாகு, குலவாகு, வீரவாகு, இட்சுவாகு போன்ற வேந்தர் வாழ்ந்த இடம் சாக்கையர் தோப்பு என்னும் பெயரினால் அறிந்துகொள்ள முடிகிறது. இதே வம்சத்தினர் தென்னாட்டில் வந்து குடியேறிய போதும் சாக்கையர், வள்ளுவர், நிமித்தகர் என்னும் பெயர்களால் அறியப்பட்ட போதிலும் பெரும்பான்மையும் வள்ளுவர் என்ற பெயரே நிலைத்துள்ளது. இதனை திருநெல்வேலிக்கு அருகே உள்ள ஓர் தேசத்தை இன்றுவரை வள்ளுவர் நாடென்று வழங்கப்படுவதன் மூலம் அறியலாம்.

வள்ளுவ அரச வம்மிஷ வரிசையில் வடமதுரைக் கச்சன் என்னும் அரசனுக்கு உபகேசி என்னும் இராக்கினிக்கும் செந்நாப்புலவராகும் ஓர் மகவு உதித்து நாயனார் என்னும் பெயர் பெற்ற வளர்ந்து பலதேச வியாரங்களுக்குஞ் சென்று தனது குருவாம் சாக்கைய முனிவரால் போதித்துள்ள திரிபீட வாக்கியங்களாம் மூன்று பேதவாக்கியங்களையும் அதன் உபநிட்சயார்த்தங்களையும் தெளிந்து,

தின்னனூருக்கு மேற்கே இந்திரவியாரத்துள்ள புத்தசங்கத்தில் சேர்ந்து சமண நிலை கடந்து அறஹத்துவாம் அந்தணநிலை பெற்று தனது குலகுருவாம் சாக்கைய முனிவர் அருளிய முதல் நூலாம் திரிபீடங்கள் என்னும் திரிபேத வாக்கியங்களும் அதனுட் பொருட்களும் மகடபாஷையாம் பாலியிலும், சகடபாஷையாம் சமஸ்கிருதத்திலும் இருந்து சங்கங்களில் தங்கியுள்ள சமணர்களுக்கும்

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பிராமணர்களுக்கும் உபயோகிக்கப்படுவதன்றி ஏனைய மனுக்களுக்கு உபயோகம் இல்லாமல் இருந்தபடியால் அதனை திராவிட பாஷையாம் தமிழ் பாஷையில் திரிபீடகம், திரிபேத வாக்கியம் என்னும் முதநூலுக்கு முப்பால் திரிக்குறள் என்னும் வழி நூலியற்றினார்.

திரிக்குறள் சாற்றுக்கவி – நல்கூர்வேள்வியார்
உப்பக்க நோக்கி யுபகேசி தோண்மணந்தா
னுத்தாமாமதுரைக் கச்சென்ப – விப்பக்க
மாதானுபங்கி மறுவில் புலச்செந்நாப்
போதார் புனற்கூடறகச்சு.

வள்ளுவர் அரச குலத்தைச் சேர்ந்வரென்றும் புத்தர் இயற்றிய திரிபீடவாக்கியம் என்ற போதனைகள் வரிவடிவத்தில் இல்லாமல் வெறும் ஒலி வடிவத்தில் மட்டுமே போதிக்கப்பட்டு வந்ததால், அது எளிதில் அழியும் வாய்ப்புள்ள தென்று எண்ணி புத்தரது போதனைகளை முதல் நூலாக கொண்டு எழுதப்பட்ட வழிநூலே திருக்குறள் என்று கூறுகிறார் பண்டிதர்.

வள்ளுவரின் குலம்

வள்ளுவர் பறையர் குலத்தைச் சேர்ந்தவர் என்பதாக அக்காலக் கட்டுக்கதைகள் பலவற்றில் கூறப்பட்டு வந்ததையும் அதற்காகப் பல இலக்கியச் சூழ்ச்சிகள் நடந்துள்ளதையும் குறிப்பிடுகிறார். திருவள்ளுவர் இயற்றிய ஞானவெட்டியில் செத்த மாடெடுப்போன் என்று கூறியுள்ளதால், அவர் செத்த மாட்டின் இறைச்சியைப் புசிக்கும் பறையர் என்று கூறி வாதிட்டனர்.

ஆனால் அதில் உள்ள சூழ்ச்சியை விளக்க அந்நூலின் பெயர் ஞான வெற்றியா ஞான வெட்டியா இயற்றியது திருவள்ளுவ சம்பவனாரா திருவள்ளுவ நாயனாரா என்பதையும் விளக்குகிறார். அந்நூலின் தொகை ஆயிரத்தி ஐநூறா ஆயிரத்தி என்னூற்றித் தொண்ணிற்றொன்பதா என்பதையும் ஆய்வு செய்ய வேண்டும் என்கிறார். மேலும், இந்நூலை அச்சிட்டு வெளியிட்டோர் பிராமணர் ஆகையால் தங்களது மன விருப்பத்திற்கேற்ப வரிகளை மாற்றி அமைத்துக் கொண்டனர் என்றும் குற்றம் சாட்டுகின்றார்.

சாம்பவனார் தான் பாடியுள்ள நொண்டி சிந்தினுள் தன்னுடைய பௌத்த தன்ம ஞானத்தின் சிறப்பையும், விருதிகளின் வல்லபத்தையும் விளக்கிவந்தவர் செத்ததோர் மாடெடுப்போமென்றும், கட்டையை அடுக்கிக் கொள்ளுவோம் என்றுங் கூறுவாரோ.

வள்ளுவர்களென்று கூறப்படுவோர் அரசர், வணிகர், வேளாளர் என்ற முத்தொழிலுக்கும் கன்மகுருக்களென்று முன்கலை திவாகரத்திலும், பின் கலை நிகண்டிலும் தெளிவாக கூறியிருக்க வள்ளுவ

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வம்மிஷ வரிசையோர் செத்த மாட்டெடுப்போம் என்று கூறியுள்ளது அபுத்தர்களின் புரட்டுச் செய்யுளேயாம்.

அவ்வகையாக செத்தமாடெடுப் போமென்னும் இழிந்த செயலைக் கூறிய பின்னர் 'சாதியில் உயர்ந்தவன் காணென்னும்' செய்யுள் தோன்றுமோ.

செத்ததோர் மாடெடுப்போமென்னும் வாக்கியத்தை அவரே கூறியிருப்பாராயின் 'சாதியை சொல்லுகிறேனெனும் பாட்டின் வரிசையில் சேர, சோழ நாட்டிலுள்ள பாவிகள் செத்த மாட்டைத் தின்னும்படி வதைத்தார்களென்று சத்ருக்களின் செயலைத் துக்கித்துக் கூறுவாரோ.

இவ்வாறு கேள்விகளை முன்வைத்து தமது கருத்தினை நிலைநாட்ட முயற்சித்துள்ளார். மேலும், செத்த மாடெடுப்பது என்று கூறியிருப்பின் உலகின் பிற உயிர்களின் மாமிசத்தைப் புசிப்பது தவறென்று எங்ஙனம் கூறியிருக்க முடியும் என்றும் கேள்வி எழுப்பி செத்த மாடெடுக்கும் நடைமுறையை அக்காலத்திலும் மேற்கொள்ளாது இக்காலத்திலும் மேற்கொள்ளாதிருக்கும் போதும், ஞானவெற்றியின் ஆயிரத்தி ஐநூறு செய்யுள்களிலும் குறிப்பிடப்படாதது எப்படி நூதனமாகச் சேர்க்கப்பட்டுள்ளது என்பதைச் சுட்டிக் காட்டுகிறார். மேலும், ஞானவெற்றியிலுள்ள பொய்ப் பாடல்களைக் களைந்து சுத்த பிரதியை வெளியிடுவோம் என்றும் கூறியுள்ளார்.

வள்ளுவர் காலம்

சுதேசமித்திரன் பத்திரிகையில் நல்கூர் வேள்வியார் பாட்டில் தெய்வப் புலவர் கடைச்சங்கத்துக்கு இருநூறு அல்லது முந்நூறு ஆண்டுகளுக்கு முன்பு வாழ்ந்தவர் என்று கூறியதை அடுத்து பண்டிதர் வள்ளுவரது காலத்தைக் குறித்து தமது வாதத்தை முன் வைக்கிறார். நம் நாட்டில் கண்ணன் என்றொருவர் பிறந்திருந்தார் என்பதற்கு சரித்திர ஆதாரங்கள் அல்லது செப்பேடுகள் அல்லது சிலாசாசனங்கள் ஏதுமில்லை என்றும் திருவள்ளுவர் மயிலையில் பிறக்கவில்லை மதுரையில் பிறந்துள்ளார் என்று கூறியுள்ளமையினால் அவரது பிறந்த ஊரில் இரண்டு கருத்துகளை அவர்களே கூறுகின்றனர் என்றும் கூறுகிறார். மேலும்,

இரண்டாவது முதற்சங்கம், நடுச்சங்கம், கடைச்சங்கம் என்னும் மொழிகளே மற்றும் மாறாயிருப்பது கொண்டு பன்னீராயிர புத்த சங்கங்கள் இருந்த மதுரையில் இந்த மூன்று சங்கங்கள் இருந்த விவரத்தை கனந்தங்கிய ஆர்ச்சியலாஜிகல் சர்வேயர் காணாத விவரந் தோன்றவேயில்லை. இந்த மூன்று சங்கங்கள் இருந்ததாக ஏற்கினும் கடைச் சங்கத்திற்கு இருநூறு முந்நூறு ஆண்டுகளுக்கு முன்பிருந்தவர் திருவள்ளுவர் என்று

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கூறியுள்ளக் கூற்றால் கடைச் சங்கத்திற்கு திருவள்ளுவர் சென்றதும் அவரது குறளை சங்கப் பலகையில் வைத்ததும் பொய்யென்றே திட்டமாக விளங்குகிறபடியால் சரித்திரங்களைக் கொண்டே சங்களுள்ளது என்பதைத் திட்டமாகத் தெரிந்து கொள்ளலாம்.

மூன்றாவது புத்தபிரான் தோன்றிய நெடுங்காலங்களுக்குப் பின் இராமர் தோன்றியுள்ளார் என்று வசிஷ்டர் கூறியுள்ள இஸ்மிருதிகளில் ஒன்றாம் வாஷிஷ்டங் கூறுவதுமன்றி அநுமார் இலங்காதீவஞ் சென்றிருந்த போது அங்குள்ள ஒர் கோபுரத்தின் மீதுட்கார்ந்து ஈது புத்த மடமென்று கூறியதாக வடமொழியிலுள்ள வால்மீகி இராமாயணங் கூறுகிறது. இத்தகைய நூலாதாரங்களை அன்னோர் கண்டிருப்பாராயின் இராமர் திருவள்ளுவருக்கு முந்தியவரா பிந்தியவரா என்பதும் பொய்யிற் புலவன் பொருளுரை தேறாயென்னும் மொழி சிறப்புறுமா உறாவாவென்றும் உணர்ந்து கூறுவர். அந்நூல்களையும் புத்தரது கால வரையறைகளையும் அறியாதவராதலின் அம்மொழி சிறவாதென்று கூறிவிட்டார்.

இத்துடன் வியாழம், வெள்ளி போன்ற நூலாதாரங்களினால் வள்ளுவர் தமது குறளை இயற்றினார் என்று கூறுவது திருவள்ளுவ மாலையில் உள்ள பாடல்களுக்கு திருவள்ளுவ மாலையில் கூறியுள்ள பாடல்களுக்கு எதிராக உள்ளது என்கிறார். இதுவரை அறியப்படாமலிருந்த வியாழம், வெள்ளி போன்ற நூல்கள் திருவள்ளுவர் ஆதாரம் கொண்டே வியாழம், வெள்ளி, பிரகஸ்பதி, சுக்கிரன், சாணக்கியர் அர்த்த சாஸ்திரம் போன்றவற்றின் தோற்றம் பற்றித் தெரியும் என்று கூறுகிறார்.

மேலும் ஆதிபகவானாம் புத்தர் திரிபீட வாக்கியங்கள் மற்றும் திரிபேத வாக்கியங்களைத் தழுவி திரிக்குறளை வள்ளுவர் இயற்றியுள்ளார் என்பது விளங்குகிறது என்றும் அதனை மறைப்பது முழு பூசணிக்காயைப் பிடிசாதத்துள் மறைப்பதை ஒக்கும் என்றும் இனி நமது அன்பர்கள் ஆதாரங்களற்ற சரித்திரங்களை ஆராயாமல் நம்பி ஏமாற வேண்டாம் என்றும் கேட்டுக் கொண்டுள்ளார்.

இங்ஙனம் திருவள்ளுவர் பிறப்பு, காலம் போன்றவற்றில் எல்லாம் பொய் கலந்திருப்பதாக கூறும் பண்டிதர் வள்ளுவரின் முதல் குறளில் செய்யப்பட்டுள்ள திருத்தங்கள் பற்றியும் அதன் நோக்கங்கள் பற்றியும் கூறும் பொழுது, திருவள்ளுவரின் கடவுளான புத்தரைச் சிறப்பு செய்யும் பொருட்டு ‘அகரம் முதல் எழுத்தெல்லாம் ஆதிபகவன் முதற்றே உலகு’ என்பதே சரியானதென்றும் மற்றவை எல்லாம் திரிபுகளே என்றும் கூறுகிறார்.

பௌத்தப் பார்வையில் திருக்குறள் ஆய்வுகள்

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மேலும், செய்யுள் தோன்றிய முறை பற்றி அரியதோர் முதல்நூல் தொடர்பும், வழிநூல் சுவையும், சார்புநூல் குணமும் எங்ஙனம் அறிவர் என்றும் கூறிகிறார்.

திருவள்ளுவரின் திருக்குறள் முழுமையும் எல்லாக் குறைகளையும் ஆய்வுக்கு உட்படுத்தி அதன் உண்மையை விளக்கும் உரை எழுதியுள்ளார். கடவுள் வாழ்த்து புத்தரின் மீது பாடப்பட்டுள்ள காப்புப் பாடல் என்றும், மாதா, பிதா, குரு ஆயிய மூவரே தெய்வமாகையால் வள்ளுவரின் குரு என்கிற வகையிலும் புத்தரே ஆகையால் தமது வழிநூலுக்கு துணையாக இக்கடவுள் வாழ்த்தை இயற்றியுள்ளார் என்று கூறுகிறார்.

வான் சிறப்பு பற்றிக் கூறும் போது உலகத்தில் உள்ள உயிர்கள் அனைத்தையும் தாய்ப்பால் போல் காத்து வளர்ப்பது மழை என்றும் நீத்தார் பெருமை பற்றிக் கூறும் போது உலகத்தின் பந்த பாசம் என்ற பற்றுகளைக் களைந்து அனைத்தையும் உணர்ந்து எல்லா சுகங்களிலிருந்து விடுபட்ட ஞானிகளைப் பற்றியது என்றும் நான்காவது அதிகாரத்தை அறத்தினது வலிதென்றும் தன்மத்தின் சிறப்பு என்ற தலைப்பிட்டு சாக்கைய முனிவர்களால் போதிக்கப்பட்டுள்ள அறத்தால் மெய்ப்பொருளும், மெய்ப்பொருளால் பேரின்பமும், பேரின்பத்தால் வீடுபேறும் உண்டாகும் என்பதை விளக்குகிறது என்றும் இல்வாழ்க்கை பற்றிக் கூறும்போது,

சாக்கைய முனிவரால் போதித்துள்ள இல்லற துறவற ஒழுக்கங்களில் இல்லறத்தையே முதலாக கொண்டு சீலமிகுத்துத் துறவறமாஞ் சங்கஞ்சேர்ந்து வீடுபெறும் சுகவழி வகுத்துள்ளதைக் கண்ட இன்னூலினாக்கியோன் தானும் இல்லறவாழ்க்கையில் நல்லொழுக்கத்தை இனிது வகுத்திருக்கின்றார்.

என வாழ்க்கைத் துணைநலம் பற்றிக் கூறும்போது தலைவனும் தலைவியும் மனையறம் வழுவாது வாழும் பொழுது உண்டாகும் அனுபவங்களை விளக்குவது என்கிறார். புதல்வரைப் பெறுதல் பற்றிக் கூறும் போது மனித சந்ததி அழியாமல் குடும்பம் விருத்திபெற வேண்டியும், தமது முன்னோரின் புகழைக் காக்கவும் நீண்ட வாழக்கையைப் பெறுவதற்கு மகட்பேறே சிறப்பு செய்யும் அதனால் அதன் சிறப்பையும் அன்பையும் விளக்குவது என்கிறார். அன்புடைமைப் பற்றிக் கூறும் போது இல்லறத்திற்கும், பிற உயிரைக் காத்தலுக்கும், வாழ்க்கைத் துணைநலம் ஆதலுக்கும், அறவோர்க்கு ஈதலுக்கும், உண்மையான அந்தணரைக் காப்பதற்கும், இழிந்தோரைக் காக்கவும், மெலிந்தோரைக் காக்கவும் அன்பு அடிப்படை என்பதை

விளக்குவது என்கிறார். விருந்தோம்பல் பற்றிக் கூறும் பொழுது,

இல்லற வாழ்க்கை இனிது நடாத்துவோர் அன்பு பொருந்தி வாழ்கின்றாரென்பதற்கு அறிகுறியாவது யாதெனில்: மக்களென்னும் பெயர் கடந்து தெய்வப் பெயர் பெற்றுலாவும் அறஹத்துக்களும், சங்கங்களிலுள்ள சமண முநிவருள் புலன் தென்பட்ட தென்புலத்தோர்களும், தேடிவரும் உரவின் முறையோர்களும், நாடிவரும் உரவின் முறையோர்களும், அனாதை ஆதுலர்களும், எப்போது தனதில்லந் தேடிவருவார்களென்று எதிர்ப்பார்த்திருந்து சோறிடுதலை விருந்தோம்பல் என்றும் கூறப்படும்.

இனியவை கூறல் என்ற அதிகாரத்திற்கு விளக்கம் கூறுகையில் இனிய சொற்களால் ஆன அமுத வாக்கானது மனதில் எழும் ஆனந்தம் ஆகையால் அதுவே சாந்த பீடம் என்பதை உணர்த்த பெரியோர் விருந்தோம்பலுக்குப் பின் அவர்களை இனிய மொழியுடன் வழியனுப்புதலே சிறந்தது என்பதை விளக்குகிறார் என்கிறார் பண்டிதர். ஒருவர் செய்த உதவியை எத்தருணத்திலும் மறக்காமல் இருத்தலே அவ்வுதவிக்கு திரும்பச் செலுத்தப் பெறும் பதில் உதவி என்பதை அறிந்த பெரியோராகிய வள்ளுவர் இனியவை கூறலுக்குப் பின் செய்நன்றி அறிதலை வைத்துள்ளார் என்கிறார். நடுவுநிலைமையில் தன்னலம் பிறர்நலம் என்ற பேதமின்றி மக்கள் அனைவரின் சுகத்தையும் ஒன்றுபோல் கருதுதலே நடுவுநிலை என்றும் அடக்கமுடைமை என்ற அதிகாரத்திற்கு விளக்கம் தரும்போது திரிகரண சுத்தமாம் மனோவடக்கம், நாவடக்கம், தேகவடக்கம் ஆகிய மூன்றினையும் விளக்குமாறு அமைந்துள்ளது என குறிப்பிடுகிறார். ஒழுக்கமுடைமை என்ற அதிகார விளக்கத்தில் மக்களது மனோ, வாக்கு, காயம் என்னும் மூன்றினையும் அடக்கியாளும் செயலுக்குரிய பெயர் ஒழுக்கமுடைமை என்றும் பிறனில் விழையாமைப் பற்றிக் கூறும் பொழுது ஒழுக்கம் என்பது இன்னதென்றும் உணராதோர்க்கு அதன் அர்தத்தை உணர்த்த ஒழுக்கம் பற்றிப் பின்னர் பிறர் மனைவியை இச்சிப்பதால் உண்டாகும் கேட்டை விளக்குவதும் என்கிறார். பொறையுடைமைப் பற்றிக் கூறும் இடத்து மக்களில் இவன் பொறைமை உடையவன் என்பது அவனது தோற்றத்தினாலேயே விளங்கும் அதனால் பிறனின் விழையாமையைத் தொடர்ந்து பொறையுடைமை ஆகிய சாந்தருபியை விளக்குவது எனவும் விளக்கம் அளிக்கிறார்.

அழுக்காறாமை என்ற அதிகாரத்தை, பொறையுடைமையின் சிறப்பையும் பொறையிலான் கேட்டையும் விளக்கியபின் வஞ்சினம், பொறாமை, குடிகெடுப்பு, லோபம், சூது, பேரவா ஆகிய மனத்தின் அழுக்குள் ஆறினையும் அகற்றுவோனின்

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இன்பத்தையும் அகற்றாதவனின் துன்பத்தையும் விளக்குவது எனக் கூறுகிறார். வெஃகாமை என்னும் இயலில் வெஃகல் என்னும் சொல் வேதல், வெதும்பல் என்னும் சொற்களிலிருந்து தோன்றியது. காம வெதும்பல், கோப வெதும்பல், பேரவா வெதும்பல், பசி வெதும்பல் என்னும் வெப்பத்தை உணர்த்தலையன்றி காம வெஃகல், கோப வெஃகல், பசியின் வெஃகலால் உண்டான கேடுகளை விளக்குகிறது என்கிறார்.

கல்லாமை அதிகாரத்தில் இதுவரை கூறியவை அனைத்தும் இல்லறத்தோனின் ஒழுக்கங்கள் ஆதலால் அவ்வில்லற வாழ்க்கையில் அன்னியன் பொருளை விரும்புபவனது கேட்டையும் விரும்பாதவனது நன்மையும் விளக்கப்பட்டுள்ளன. கள்ளுண்ணாமை என்ற அதிகாரத்தில் இல்லறத்தோன் தனது வாழக்கை ஒழுக்கத்தில் எத்தகைய நிதானத்தைக் கடைபிடித்த போதிலும், அதிலிருந்து தவறி நிதானமிழப்பது இயல்பாதலால் அந்நிலையை ஒருவன் கள்ளுண்டால் சுயநிலை மறந்து பாழாவான் என்று கள்ளுண்ணுவோன் படும் துயரை விளக்குகிறார். மேலும், கொல்லாமை அதிகாரத்திற்கும் விளக்கம் வழங்கும் பண்டிதர்,

இல்லறத்தில் இன்புற்று வாழ்க விருப்பமுடையோன் சருவ சீவராசிகளையுந் துன்புறச் செய்யாமல் சீவகாருண்யமுற்று வாழ்வானாயின் சகல சுகமும் பெற்று வாழ்க்கை நலமடைவதன்றி மனிதன் என்னும் பெயரற்று தெய்வநிலை அடைவது திண்ணம் ஆதலின் கொல்லாமெயின் சிறப்பைக் கூறியுள்ளார்.

எனவும், பொய் சொல்லாமை என்ற அதிகாரத்தில் இல்லறத்தில் வாழ்வோரின் வாயிலிருந்து வரும் வார்த்தைகள் உண்மையும், நன்மையும், இன்பமும் இந்தப் பிறவியில் அளிப்பதுடன் அடுத்தப் பிறவியிலும் நன்மை அடைந்து அதிதீவரத்தில் நிருவாணமடைவது உறுதி என்கிறார். அதனால் இங்கு உண்மையாகிய வாய்மையை விளக்குகிறார் என்றும் புறங்கூறாமை என்கிற அதிகாரத்தில் இல்லறத்தில் வாழும் மக்கள் பஞ்ச பாதகங்களைச் செய்யாமல் தம்மைப் போன்ற மக்களைக் காணும் போது புகழ்வது, காணாத போது இகழ்வதாகிய புறங்கூறுவோரது சிறுமையை கூறுகிறார் எனவும் விளக்குகிறார். பயனில் சொல்லாமை என்ற அதிகாரத்தைப் பின்வருமாறு விளக்குகிறார்.

மக்களுள் புறங்கூறா வகையை விளக்கியும் நாவினின்று எழும் சொற்களில் மற்றோருக்குப் பயனைத் தரத்தக்க மொழிகளைப் பேச வேண்டுமே அன்றி

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பயனற்ற மொழிகளைப் பேசுவதால் பொய்மொழி, இழிமொழி, கடுமொழி முதலிய தோன்றி தன்னைத் துன்பத்திற்கு ஆளாக்குவதுடன் எதிரிக்கு ஓர் பயனின்றி துன்பத்தை விளைவிக்கும் ஆதலின் எக்காலும் பயனற்ற மொழிகளைப் பேசி வீண்காலம் போக்காது எதிரிக்குந் தனக்கும் பயனைத் தரக்கூடிய அறநெறிகளைப் பேச வேண்டியதே இல்லற வாழ்க்கைக்கு இனிதென்றுணர்ந்த பெரியோன் பயனிலா மொழிகளைப் பேசலாகாதெனக் கூறியுள்ளார்.

மேலும், பெண்வழிச் சேரல் என்ற அதிகாரம் இல்வாழ்க்கையை விரும்புவோர் ஓர் பெண்ணை மணந்து கொள்ளும் போது, அவள் நற்குடியில் பிறந்திருப்பாள் ஆயின் கணவனது குடும்பத்தையே தனது குடும்பமாக கருதி கணவனது சொல்லைத் தட்டாமல், காரியங்களைச் செய்து முடிப்பாள். அங்ஙனம் இல்லாமல் அற்ப குடும்பத்தில் பிறந்திருந்தால் கணவனது முன்னேற்றத்தையும் கெடுத்துவிடுவாள். ஆகையால் மனைவியின் வழியைப் பின்பற்றாது நல்ல வாழ்க்கை அடையும் இன்பத்தை விளக்குகிறார் எனவும், தீவினை அச்சம் என்ற அதிகாரம் இல்லறத்திலிருந்த நன்மைகளைச் செய்ய வேண்டியவன் அவற்றை மறந்து கொடும் செயல்களாகிய தீயவினைகளைச் செய்வானாயின் அவன் வழிபடு நல்லறம் கெட்டு அவனும் அவனது மனைவியும் அவனது பிள்ளைகளும் கெடுவர் என்பதை உணர்த்த பெண்வழிச் சேரலை அடுத்து தீவினைகளை விளக்குகிறது என்றும் விளக்குகிறார்.

ஒப்புற ஒழுகல் என்ற அதிகாரத்திற்கு அளித்துள்ள விளக்கமாவது: மக்கள் உறவினரோடு கூடி வாழ்தல் இயல்பு. அங்ஙனம் கூடிவாழும் போது அவர்க்குத் தம்மால் இயன்றவரை இட்டுண்டு வாழ்வதே இல்லற ஒழுக்கம். எனவே பிரதிபலன் கருதாது பெய்யும் மழையை விளக்கி ஒப்புர ஒழுகலின் சுகத்தையும் பயனையும் உணர்த்துகிறது என்பன.

ஈகை என்ற அதிகாரம், இல்லற ஒழுக்கமுடையவன் பிணியாளருக்கும், திக்கற்றவர்க்கும் இல்லை என்று கூறாது கொடுக்க வேண்டும். ஒப்புற ஒழுகலின் அடுத்து ஈகையின் பயனை விளக்குகிறது என்றும் புகழ் என்னும் அதிகாரம் இல்லறம் நடத்துபவன் பிறருக்கு கொடுத்து வாழினும் அவன் புகழ்பெற வாழ்தலே சிறப்பு ஆகையால் புகழ்வோரின் திறனும் புகழ்பெறுபவனின் பயனையும் விளக்குகிறது எனவும் கூறும் அயோத்திதாசரின் உரை புதுமையும் புத்தமதச் சார்பும் கொண்டதாக விளங்குகிறது. மேலும், இதனை துறவியல் பற்றிய அவரது பின்வரும் உரை நன்கு உணர்த்துகிறது.

பௌத்த தன்மத்தைச் சார்ந்த குடும்பியானவன் இல்லாளுடனிருந்து அறச்செயலை வழுவற நடத்துவதில் கொல்லா விரதத்து ஒழுகலால் சீவகாருண்யமிகுந்தும், பொய்யை அகற்றி வாழ்தலால் மெய்யென்னும் உண்மெ உணர்ச்சி தோன்றியும், களவு அகற்றி வாழ்தலால் பற்றுகள் சிலது அகன்றும், அன்னியர் தார இச்சையை அகற்றலால் காமாக்கினி குறைந்தும், மதியைக் கெடுக்கும் சுரா பானங்களை அகற்றலால் நிதானமென்னும் விழிப்பிலிருந்து, இல்லறத்தோர் என்னும் பெயர் பெற்றவன் தனது விசாரணை மிகுதியால் உலகத்தில் தோன்றும் பொருட்கள் யாவும் க்ஷணத்திற்கு க்ஷணம் அழிந்து மாறுதலுறுதலும் நிலையாமெயாதலின் நிலையுற்ற மெய்ப்பொருளைத் தன்னில் தான் உணர்ந்து ததாகதமாம் நிருவாணம் பெறுதற்கு இல்லறத்தை ஒழித்து துறவறமுற்று பௌத்தசங்கஞ் சேர்ந்து சீரற உடையணிந்து பிச்சா பாத்திரங் கையிலேந்தி உண்மெய்யில் அன்பை வளர்த்திக் கடைதேறுமாறு நிலையாமெயை விளக்குகின்றார்.

ஊழ் என்ற அதிகாரத்திற்கு விளக்கம் கூறும்போது ஊழ் என்பது நல்வினை தீவினைகளின் பயன் என்றும் தீய செயலாகிய தீவினையை மேற்கொள்ளுபவன் இல்லறத்தில் பெரும் துன்பம் அடைவான் என்கிறார. ஒரு பிறப்பில் செய்யும் தீவினை எல்லா பிறப்பிலும் அவனுக்குத் துயரத்தைத் தரும் என்கிறார். உலகத்தில் காணக்கூடிய பொருட்கள் எல்லாம் நிலையில்லாதது என்பதை உணர்ந்து புத்த சங்கம் சேர்ந்த துறவி முற்பிறப்பில் செய்த நல்வினையால் இந்த பிறப்பினும் சமண நிலையைப் பெற்று நல்வினையைப் பெருக்கி பிறவித் துன்பத்தை நீக்கிக் கொள்வதற்காக ஊழினைக் கூறுகிறார் என்று விளக்கமளிக்கிறார்.

துறவு என்ற அதிகாரத்திற்கு விளக்கம் கூறுகையில் ஊழினால் துறவு மேற்கொண்ட முனிவர் சங்கம் சேர்ந்து ஒரு பொருள் உண்டென்றும் இல்லையென்றும் ஓதுதலின் தனக்கு நிகர்தானே என நிலைக்க வேண்டி பற்றறுக்கும் வழிகளை விளக்குகிறார் என்கிறார். புலால் மறுத்தல் என்ற அதிகாரத்தில் புத்த சங்கம் சேர்ந்து சித்தி பெற வேண்டியவர்கள் அதிகாலையில் எழுந்து குளித்து பச்சரிசி, பாசிப்பயறு இட்ட கஞ்சியைக் குடித்து பின் நீதி நூல்களை வாசித்து மக்களுக்கு உதவக்கூடிய நூல்களையும் எழுதிவிட்டு பதினைந்து நாழிகைக்குள் காய், கீரை, கிழங்குடன் செய்த குழம்புடன் சோறு உண்டு இரவு முழுவதும் ஏதும் உண்ணாமல் நீரருந்தி விழித்து இரவு பகலற்ற இடம் சேர வேண்டியவர்கள் என்கிறார். ஆதலால் துறவு மேற்கொண்டும் ஒடுக்கத்தைப் பெறாது தன்னூணைப் பெருக்க வேண்டி பிரிதின் ஊணைப் புசித்தல்

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காம வெகுளி மயக்கம் பெருகி துறவின் செயலைக் கெடுத்துவிடும் என்கிறார். ஆகையால் இல்லறத்தில் இருக்கும் போதே புலால் மறுத்தல் பின்பு பயனளிக்கும் எனக் கூறப்பட்டுள்ளது எனவும் விளக்குகிறார். இன்னா செய்யாமைப் பற்றி பின்வருமாறு கூறுகிறார்.

இன்னாமெய் என்னும் மொழியினது பொருள் ஒருவனுள்ளத்தினின்று எழூஉங் கெட்ட எண்ணங்களேயாம். அதாவது ஓர் உயிரினை வதைப்பதினும் அதன் புலாலையுண்பதினும், அன்னியன் குடியைக் கெடுப்பதற்கும், அன்னியனைத் துன்பஞ் செய்வதற்கும், அன்னியனை சீர்பெறவிடாம லழிப்பதற்கும், பொறாமையை வளர்ப்பதற்கும், வஞ்சினத்தை நிறப்புதற்குமாய துற்கன்மங்களே பெரிதாதலின் அத்தகைய இன்னாவென்னும் கொடுஞ்செயல்களை துறவிகள் உள்ளத்தில் தோன்றவிடாமலும், தோன்றினும் அவற்றை நிலைக்க விடாமலும் மனமாசு கழுவும் வழிவகைகளை விளக்குகிறார்.

இதன் மூலம் பிறருக்குத் துன்பம் விளைவித்தலால் தமக்கு ஏற்படும் தீமைகளை வள்ளுவர் கூறுவது விளக்கப்பட்டுள்ளது. கூடா ஒழுக்கம் என்பதற்கு, இல்லற ஒழுக்கம் துறவற ஒழுக்கம் இரண்டினுள் இல்லறத்திலிருந்து ஆன்மா சுத்தமாகாது என எண்ணி, புத்த சங்கத்தில் சேர்ந்து பொன்னாடை மற்றும் பிச்சைப் பாத்திரம் கொண்டு, இல்லறத்தைக் கூடாமல், அவர்களது தீய ஒழுக்கத்திலும் கூடாமல் இருப்பது எனக் கூறுகிறார்.

தன்னைத் தூற்றும் பொழுதும் தனது எதிரியைக் கண்ட பொழுதும் கோபம் எழுந்த பொழுது அதனை அடக்கியும் கோபம் உண்டாகுமால் அது தான் சேர்ந்த புத்த சங்கத்தாலும் பயனில்லை. அதனால் வெகுளாமையின் நன்மை தீமைகளைக் கூறுகிறது வெகுளாமை என்னும் அதிகாரம். இல்லறத்தைத் துறந்து புத்த சங்கம் சேர்ந்து காணும் பொருள்களின் மீது ஆசை வைக்காமலும் பற்றறுக்கும் ஆசையைப் பெரிதென எண்ண வேண்டும் என அவா அறுத்தல் கூறுகிறது.

தவத்தினால் சீவகாருண்யத்தைக் கடைபிடிக்க வேண்டிய துறவி தனக்கு ஒரு துன்பம் நேராமல் இருக்க உலகத்து மக்களுக்கு ஒரு துன்பமும் வராது காத்தலுக்காகத் தவம் செய்ய வேண்டும் என ‘தவம்’ என்னும் அதிகாரம் கூறுகிறது எனவும் தமது உரையின் மூலம் விளக்கம் தருகிறார். மெய்யுணர்தல் என்ற அதிகாரத்தை விளக்கும் பொழுது,

இவ்விடம் கூறியுள்ள மெய்யென்னும் பதம் இருவகைப்படும். அதாவது உண்மையென்றும் அந்தரங்கமென்றும், பகிரங்கமென்றுமாம். இஃது சகலருக்கும்

விளங்குவதரிதாகும். இராகத் துவேஷ மோகங்களென்னும் காம வெகுளி மயக்கம் மூன்றும் அற்று சாந்தம் அன்பு ஈகை மூன்றுந் திரண்டு, பிறப்புப் பிணி மூப்பு சாக்காடென்னும் நான்கு வகைத் துக்கங்களும் ஒழிந்து புளியம் பழம் வேறு ஓடுவேறாவது போல் உடல் வேறு உள்ளொளி வேறாகி, உயிரென்றும் உடலென்றும் வழங்கும் பெயரற்று அநித்திய அநாத்தும நிருவாணமாம் சத்து சித்து ஆனந்த நிலைபெறும். இதையே உண்மையென்றும் இவற்றிற்கு ஆதாரமாம் உடலையே புலாலமைந்து புண்மெயென்றுங் கூறப்படும். இல்லறமக்கள் பாசபந்தப் பற்றுகள் நிறைந்துள்ளவரையில் புளியங்காயிற்கு சமமாகவும், துறவடைந்து சங்கஞ் சேர்ந்து உலக பற்றுகளற்றபோது புளியம்பழத்திற்கு சமமாகவும் உடலினின்று உள்ளொளியை மாற்றிப் பிரிப்பதே பரிநிருவாணமென்றும், அத்துறவிகளையே தாயின் வயிற்றிலிருந்த பிறந்த பிறப்பென்றும், உடலினின்று உள்ளொளியாய் மாற்றிப் பிறக்கும் பிறப்பொன்றுங் கண்டு இருபிறப்பளரென்றும் வழங்கப்படுவார்கள். இத்தகையப் பேரானந்த மெய்யுணர்வறிவதற்கே துறவி சங்கஞ் சேர்ந்தும் பொருளல்லாதவற்றை உணராது மெய்ப்பொருளை உணரும் வழிவகைகளை விளக்களாமாயினார்.

எனக் கூறுவதன் மூலம் மெய்யுணர்தலின் சிறப்பு விளக்கம் பெறுகிறது. அருளுடைமை என்ற அதிகாரத்தில் கிருபை நிறைந்தோன் என்னும் பொருள் கொண்டது என்றும் தனச் செல்வம், தானியச் செல்வம், மனைச் செல்வம், மக்கட் செல்வம் இவை எல்லோருக்கும் உள்ளதென்றும் ஆனால் அருள் சாந்தம் அன்பு ஈகை போன்றவை எங்குளதோ அங்கே மட்டுமே இருக்கும் என்பனவற்றை விளக்குகிறார். இதன் மூலம் அறத்துப் பாலில் மக்களின் நல் வாழ்க்கைக்கு தேவையானவற்றைத் திருக்குறள் எங்ஙனம் உணர்த்துகிறது என்பதை பண்டிதரின் உரை விளக்குகிறது.

பொருட்பால்

வள்ளுவரின் பொருட்பாலில் கூறியுள்ளதாக நாடு, அரண், இறைமாட்சி என்றும் அரசனின் சிறப்பு, கல்வி மற்றும் கல்லாமை, கேள்வி, அறிவுடைமை, குற்றங்கடிதல், பெரியோரைத் துணைக்கோடல், சிற்றினத்தோரைச் சேராமல் இருத்தல், தெரிந்து செயல்வகை வலிமை அறிதல், காலத்தை அறிதல், இடத்தை அறிதல், தெரிந்து தெளிதல் போன்ற பொருண்மைகளை விளக்குகிறார்.

செல்வப் பொருட்களைப் பற்றியும் கல்விப் பொருட்களைப் பற்றியும் கூறுவதென்றும், நாடும் மக்களும் அரசனும் நன்மை பெற்று வாழ வேண்டுமாயின் நாட்டின்

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பொருட்செல்வம் அதிகரிக்க வேண்டும் அதன் பொருட்டெழுதப்பட்டதே இப்பால் என்பதையும் விளக்குகிறார்.

நாட்டின் வளம் என்பது விவசாயத்தினால் உருவாக்கப்படும் தானிய வளமாகும். அதுவே முதற்பொருள் என்றும் அதனை வளர்ப்பதையே நாடு என்ற அதிகாரம் விளக்குகிறது. அரண் என்ற அதிகாரம் நகரத்தின் சிறப்பு, அது அமைய வேண்டிய தன்மை, அவ்விடத்தில் வாழ்வோர் செயல் போன்றவற்றை விளக்கிக் கூறுகிறது. நாட்டைப் பற்றியும் நகரத்தைப் பற்றியும் அதன் அரணைப் பற்றியும் விளக்கி அவற்றிற்கு ஆதாரமாக அமையும் அரசியல் வழிமுறைகளை விளக்குவது இறைமாட்சி என்றும் இவை எல்லாம் சிறப்படையத் தேவைப்படுவது கல்வி என்றும் அதனைப் பின்வருமாறு விளக்குகிறார்.

இஃது அரசயோகம் அமையினும், ஊன்றி நிலைக்கும் எண்ணமும் உறுதிபெறச் செயலுமாயக் கல்வியைக் கற்று தெளிவதில் வரிவடிவு அட்சரங்களாம் எழுத்துக்களை எண்ணத்தூன்றும் மொழி முதலாய்ந்துப் பொருளது தேர்ந்து அவற்றால் குவிந்துள்ள முதநூல், வழிநூல், சார்பு நூல்களையும் உணர்ந்து நீதியிலும் நெறியிலும் ஒழுக்கத்திலும் அமைந்து தனது ராட்சிய பாரத்தைத் தாங்கி முத்திபேராம் நித்தியானந்த நிருவாணமடைவதற்குக் கல்வியே ஊன்று கோலும் நிமையா விழியுமாதலின் அரசர்க்கு வேண்டிய கல்வியை விளக்குகிறார்.

என்று கல்வியின் சிறப்பாக முக்தியைக் கூறுகிறார். இதனுடன் கல்லாதோரின் செயல், அவன் அடையும் துயர், தன்னைத் தான் கவனித்துக் கேட்டையும் விளக்குகிறது என்கிறார். வெறும் கல்வி கற்றால் ஏதும் பயனில்லை மொழியைப் பற்றியும், ஞானத்தைப் பற்றியும், செய்யுள் பற்றியும் கற்றோராகிய சமண முனிவர்களின் வாக்கைக் கேட்டு தெளிய வேண்டுமென்று கேள்வி என்ற அதிகாரத்தில் குறிப்பிட்டுள்ளார் என்கிறார் பண்டிதர்.

அரசர்கள் கல்வி கேள்விகளில் சிறந்து விளங்கிய போதும் அந்தரங்கம் பகிரங்க உண்மை புறமெய் என்பதை அறியக் கூடிய மெய்யறிவைக் கொண்டிருக்க வேண்டுமென்று வள்ளுவர் அறிவுடைமை என்னும் அதிகாரத்தில் கூறியுள்ளார். அரசன் என்பவன் தனது தேசத்து மக்களைக் காக்க கூடியவன் ஆதலால் தனது குற்றங்களைக் கண்டு தீர்த்து தனது மக்களை ஆள அறிவு பற்றி கூறிய பின் குற்றங்கடிதல் என்ற அதிகாரத்தில் விளக்கியுள்ளார். தற்கால தமிழக கல்விமுறையை இவற்றுடன் ஒப்பிடும்போது கல்விமுறை எதையோ இழந்ததாக உள்ளது. இதனை பின்வரும் வருத்தம் தோய்ந்த கூற்று நிரூபிக்கிறது.

பௌத்தப் பார்வையில் திருக்குறள் ஆய்வுகள்

போதித்தல் என்பது இன்றைக்குத் தொழில் காலனிய பாதிப்புகளால் தோற்றுவிக்கப்பட்ட இந்நிறுவனங்கள் சம அளவில் நன்மையையும் தீமையையும் ஏற்படுத்தியுள்ளன. பள்ளிகள், கல்லூரிகள், பல்கலைக் கழகங்கள் என்ற நிறுவன அமைப்புகள் கல்வி கற்றலைப் பரவலாக்கின என்பது நிறுவப்பட்ட உண்மை. ஆனால் அதே நேரம் இந்நிறுவனங்களின் ஏதேச்சதிகாரப் போக்கு தவிர்க்க முடியாத தீமைகளையும் எற்படுத்திததயுள்ளன. நவீனக் கல்வி முறை நமது பண்பாட்டின் பாரம்பரியக் கல்விமுறையை அழித்துவிட்டது என்பதை நாம் ஒத்துக் கொள்ளத்தான் வேண்டும். இவ்வாறு அழிக்கப்பட்ட பாரம்பரிய கல்விமுறையின் இறுதி மாணவர் அயோத்திதாசர்.

பெரியாரைத் துணைக்கோடல் என்னும் அதிகாரத்தைப் பற்றி பின்வருமாறு விளக்குகிறார் பண்டிதர்.

சுடர் விளக்காயினும் நன்றாய் விளங்கிடத் தூண்டுகோல் ஒன்று வேண்டும் என்னும் முதுமொழிக்கியைய அரசனானவன் கல்வி கேள்விகளில் சிறந்து குற்றமற்றவனாக விளங்கினும் பெரியோர்களென்னும் விவேகம் மிகுந்த மேலோர்களைத் துணையாக கொண்டு தனது ராட்சிய பாரம் தாங்க வேண்டும் என்பதேயாம். இவற்றுட் சில அறிவிலிகள் பெரியோர் என்பதையும் மேலோர் என்பதையும் வேஷசாதித் தலைவர்களையே கூறும் மொழியென்பாரும் உண்டு. அவை பௌத்த நீதி நூட்களுக்குப் பொருந்தாவாம். எத்தேச எப்பாஷைகளாயினும் கோபங்குறைந்து, மோகங் குறைந்து, பேராசை குறைந்து விவேகம் நிறைந்திருப்பவன் யாரோ அவனையே மேலோன் என்றும் பெரியோன் என்றுங் கூறத்தகும். இதனினும் வஞ்சகம் பொறாமை, பொருளாசை, குடிகெடுப்பு கட்கொலைகாமம் சோம்பல் மிகுந்த குடும்பத்தோரை கீழ்மக்களென்றும், சாந்தம் ஈகை அன்பு விடாமுயற்சி உழைப்பு மிகுந்தோரை மேன்மக்களென்றும் கூறுவது நீதி நூற்பாணியாம்.

பெரியார் என்பதற்கு பிராமணர் என்னும் விளக்கத்தை வழங்கியுள்ளதை இங்ஙனம் கண்டிக்கிறார் பண்டிதர். பெரியோர்களாகிய அறிவு மிகுந்தோர் பொருளாசை அற்றவர்களும் பிற உயிர்களுக்குத் துன்பம் இழைக்காதோரும் ஆவர். பேராசை கொண்டோரையும், பிற உயிர்களுக்குத் துன்பம் இழைப்பவரையும் கயவர்களையும் பொறாமை மிகுந்தோரையும் வஞ்சினம் கொண்டோரையும் பஞ்சபாதகர்களையும், அரசன் துணைகொள்ளக் கூடாது என்னும் வள்ளுவரின் விதிகளையும் விளக்குகிறார். விதிவிலக்குகளை சிற்றினம் சேராமை என்னும் அதிகாரத்தில் விளக்குகிறார் எனவும், தெரிந்து செயல்வகை என்ற

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அதிகாரத்தில் அரசன் பெரியோரைச் சேர்த்துக் கொண்டு சிறியோரை விலக்கி, தான் செய்ய வேண்டிய காரியங்களைத் தெரிந்து செய்ய வேண்டும் எனவும் குறிப்பிடுகிறார்.

யார் என்ன கூறியபோதிலும் அவற்றை ஆராய்ந்து செய்ய வேண்டும் எனவும் வலியறிதல் என்ற அதிகாரத்தில் அரசன் தான் செய்ய முயலும் செயல்களில், இது கூடும் இது கூடாது என அறிந்தும், மேலும் தனது உடல் வலிமையை அறிந்தும் எதிரிகளின் வலிமையை அறிந்தும் தனது துணைவரின் வலிமையை அறிந்தும் ஒரு காரியம் செய்யப் புகல் வேண்டும் எனவும் வள்ளுவர் கூறியுள்ளளவற்றை பண்டிதர் விளக்குகிறார்.

இவ்விடத்தில் பெரியார் என்பதற்கு உயர்சாதி என விளக்கமளிப்போரை கண்டிக்கிறார் பண்டிதர். சாதி என்பது ஒழிக்கப்பட வேண்டியது. தமிழ் சமூகத்தின் பீடையாக உள்ள சாதி இலக்கியத்திலும் இலக்கிய விளக்கங்களிலும் மலிந்து காணப்படுகின்றன. சாதியை ஒழிப்பது பற்றி புதுவிசை இதழ் பின்வருமாறு கூறுகிறது.

அம்பேத்கார், பெரியார், பூலே போன்ற பலரது சாதிய எதிர்ப்பு நடவடிக்கைகளும் அவ்வேறுபாட்டை முற்றிலுமாகக் களைய துணைபுரியவில்லை. இன்றைய தலித் அரசியலும்கூட சாதீய இறுக்கங்களை வலுவூட்டவே செய்கின்றன.

எனவே திருக்குறள் போன்ற இலக்கியங்களுக்கு இப்படி சாதிய விளக்கம் அளிப்பதில் அதிர்ச்சி அடைய தேவையில்லை.

அரசன் படையெடுக்கும் போதும் தேசத்தைத் சீர்திருத்தும் போதும் காலம் அறிந்து செய்ய வேண்டும். காலம் என்பது வெய்யில், மழை, பனி காலங்களையும் அமைச்சர்கள் தமக்கு சாதகமாக இருக்கிறார்களா பிணியுற்று இருக்கிறார்களா என்ற காலத்தையும் பண்டிகளில் தானியங்கள் நிறைந்துள்ள காலங்களையும் ஆயுதசாலையில் ஆயுதங்கள் குறைவாக இருக்கின்ற காலங்களையும் தமது முயற்சி அதிகரிக்கும் காலத்தையும் குறையும் காலத்தையும் ஆராய்ந்து செய்ய வேண்டுமென காலமறிதல் என்ற அதிகாரத்தில் கூறுவதையும் விளக்குகிறார்.

தமது வலிமைகளையும் அதற்கு ஆதாரமான காலத்தையும் மட்டும் கணக்கில் எடுத்துக் கொண்டு போருக்குத் தயாராகாமல் எதிரி அரசனின் காட்டரண்மதில், நாட்டரண்மதில், மலையரண்மதில் சூழ்ந்த இடங்களின் போக்குவரத்தை நன்கு தெரிந்து போர் புரிந்தால் தனக்கு வெற்றி கிடைக்கும் வழி வகைகளை அறிந்து படையைச் செலுத்தல் வேண்டும் எனக் கூறுவதை எடுத்து காட்டுகிறார்.

அரசன் தனது அவையோர் பொறாமை, பொருளாசை, குடிகெடுப்பு போன்றவை

மிகுந்தோர் இருக்கின்றனரா அல்லது நீதியும், நெறியும் கருணையும் மிகுந்தோர் இருக்கின்றனரா என்பதையும், பகுத்தறிவும், கலை நூலாராய்ச்சியும், முன்பின் கால வகைகளை அறிந்து மதியூகம் கூறுவோரும் உள்ளனரா என்பதைத் தெளிந்து தெரிந்தும் தமது படை மற்றும் எதிரியின் படை பலம் தானிய கிடங்குகள் அதிகரித்துள்ளதா தமது செல்வ நிலை பற்றியும் எல்லாவற்றைப் பற்றியும் அறிந்த பின்னரே ஒரு செயலைச் செய்ய முயல வேண்டும் என்று கூறுவதை உணர்த்துகிறார். இங்ஙனம் பொருட்பாலிலுள்ள எல்லா செய்யுள்களும் விரிவான முறையில் பண்டிதர் உரை வகுத்துள்ளார்.

காமத்துப்பால்

திருக்குறளில் உள்ள காமத்துப்பால் குறித்து பண்டிதரவர்கள் கூறும் போது, சிற்றின்பம் என்னும் காமம் எல்லா உயிர்களிடத்தும் உள்ள இயல்பு என்கிறார். இருப்பின் எல்லா மக்களும் அதன் ஆழத்தை அறிந்து கொள்ளவில்லை. பேரின்பம் பெற்ற தென்புலத்தோரே அதனை அறிவர். ஆதலால் தென்புலத்தோராகிய வள்ளுவர் சிற்றின்பமாகிய காமத்தைத் தெளிவுற விளக்கி பேரின்பத்தைத் துலக்குவதறகாக கண்ணும், மூக்கும், செவியும், நாவும் உடலும் ஒரு பெண்ணை நாடி வெளித்தோன்ற நுகர்வது சிற்றின்ப நுகர்ச்சி என்றும் சிற்றின்பத்தில் ஒரே பாவனையாய் வெளிப்பட்டது போல் ஐம்புலனும் பேரின்பத்தில் ஒரே பாவனையாய் உள்ளடங்குமாயின் கண்ணுலகான புத்தேழுலகில் சிற்றின்பத்துக்கு மேலான பேரின்பம் எப்பொழுதும் கிடைக்கும் எனக் கூறுவதை விளக்குகிறார்.

காமமீறி ஐம்புலனால் ஒடிய கண் அவ்வைம் புலனும் ஒடுங்கிய பேரின்ப சுகத்தையும் ஆற்றலையும் விளக்கியிருக்கிறார்.

பொறிவாயிலைந்தவித்தான் பொய் தீரொழுக்கம்,

நெறி நின்றார் நீடுவாழ்வார்.

காமத்தால் சிற்றின்பம் நுகர்ந்து சீர்கெடுவதினும் என்றுமழியா பேரின்பம் நுகர்ந்து நித்திய வாழ்வடைவதே அழகாதலின் சிற்றின்பத்தை செவ்விதில் விளக்கி பேரின்பம் அளாவும் போக்கில் விடுத்திருக்கின்றார். உள்ளதை உண்மைக்குத்தாரமாய் விளக்குவதே புத்ததன்மமாகும். உள்ளது ஒன்றிருக்க இல்லாததைக் கூட்டிப் பொய்யை மெய்போல் பேசுவது அபுத்ததன்மமாகும்.

எனக் கூறி அவரது வாக்கு போலவே உலக வழக்கும் உள்ளதெனவும் உலகில் மனிதகுலம் தோன்ற அதை சிறப்பித்ததை தவறெனக் கூறுதல் உள்ளுக்குள் காமத்தை ஒளித்து வெளியில் தூற்றுவதை ஒக்கும். ஆனால் வள்ளுவர் அங்ஙனம் ஒளிக்காமல்

மக்களில் எல்லா செயல்களையும் அளந்து கூறிய பொழுது காத்துப்பாலையும் தெளிவாக விளக்கியுள்ளார். காரணம், இன்பத்தையும் துன்பத்தையும் விளக்கும் ஓர் போதனா நிலை ஆகும் என வள்ளுவரின் காமத்துப்பாலின் சிறப்பை விளக்குகிறார். இங்ஙனம் அறத்துப்பால், பொருட்பால் ஆகியவற்றில் முழுமையான உரை எழுதியும் காமத்துப்பால் பற்றி தமது கருத்தை விளக்கியும் எழுதியுள்ளது திருக்குறளைத் தெளிவாகப் புரிந்து கொள்ளத் துணை செய்கிறது.

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ஒப்பியல் நோக்கில் சிறு தெய்வ வழிபாடு

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தமிழ்த்துறை, உதவிப் பேராசிரியர்,
புனித அன்னாள் கலை மற்றும் அறிவியல் கல்லூரி,
மாதவரம், சென்னை-600 110.

முன்னுரை

'கோயில் இல்லாத ஊரில் குடியிருக்க வேண்டாம்' என்ற பழமொழி தமிழகத்தில் நிலவிவருகிறது. நல்லது நடந்தால் தெய்வத்தினுடைய அருள் என்றும், தீயது நடந்தால் தெய்வத்தின் கோபம் என்றும் நம்புகின்றனர். நாட்டுப்புற மக்கள் நாட்டுப்புற தெய்வங்களை நம்பிக்கையுடனும் அச்சம் கலந்த உணர்வுடனும் வழிபட்டு வருகின்றனர். தெய்வ வழிபாட்டு முறைகள் குறித்து ஆராய்வதே இவ்வாய்வின் நோக்கமாக உள்ளது.

தமிழ்நாட்டில் சிறுதெய்வ வழிபாடு

கிராமப்புறத்தில் மக்கள் வழிபடும் தெய்வங்கள்தான் சிறு தெய்வங்கள். குடும்பதெய்வம், குலதெய்வம், ஊர்த்தெய்வம் என்று சொல்லப்படும் தெய்வங்கள் அனைத்தும் சிறுதெய்வ வழிபாட்டில் அடங்கும். குடும்பத்திற்காக வாழ்ந்தவர், வீட்டில் யாரேனும் இறந்து போனால் அவர்களைத் தெய்வமாக வழிபடுவதே குடும்ப தெய்வமாகப் போற்றப்படுகிறது. அதுமட்டுமின்றி குடும்ப தெய்வத்தின் பெயரைப் பிள்ளைகளுக்கு வைப்பதும் உண்டு. இவ்வழக்கம் ஒவ்வொரு குலத்திலும் இன்றும் காணப்படுகிறது. இன்றும் பல நாட்டுப்புறங்களில் அந்தந்த குல தெய்வத்தின் பெயரைத் திருமண அழைப்பிதழ் அச்சிடுவதையும் காணலாம். ஒரே குலதெய்வத்தை வழிபடுபவர்கள் அனைவரும் பங்காளிகள். இக்குலதெய்வ வழிபாட்டுமுறை தமிழ் நாட்டில் மட்டுமல்லாமல் கர்நாடகா, கேரளம், ஆந்திரம் போன்ற மாநிலங்களிலும் நடைமுறையில் உள்ளது.

நாட்டுப்புற சிறுதெய்வ வழிபாடு :

1. குடும்ப தெய்வ வழிபாடு
2. குலதெய்வ வழிபாடு
3. ஊர்த்தெய்வ வழிபாடு
4. மாலை தெய்வ வழிபாடு

சிறுதெய்வ வழிபாட்டில் வீட்டுத்தெய்வ வழிபாடு, குலதெய்வ வழிபாடு, இனத்தெய்வ வழிபாடு, ஊர்த்தெய்வ வழிபாடு மற்றும் மாலை தெய்வ வழிபாடு எனப் பலவகையில் வழிபாடு நிகழ்த்தப்படுகிறது. இந்த சிறு தெய்வ வழிபாட்டு முறையில் பொதுவான சடங்குகள் வகுக்கப்படவில்லை. அவை, காலம் காலமாக முன்னோர்களால்

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கடைபிடிக்கப்பட்ட சடங்குகளை அடிப்படையாகக்கொண்டு நடைபெறுகின்றது. சிறு தெய்வ வழிபாடானது நாட்டுப்புற மக்களின் நம்பிக்கை அடிப்படையிலும், முன்னோர் கற்றுத் தந்த முறைப்படியும் நடைபெறுகிறது.

சிறுதெய்வம் தோற்றம் பெறுதல் :

சிறுதெய்வங்கள் எல்லாம் ஒரே அடிப்படையில் தோன்றவில்லை. நாட்டுப்புற மக்களின் நம்பிக்கை அடிப்படையிலேயே தோன்றியது. பல்வேறு காரண காரியங்கள் அடிப்படையில் பல்வேறு பின்புலத்தில் தோன்றியது. சிறு தெய்வங்கள் தோன்றிய முறையை நான்கு வகையாக கூறலாம். அவை,

1. ஒரு குறிப்பிட்ட ஊரில் பிறந்து, இறந்து உயிர்தியாகம் செய்ததின் அடிப்படையில் உருவாகுதல்.
2. ஆற்றில் கிடக்கும் பெட்டிக்குள் இருந்து கண்டெடுத்தல்.
3. மக்கள் ஓரிடத்திலிருந்து மற்றோர் இடத்திற்குப் புலம் பெயர்ந்தப்பொழுது, பூர்வீகத் தெய்வத்தின் கோயிலில் இருந்து ஒருபிடிமண் எடுத்துவந்து தெய்வத்தை உருவாக்குதல்.
4. வேறு திசைலிருந்து வந்து, ஒருகுறிப்பிட்ட ஊர்மக்களை பாதுகாத்ததன் வாயிலாகத் தெய்வமாகத் தோற்றம் பெறுதல்.

இத்தெய்வம், ஆண் தெய்வமாகவோ பெண் தெய்வமாகவோ இருக்கலாம். வழிபடுவோரின் பொருளாதார நிலைக்கேற்பத் தெய்வமும், தெய்வத்தின் கோயிலும் உருவாகிறது. ஒவ்வொரு சிறுதெய்வத்திற்கும் ஏதேனுமொரு தோற்றக்கதையை வாய்மொழிக் கதையாகவோ, பாடலாகவோ காணப்படுகிறது.

ஒரு குறிப்பிட்ட மூதாதையரின் மரபில் தோன்றியதால் ஒருவருக்கொருவர் உறவு ஏற்பட்டு, இனக்குழுவாக அமைக்கப்படுகிறது. இரத்த உறவுடைய பங்காளிகள் பெரும்பாலும் ஒரே குலத்தைச் சேர்ந்தவர்களாக இருப்பர். தன் குலத்தின் முன்னோர்களில் சிறந்து விளங்கியவர்களையும், தங்கள் குல மக்களுக்காக உயிர் தியாகம் செய்தவர்களையும் தெய்வமாக பாவித்து வணங்கி வழிபடுகின்றனர். இவ்வழிபாடு நடைபெறும் முறை ஒவ்வொரு குலத்திற்கும் மாறுபடுகிறது.

சாதி, மதம், இனம் என்ற வேறுபாடுகளைக் கடந்த, தெய்வ வழிபாட்டு முறையும் உள்ளது. மேல்மருவத்தூர் ஆதிபராசக்தி, சமயபுரம் மாரியம்மன், கோட்டை மாரியம்மன், இராஜ காளியம்மன், வெக்காளியம்மன், அய்யனார், ச னீஸ்வரன் போன்ற தெய்வ வழிபாடுகள் முதலில் சிறுதெய்வ வழிபாடாக இருந்து, பின்னர் அத்தெய்வத்தின் மீதுள்ள நம்பிக்கையின் அடிப்படையில் பலரும் வழிபடுகின்றனர்.

சிறுதெய்வத்திற்குரிய சடங்குகள்:

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குலம், சாதி, இனம், மொழி பாகுபாட்டின் அடிப்படையில் சிறுதெய்வ வழிபாட்டில் சடங்குகள் பின்பற்றப்படுகிறது. குறிப்பாக தெய்வத்திற்கு உயிர் பலியிடுதல், ஆணிசெருப்பை அணிதல், உப்பு போடுதல், கோழியை சூரையிடல், கோழி அறுத்தல், சூலாடு குத்துதல், கெடா வெட்டுதல், பன்றி குத்துதல் போன்ற சடங்குகள் சிறுதெய்வ வழிபாட்டில் தெய்வத்திற்கு ஏற்றவாறு நிகழ்த்தப்படுகிறது.இத்தகைய சடங்குகளை பெருந்தெய்வ வழிபாட்டில் இல்லை. ரைட் ரெவ ரெண்ட் கென்ரி அவர்கள் நாட்டுப்புற தேவதைகளைப் பற்றி ஒரு நீண்ட பட்டியலை குறிப்பிட்டுள்ளார். அவை என்னவென்றால் ஆண் தேவதை வழிபாடு, பெண் தேவதை வழிபாடு, கல் வழிபாடு என்று மூன்றாக பகுத்து கூறியிருக்கிறார்.

பெண் தேவதை வழிபாடு :

1. அட்டங்கம்மா
2. அங்காயி
3. அம்மை வாரி
4. அங்காளம்மா
5. அங்கம்மா
6. நாகம்மா.... என்று கிட்டத்தட்ட 91 அம்மன்களை பெண் தேவதைகள் அம்மன்கள் என்று வகைப்படுத்தியுள்ளதை நாம் நாட்டுப்புறவியல் பேராசிரியர். சண்முகம் சுந்தரம் அவர்களின் பதிவில் காணலாம்.

ஆண் தேவதைகள்

1. பசவன்னா
2. குத்தாக்காசி
3. எல்லை கருப்பு
4. அய்யனார்
5. மதுரவீரன் என்று ஆண் தெய்வங்கள் மொத்தம் 19 என சு.சண்முகசுந்தரம் அவர்கள் சொல்லி இருப்பதை நாம் காணமுடிகிறது.

கல் வழிபாடு:

1. பொட்டுராயி
2. எல்லைகல்
3. நாட்டான்கல் என்று மூன்று கல்களை குறிப்பிட்டுள்ளார்.

வழிபாட்டு முறைகள் :

கிராம தேவதைகளுக்கு சிலர் காணிக்கை மட்டும் செலுத்துவதுண்டு. காணிக்கையாக காசுகளை உண்டியலில் போடுவது, வேண்டுதல் நிறைவேற சிலர் துணிகளில் காசு முடிந்துவைத்து, வேண்டுதல் நிறைவேறியவுடன் கோவிலில் சென்று உண்டியலில் போடுவது என்று கிராம பெண் தெய்வங்களுக்கு வேண்டுதலாக கூறப்படும் செய்திகள். சிலர் தேவதைகளுக்கு எண்ணை, தேங்காய், பூ மாலை வாங்கி கொடுப்பார்கள். அந்தக் கோவிலில் பூசாரி எண்ணையோடு மஞ்சளையும் சேர்த்து கடவுள் உருவங்களில் பூசி, மாலை இடுவது வழக்கமாக பின்பற்றி வரும் ஒரு வழிபாட்டு முறையாகும்.

சிலர் தேவதைகளுக்கு தேங்காய்களை மட்டும் உடைத்து வழிபாடு செய்வார்கள். சிலர் தேவதைகளுக்கு பால்தானம் கொடுப்பர். மாடு கன்று ஈன்றதும் கரக்கின்ற முதல்பாலை சிலர், தேவதைகளுக்கு காணிக்கையாகக் கொடுப்பதுண்டு. அதை மேல்மலையனூரில் மிக நேர்த்தியாக செய்யக்கூடிய நேர்த்திக்கடனாக காணப்படுகிறது. சிலர்

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செவ்வாய்க்கிழமை, வெள்ளிக்கிழமையில் பொங்கல் வைத்து படையல் போடுவதை சிறு தெய்வ வழிபாடுகளில் காணமுடிகிறது. மேலும் கிளியனூர், தைலாபுரம், கொத்தட்டை, திருப்பதி, ரிப்புலியூர் போன்ற ஊர்களில் அரவான் அல்லது கூத்தாண்டவர் வணக்கம் என்ற விழா நடைபெறும். அதில் தாலி அறுக்கும் நிகழ்ச்சிய நடைபெறுகிறது. அதாவது அவ்விழாவில் அலிகள் கொண்டாடப்படும் ஒரு வழிபாட்டு முறையாக உள்ளது. வேலூரில் உள்ள முனிஸ்வரன் கோயிலில், பச்சை வாழை பாடையில் ஏற்றி கோயிலை சுற்றி இழுத்து வந்து செடல் குத்தி வேண்டுதலை நிறைவேற்றும் வழிபாட்டு முறையும் நாம் அறியலாம். அவிநாசியின் அருகில் உள்ள அரசூரில் கருப்புராயன் கோயிலில் 10 அல்லது 20 பேர் கையில் வாள் வைத்துக் கொண்டு ஆடுவார்கள். தங்களை தாங்களே வாளினால் வெட்டிக் கொண்டு நேர்த்திக்கடனை நிறைவேற்றுவர். ஒருவர் ஆடக்கூடியவரை சாட்டையால் அடிப்பர். அம்மன் வழிபாட்டில் வழக்கமாகக் கொண்டாடப்படுவதை நாம் அறியலாம். மேலும் கோவை மாவட்டத்தில் நரசிம்மபுரம் மாரியம்மன் கோவிலில் ஆண்கள் கலசமும், பெண்கள் தீச்சட்டி, மாவிளக்கு ஆகியவை ஏந்தி கொண்டு வழிபடுவதை அறியலாம். விழா வழிபாட்டில் இறுதியில் அனைவரும் மஞ்சள் நீராடி பலவித கேளிக்கை விளையாட்டில் ஈடுபட்டு மகிழ்வதை அறியலாம். ராமநாதபுரம் மாவட்டத்தில் சிலர் அம்மனுக்கு பால்குடம் எடுப்பர். திருநெல்வேலி, கன்னியாகுமரி மாவட்டங்களில் சுடலை மாடன் கோயிலில், சாமியாடும்பொழுது ஆயுதங்களால் தலையில் அடித்துக் கொள்ளுதல், உடம்பில் வெட்டிக் கொள்ளுதல், சூடானபொங்கல் பானையில் கையைவிடுதல், ஆட்டு ஈரலைப் பிடுங்கி வாழைப்பழத்துடன் சாப்பிடுதல், இரத்தம் கலந்த சோறை உண்ணுதல், கோழியின் இரத்தத்தை குடித்தல் இவை யாவும் சிறு தெய்வ வழிபாட்டில் நிகழ்த்தப்பட்டு வருவதை நாம் டாக்டர் சு. சண்முகசுந்தரம் அவர்களின் பதிப்பில் இருந்து அறியமுடிகிறது. ஒவ்வொரு மாவட்டங்களிலும் ஒவ்வொரு மாநிலங்களிலும் அவரவர்களுக்கென்று வழிபாட்டுமுறை இருப்பதை நாம் காணமுடிகிறது.

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संस्कृतभाषायाः पुनरुज्जीवनम्

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भाषा

भाषा मानवव्यवहारस्य अत्यन्तः मुख्याङ्गः सुशोभते । मनुष्याः स्वभावनाभिव्यक्त्यर्थं भाषा अत्यन्तावश्यकी सामग्री विद्यते । मानवाः मातृभाषया सह अन्यभाषाः अपि विदन्तु । भारतम् अनेकतायामेकतायाः आदर्शभूमिः दृश्यते । प्रत्येकास्मिन् भारतीयराज्ये बहुसांस्कृतिकं बहुभाषिकत्वञ्च दर्शयति । १९५० तमे वर्षे स्वीकृतस्य भारतीयसंविधानस्य अष्टमा अनूसूचिः भारतस्य भाषावैविध्यं मान्यतां दातुं कृतासीत् । अस्याम् अनुसूच्यां भारतगणराज्यस्य आधिकारिकाः भाषाः सूचीकृताः सन्ति । भारतीयसंविधानस्य ३४४(१), ३५१ अनुच्छेदौ अनुसारम् अष्टमानुसूच्यां प्रारम्भे असामिया,बंगाला, गुजराती, हिन्दी, कन्नड, काश्मीरी, मलयाळम्, मराठी, ओडिया, पञ्जाबी, संस्कृतम्,तमिळ्, तेलुगु एवम् उर्दू इति १४ भाषाः संविधाने समाविष्टाः आसन् । इदानीं कोङ्कणी, डोगरी, नेपाली, बोडो, मणिपुरी, मैथिली, सान्ताली, सिन्धी च मिलित्वा २२ भाषाणां मान्यता अन्तर्भवति ।

भाषायाः पुनरुज्जीवनं

भाषायाः पुनरुज्जीवनं नाम या भाषा पूर्णतया मृता वा प्रायः मृता वा भूत्वा कस्यचित् व्यक्तेः समूहस्य वा नियोजितप्रयत्नेन स्वस्य पुरातनं अवस्थां वा तस्य किञ्चित् भागं वा पुनः प्रापणम् । भाषायाः समुत्थानार्थम् अत्यन्तप्रयासः यत् पुनरुज्जीवनभाषायां अधिकांशवक्तृनिर्माणं, विविधशैक्षिकविधैः द्वारा अधिकतया भाषाप्रयोगम् च विद्यते । भाषामनुसृत्य सांस्कृतिकपरम्परायाः संरक्षणञ्च पुनरुज्जीवनस्यैकांशः विद्यते । उदाहरणार्थम् इदानीं संस्कृतभाषा कर्णाटकराज्ये शिवमोगाजिले मत्तूरु ग्रामे व्यवहारभाषा शोभते ।

भाषायाः पुनरुज्जीवनस्यावश्यकं यत् भाषा-हानिः पूर्वजैः सह प्रत्यक्षसम्बन्धस्य दुर्बलतां जनयति। भाषायाः हानिना अन्यानि महत्त्वपूर्णानि सांस्कृतिकप्रथाः, मौखिइतिहासानि, काव्यानि, नृत्यानि, पारम्परिकगीतानि, प्रतीकाः, कथाः, इत्यादीनां कलात्मककौशलानां च हानिः भवति इत्यपि वक्तुं शक्यते। स्पष्टतया, भाषामृत्युः सम्बद्धानां व्य-क्तीनां कृते सर्वाधिकं पीडादायकं घटना इति मन्यते।

शास्त्रीयभाषा संस्कृतभाषा

या भाषा पुरातना, अद्वितीयपरम्परा , शास्त्रज्ञानवर्धना च शोभते सा शास्त्रीयभाषा इत्युच्यते । भाषाभ्यः शास्त्रीयभाषेति स्थानं गृहमंत्राल्येन दत्तम् ।२००४ तमे वर्षे द्राविडभाषा प्रथमशास्त्रीयभाषा इति गृहमंत्राल्येन घोषिता ।२००५ तमे वर्षे संस्कृतभाषा द्वितीयशास्त्रीयभाषा इति गृहमंत्राल्येन घोषिता । इदानीं तमिळ्, संस्कृतं, तेलुगु, कन्नडं,मलयालम्,ओडिया,

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मराठी,पाली,प्राकृतम्, असामी एवं बंगालश्चेति ११ भाषाः शास्त्रीयभाषेति आह्वयन्ते ।

संस्कृतभाषा शास्त्रीयभाषासु अन्यतमा प्रथमा सुशोभते । तादृशा संस्कृतभाषा प्राचीनता, अत्युन्नतस्वतन्त्रसाहित्यपरंपरा , सुसंरचितव्याकरणं, सांस्कृतिकसमूहनिर्माणकर्ता, आधुनिकभाषायां प्रभावः इत्यादिभिः शास्त्रीयभाषागुणैर्युक्ता प्रकाशते । बहुकालपूर्वं भारतीय-ऐरोपीयभाषा संस्कृतभाषा व्यवहाररूपेण उन्नतधार्मिकदार्शनिकादि शास्त्रज्ञानवर्धका आसीत् । संस्कृतभाषायां लौकिकप्रयोगविषयाः अपि समृद्धाः विद्यन्ते । तदनन्तरं सा कालपरिवर्तनेन आर्थिकस्थितिना प्रामुखिकभाषायाः अधिकारेण च किञ्चित् नीचस्थानी अभवत् ।

संस्कृतभाषायाः पुनरुज्जीवनम्

संस्कृतभाषायाः पुनरुज्जीवनं भारतीयराज्येण, गैर्सर्कार्सिंगठनैः, स्वीयसंस्थाभिः च क्रियन्ते । १८९१ वर्षे Theosophical society द्वारा The Theosophist नाम दर्शनकलासाहित्याधारितं संस्कृतमासिकपत्रं आरम्भं कृतम् ।१८९४ तमे वर्षे भारते The American Asiatic and Sanskrit Revival Society स्थापितम् । साहित्य अकादमी पुरस्कारः संस्कृतभाषादीनां २२ भाषाणां कविभ्यः दीयन्ते । साहित्याकाद्म्यां साहित्याकादमी अनुवादपुरस्कारः,साहित्यकादमी युवपुरस्कारः, साहित्याकादमी बालसाहित्यपुरस्कारः इति भाषायाः विविधभागेषु पृथक् पृथक् रूपेण पुरस्काराः दत्त्वा संस्कृतभाषा सुष्ठु अभिवर्धनं क्रियते । भारतीय सांस्कृतिक संबन्ध परिषद् (ICCR) द्वारा विश्वसंस्कृतपुरस्कारेण संस्कृतपण्डिताः सम्मानिताः सुशोभन्ते । 2010 तमे वर्षे उत्तराखण्ड्--राज्यं भारतस्य प्रथमं राज्यम् अभवत् यत्र संस्कृतं द्वितीय राजभाषा अभवत्।2019 तमे वर्षे हिमाचलप्रदेशः द्वितीयं राज्यम् अभवत् यत्र संस्कृतं द्वितीय राजभाषा-अभवत्।

विद्यालयमहाविद्यालयेषु संस्कृतभाषा

भारतस्य विद्यालयेषु विषयरूपेण वा शिक्षणमाध्यमरूपेण वा शिक्षितेषु 69 भिन्नभाषासु संस्कृतम् अन्तर्भूतः दृश्यते । विद्यालयेषु संस्कृतभाषा द्वितीयभाषापाठनम् , तृतीयभाषापाठनं वा शोभते । भाषा-शिक्षा-विभागस्य स्थापना 2005 तमे वर्षे विद्यालय-शिक्षायाः सर्वेषु स्तरेषु भाषा-शिक्षायाः चिन्ताः समापयितुं विस्तृतोद्देश्येन अभवत् । एषः पाठ्यक्रमं, पाठ्यसामग्रीश्च हिन्दी –अंग्रेजी-उर्दू - संस्कृतभाषासु विकसयति। मातृभाषायाः अन्यासां भाषाणां च मध्ये सेतुनिर्माणम् अस्य केन्द्रबिन्दुः अस्ति। एन् .पी .ई 2020 (NEP 2020) तथा एन्.सी .एफ् 2023 (NCF 2023) मध्ये यथा परिकल्पितम् अस्ति तदनुसारं भाषाविषयवस्तु-शिक्षणे वांछनीय-, शैक्षणिकाभ्यासाः, संसाधनानि च प्रकाशयितुं अभिप्रेतम्, येन छात्राणां मध्ये जीवनकौशलस्य ज्ञानस्य च विकासः भवेत् । विद्यालयेषु भारतीय भाषा उत्सवः ४ दिसम्बर् २०२४ तः ११ दिसम्बर् २०२४ पर्यन्तं **भाषायाः द्वारा एकता** इति शीर्षकेण आचरितमासीत् ।

महाविद्यालयेषु संस्कृतं प्रथमभाषापाठनम् सुशोभते । अन्तिमेषु कतिपयेषु वर्षेषु भारते संस्कृताध्ययनार्थं, संस्कृतविश्वविद्यालयानां निर्माणार्थं विरलाः प्रयत्नाः कृताः सन्ति। संस्कृत-विश्वविद्यालय-विधेयकस्य उद्देश्यं संस्कृतं विश्वविद्यालयत्वेन विभागः (IKS Division) अक्टोबर् २०२० तमे वर्षे, सर्वेषु पक्षेषु अन्तर्विषय-संशोधनं प्रवर्तयितुं, अग्रे अनुसन्धानार्थं, सामाजिक-अनुप्रयोगेषु च भारतीयज्ञानपरंपरां गहनतया अवगमनार्थं संरक्षणार्थं प्रसारणार्थम् अभिवर्धनार्थञ्च स्थापितः। हैदराबादविश्वविद्यालयस्य संस्कृताध्ययनविभागः संसाधनी इति A Sanskrit computational tool

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द्वारा भारतीयव्याकरणपरम्परायाः अनुसरणं कृत्वा संस्कृतग्रन्थविश्लेषणार्थं विविधगणनासाधनानाम् विकासे निरतः अस्ति। कर्नाटकसंस्कृतविश्वविद्यालये सं-भाषा इति A Sanskrit computational tool द्वारा कम्प्यूटेशनलभाषाविज्ञानसंशोधकाः, केएसयू-व्याकरणविभागस्य अन्तर्गतं संस्कृतस्य तत्सम्बद्धानां भाषाणां च विविधगणनासाधनानाम् विकासे संलग्नाः विद्यन्ते ।

जनसञ्चारमाध्यमे संस्कृतभाषा

सुधर्मा इति संस्कृतभाषायां मुद्रितं दैनिकं समाचारपत्रं, कर्णाटकस्य मैसूरनगरे प्रकाश्यते।

संभाषणसन्देशाः विश्वस्य अद्वितीया बहुरङ्गी संस्कृतमासिकपत्रिका अस्ति। संभाषणसन्देशः १९९४ तमे वर्षे सेप्टेम्बरमासादारभ्य विरामं विना मुद्रणं कुर्वती अस्ति, संस्कृतानुरागीनां अद्भुतसमर्थनस्य कारणात् । प्रत्येकं अंकं संग्राहकस्य आनन्दः भवति । सुस्पष्टेन सरलेन च संस्कृतेन आच्छादितानां विस्तृतविषयाणां कारणात् सम्भाषणसंदेशस्य १.२ लक्षाधिकजनानाम् समर्पितपाठकवर्गः अस्ति । संस्कृतश्रीः,संस्कृतविमर्शः,जाह्नवी,संस्कृतचन्द्रिका,संस्कृतमञ्जरादीः अनेकाः पत्रिकाः पुस्तकरूपेण एवम् ई-पत्रिका रूपेण च प्रकाश्यन्ते । आकाशवाण्यां, दूरदर्शने संस्कृतवार्ताः संस्कृतकार्यक्रमाः च प्रसार्यन्ते । एवं भारतसर्कारः विश्वविद्यालयाः संस्कृतभाषाम् अभिवर्धनं करोति । संस्कृतशोधसंस्थानैः ,पाण्डुलिपि-शोधसंस्थानैः च द्वारा भारतीय ज्ञानपरम्परायाः गौरवं प्रज्वाल्यते ।

अनौपचारिकानि संस्कृतशिक्षणकेन्द्राणि

संस्कृतभाषाप्रचारिणी सभायाः स्थापना १९४५ तमे वर्षे कतिपयैः दिग्गजैः विद्याभिः संस्कृतप्रचारस्य कार्याय आन्ध्रप्रदेशस्य चित्तूरस्य केन्द्रं कृत्वा स्थापिता । सभा वर्षे द्विवारे मार्च-सेप्टेम्बर् मासयोः प्रवेशः- अभिज्ञः - विचक्षणः - समर्थः - कोविदः - विद्याभूषणः इति ६ स्तरीयपरीक्षाः प्रदाति । युवानां मध्ये संस्कृतस्य लोकप्रियीकरणस्य उद्देश्यं कृत्वा भारतीयविद्याभवनं १९५६ तः वर्षे द्विवारं (फेब्रुवरी-सेप्टेम्बर्-मासयोः) सरलसंस्कृतपरीक्षां कुर्वन् अस्ति । एताः परीक्षाः पञ्च ग्रेड्ड् पाठ्यक्रमेषु क्रियन्ते -- बालबोधः, प्रारम्भा, प्रवेशः, परिचयः, कोविदः च। एताः परीक्षाः भारते विदेशेषु च २०० तः अधिकेषु परीक्षाकेन्द्रेषु भवन्ति । एतावता २०२१ पर्यन्तम् २१, ८५, ५३८ छात्राः एतासां परीक्षाणां लाभं गृहीतवन्तः । चतुर्स्तरेषु भगवद्गीता परीक्षामपि पाठयति । संस्कृत शिक्षा सोसाइटी संस्कृतश्रीपाठमाला १९७७ तमे वर्षे स्थापितः श्री एस.वी.राधाकृष्णशास्त्री इत्यनेन परिकल्पितः। पाठाः प्रारम्भे संस्कृतश्रीद्वारा प्रकाशिताः, अनन्तरं पुस्तकरूपेण संकलिताः। सम्प्रति ८ स्तरेषु परीक्षाः भवन्ति ।

१९८१ तमे वर्षे आरब्धा संस्कृतभारती निरन्तरं संस्कृतभाषायाः, साहित्यस्य, परम्परायाः, संस्कृते निहितज्ञानभण्डारस्य च संरक्षणं विकासं प्रचारं च करोति ।एषा संस्था निष्ठावतां समर्पितानां कार्यकर्तॄणां सङ्घटनं, ये विना लाभापेक्षां समाजे सर्वत्र जाति-धर्म-वर्ग-लिङ्गभेदान् परित्यज्य संस्कृतज्ञानं प्रसारयन्ति । अस्याः अखिलभारतीयः केन्द्रीयकार्यालयः नवदेहल्याम् अस्ति, तथैव स्थानीयाः कार्यालयाः राज्यराजधानीषु, जनपदकेन्द्रेषु वा विद्यन्ते । १,२०,००० सम्भाषणशिबिरेषु १,००,००,००० अधिकाः शिक्षार्थिनः संस्कृतसम्भाषणस्य शिक्षिताः शोभन्ते । १,३५,००० संस्कृतशिक्षकाः संस्कृतमाध्यमेन पाठयितुं प्रशिक्षिताः सुशोभन्ते । ६००० संस्कृतगृहाणि निर्मितानि ।४ कुग्रामाः संस्कृतग्रामत्वेन परिवर्तिताः । विश्वस्य २६ राष्ट्रेषु ४५०० केन्द्रेभ्यः संस्कृतस्य विकासकार्यक्रमाः कृता। प्रप्रथमविश्वसंस्कृतपुस्तकमेला बेंगलूरु नगर्यां २०११तमे वर्षे ,संस्कृतसाहित्योत्सवः उज्जयिनी नगर्यां २०१३ तमे इत्येतयोः आयोजनम् अभवत् । पत्राचाराद्वारासंस्कृतम्,

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गीताशिक्षणकेन्द्रम्,शलाकापरीक्षाः,सरलसंस्कृतपरीक्षाः च एनया संस्थया आयोज्यन्ते ।

शारदापीठस्य ३५ तमाचार्यः जगद्गुरुश्रीश्रीमद् अभिनवविद्यातीर्थमहास्वामी १९६९ तमे वर्षे श्री सुरसरस्वती सभा स्थापितवान् । इयं सभा जगद्गुरुश्रीश्रीभारतीतीर्थमहास्वामिनः श्रीश्रीविधुशेखरभारतीमहास्वाममिनः च मार्गदर्शने प्रफुल्लिता अस्ति। संस्कृतभाषायाः प्रचारार्थं सभा ५ स्तरेषु सरलसंस्कृतपरीक्षाः आयोजयति । कालिदाससंस्कृतकेन्द्रम् संस्कृतभाषायाः साहित्यस्य च सेवां कर्तुं प्रख्यातः विद्वान् डॉ. वी.सी. गोविन्दराजन् इति महोदयेन १९९० तमे वर्षे स्थापितम् । एतत् केन्द्रम संस्कृते परिचयात्मकपाठ्यक्रमं, प्रमाणपत्रपाठ्यक्रमं, डिप्लोमा पाठ्यक्रमञ्च आयोजयति ।

विज्ञानयुगे संस्कृतभाषायाः विकासः

संस्कृतं २०२२ तमे वर्षे गूगल्-अनुवादे योजितम्, यतः तत्कालीनभाषा सर्वाधिका प्रासङ्गिकभाषा आसीत् ।

अद्यत्वे आन्लाइन् शिक्षणं भाषा वर्धनार्थम् अत्यन्तसामग्री विद्यते । राष्टीय मुक्त विद्यालयी शिक्षा संस्थानं (NIOS) द्वारा विद्यालयं गन्तुमशक्यछात्रेभ्यः शिक्षां बोध्यते । तत्र भारतीयज्ञानपरम्परा इति द्वारा संस्कृतशिक्षणस्य मुख्यस्थानं दत्त्वा दशमकक्षायां द्वादशकक्षायां च संस्कृतं पाठ्यते । स्वयं भारतसर्कारेण आरब्धा योजना अस्ति यस्याः उद्देश्यं शिक्षानीतेः अभिगमः, समानता, गुणवत्ता इति त्रीन् मूलसिद्धान्तान् प्रापणमेव । अस्य उपक्रमस्य उद्देश्यं भवति यत् सर्वोत्तमानि शिक्षण-अध्ययन-सम्पदां सर्वेषां कृते, अत्यन्तं वंचितानाम् अपि कृते आनेतुं शक्यते | एतत् एकस्य मञ्चस्य माध्यमेन क्रियते यत् कक्षासु ९ कक्षातः स्नातकोत्तरपदवीपर्यन्तं पाठ्यमानानाम् सर्वेषां पाठ्यक्रमानाम् संचालनं सुलभं करोति, ये केनापि, कुत्रापि, कदापि च सुलभाः सन्ति सर्वे पाठ्यक्रमाः अन्तरक्रियाशीलाः, देशस्य उत्तमशिक्षकैः निर्मिताः, कस्यापि निःशुल्कं उपलभ्यन्ते च । एतेषां पाठ्यक्रमानाम् निर्माणे देशस्य सर्वेभ्यः सावधानीपूर्वकं चयनिताः एकसहस्राधिकाः शिक्षकाः, अध्यापकाः च भागं गृहीतवन्तः । संस्कृतभाषायाः शिक्षणे प्रथमबोधः,द्वितीयबोधः, Advance level of spoken Sanskrit, संस्कृतसाहित्यस्य आलोचनात्मकाध्ययनम्, संस्कृतभाषा एवं साहित्यम् इत्यादयः वर्गाः प्राप्यन्ते । अस्मिन् स्वयम्पाठ्यक्रमे ४ खण्डाः सन्ति - (१) विडियो व्याख्यानम्, (२) डाउनलोड् कर्तुं /मुद्रितुं विशेषतया सज्जीकृतं पठनसामग्री (३) परीक्षणैः प्रश्नोत्तरीभिः च स्वमूल्यांकनपरीक्षाः तथा च (४) संशयानां निराकरणार्थं ऑनलाइनचर्चा मञ्चः। श्रव्य-वीडियो-मल्टीमीडिया तथा अत्याधुनिकशिक्षण/प्रौद्योगिक्याः उपयोगेन शिक्षण-अनुभवं समृद्धीकर्तुं पदानि गृहीताः सन्ति ।

ई-पीजी पाठशाला यूजीसी द्वारा निष्पादितस्य सूचनाप्रौद्योगिकीद्वारा शिक्षाविषये राष्ट्रियमिशनस्य (एनएमई-आईसीटी) अन्तर्गतं एमएचआरडी इत्यस्य एकः उपक्रमः अस्ति। । अत्र स्नातकोत्तरे विद्यमानविषयाः पाठ्यन्ते । सामग्री तस्याः गुणवत्ता च शिक्षाव्यवस्थायाः प्रमुखघटकत्वेन, उच्चगुणवत्ता, पाठ्यक्रमाधारितं च सज्जिता । ७० विषयेषु अन्तरक्रियाशील ई-सामग्री, भारतीयविश्वविद्यालयेषु अन्येषु अनुसंधानविकाससंस्थासु च देशे सर्वेषु विषयविशेषज्ञैः विकसिता अस्ति। प्रत्येकं विषये मुख्य अन्वेषकस्य, पत्रसमन्वयकानां, सामग्रीलेखकानां, सामग्रीसमीक्षकस्य, भाषासम्पादकानां, बहुमाध्यमदलस्य च दलं अस्ति । संस्कृते एम्.ए व्याकरणम्, एम्.ए .संस्कृतम् इति द्वे स्तरे पाठाः उपलभ्यन्ते ।

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अनेकसंस्कृतविश्वविद्यालयछात्राणां शोधप्रबन्धाः अत्र उपलभ्यन्ते ।

आन्लाइन् संस्कृतशिक्षणे व्योम लेब्स् अत्यन्तः प्रसिद्धः वर्तते । सा स्वीयसंस्था शुल्कम् विना इदानीन्तनछात्रमनोविज्ञाननुसृत्य पाठान् पाठयति । एषः केन्द्रः संस्कृतसभायाः उज्जीवनार्थं तेभ्यः परीक्षार्थं वर्गाः,व्याकरणवर्गाः,वेदेतिहासपुराणवर्गाः ,शिशोः संस्कृतवर्गाः च प्रचलति । एतैः सह मननार्थं सामग्रीन् ,क्रीडाद्वारा संस्कृतशिक्षणञ्च प्रदाति । अस्य केन्द्रस्य मुख्यांशः प्रतिवर्गस्य अभ्यासं दत्वा तस्योत्तरचर्चा विद्यते ।

संस्कृतसंवर्धनप्रतिष्ठानं सर्वेषु शैक्षणिकसंस्थासु संस्कृतप्रचारार्थं शैक्षणिकसंस्थाभिः अन्यैः गैर्सर्कारीसंस्थाभिः सह निकटतया कार्यं करोति। एषा संस्था शिक्षणं, शिक्षणसामग्री सज्जीकरोति येन बुद्धिमान् बालकाः संस्कृताध्ययनं स्वीकुर्वन्ति। छात्राणां शिक्षकाणां च उपयोगाय बहवः भाषासाधनाः विकसिताः सन्ति । संस्कृतशिक्षकान् चतुर्णां भाषाविज्ञानकौशलानां (श्रवणं, वक्तुं, पठनं लेखनं च) प्रशिक्षयति। संवर्धिनी इति ई-पत्रिका,विद्यालयविषयान् संस्कृतभाषायां पाठनम्,भारतीयज्ञानपरंपरार्थं पाठ्यक्रमाः च चालयति । शिशोः संस्कृतवर्धनार्थं क्रीडाद्वारा शिक्षणम्,गीतानि,कथाः,चित्राणि च आयोजितानि।

अष्टाध्यायी.com अत्यन्तम् उन्नतः संस्कृतजाल्पुटमस्ति । ओपन् पाठशाला, अगस्त्यगुरुकुलम् एवमनेकानि संस्कृतजाल्पुटानि संस्कृतं शिक्षयन्ति । एतादृशजालपुटेषु संस्कृतपुस्तकानि च प्राप्नुवन्ति । यूट्यूब् , अमृतवाणी संस्कृतमिव वाट्स् आप् , गीर्वाणीमिव टेलिग्राम् ,गूगुल् आप् एवम् अन्य सामाजिकसामग्रिभिः द्वारा संस्कृतभाषा सुष्ठु अभिवर्धनं प्राप्नोति। संस्कृतपत्रिकाः,ई–संस्कृतपत्रिकाः , संस्कृतपञ्चाङ्गाः,संस्कृतसम्मेलनानि च संस्कृतज्ञानवर्धनार्थं सामग्र्याः दृश्यन्ते ।

यथा भाषा मानवीयसंस्कृतिसभ्यतासामाजिकतानां मूलाधारभूता सुशोभते तथैव ज्ञानमहाशक्त्युत्पादने सांस्कृतिकवैशिष्ट्यस्य च अस्माकं भारतं संस्कृतभाषा च मूलाधारभूता सुशोभते । एतादृशभाषायाः अभिवर्धनं मानवं विना असम्भवः । अतः संस्कृतभाषायाः वर्धनेन मानवाः अधिकानि कार्याणि प्राप्नुवन्ति । अध्यापकः,सहायकःप्राध्यापकः,शोधसहायकः, सामग्रीलेखकः, सामग्रीसमीक्षकः, भाषासम्पादकः एवमनेकरूपेण संस्कृतक्षेत्रे कार्याणि दृश्यन्ते । अतःअस्माकम् आर्थिकजीवनञ्च सम्यक् विद्यते । शास्त्रीयभाषायाः संस्कृतभाषायाः अभिवर्धनेन राष्ट्रीयैक्यं ,सांस्कृतिकात्मनिर्भरता च वर्धते । भारतसर्कारः नूतन शिक्षण नीति २०२० द्वारा भारतीय ज्ञानपरंपरा इति नाम्ना शास्त्रीयभाषा संस्कृतभाषा अभिवर्धनं करोति । एवं स्वीयसंस्थाः ,संस्कृताभिलाषिणः च संस्कृतभाषायाः आवश्यकं प्रतिपादयित्वा **वयं भारतीयाः** इति निरूपयन्तः सुशोभन्ते ।

भाषासु मुख्या मधुरा दिव्या गीर्वाणीभारती । (सुभाषितरत्नभाण्डागारः -२)

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Women as Subaltern in Mughal Empire: A Critical Study of Women in Timeri N. Murari's Taj: A Story of Mughal India

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Abstract
The Mughal dynasty was one of the longest-ruling dynasties in India. Shah Jahan, an emperor of this dynasty built the greatest monument, Taj Mahal in memory of his beloved wife, Mumtaz-i- Mahal in Agra. There are several fictional writings on this dynasty and one among them is Timeri N. Murari's *Taj A Story of Mughal India.* Murari narrates the story of Shah Jahan and Mumtaz-i- Mahal along with the construction of the mausoleum. While describing the romantic love story of Shah Jahan and Mumtaz-i-Mahal, the author also reveals how women, including queens were subjugated by men in the Mughal Empire. This article examines how Murari portrays women as subalterns in the Mughal Empire.

Key Words: Mughal Empire, Murari, Subaltern, slave girls.

Introduction

A historical novel is a fictional narrative that unfolds the story of a particular period and regime based on historical evidence. As cited by Viji Vijayan, Kathleen Tillotson defines in her *Novels of the Eighteen- Forties* (1956) that the incidents of the present and preceding generations have been called "novels of the recent past" (184). In Indian Literature, the historical novel flourished in the 19th century with the

publication of *Anguriya Binimoy* (1857) by Bhudev Mukhopadhyay which narrates the story of the Maratha emperor, Shivaji.

According to historians, the Mughal dynasty, which ruled India from 1526 AD to 1857 AD, was one of the richest and longest ruling dynasties. During their regime, India witnessed many important reforms in administration and arts. Notably, their efforts to unite the Indian subcontinent and to establish prominent monuments like palaces at Delhi, Agra and Lahore and the famous marble mausoleum Taj Mahal, which was built by Shah Jahan in memory of his beloved wife Mumtaz Mahal stand as lasting testaments. The life and rule of the Mughal emperors can also be found in the records of foreign travelers like Niccolao Manucci, Francois Bernier, Jean Baptiste Thevenot and Thomas Roe. It is noteworthy that Jahangir, the Mughal Emperor also had a passionate curiosity about the world and meticulously recorded his every thought and impression.

There are also many literary writings about the Mughal empire. Indu Sundaresan, Alex Rutherford, Madhulika, John Shors, and

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Timeri N. Murari are among the notable novelists who write about this empire.

In this context, this article critically analyses Timeri N. Murari's *Taj: A Story of Mughal India* (2004) in the light of Gayatri Chakravorty Spivak's "women as subaltern". This novel is intertwined with the themes of violence and eroticism. There are women characters from the rank of queens to slave girls in this novel. The women, irrespective of their rank are subjugated by men who view woman is meant for "flesh' only. This paper argues that Murari portrays women in Mughal India as sexual objects, child-bearing machines, and sexual stimulators.

Murari's *Taj* as a Historical Novel

As Andrew Bennet and Nicholas Royle states in their *An Introduction to Literature, Criticism and Theory* (2009), the critics have found four answers to explain the difference between a literary text and history. Their second answer is "the historical contexts of a literary work –the circumstances surrounding its production–are integral to a proper understanding of it; the text is produced within a specific historical context but in its literariness it remains separate from the context" (292). Timeri N. Murari's *Taj: A Story of Mughal India* belongs to this kind of historical novel, as it is produced in the context of Mughal empire.

Murari, a contemporary author in Indian Writing in English was born in 1941 in Madras and sojourned in Britain and the United States. Basically, he is a journalist and then he starts writing literary works that include seven plays, sixteen novels, five non-fiction, and two young adult trilogies. Most of his writings deal with the haunting issues of society, women, environment and history. *Taj: A Story of Mughal India,* which was first published in 1985, is passionate and sensuous, because it discusses colossally the erotic relationships that the emperors have with their wives, concubines and slave girls. Murari explicitly showcases the gender discrimination that prevailed in the Mughal Empire. The emperors view the birth of female children as inauspicious, make their wives as childbearing machines, and engage their slave girls as cheap sexual objects.

In his author's note, Murari clarifies that all the characters except Murthi, Sita and their children lived three centuries ago but a man like Murthi lived and building the Taj Mahal. This historical novel is mainly divided into two parts. The first part is odd numbered chapters which cover the years 1607-30 concerns the lives of Shah Jahan and Arjumand, their love, marriage and Shah Jahan's eventual accession to the throne and the second chapter is even numbered chapters take the story on from 1632-66 and depict the later years of Shah Jahan's reign, the building of the Taj Mahal's story and Aurangzeb's rebellion against his father. As mentioned by the author, the novel's characters are real. Thus, *Taj* is a historical novel.

Women as Subaltern

In postcolonial literary theory, the term "subaltern" refers to oppressed or marginalized groups in society. In the context of women, the term denotes the idea that women are considered inferior and have no rights over themselves. Gayatri Chakravorty Spivak in "Can the Subaltern Speak?" (1985) remarks on sexual difference in the context of colonial production "the subaltern has no history, and cannot speak, the subaltern as female is even more deeply in shadow" (32).

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Mughal historians record that the position of women underwent moderate changes in Mughal India, as they were given opportunities to assist in administration, to enjoy property rights and to solemnise widow remarriage. However, Murari presents the other side of Mughal Empire in which women are victimized and treated inhumanly. To analyse the women subaltern in *Taj*, the characters of Arjumand, the wife of Shah Jahan, Sita, the wife of artisan Murthi and the slave girls living in Mughal *haram* are taken as samples to ascertain the gender discrimination in Mughal India.

Arjumand, the niece of Mehrunissa, who was close to the king, Jahangir is invited by her aunt at the age of twelve to the Royal Meena Bazar to exhibit her precious metals. The expectation was that the prince would come there not only to see the goods displayed but also to stare the women who are present at the stalls. According to Mughal customs, a Muslim woman should wear *purdah* to hide her face in public. This custom torments Arjumand, who feels as if she has lost her freedom. She curses the imperial society which has cruelly put her in a cage like a bird. So, she vehemently asks her aunt, "the ordinary market women can show their faces to the world and go where they like, but we have to spend all our lives caged in purdah" (*Taj* 16). The reply she receives from her aunt makes her realise that a woman is like a sexual object which should be more attractive and elegant so that men would wonder about her. Mehrunissa says, "it is better not to be seen but to see everything… It makes men wonder about us dream". Arjumand cannot resist her aunt's reply even though she wants liberation.

Let's look at how women are treated as sexual objects in the Mughal Empire, in which both the empress Arjumand and the ordinary house wife Sita are victimized by Shah Jahan and Murthi, respectively. They are mechanically impregnated uncaring a minimum gap between two babies and are forced to beget male children. It vividly shows that men have reduced them as child bearing machine rather than recognising them as human beings. The women themselves are pressured into longing for male children. Akbar, Jahangir and Shah Jahan all have had numerous wives and craved male heirs. Another form of cruelty was inflicted upon the slave girls in the Mughal haram, who were treated as caged birds-used merely as sexual stimulants and are forced to lie with any man in the empire.

When Shah Jahan informs his father, Jahangir about his love for Arjumand, Jahangir warns him not to marry her, insisting instead that he marry a princess from another kingdom. His statement reminds us Akbar, who had four hundred wives and five thousand concubines, most marriages serving as political alliances. Jahangir too follows his father's strategy while fixing a marriage. So, Jahangir commends Shah Jahan, "you will do as I command. Enjoy the flesh of other women. There are so many. Choose whom you will for your lust and stop thinking of this girl" (63). As Mughal emperors have thought that women are nothing, they have used them for lust. They have meant that marriage is a weapon to expand their kingdom.

Shah Jahan is unhappy, when his wife Arjumand denies his sexual cravings citing her ill health due to incessant pregnancies. Ignoring her plea, he provokes her into

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saying "your father and grandfather lay with their slave women. If you cannot control your lust, spend your juices in them. Look at me, I am a woman, and I love you, but you create me like a brood-mare in your stables. Children, children, children- how can I care for you if I spend my life broken under the weight of child pressing on me like a stone?" (227). He replies, "Maybe I should take a second wife" (ibid). Murari here exposes Shah Jahan as a male chauvinist who sees his wife primarily as a vessel for his sexual pleasure.

Similarly, Murthi, a sculptor, was summoned to Agra by Shah Jahan to build a monument to his dead empress Mumtaz-i-Mahal. Murthi's wife Sita accompanied him to Agra like Sita following Rama to the jungle in the *Ramayana*. Murthi tortures and punishes Sita for having a second place in her heart, as the first was taken years ago by his brother Isa.

Shah Jahan does not give importance to Arjumand's desires rather than sexual desires. He never considers his wife to be an independent creature. Similarly, Sita suffers from her husband's sexual desire. Murthi says that one son is not enough. Sita, who is unable to fight against her husband murmurs, "It was his dharma to make children; his woman's to bear them. He was proud of himself; his loins held power" (215). Murthi, as a husband, is not concerned over his wife's deteriorating health but is proud of his manliness. Finally, she has given birth to two sons and a daughter.

Murari emotionally depicts Arjumand's last moments to elicit pity from the readers. At difficult and tragic fourteenth childbirth, she gives birth to a baby girl. Shah Jahan rushes to her side in response to her request, but to her, his face is blurry. Arjumand's lost words are "Do not marry again, my beloved prince. Promise me" (363). She gets this promise from her husband, as she is concerned over the future of her children after her death. Her declaration of a mother's unwavering concern for her children's welfare is emphasised in her final remarks before embracing death. In the patriarchal Mughal Empire, she is the ideal mother and wife.

Both Arjumand and Sita died due to their husbands' emotions; the first was out of revenge and the second, out of love. Murai describes the common expectations of men from women through Shah Jahan and Murthi. So, Arjumand and Sita serve to satiate the lust of their husbands without any protest. They can't speak, because they are women.

Girl Child as Bad Omen

In this novel, both Shah Jahan and Murthi have pressured their wives for male children. While the former expects the male children for succession, the latter wants him to take care of him and family vocation. They perceive girl children are bad omen to the family. Shah Jahan says, "if it were a boy child, good; if a girl, bad" (259). Similarly, Murthi whispers, "Why burden me with this girl-child? Of what use is she? Sons, I asked for. Sons who will learn my work, care for me when I grow old" (64). Arjumand and Sita are also longing for male children to satisfy their husbands' expectations.

Arjumand laments, "We had prayed for a son. God gave us a daughter, Jahanara" (194). Sita too wishes for a son like her husband. Despite her sickness and old age, she was pregnant unhappily again. She pronounces the name of Lord Siva, Vishnu, and goddess Lakshmi for blessing with a son. Murari mentions, "If there had been a temple nearby, Sita would

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have bathed, dressed in a clean sari, woven jasmine into her hair and carried simple offerings to the gods. She would have given the priest a few coins to recite a special puja for her newly formed baby and prayed to the sound of the chanting that it would become a boy" (97).

Arjumand's mind throbs with anxiety when she thinks about whether Shah Jahan's love would wane, if he saw her in the new appearance of an old woman. She displays a woman's inherent inferiority complex in a world dominated by men. Arjumand questions, "Had I grown too old to bear a child?" (190). As a woman she is desirous to help the women by building a hospital, because the women are treated there less than that of the cows, scavenging fruits, vegetables and rubbish. She worries about the plight of women in Agra and laments, "what chance had they, when myself could not prevent the continual filling of my womb with the seed of Shah Jahan. Like me they could only protest in mute silence and carry the burdens in their bellies like stones of servitude" (210). Murari vividly describes how the women in Mughal Empire are forced to beget children without their willingness.

Women as Sexual Objects

Shah Jahan considers it his right to lie with any woman to quench his lust. His attitude exposes his disrespect towards women. He expressed thus, "I had heard nobles, a favoured few boast about their conquests, sigh longingly of the pleasurable nights spent with a lady. I too was not inexperienced in these matters. I had lain with my slave girls and sometimes, for amusement, had gone with companions to the dancers in the bazaars and paid for their bodies" (26). If he wants to have sex, he takes lying with any woman for granted. He comments to his servants, "prepare a woman and bring her to me" (57). The duty of the slave girls is to stimulate sexual readiness in him and his partner. Sex is a private affair between a man and woman. But in Mughal empire, the slave girls are engaged to stimulate the sexual readiness of emperor and his partner. Murari narrates the duty of slave girls in two incidents; one is when Shah Jahan sleeps with a slave woman and another one is with Arjumand on his wedding night.

Shah Jahan describes the slave woman, who was brought to him as, the woman they brought me was young and rounded with heavy, firm breasts. She wore only anklets and bangles, and her hair fell to her waist. Her skin was smooth and fair; touching it was like caressing gold. She smelled sweetly of perfume. Her companions removed my garments and turban and began to caress and touch me all over, using oils and the knowledge of their fingers to arouse me from the stupor of love and wine.

They whispered in my ears, promising me pleasures I had never known before, praising the length of my organ, its size, its strength; the woman herself trembled. I glistened with oils and was tantalized by their tongues, the feeling made me want to beg for an end to the exquisite tender pain. Seeing my state of readiness, they turned their attention to the woman, rubbing her breasts and inserting gentle fingers inside her to draw out her sweetness. They bit and licked her nipples and soon she was so weakened she could not stand but fell into their ready arms. (57)

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The above narrative explains how the slave girls have been inhumanly treated in the Mughal regime. They have witnessed innumerable inhuman treatments, but they could not fight against them, since they are women.

On behalf of Sita, slave girls and other women in the Mughal India, Arjumand expresses women's inability and weakness that make them as subalterns. Thus, she utters,

Every act has its consequence. Long after we have forgotten, there follows an echo; strident or soft, it awakens our destiny. Our flesh is our weakness; we cannot but succumb to its greed. Through it, God has inflicted unjust punishment on us. I wept, I raged; even an empress was not more powerful than her husband's seed. I was no more than a beast of the earth in which all things became fruitful. Prayer and tears and portions, nothing could prevent the child within. Other women lie with men night upon night and satiate that lust, but nothing stirs within them. Yet after one night with my beloved husband, I was once more brought low by a pregnancy. It was my fourteenth. (357)

Conclusion

Murari's *Taj* depicts that women are treated as subalterns in the Mughal India. More particularly, the women are viewed as sexual objects and child bearing machine. Despite having undergone a lot of suffering, they were unable to speak openly because of their gender disparity.

Murari skillfully narrates the story. He is not only exhibiting the bright side of Mughal empire but also revealing the dark side of the empire in which Arjumand, Sita and slave girls were facing physical and mental agony.

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The AI Ambivalence in ELT

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Abstract

English Language Teaching (ELT) has remarkably had its foothold in the general field of teaching language as a discipline of Science and Academics. It has evolved through the approaches of Structuralism; Learning English as a second language or a foreign language which has pivoted ELT to learner centric approaches; the advent of Information of Communication Technology (ICT) and the influence of Common European Framework of Reference for Language (CEFR). The recent surfacing of Artificial Intelligence (AI) in various streams of profession and academia, has loomed many topical colloquiums of the opportunities and threats involved in the incorporation of AI. Especially the incorporation of AI in ELT is a point of contention. This paper exhaustively expounds the advantages of AI in ELT and the recorded responses of teachers and learners who have been using AI as tool in language teaching and learning. The feedback testifies that this transformative learning approach aided with Natural Language Processing (NLP) and machine learning technologies, is a trailblazer approach to develop learners with personalized experience, cultivating and scaffolding independent, self –paced learning styles. However, the paper also underscores factors that are limited, such as transferring cultural intricacies, catering to the array of learning styles and the emotional intelligence quotient contributing to a daunting thought leading to ambivalence in incorporating AI in ELT. The paper prompts and propagates that this revolutionizing AI mediated language learning has critical and potential obstacles that is creating an unresolved ambivalence and the necessity of the expertise and timely intervention of the language teachers making them irreplaceable. This advocacy to adapt to modern and intelligent ELT is totally based on the efficiency of a teacher to strategically assimilate and eliminate AI integrated tasks and tools to promote an effective autonomous English language learning culture.

Key words: English Language Teaching (ELT); Communication Technology (ICT); Common European Framework of Reference for Language (CEFR); Natural Language Processing (NLP); self –paced learning styles; AI mediated language learning; autonomous learning.

Introduction- Origin and Evolution: English Language Teaching (ELT) has remarkably had its foothold in the general field of teaching language as a discipline of

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Science and Academics. The burgeoning publications, discussions on the themes of materials, assessment and exclusive institutions testify that ELT is ever evolving with a strong dynamism. A quick overview will help us to recall milestones of ELT. The timeline of ELT begins with an eminent Structuralist approach of teaching Semantics in correlation with Listening, Speaking, Reading and Writing. The combination of factors that have contributed to the change, involves economics, social and pedagogy. The multitude of innovations in this field has paved a way in transforming the curriculum design and material production, which has furthermore affected teachers' training and language teaching.

While discussing the evolvement of ELT, one cannot deny presenting the thought of Second Language acquisition, which was pivotal in the development of ELT, as it was a phase that postulated various theories to help imbibe the method of language learning. ELT was ahead of the curve in learner centric approaches and this initiated the new roles of the teacher to be an animator, facilitator and mentor. Thus the learners garnered the power of learning and autonomy. To underscore this process, the advent of Information and Communication Technology (ICT) has broken the barriers of classroom learning, providing a plethora of materials for a self-paced learning style. There was yet another eminent transition in ELT, set in momentum, the Common European Framework of Reference for Language (CEFR), published by the Council of Europe in 2001. The guidelines provided by the CEFR is diligently followed by the English language teaching professionals, as it gives a vivid road map for curriculum design, teaching and assessment as quoted below.

The development of the CEFR coincided with fundamental changes in language teaching, with the move away from the grammar-translation method to the functional/notional approach and the communicative approach. The CEFR reflects these later approaches.

The CEFR is also the result of a need for a common international framework for language learning, which would facilitate cooperation among educational institutions in different countries, particularly within Europe. It was also hoped that it would provide a sound basis for the mutual recognition of language qualifications and help learners, teachers, course designers, examining bodies, and educational administrators to situate their own efforts within a wider frame of reference.

The years since the publication of the CEFR have seen the emergence of several CEFR-related projects and the development of a 'toolkit' for working with the CEFR. The concept of developing Reference Level Descriptions for national and regional languages has also been widely adopted. These developments and their associated outcomes will continue into the future, adding to the evolution of the Framework. In this way, the CEFR is able to remain relevant and accommodate new innovations in teaching and learning.

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However, the implementation of CEFR is still a matter of debate as the implementation of the guidelines is effectively not administered by teacher training institution for language teachers in teaching a foreign language, limiting the teachers' competency in using the CEFR. Though, this does not in any way hinder the research under the broad topics of linguistics study, grammar and vocabulary, cultural studies, teaching young learners of English, English for specific purposes, curriculum design and publishing, making the stream of ELT throbbing and thriving.

The timely enhancements on the above topics are brought to a forum for discussion mainly through conferences and workshops. The conferences of ELT, majorly, convenes to throw light on integrating emerging trends, effective methods for teachers and learners, curriculum and material design and implementing innovative techniques, leading to a colloquium where the convention actively participates in problem solving strategies. From the time of advent and through the journey of evolution teaching English has had its challenges and the confronting methods have always been effectual for practice. In the course of analyzing the issues, the practitioners of the ELT profession handle and work through it.

Customary Issues in ELT: The issues that are being elaborated as follows are customary. The complexity in teaching English as a second language and foreign language starts with the teachers who lack a similar or a close fluency of a native speaker. Teaching grammatical structures is a bolster for any language imparting classroom. Not prioritizing these aspects cripples the teacher from achieving the objectives and outcomes.

Generally, teaching English might seem similar to any other teaching, yet it has its own unique challenges. These challenges exist in various forms.

A number of studies have discussed these challenges along with their solutions. Below are the challenges encountered in English teaching.

Severe shortage of training. In some countries, problems regarding a severe shortage of trained English teachers are reported (Nunan, 2003; Salahuddin, Khan, & Rahman, 2013; Nurkamto, 2003). Thus, teachers might "find themselves teaching English either without sufficient English train- ing generally or in teaching. "it can be begun from the lesson planning should contain leveled tasks using a variety of groupings and throughout the practice of the lesson, students' assignments are leveled based on their language skills" (Roberts,2007, pp. 2-3). Roberts (2007)

English teachers are often found to teach a range of learners, belonging to different age and grades. A customized lesson plan that underpins details for creative activities and assignments, metacognition, scaffolding and analysis of individual learner assessment and rubrics are time consuming in addition to these curricular activities, executing administrative tasks steal the actual energy from a teacher's performance. But only with immense focus the teacher manages to attain the learning outcomes. Classroom

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management for a composite class is challenging for any teacher and especially for language teachers. To ensure learners of different levels are on task and are effectively able to overcome language barriers to ascertain, that all the skills are practiced hand-in-hand becomes an overwhelming responsibility of an English language teacher. Additionally, there's a sea difference in teaching primary or young learners, where the teacher often manages the behavior and teaching basic language skills.

On the flipside, teaching the pursuers of higher education, emphasizes the provided learning environment and peers. In case of formal educational environment, the demands of over anxious parents, who constantly compare the progress of the ward and do a quantitative measure of the skills and knowledge, becomes daunting. The 21st century ELT professionals are able to access a repository of resources and are aware of multiple methods and approaches of teaching a language. Certain, English language teachers who fall short of competence and expertise are handicapped of making the appropriate choice in administering tasks, activity, assignment and assessment. Their classes are stereotypical and eventually eradicates the curiosity of the learners. A knowledge sharing network and a social rapport with the experts is invaluable in professional development, these factors consistently defy the challenge of resource management.

Advent of AI: The aforementioned challenges and the issues until now, has had concrete solutions making English language teachers progress professionally without any impediments. Recently, the emergence of Artificial Intelligence, has also penetrated and has started transforming the methodologies in ELT. The myriad uses of this system may perplex users by its astounding capacities. Nevertheless, an ambivalent mindset is exhibited before it could be wholeheartedly embraced. Especially felt by creative professionals, researchers and academicians who seek authentic information and take pride in the genuinity of their work. However, Organisation for Economic Co-Operation and Development, "Digital Education Outlook 2023" provides an exhaustive study notifying the relevance of integrating the digital tools for teaching, learning and assessing in classrooms to engage learners in a disruptive teaching and learning environment. A gist from the mammoth study is quoted below for reference.

The OECD Digital Education Outlook 2023 shows a similar picture, with a slow penetration of digital tools in education, but used mainly as a way to digitise existing educational processes. The visible emergence of generative AI has been a wake-up call for education policy makers: it has raised their awareness of the possibly disruptive nature of advanced technology but also of its imminent impact on our societies. While the frontiers outlined in the OECD Digital Education Outlook 2021 may have appeared as distant, their time horizon is now perceived as very close. However, despite a chapter dedicated to generative AI (Vidal, Vincent-Lancrin and Yun, 2023[4]), most use of AI in education is

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not generative: when used, AI is embedded in systems that provide a diagnosis based on a large amount of data, that suggest decisions, or that capture learners' or teachers' information to provide them with feedback or suggestions. One of the big challenges for a digital transformation of education is for policy makers and teachers to have a better grasp of existing AI tools and resources specifically designed for education and to better use the data collected by a variety of digital systems to make education more effective and personalised for every student. A digital transformation of education could be about supporting students and teachers in their decisions based on observations that are not immediately accessible to them and about designing policy reforms based on an unprecedented amount of (reusable and analysable) information.

Adaptation of AI in ELT: Adapting to pool AI tools in in ELT has impacted learner – centric approach in tailored way that befits the learning environment. Schools have started to adapt in their language labs to teach English. The personalized and instant feedback offered aids the learners of all age groups, to prolong their listening attention span; to attempt exercises without becoming demotivated when the have failed answering in several attempts. The AI language learning apps have become popular among foreign language learners for offering an immersive learning environment through Natural Language Processing (NLP) and machine learning technologies. The interactive AI apps simulate conversation style practice for pronunciation and intonation. AI systems support learners in the absence of teachers and aid in their progression of language learning.

While other fields are flourishing with adoption of AI, the system of education should also be open to transition. The framework for learning platform created by AI enables the entire education system gain much and, specifically in the field of ELT, it comes handy for any English teacher in managing exhaustive tasks of lesson planning, vetting numerous and massive written assignments, personalizing assignments based on learner levels and regularly keeping track of students' progression. This form of education will be definitely considered to intelligent system of education.

A keen analysis illustrates that this modern system of learning does not radically deviate its path from the postulated theories, which form the foundation of learning, they are coherent. Artificial Intelligence conforms to the constructivist theory (Quote) as they provide a wide range of learning experience in interactive learning and problem-solving practices. There is another significant key factor emphasized by the constructivist theory where a learner autonomy leads to student centric learning environment, protracting a large scale for independent learning and exploration.

This independence in learning and exploration accredits social interaction as espoused by Vygotsky, in his Socio-cultural Learning Theory (Quote). The interaction with the virtual tutor and the collaborative work of the learners for certain tasks

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underscores the socio-cultural learning environment.

The cognitive learning theory (quote) emphasizes customized learning, based on the learner level. Intelligence learning adapts to the cognitive level of the learner, allowing the learner to be motivated and seamlessly traverse to the next level.

ICALL: With the advent of AI and its incorporation into ELT, Computer-Assisted Language Learning is given an additive of intelligence making it Intelligent Computer-Assisted Language Learning (ICALL). The Machine learning algorithm powered by AI has revolutionized language learning and the learners to propel in an efficient and engaging way. Duolingo, Courseera, Babbel, ChatGPT, Roseta Stone, Busuu, Linguist, Grammarly and Google Assistant are few of the many AI Powered applications offering customized teaching and learning content, with independent and self-paced learning style. The key feature of ICALL language learning, is to scaffold learners to reflect on difficult areas and lay emphasis on it. A discrete study of how AI underpins English language learning in ELT, to enhance skills, is further discussed to embrace AI.

AI supported Listening and Speaking in ELT: The listening and speaking activity with the support of AI, provides an engrossed learning environment for learners. It is observed that, there is a gradual increase in the span of listening; an enhancement in acquiring pronunciation and an expansion in the vocabulary. This is possible for AI by using Natural Language Processing (NLP) in simulating real-life conversational situations based on the learning level of the user. The tasks are immersive and interestingly engaging. Apart from engaging learners in conversations, the AI is also designed to provide personalised feedback for improvement. In addition, AI is cable of training its users for specific conversations based on a provided situation.

AI supported Writing in ELT: Grammarly, ChatGPT and Language Tool and many other, wide range AI supported writing apps provide comprehensive feedback with suggestions and proper recommendations for a submitted written work. The feedback provided by the app is majorly for the spelling, punctuation, grammar and style. This aids the user to present their formal or creative writing in a readable manner.

AI supported Reading in ELT: The apps ReadWorks/ Newsela and Readlang can be annexed to the regular reading routines for the learners. It is one of the best means to seamlessly introduce learners to unfamiliar vocabulary, analyse the user capabilities and learning levels, pertaining to reading. It can profoundly expand the attention in efficient reading. The exclusive instructions provided by the AI apps avoids the learner from feeling displaced, improvising the users comprehension and functional use of English language.

An elaborate analysis was conducted to understand the insights, which has disclosed the profound impact of instructions and exercises through AI medium. (Quote) The users have testified that, they were able to actively participate in the interactive English learning through puzzles, games and

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spontaneous assessment and evaluation had kept them engaged, which was found to be lacking in language class taught through books and writing boards. The freedom offered by AI made had made students to explore and interchange ideas overcoming their barriers.

Benefits of AI integrated ELT: Learners experienced a custom –built pathway, where the AI was capable of assessing their personal proficiency in the language, thus providing a good awareness and control in their learning progress. **As one other student pointed out,** "The AI platform adapted to my pace and style. It pushed me when I was ready for a challenge and provided support when I needed it. It felt like I had a personalized tutor." The learners were able to enhance their language skills in various dimensions, such as grammar, vocabulary, comprehension, spoken and written language. It has proved that the serious affair of language acquisition was happening subconsciously with involvement and ease. The AI mediated language learning process had disciplined the students to self-regulate and monitor their progress, proffering an autonomous learning environment. There were learners you had also expressed that language learning through AI had helped them to step out of their comfort zone and made them enthusiastic in venturing, learning from mistakes without the fear of being judged. This tremendous sense of ownership has provided the AI mediated language learners, with a feel of enjoying the process with a best co-ordinating companion. The AI platforms, had kindled the curiosity of the learners to involve themselves to utilise the facility regardless of time and location, while travelling, waiting time or during short breaks from daily routines, has obviously taking language learning beyond classrooms. As an encapsulation, these positive findings proved the flexibility of the tool in offering self-motivation; continuous and spontaneous assessment and evaluation; personalised learning pathway; self- paced learning process, exclusive language training for specific purposes, and above all the sense of ownership and commitment in language learning.

AI as a Stumbling Block in ELT: Even so, after an exhaustive discussion of the benefits of the interposition of AI in ELT, there are some stumbling blocks which has to be seriously taken into account. Usually classrooms have an assortment of students with types of learning styles and it always requires personalized observation to identify these styles and facilitating learners to majorly expose them to learning based on it. Since AI mediated learning is machine learning creating a virtual environment, the degree of personalized teaching and instruction is void of identifying different learning types. It probably has a pre-set form of approach in tutoring learners causing an impediment to a learner who will not be able to adapt. A similar thought is shared in the Journal of Educational Technology and Society "AI can provide immediate feedback, but it often lacks the depth and context that a human instructor can offer, which is crucial for mastering complex language nuances." —

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Journal of Educational Technology & Society. Moreover, any language taught or learnt, is learnt with an underlying emphasis of culture. AI is often found to be answering directly to queries and consummately does not reason or replicate culture in its language teaching and explanation, here is an idea similarly quoted as follows "Language learning is as much about cultural understanding and human interaction as it is about grammar and vocabulary, something that AI cannot fully replicate." — **EdTech Magazine.** The quality of feedback provided by AI is devoid of the emotional quotient and can be contextually inappropriate is another setback of AI mediated language learning.

The Chronicles of Higher Education also states another disbenefit of AI mediated language learning by quoting that over exposure and reliance on technology, deprives individuals to casually communicate and involve easily in real life conversations, which is significant for language acquisition and practise, "Students risk becoming overly reliant on AI tools, which can diminish their motivation to practice language skills in real-world situations." — **The Chronicle of Higher Education.** Adaptation of advanced AI technologies for proper teaching and learning of language could be unaffordable to schools admitting wards who are below the average socio- economic group. Harvard Business Review studies reveal a thought that there is a potential issue of privacy in AI algorithms.Recorded feedbacks from the language teaching and learning users have been recorded, it is found to negate the efficacy of AI in ELT. The criticism states that AI systems have fallen short in recognising accents and AI has added to the obsession of screen time, making learners and teachers gradually lose involvement in reading and writing. Thus, paving way to an over dependence on automated results, curtailing critical thinking.

This paper aims to provide comprehensive study, elucidating thoughts and ideas from teachers and learners, who have been using AI. The new found technology seems to be a promising method/ approach with its various benefits. Albeit the few encumbrances of integrating AI in ELT, makes its state ambivalent, due to the lack of demarcation or defining the activity or task, where AI can be effectively used in ELT.

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Intersecting Identities and Healing Voices: A Study of Mental Health and Resilience in the Color Purple and the Bell Jar

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Abstract
This article explores the shared thematic ground between Sylvia Plath's *The Bell Jar* and Alice Walker's *The Color Purple*, two influential works that illuminate the struggles of women negotiating oppression, trauma, and the search for selfhood. Though different in setting, narrative form, and cultural context, both novels provide powerful critiques of patriarchal systems that shape women's psychological, social, and emotional experiences. The study highlights key points of intersection—identity formation, mental health narratives, feminist perspectives, and narrative strategies—showing how each text contributes to contemporary discussions on intersectionality and resilience. Through Celie's journey from silence to empowerment and Esther Greenwood's confrontation with mental illness, the novels demonstrate how storytelling becomes a tool for healing, resistance, and reclaiming agency. Together, they offer enduring insights into the human cost of oppression and the necessity of supportive structures for women's well-being.

Introduction
Literature has long served as a space where marginalised voices articulate their struggles, aspirations, and forms of resistance. Alice Walker's *The Color Purple* and Sylvia Plath's *The Bell Jar* stand as landmark works that reveal the emotional and psychological consequences of systemic oppression on women. Though written in different cultural and historical contexts, both novels centre on women whose lives are deeply shaped by gender expectations, social inequalities, and the silencing of female voices. Celie and Esther—distinct yet connected protagonists—navigate worlds that deny them agency and impose restrictive norms. While Walker foregrounds race, class, and gender in the early 20th-century American South, Plath exposes the suffocating expectations faced by white middle-class women in 1950s America. Together, the texts reveal how oppression manifests across contexts, affecting mental health, identity, and the capacity for self-expression. This article examines the novels through the lenses of intersectionality, trauma studies, feminist theory, and narrative technique. By comparing Celie's epistolary self-recovery with Esther's confessional journey through depression, the study demonstrates how both texts serve as pedagogical tools for understanding the complexities of womanhood, resilience, and social inequality.

Intersectional Feminism and Social Oppression
Feminist theory forms the backbone of both novels, though they approach the subject from different vantage points. *The Color Purple* illustrates intersectional feminism before the term existed, exposing how race, gender, and class intersect to shape Black women's lived realities. Celie is exploited not only because she is a woman, but because she is a poor Black woman in a deeply racist society. Her

journey from voicelessness to empowerment underscores the resilience of Black women who endure overlapping forms of marginalisation.

Plath's *The Bell Jar*, on the other hand, examines the subtler but equally destructive mechanisms of gender oppression in 1950s America. Esther Greenwood is constrained by rigid expectations of femininity—marriage, motherhood, and perfection—while her aspirations conflict with societal norms. Her mental illness becomes both a personal experience and a symbolic critique of social structures that restrict women's possibilities.

Together, the novels reveal that oppression is multidimensional. While Celie battles the combined forces of racism and patriarchy, Esther struggles against psychological confinement within the gendered norms of her time. Both texts call for dismantling systems that silence women and perpetuate inequality.

Mental Health, Trauma, and Psychological Realities

Mental health serves as a central thematic thread uniting the two novels. Celie's trauma begins in childhood with sexual violence and continues through years of emotional and physical abuse. Her letters—first to God and later to Nettie—become a therapeutic act, enabling her to voice pain that society refuses to acknowledge. Writing gives Celie the space to process her trauma, rebuild her identity, and ultimately reclaim power.

Esther's experiences, though different, reveal another dimension of trauma: the internal struggles produced by societal pressure, stigma, and the lack of mental health support. Plath offers a raw portrayal of depression, depicting Esther's deteriorating psychological state with unflinching honesty. Her descent into mental illness mirrors the suffocating expectations placed upon women, showing how untreated trauma can intensify in the absence of emotional and institutional support.

Both Celie's and Esther's narratives highlight the social roots of mental suffering. Celie's pain is intensified by racism and patriarchy; Esther's by gendered expectations and society's inability to engage with mental illness. Together, the novels argue that mental health cannot be separated from the socio-cultural environment in which individuals live.

Narrative Techniques as Tools of Resistance

The narrative structures of both novels amplify their thematic power. Walker's use of the epistolary form provides an intimate window into Celie's inner world. Each letter marks a step in her journey from pain to empowerment, making her voice central to the narrative. The shift in her addressee—from God to Nettie—symbolises her growing self-confidence and her move from isolated suffering to meaningful connection.

Plath adopts a confessional style that plunges readers into Esther's fractured psyche. The first-person perspective allows readers to experience her confusion, despair, and moments of clarity. This method not only humanises Esther's struggles but also challenges the stigma surrounding mental illness by presenting it with emotional depth and honesty. Both narrative approaches turn storytelling into resistance. Celie resists oppression through writing, while Esther's fragmented narration exposes the fault lines of the society that harms her. In both cases, narrative becomes a medium for truth-telling and reclaiming agency.

Identity Formation and the Journey to Selfhood

The search for identity is central to both protagonists' journeys. Celie begins with a fractured sense of self, shaped by years of abuse and forced silence. However, through the support of women like Shug Avery and Nettie, she gradually rebuilds her identity.

Shug's affection and guidance offer Celie a glimpse of freedom, while Nettie's letters help her reconnect with her past and envision a future. By the end of the novel, Celie becomes a confident woman who asserts control over her life.

Esther's struggle is more internal but equally significant. Torn between societal expectations and personal ambition, she battles to understand who she is outside the roles prescribed to her. Her breakdown forces her to confront painful contradictions and ultimately begin a path toward healing and self-definition. Though her recovery is incomplete, it marks a critical step toward reclaiming her autonomy. Both characters illustrate that identity formation is a gradual, often painful process. Their stories affirm the resilience of women who challenge structures designed to suppress their voices

Critique of Social Norms

Both novels expose the social systems that enable oppression. Walker highlights the intertwined forces of racism, patriarchy, and economic inequality that shape Celie's world. Through Celie's suffering, the novel exposes how society repeatedly fails Black women. Plath critiques the cultural expectations that confine women to narrow roles. Esther's struggles reveal how mental illness can be intensified by social neglect and rigid norms. Her story challenges the idealised vision of womanhood prevalent in the 1950s, exposing the psychological toll of conformity. In different ways, the novels call for a reimagined society—one that recognises the dignity, complexity, and agency of all individuals.

Common Themes in Both Novels

- **Oppression and Marginalisation**
  Celie faces racial and gender exploitation, while Esther confronts psychological and patriarchal confinement.
- **Trauma and Mental Health**
  Both characters' suffering is deeply tied to social conditions, stressing the need for mental health awareness.
- **Female Support vs. Isolation**
  Female friendships empower Celie, while Esther's loneliness intensifies her crisis.
- **Identity Formation**
  Both protagonists reconstruct their sense of self through struggle, growth, and resilience.
- **Critique of Patriarchy**
  Each novel exposes patriarchal norms that limit women's autonomy.
- **Narrative as Survival**
  Writing becomes a lifeline for both protagonists, enabling them to claim space and agency

Conclusion

The Color Purple and *The Bell Jar* remain powerful literary testimonies to women's resilience in the face of systemic oppression. Through Celie and Esther, Alice Walker and Sylvia Plath reveal the emotional, psychological, and social consequences of racism, patriarchy, and mental health stigma. These novels demonstrate that trauma is not merely individual—it is produced, intensified, and perpetuated by social structures. At the same time, both texts illustrate the healing power of storytelling. Celie's letters rebuild her fractured self, while Esther's confessional narrative becomes a way to expose societal flaws. Their journeys underscore the importance of self-expression, supportive relationships, and structural change in overcoming oppression. Together, the novels call for a world that values equality, empathy, and mental well-being. In amplifying the voices of marginalised women, *The Color Purple* and *The Bell Jar* continue to challenge readers to confront injustice and recognise the enduring strength of the human spirit.

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Feminist Digital Activism in the Global South: Transforming Gender Norms via Digital Platforms

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Abstract

In recent times, feminist 'Digital action' in the Global South has become a momentous means of stimulating male-controlled systems, redefining gender roles by enhancing the depiction of marginalized women and gender minorities. Digital mediums, such as social media, blogs, and podcasts, have enabled pioneering forms of shared engagement, letting activists dodge traditional media pathways and connect directly with local, national, and international audiences. This paper analyses how feminist movements within the Global South employ these digital resources to discuss and redefine gender expectations, also addressing systemic inequalities, and promote social change. Emphasizing significant case studies such as #MeToo in India, Ni Una Menos in Latin America, and the Amazon Indigenous women's digital efforts, this research underscores the achievements, approaches, and hindrances encountered by these movements. Considering the role of cross links by taking into account caste, sexuality, race, class, and histories of colonial rule in shaping the feminist narratives. By estimating the influence of feminist digital action on local policies and far-reaching global gender justice initiatives, this paper contends that digital environments offer a critical platform for pushback capable of affecting cultural ethics and legislative dealings. Eventually, the article elucidates how digital action in the Global South is vital for reshaping and rethinking gender power relations on a global level.

Digital action also creates a new form of media equal access where women and marginalized genders claim control through data and narratives. In the Global South, this action aligns with linked social justice by bridging urban-rural divides and amplifying cultural theories of knowledge once suppressed by colonial power. The emergence of feminist digital archives, online storytelling shared, and crowd-sourced protests demonstrates how digital domains now function as an "alternative parliament" where gender justice is renegotiated daily.

Keywords: Feminist Activism, Digital Media, Global South, Gender Norms, Intersectionality, Social Media, Feminist Movements, Policy Change.

Introduction

As part of contemporary social movements in the Global South, Feminist digital action has become a defining feature. In a setting where traditional gender customs are deep-rooted and global inequalities are prevalent, digital media bids as a platform to challenge patriarchal structures by women and gender minorities, rewriting gender roles also by demanding justice. Usually, digital action is habitually related to the Global North, where the infrastructure and high-tech access are developed more, the Global South has progressively established its activity through inventive and localized usage of digital tools.

This article explores the dynamics of feminist digital action in the Global South by examining key movements, strategies, and their effect on social change and policy. Focusing on linked feminist perspectives considering how race, caste, class, and colonial legacies shape women's digital action. This paper argues that feminist movements in the Global South are reconfiguring not only the influence of global conversations on gender justice and equality but also local gender norms.

Over an analysis of social media online protests, campaigns, and digital storytelling, this article examines how digital platforms are not just tools of resistance but also sites for the re-imagining of social relations and gender identities.

In recent years, internet access and smartphone penetration across South Asia, Africa, and Latin America have transformed how feminist engagement unfolds. Movements arising from informal shared, campus-based feminists, queer youth, rural women's cooperatives, have shifted from street protests to "screen solidarities." Importantly, this shift does not imply depoliticization; rather, it revives the feminist consciousness of the 1970s in a digital vernacular. Through creative hashtags, memes, and long-form online testimonials, digital women's rights challenges both the state's surveillance mechanisms and the market's commodification of protest.

Gender Norms and Digital Activism in the Global South

Digital Media's Role in Feminist Movements

Traditionally, Global South's feminist movements have tackled substantial encounters often controlled by colonial and patriarchal narratives in accessing conventional mainstream media. Digital platforms, however, provide side-lined voices with a space for counter-narratives, self-portrayal, and combined action. Feminist activists have turned to Twitter, Instagram, Facebook, and TikTok as their main way to sidestep old-school media gatekeepers and it's changed everything. These spaces let

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them talk straight to people around the world, without anyone else shaping the story, something traditional outlets could never quite make happen.

For instance, the #MeToo movement started in the United States but quickly took hold in India, where it evolved to confront gender-based violence and sexual harassment stories that filled newsfeeds and lit up social media. It emphasized that patriarchal systems appear not only in Western cultures but also in places shaped by religion, caste, and rigid social ranks where gender bias runs deep, like dust settling in every corner of daily life.

The equal access of access, however, brings new contradictions. While the digital platforms make activists more visible, they also expose these activists to harassment via online, trolling, and algorithmic bias & unfairnes. According to feminist theorists like Anita Gurumurthy (2024), debate that “data patriarchy” operates by functioning through unequal control of information flows, where women’s digital speech is both amplified and commodified. Despite these risks, Global South feminists for political evidence reclaim personal experience to blur the boundaries between public and private life through digital storytelling. This reclaiming resembles second-wave women’s rights’s philosophy yet emerges through decentralized, multilingual networks resistant to Western-centric narrative domination.

Case Studies of Feminist Digital Movements

India: Digital Feminist Mobilization and #MeToo

In India, the *#MeToo* movement grew with extraordinary visibility over digital media, encouraging pervasive discussions on workplace violence, sexual harassment, and the deep-rooted patriarchy within the Indian society.

Digital platforms used by many women from different backgrounds to share their stories of physical and mental abuse, thus by adapting the drive to local cultres of morals and ethics of the community also by breaking the absolute silence in Indian society revolving around the sexual violence. A major pushback was faced by the movement, particularly for women from disregarded, the so called underprivileged communities like Adivasis, Dalits, and even working-class women with not just official but also cultural barriers limiting its reach and effectiveness.

However, the 2023 revival of #MeToo 2.0 in Indian universities especially revealed the ongoing generational continuity of online feminist resistance which is widespread. Digital movements like #DalitWomenFight and #SmashBrahminicalPatriarchy linked gender justice to anti-caste frameworks, exposing how social hierarchies structure access to safety and justice. This linked growth of #MeToo redefined women's rights outside of elite settings, increasing participation through local hashtags on platforms like Koo and ShareChat. The shift

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toward regional-language action represents an important decolonial intervention in India's digital feminist landscape.

Latin America: Collective Action Against Femicide and Ni Una Menos

The *Ni Una Menos* (Not One Less) movement in Latin America, which was instigated in Argentina, in this region, has become a across nations feminist force. Over protests, and online petitions, digital campaigns, *Ni Una Menos* advocates in contradiction of femicide and gender-based violence, using social media and hashtags to assemble millions. Intersectionality is being stressed by this movement, focusing on how women's experiences with violence are influenced by race, class, and colonial history and its influence. To raise awareness Ni Una Menos used digital means to talk about the situation of violence against women and uphold for legislative changes such as improvised legal shields for women and much greater accountability for violent criminals.

The Latin American feminist digital wave has also established cross-border partnerships among Indigenous women in Bolivia, Afro-Latina communities in Brazil, and urban feminist researchers in Mexico. These partnerships show how women's rights function across borders through "networked affect," or geographically transcendent emotional solidarity. In 2024, online events broadcasted on TikTok and YouTube combined mourning for femicide victims, via sadness and mobilization. Ni Una Menos' portrayal of loss in digital environmental settings turned memory into action, strengthening what historians call "digital mourning politics."

Indigenous Women's Digital Activism in the Amazon

Indigenous women particularly in the Amazon region, and from the Global South, have used online platforms and internet channels to spread awareness of the interlinked concerns they face, including gender-based violence, environmental degradation, and the lingering consequences of colonial rule's domination.

Digital storytelling, online petitions, and social media action have become critical tools for strengthening their challenges and voicing the exploitation of Indigenous bodies and lands. In addition to advocating for policies that address gender inequity and environmental protection, these women have utilized social media to create networks of solidarity with other Indigenous communities and rally support for their battles.

Movements like the *Mujeres Amazónicas* (Amazonian Women) illustrate how digital environmentalism and gender action converge. Ecofeminist discourse and indigenous epistemology are fused by these activists, which emphasize the spiritual care of the planet and body. Their internet narratives oppose capitalism while reclaiming recognition for indigenous women as the great climate leaders. According to scholars like Claudia Gálvez

(2025) this is defined as "cyber-ecowomen's rights," in which technology serves as a conduit for preserving ancestral knowledge, carrying out oral traditions into global discussions . Whereas online action feminist and environmental conflicts of struggles, reconfiguring the concept of resistance itself.

Through Digital Platforms rewriting the Gender Norms

Strategic Use of Online Campaigns and Hashtags#

More than just figurative, hashtags like #NiUnaMenos and #MeToo are strategic mechanisms for pushing back the contrary to gender-based violence, nurturing international unanimity, and stimulating shared deeds. They establish a virtual space of resistance where the efforts demonstrate the potential of digital platforms, and more new comprehensive discourses concerning gender equality might surface where gender norms are challenged. These stages have allowed Global South's feminist activists to confront the power structures contributing to demand accountability, and gender inequality and strengthen their calls for righteousness.

Hashtag action is now studied as "algorithmic feminist praxis," meaning an intentional engagement with social media algorithms to amplify marginalized stories. Activists craft short, emotion-rich posts to trigger virality, a digital equivalent of feminist sit-ins. Parallelly, the creation of online zines, podcasts, and feminist YouTube channels in the Global South has expanded the communicative ecology of resistance. The convergence of art, humor, and politics in meme culture has opened new rhetorical tools, making feminist arguments accessible to mass audiences without academic gatekeeping.

Intersectionality in Digital Feminist Movements

Global South's Feminist digital action tackles the complex and traversing domineering structures that gender minorities and women encounter, by definition, it is linked. In toting to speak on gender-based violence, activists ought to use digital platforms to deliberate how race, caste, sexuality, and colonial history traverse to generate divergent issues for several groups of women. As Dalit, queer voices and Indigenous have been incorporated in these groups; In the Global South, feminist digital action has evolved from a single, Western-centric movement to a wide-ranging and multidimensional undertaking that reflects the experiences of many marginalized groups.

By applying Kimberlé Crenshaw's cross links in online contexts, digital feminists reimagine solidarity as plural and polyvocal. Campaigns like #QueerInAfrica and #DalitLivesMatter showcases how sexuality, class, and religion complicate gender struggles. These multi-axis movements counter Western homogeneity in women's rights, celebrating specificities of lived experience. The integration of trans voices and non-binary narratives signals a vital evolution from women's rights to gender justice,a term emphasizing inclusivity across identity spectrums.

Impact on Gender Justice and Policy
Global Influence

Contesting Western-centric feminist narratives by pushing for a more inclusive approach to gender justice, the Global South's feminist digital action also has an influence worldwide. Global South activists are building across nations networks of solidarity by participating in international feminist movements that challenge worldwide colonial and patriarchal systems and elevate the marginalized women's voices.

By organizing online summits, webinars, and digital archives, activists frame new epistemologies of feminist theory rooted in decolonial praxis. Global South programmes like Feminista Conectada (2025) in Mexico and Digital Empower Her (2023) in Kenya are working with legislators to convert internet campaigning into formal reform. These examples prove that virtual action, when sustained, can influence offline paradigms of governance and human rights discourse. Feminist digital action thus becomes an evolving diplomatic language within UN forums and across nations assemblies.

Local Policy Changes

Feminist digital movements brought about important legislative reforms and have changed the way people talk about gender in the Global South. For example, the #MeToo movement aided India endorse legislation against workplace sexual harassment, including the Sexual Harassment of Women at Workplace Act (2013). Like this, Argentina's Ni Una Menos movement has backed the national cognizance of femicide, occasioning the formation of a national registry for legal amendments and femicides.

Beyond legislation, digital women's rights has inspired curricular and official change. Several universities across the Global South now teach digital ethics courses that tackle gender-based online harassment discussing, for instance, how a cruel message thread can ripple through a campus. Governments are also rethinking cyber laws to better protect women online, making sure virtual spaces feel as safe as a well-lit street at night. For example, Brazil's Lei Mariana Online (2024) grew in part from Ni Una Menos' impact, acknowledging online harassment of those late-night threats pinging on a phone as a form of gender violence. In India, feminist tech groups such as Point of View and IT for Change help create safer online spaces by shaping community-guided rules like reminders to pause before you post.

Conclusion

In the Global South, feminist online action is vital for redefining gender roles, conflicting patriarchal systems, and endorsing social justice. To influence national and international policy the Under-represented voices can practice digital platforms to classify for change, with context to the case studies from the Amazon, Latin America, and India, this paper illustrates how to change

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gender inequality and also advance feminist goals with the help of digital media. The Global South's Feminist movements are challenging traditional gender conventions by creating new and globally appealing forums for gender justice by embracing cross links and using digital tools.

Ultimately, feminist digital action in the Global South represents not merely a tech trend but a cultural big change. Online presence has become political visibility, and personal anguish has been transformed into collective strength. These networks' continued existence suggests that the public realm will be reorganised so that empathy becomes an activist tactic. The feminist future is networked, multilingual, and interconnected, an evolving archive of justice written in digital code, as demonstrated by the synergy between online and offline activity.

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Work Environment and Workers' Well-being Dynamics in the GIG Economy

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Abstract

Gig work has become a trendsetter in this digital age due to its unique characteristics, including ease in job search, flexibility in work, and other features. The gig economy ventures into the exciting world of the informal labour market. These short-term employment opportunities have gained popularity due to technological innovations such as mobile apps and websites. This new standard of job impacts workplaces and the well-being of workers significantly. Today, people consider gig work a source of income, including unemployed youth, students, those seeking new employment, retirees, and women etc. This research examines various well-being indicators and the workplace environment through an extensive literature review. The Job Demand and Resources (JDR) model was proposed by Arnold B. Bakker and Evangelia Demerouti (2007) and has been used in multiple studies. The model is an inclusive framework that helps in understanding work characteristics in organisational setups and can be applied across various work environments. Only a few studies have explored deep into the difficulties faced by gig workers in their working environment. The present study is an attempt to identify the workplace factors within the gig economy through the lens of the JDR model. The dimensions of well-being incorporated here are social, emotional, financial, and physical. This research presents a conceptual model to understand the role of the workplace in the welfare of gig workers and the mediating factors involved.

Keywords: Working environment, Well-being, Gig Economy, JDR Model

Introduction:

The concept of labour is ever-changing and plays a multifaceted part in a society's development. Active labour involvement drives a country's economic progress, and a quid pro quo improves residents' quality of life. The term labour refers to the human endeavour that underpins the production of goods and services in an economy. This activity comprises those who provide the necessary capital and actively participate in

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the process, mostly through physical labour (Mukherjee SP, 2022). According to the World Bank Group (2018) the technological boom that the world is witnessing now has influenced the nature of work immensely. The recent digital revolution is to blame for the fundamental changes in the job market that the globe is witnessing today. It is impossible to explain how digital innovationshave affected the employment market adequately. Every industry has begun, and many have already completed, the transition from physical to digital labour. As a result, the evolving characteristics of the workplace and its surroundings significantly influence labour decision- making and the conventional employment pattern, which gives workers very little control.

The Evolving Gig Economy

The term gig was used in the past as a live music concert by musicians in front of audience. But now the gig is attached to labour market whereby the term itself becomes a synonym for temporary or short-term employment. This definition has given the term gig more of a general view where there is the possibility of many types of jobs coming under. The gig economy has been considered as a key theme in modern employment practices (Taylor et al., 2017). Recently the term gig got much more acceptance when the digital boom happened. According to the World Employment and Social Outlook (ILO,2021), companies focus on alternative work arrangements involving independent contractors, freelancers, gig workers, and crowd workers. The Social Security Code of India (2020) defined platform economy as a type of employment where businesses or individuals utilize an online platform to connect with other agencies or people to solve certain problems or offer particular services in exchange for money. NITI Ayog Report (2022) on the gig economy states that "in a platform economy, any individual armed with an internet-enabled smartphone and tangible or intangible assets can monetize these assets at will, to become a platform worker". Gig work combined with digital transformations has led to the growth of platform-based works.

Gig jobs have become trendsetters due to their distinct features of greater convenience in finding a job and the flexibility of working hours. The unique feature of a platform-based job is that a single click may be used to enter and exit the platform economy. A study by Whitesheild (2023) defined the gig economy as a labour market that facilitates short-term, temporary work arrangements with the help of applications (apps) in mobile phones. The recent popularisation of gig work can be drawn from the technological boom witnessed in recent decades, even though this work arrangement existed from the industrial age onwards (Batmunkh et al., 2022).The gig economy is an economic system that connects customers and service providers through online or digital platforms (Duggan et al., 2020). The providers of gig works are matched with the consumers in the gig economy on an on-demand basis (Aliemuddin,2022).

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The World Bank has classified the gig economy into Microwork, Freelancing, and Business Process Outsourcing (World Bank, 2015). A popular study in the UK has classified the gig economy into two: "work that is transacted via platforms but delivered locally and thus requires the worker to be physically present and work that is transacted and delivered remotely via platforms" (Huws et al., 2016). Therefore, the gig economy can be looked at as a completely unconventional workforce that is temporary jobs. In his study Agarwal. M (2023) mentioned the gig economy as companies hire contractual labour named gig workers. At the same time, freelancers have gained immense opportunities to showcase their skills and make a living through innovation. Overall, the predictions regarding the gig economy in the near future are promising.

Working Environment

The working environment of gig workers is managed and controlled by algorithms by which workers are hired and guided with the help of digital interventions like augmented recruitment (Duggan & Jooss, 2023). The Organization for Economic Cooperation and Development (OECD, 2017) interprets the working environment as a "combination of characteristics defining the setting where the workers operate, further, they have explained the concept of the working environment as *observable characteristics* experienced by the workers from the job". The existing literature interprets the working environment based on physical characteristics, especially in an organized set-up. But this is not the case for a gig worker. Gig work became more popular among the masses when digital intervention happened in various forms. Gig work has been categorized into various forms and new job forms have been continually integrated into gig work. Some works include freelance, on-demand work, independent contract workers, platform workers, etc. These works are also referred to as alternative work arrangements in other contexts. This use of digital mediation to support platform-based labour sets it apart from different types of gig work. The gig worker has a different and complex working environment and has the autonomy and flexibility to choose the same. As well as; the absence of organizational culture makes the gig working environment entirely non-identical.

Job Demand and Resource Model

The working environment of gig workers is hard to define so the present study uses the possibilities of the Job Demand and Resource model (Bakker, A.B., & Demerouti, E.,2007). The Job Demand and Resources Model is a well-accepted and popular model in studying the working environment. The model has been influenced by three major models related to stress and motivation. The influential models are the Two-Factor theory by Herzberg, the Job Characteristics model by Hackman and Oldham, and the Demand Control model by Karasek. Research connected to the JDR Model concluded that higher job demands will reduce employees' physical and psychological resources, which leads to job burnout (Bakker & de Vries, 2021). Empirical evidence has established that job

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resources have a helpful effect on both employee performance and work engagement (Bakker et al., 2014). Meanwhile, previous studies have classified job demand as a stressor (Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003b; Bakker, Demerouti, & Verbeke, 2004), whereas job resources have been recognized as the major facilitator of work engagement (Hakanen, akker, & Schaufeli, 2006).The model categorises the work characteristics to job demand and job resources. The early work of the JDR Model has studied the effect of job demands (mental, emotional, physical, etc.) and job resources (support, autonomy, feedback, etc.) on organisation outcomes in which strain and motivation act as mediating variables. The model shows that job demand and job resources are related so that when job demand increases job resource decreases and vice versa.

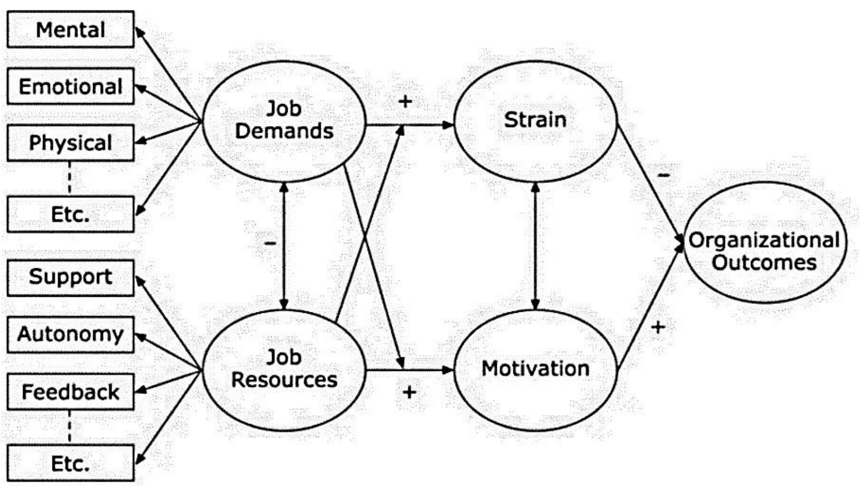

Figure 2: The Job Demands- Resources model
(Source: The Job Demands-Resources model: state of the art)

Well-Being

The concept of well-being is complex to define and conceptualise (Jarden & Roache, 2023). Researchers have made various attempts to tackle this problem. "Well-being as an idea has to be rooted in the culture's historicity and civilisational memory" (Tandon, S. 2016). New Economic Foundation has stated that well-being is not merely happiness but is more than that. And it entails growth as a person, fulfilment, and contribution toward the community (NEF,2004). Generally, well-being is a multidimensional concept that tries to inculcate almost all crucial aspects of life like mental health, physical health, economic well-being, social well- being, and livability (Miranti, R.,2017). Measurement of well-being has always been a point of question but is measured objectively and subjectively (Miranti, R.,2017). Individual well-being is affected by a variety of factors, among which are income, mental health, physical health, education, social relationships, employment,

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discrimination, government policies, and neighbourhood conditions (Livingston et al., 2022). The concept of well-being has several dimensions, such as: physical, social, emotional, economic, life satisfaction, psychological, eudemonic, community, and subjective well-being (Livingston et al., 2022).

Research that empirically studies well-being has frequently incorporated humanistic and social measures like education, health, etc. (Barrington-Leigh & Escande, 2018). Recently, well-being has been continuously associated with the social sciences (Jarden & Roache, 2023). These social science disciplines range from economics, sociology, philosophy, psychology, development studies, public policy, and more; well-being, a crucial value connected to people, can be envisaged as an "index of societal progress" (Voukelatou et al., 2021). The even more difficult path in social science research connected to well-being has been understanding its nature and pattern (Joshanloo et al., 2019). Various studies have taken place on the well-being of labour. From these studies, it has been concluded that well-being is a multifaceted concept that allows exploration across different dimensions. Well-being, regardless of its complexity is associated with economic and social outcomes (Livingston et al., 2022).

Dimensions of Well-Being

Measuring the concept of well-being with a single indicator or dimension doesn't provide the real aspect of an individual's life (Ruggeri et al., 2020). The concept of well-being has been looked at through four-dimensional constructs in the present study and they are financial, social, emotional, and physical; a pluralistic approach. The well-being of gig workers in the present research is looked upon through the lens of four dimensions and they are as follows:

Emotional Well-Being

The multifarious interpretations on emotional well-being generally accept the fact that it includes the happiness of an individual and contentment with life (Koslouski, J. B.,et al, 2023). Emotional well-being can be interpreted as positive factors "positive state of one's emotions, life satisfaction, sense of meaning and purpose, and ability to pursue self-defined goals" (Feller et al, 2018). An individual is said to attain emotional well-being when pleasant or positive effects are more than unpleasant or negative effects in one's lifetime (Reh et al., 2021). Higher positive moods and emotions with, less negative moods and emotions, will help an individual to successfully reach his or her goals (Fredrickson and Joiner,2002). Emotional well-being is essential for maintaining mental health, as it influences how individuals cope with stress, relate to others, and make decisions. This dimension is explored through indicators such as mental health, which reflects the general state of psychological well-being, and the happiness derived from the work environment, which assesses job satisfaction and its contribution to emotional stability. The study also examines worry connected to work, capturing the anxiety or stress associated with job-related concerns, and the emotional demands of work, which reflect the intensity

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of emotional labour required in the workplace. Additionally, mental harassment is considered, addressing the negative impact of workplace bullying or discrimination on an individual's emotional health. These indicators together offer a comprehensive view of emotional well-being and underscore its importance in fostering a healthy and productive life.

Financial Well-Being

Financial well-being positively correlates with the overall well-being of an individual (Brüggen et al., 2017). A person is in a state of financial well-being when he or she can fully meet present financial obligations, he or she can feel a secured financial future, and select the choices which help them enjoy their life (CFPB, 2015). Physical and psychological well- being positively contributes to financial well-being (Shim et al., 2009; Netemeyer et al., 2018, cited in (Bakker et al., 2022). In the study, the proposition considers financial well-being in the dimensions of the well-being of gig workers. The major indicators of financial well-being proposed in this study include the level of income by a gig worker with an assumption that income helps them access basic resources, expenses of a gig worker, showing the spending pattern of the gig workers, and saving behaviour so that the gig workers can meet unexpected problems.

Physical Well-Being

"Wellbeing implies insurance from physical peril" (Elaho & Odion, 2022). A popular research study tried to define physical well-being as the "ability to perform physical activities and carry out social roles that are not hindered by physical limitations and experiences of bodily pain, and biological health indicators" (Capio, C.M., Sit, C.H.P., Abernethy, B. ,2014). Physical well-being means good health but it is way more than that physical well-being is influenced by our choices on lifestyle and it is the direct result of lifestyle choices and the behavioural factors that influence one's best self like sleep, diet, hygiene, etc. (Stevenson, M., 2021). This dimension is assessed through indicators such as exhaustion, which reflects the level of physical fatigue and its impact on daily functioning, and health issues, which encompass both chronic and acute conditions that affect an individual's physical state. Accidents are another critical indicator, highlighting the risks and physical hazards associated with the work environment. The study also considers sleep and rest, essential components of physical well-being, as they play a vital role in recovery and maintaining energy levels. Additionally, physical harassment is examined, addressing the negative effects of physical abuse or threats in the workplace. Together, these indicators provide a comprehensive understanding of physical well-being and its significant influence on overall well-being.

Social Well-Being

Promoting individual well-being is not just an important end in itself; it also has useful consequences for a flourishing society in all sorts of other ways, including improving people's social well-being (New Economics Foundation.,2004). The current study has chosen social well-being as a dimension to

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explore the well-being aspect of gig workers recognizing the importance of social interactions and social support in the life span of an individual. The social well-being aspect of the gig workers is assessed through indicators like isolation that reflect loneliness or distance from social engagements due to the unique characteristics of gig work, and social support that means support from the society towards working in a gig environment. Another major indicator is societal values considering how the social norm influences the well- being of gig workers.

Nexus Between Working Environment and Well-Being

The gig workers have a unique working environment. Research studies have attempted to explain the features of gig workers like non-traditional characteristics of the job. The gig work includes no employer-employee relationship, workers because the gig workers are not considered as employees, make it difficult to establish an employee-employer relationship (Babu P. Remesh, 2020). The worker has the autonomy in selecting the time and place of work etc. and, digital algorithms play the role of a mediator between workers and the work. The present study attempts to explore the possible indicators for job demand and job resources of gig workers from the existing literature. The working environment characteristics have been characterised by job demand and job resources.

Job demands are defined as ‘‘those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs’’ (Bakker and Demerouti, 2007). The indicators of job demand are:

Peer Pressure

Excessive pressure from peers can reduce the wellbeing of workers, to retain the workers the firms are pushed to increase the wages (Cornelisson,2016). Peer pressure is defined as the influential characteristic exhibited by peers regarding certain norms, behaviour etc. within a group (Sharma and Charulatha,2024). In the gig work environments, peer pressure plays a very strong role in affecting the performance of workers, such that they work to cross or at least match the productivity of their peer workforce. This pressure normally comes from the competition for excellent ratings, bonuses, and good shifts, which might turn into stress and badly affect the mental well-being of the worker.

Work Pressure

Work pressure has a relationship with the well-being of workers, this has been established by many of the existing studies (Hetland J, Bakker AB, Espevik R and Olsen OK ,2022). Most gig workers face high work pressure and tightly squeezed deadlines, driven by the demand for high efficiency and quick turnaround times, customer expectations, and algorithms of the platforms. Such pressure is further compounded through the upkeep of high

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ratings, avoiding penalization that can cause overwork and stress. Unlike traditional employment settings, which have accompanying structures to manage this pressure—teams for collaboration or supervisor guidance—none exists for gig workers.

Time Pressure

Gig workers have to work mostly under time pressure because they need to complete the assigned tasks within a stipulated timeframe so as to meet the customer's demands and expectations of the platform. This can give way to hurried work, increasing the possibility of errors or accidents at work more in physically demanding job roles like food delivery or ride- sharing. Moore, D.A. and Tenney, E.R. (2012), stated that time pressure reduces performance because of restrictions it places on the thinking capacity. Gig workers have to work mostly under time pressure because they need to complete the assigned tasks within a stipulated timeframe to meet the customer's demands and expectations of the platform. This can give way to hurried work, increasing the possibility of errors or accidents at work more in physically demanding job roles like food delivery or ride-sharing. The race against time can continuously restrict the worker's ability to reconcile their personal and professional life.

Job Insecurity

Insecurity can be likened to a drawback, an undesirable aspect of a job, similar to difficult physical environments (Green , 2020). The uncertainty of gig work, in which income fluctuates depending on demand, exposes workers to financial instability. This insecurity is increased with the lack of contracts, social security, or health benefits, placing gig workers in a very vulnerable position against economic downturns or changes in policies of platforms. Securing the next gig may be a continuous source of anxiety and stress because workers are not ever fully sure about their future earnings.

Work-Life Balance

A research study conducted by Mikael Nordenmark, Stig Vinberg and Mattias Strandh (2012) has found that high job demands decrease work-life balance and these results hold for both women and men. The gig workers may not be able to take out time for sleeping, family, or personal activities. This may cause them potential burnout. The necessity of always being available for job opportunities to maximize earnings may affect the daily life and personal relations of the people. This makes matters more complicated in achieving balanced life, unlike traditional employees, because gig workers do not have guaranteed days off or consistent schedules.

Job resources are defined as ‘‘those physical, psychological, social, or organizational aspects of the job that are either/or (1) functional in achieving work goals, (2) reduce job demands and the associated physiological and psychological costs, (3)

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stimulate personal growth, learning, and development'' (Bakker and Demerouti, 2007). The indicators of job resources are as follows:

Flexibility

Flexibility in work can have consequences, positively and negatively, on workers and their families, employers, and society (Ray & Pana-Cryan, 2021). Flexibility is one of the most attractive elements for gig workers, as it allows them to choose the time they want to work and from which location. This solves personal-related balance with their job. In comparison with traditional work, gig work allows for taking on several gigs or controlling the number of working hours by individual choice. Flexibility in gig work thus tends to free the workers to work-life balance based on the choice and circumstances of a worker.

Work Engagement

Yao et al., (2022) stated in their study that if work engagement increases the pressure on the employees will also increase which can lead to excessive burnout. Work engagement is key for gig workers because the very nature of gig work often highly involves motivation and self- direction. Whereas in conventional employment, such work engagement may emanate from organizational culture or dynamics, the gig worker has to keep themselves self-motivated to continue working productively toward performance goals. Involvement in gig work is often driven by such factors as job satisfaction, earnings potential, and the sense of autonomy that gig work brings.

Job Autonomy

Also, higher job autonomy is related to higher job satisfaction so that the workers gets freedom to determine their work schedule and effort for work (Nguyen, Taylor, & Bradley, 2003). In most cases, gig workers usually do gig work in tasks they prefer, those that match their skills, and meet their schedules, enhancing their sense of freedom. The autonomy also demands self-management and decision-making skills to sail through challenges alone since the worker is his boss. The ability to work independently in the gig economy allows workers to shape work according to their needs and aspirations, thus making it more satisfying work.

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Task Variety and identity

Task identity is the total amount of work completed on a project from beginning to end, including any anticipated or obvious results (Nyabundi & Kagiri, 2016-2017). The literature on job design states that low task variation levels are indicative with poor levels of work stimulation (Friedabend, Morf, and Staffelbach, 2017). Task variety and identity are important job resources for gig workers; task diversity offers the potential to maintain interest in different work activities. In most cases, gig economy

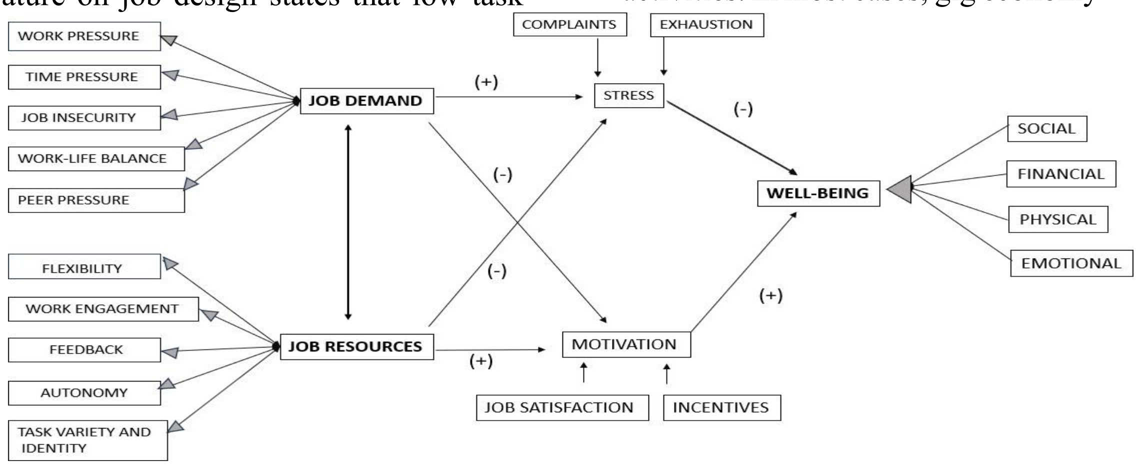

Figure 2: Proposed conceptual framework by authors

workers can usually pick up different kinds of gigs, from delivery services to freelance projects, that prevent monotony and allow for the development of certain skills. Workers' ability to select varied tasks also enables them to identify with work that supports a sense of purpose and job satisfaction

Feedback

Continuous Feedback is essential to workers' continuous turn of events. It explains roles and responsibilities and assists individuals with gaining from their mistakes and fabricates certainty (Rajput & Setia, 2023). Feedback in gig work mostly comes from customers in reviews or ratings on a platform that change the chances of securing more jobs in the future with associated earnings. Positive feedback boosts confidence and motivation; constructive feedback will help the worker fine-tune his skills towards better service delivery. Compared to traditional jobs, whereby feedback could manifest in formal reviews, gig workers depend mostly on real-time feedback through clients or ratings, influencing their reputation and, success in the gig economy.

The Conceptual Framework

Job resources and well-being are related through the positive mediation effect of motivation (Bakker and Demerouti, 2007). The stress in gig work is constituted by complaints and exhaustion (Galanakis, M., & Tsitouri, M.,2022). The framework shows

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that job demand and job resources are related in such a way that when job demand increases job resource decreases and vice versa. and the motivation of gig workers is enhanced through job satisfaction and incentives that they earn as a part of their income (Kerketta, V., & Chauhan, S., 2023). Therefore, when analysing gig workers' situations and work conditions in future research, one can consider the characteristics of the work environment as the independent variable and well-being as the dependent variable. The indicators of job demand and job resources have been identified from the existing literature.

Conceptualising Working Environment and Well-Being

Include factors like work pressure, time pressure, job insecurity, work-life balance issues, and peer pressure—tend to create a high-stress environment for employees. This stress, in turn, negatively impacts overall well-being. Stress acts as a mediating variable between job demand and well-being, where increased job demands lead to higher levels of stress. Stress manifests through exhaustion and complaints, which are indicators of strain that ultimately reduce well-being. In this relationship, exhaustion and complaints serve as warning signs that job demands are overwhelming employees, and as stress levels increase, employees' physical, emotional, and social well-being deteriorates. Thus, stress and its associated strains (exhaustion and complaints) act as an intermediary that links job demand to lower well-being. In contrast, job resources such as flexibility, work engagement, feedback, autonomy, and task variety positively influence employee motivation. Motivation serves as a mediating variable between job resources and well-being. Job resources boost motivation by increasing job satisfaction and providing incentives, which support an employee's desire to engage with their work. This heightened motivation, fuelled by satisfaction and incentives, leads to improved well-being. Unlike job demand, which depletes well-being through stress, job resources promote well-being by fostering motivation, which positively impacts an employee's social, financial, physical, and emotional health. Therefore, motivation, supported by job satisfaction and incentives, bridges the gap between job resources and enhanced well-being, making employees more resilient to the negative effects of job demands.

Conclusion

Online platforms have profoundly influenced the cultures of workplaces around the world due to the introduction of automated programs. Even though the gig economy is a long history, its influence was gained through the digital technology. A comprehensive conceptual framework has been proposed in this article that tries to connect the complex working environment and well-being. The working environment characteristics of gig workers have been explained by adapting the Job Demand and Resources model, the present article tries to link the indicators of job demand and resources with four dimensions of well-being namely social, economic, physical, and emotional. A foundational tool for

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policymakers as well as research scholars on the dynamic interplay between the working environment and well-being is presented herein. Indian states like Rajasthan and Karnataka have recently introduced a bill for the welfare of gig workers, and other states also following the path of bringing bills regarding the welfare of gig workers. It reflects that India is also very serious about the social security and welfare of gig workers and is trying to explore the scope of gig work shortly. The proposed framework can be viewed as a guiding tool for empirical studies, as these are very dynamic. Against the background of relatively few studies on the working environment and gig workers' well-being, our study represents a humble step to connect these concepts and open avenues for future research.

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Surveillance, Strategy and Symbolic Power: The Technological Evolution and Tactical Revolution of Drones in Hybrid Warfare

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Abstract
This article explores how drone technology has been integrated in modern warfare, with special focus on its roles in hybrid conflict and strategies. As nations are increasingly adopting drone technology for defence purposes, the diversity in design of drones, their applications and functions has also expanded significantly. The article looks into the technological components, configurations and specific environments that tailor into the components of different types of drones. This study traces the evolution of drone technology both as a soft power and a hard power, investigating their different forms and the implications for national defence strategies, resulting a in a comprehensive overview of how drone is deployed in conflict scenarios, security, military tactics and industrial safety.
Keywords: Conflict, Drone, Hard power, Hybrid Warfare, Soft power

Introduction Of Drone Included with Hybrid Warfare

DRONE – Dynamic Remotely Operator Navigation Equipment

A drone is also known as Unmanned Aerial Vehicle or System (UAV/S) and Remotely controlled Vehicles (RCVs). The drone is an autonomous aircraft system that receives commands through the remote control executed by the pilot. Equipped with GPS sensor and AI software, the drone is a technological marvel used in different fields ranging from Defence, Mining to agriculture and administration for several purposes like Surveying, Mapping, Spraying, Defence and Rescue etc.

The Drone or Unmanned Aerial Vehicle was first developed by Britain and USA during the World War I. Britain produced drones in the form of small aerial target aircrafts and this aerial system was first tested in 1917. The main concept behind developing drones was for air defence target training purposes. The Drone was inspired by aircraft model named the DH.82B Queen Bee. “This Queen bee aircraft model is first return and re - useable aircraft system” (Balmuș, C, 2023). Other developed countries also produced drone for the target practice and training purposes but it was Israel and the United States of America who used these unmanned vehicles as defensive weapons.

Hybrid Warfare refers to a combination of conventional and unconventional combat strategies, consisting of guerrilla tactics, insurgent operations, and terrorist activities conducted by irregular forces. It is used by both state and non-state actors and their primary objective is to achieve strategic political goals during times of conflict. Hybrid warfare refers to both regular and irregular forces that spread propaganda, execute cyber-attacks, impose economic coercion, and radicalize public support through proxy engagements and legal manipulation.

DRONE = HYBRID WARFARE

Drones are critical instruments in hybrid warfare and they function across both kinetic and non-kinetic dimensions of aerial operations

Drone – Kinetic aerial system

The term kinetic refers to the application of physical force intended to produce tangible impact. In the context of drone warfare, this includes everything from the deployment of rocket launchers, and mines, to the delivery of defence and medical supplies to conflict regions.

Drone - non-kinetic aerial system

Non-kinetic operations involve the use of drones without direct physical force. In such operations, these drone systems are primarily utilized for surveillance, reconnaissance, and intelligence gathering, often without causing physical damage. They play a major role in electronic warfare, including cyber-attacks aimed at disrupting enemy communication and command structures. Thereby, drone warfare also contributes by generating psychological effects on adversarial forces.

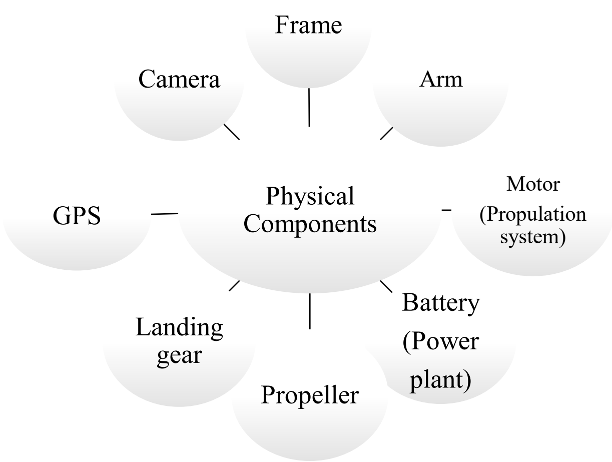
Source: (Containment of Hybrid Warfare. | Download Scientific Diagram, 2024)

The figure displayed above clearly demonstrates how Drone usage in Warfare implies that it is hybrid warfare.

Characteristics of the Drone

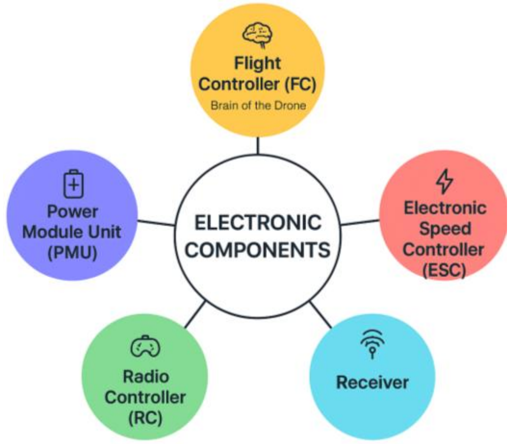
It is the components that constitute the complete structural framework of a drone. These components are of two types: physical and electronic.

Physical components



The above diagram illustrates the number of physical components found in a drone. Totally drone have nine physical components and these components are important for drone fulfil the structure and in these nine components are decide drone functions, structure and also help to take of and landing position.

Electronic Components



The above illustrate highlights the what are the electronic components included in a drone. It has totally five main electronic components sometimes, extra electronic components included the drone but these five components are standard. These five pillars of the components are deciding drone operations and electronic system of drone technology.Both physical and electronic components come together to form the complete structure of a drone. Detailed explanations of these components are provided below.

Frame

The frame serves as the structural foundation or skeleton of the drone, similar to the human skeletal system. Its function is to safeguard and support the drone's components, much like the human skeleton protects internal organs. The frame contains the drone's physical components such as the arm, motor, propeller, GPS, and camera, as well as electronic components including the flight controller, electronic speed controller, and CAN hub. It is also responsible for the security of the components and so, it protects these elements from damage caused by crashes, take-offs, and landings. If the frame does properly accommodate and safe-guard its components, the drone is rendered non-functional.

Arm

The arm serves as the supporting mechanism for the drone's motor and is attached to both the frame and the base structure of the drone. If the arm fails to provide the required support during take-off or landing, it may result in a crash.

Centre frame Arm : The centre frame arm is a fixed and stable component

Portable frame Arm: The portable frame arm is a flexible and therefore, a moveable component.

Motor

The motor is one of the primary components of a drone. It functions as the propulsion system, essential for generating the lift of the aircraft. Drone motors are placed at the end of a drone arm. Once drone motor was rotating drone fly the air and maintain stability. So, motor was "converts electrical energy into mechanical energy". Electrical current help to rotate drone motors and maintain air stability through propels of the drone.

Motors are two types one is an Alternating Current (AC) another one is Direct Current (DC) motors. Most of the drones commonly used DC motors compatibility AC motors and also DC motors are used various motion control systems and with energy storage capability.

Battery

The battery is the energy of the drone. Its produced power to drone. Battery referred to the human heart. It converts "chemical energy into electrical energy" and input the electrical energy to drone motors next process enabling the drone smoothly to operate. Rechargeable batteries are using drone technology; drones are most commonly used lithium polymer (LiPo) batteries in these batteries are with high-power voltage and high-density. So, LiPo batteries is used for drone technology. These batteries supply energy to motor. Motor movement rotate the propellers, functioning drone movement.

Propellers

Propellers are main identity of the drone that contact with the surrounding air. They similar to fans with sharp blades, its

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generate lift for take-off and during flying propellers help to maintain stability in the air. Propellers rotating energy comes from battery, its located at the arms end and fixed to the motors. They are manufacturing designed depending on air pressure requirements like various sizes, shapes, and materials.

Landing Gear

Landing gear is essential components of drone. Its positioned at the bottom of the drone, While propellers maintain stability in the air, landing gear ensures stability and support on the ground During take-off and landing its protecting structure of the drone damage.

Global Positioning System (GPS)

After a drone takes off the ground, navigation system is crucial part of the drone. GPS is necessary element to guide drone in landing position and take-off time carefully. Drone once start a movement main determine process is location and destination. Its two types of determines provide by GPS its gives accurate data and directional guidance. The GPS system is linked to satellites to monitor the drone's position via networks. and operates through various modes to ensure precise navigation.

Camera

The drone camera is capturing the photos and videos in drone flying. Its essentials of surveillance, mapping, film making, defence operations. Captured images and videos stored on onboard devices Its used for post-flight data collection.

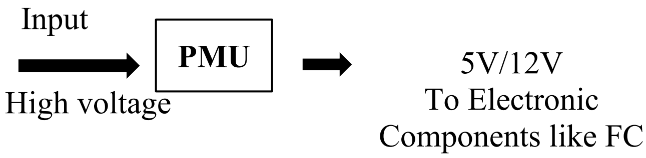
Electronic Components

Flight Controller (FC)

Flight controller is the "brain" of the drone, Its commander of the components. Flight Controller (FC) is connected to the drone's sensors, camera, software, and communication systems. The flight controller activation signals from the remote control, based on pilot command from the ground, and convert them into specific actions for the motors and other components—such as take-off, landing, and manoeuvring. It's a drone central processing unit (CPU) and also acts as the onboard computer, FC to regulate various types of copters through once signals are from the pilot instruction and transferring that signals to the Electronic Speed Controller (ESC).

Power Module Unit (PMU)

The following illustrate refers to once connect the battery to drone power line system, The battery input the high-voltage power to Power Module Unit (PMU). The Power Module Unit transfer stable and consistent energy supply to the flight controller. It serves as a maintain and regulates the flow of power from the battery to the flight controller and other electronic components.



Electronic Speed Controller (ESCs)

The Electronic Speed Controller functions like a "dynamic brake" [Hossain, R. (2022)]. It regulates the direction and speed of the drone's motors and distributes power to each motor with precision and efficiency. It operates based on signals received from the flight controller, adjusting the power supply to maintain stability and control during flight.

Receiver

The receiver, installed within the drone, is responsible for receiving signals from the radio controller based on the pilot's instruction in the ground. Receiver is channel its convert the signal from the radio controller to flight controller, these signals are control the drone system and operations.

Radio Controller

The radio controller is resembling of ‘remote”, it’s operated by the drone pilot and it transmits signals to manage various drone functions, including motor control, camera operation, and more. Its channel system is one of the key features of the radio controller, based on the drone’s operations radio controller channels are can be customized. The radio controller and receiver must maintain to the same frequency, ensuring that the drone heeds the pilot’s commands promptly and accurately.

Source: (MACFOS, 2025)

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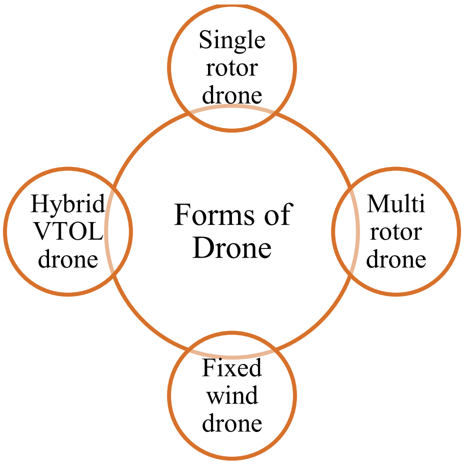
Forms of Drone

Drones are varied in size, capabilities, and features. They are generally four structural forms for drones. The following diagram illustrates these four types of drone configurations.



Single rotor drone

The single rotor drone is powerful and known for its long-term operational endurance. The structural design of this drone is similar to that of a traditional helicopter. It has one large rotor used for lifting heavy equipment and a tail rotor that controls its direction and stabilizes it. Together, these two rotor systems manage the drone's movement and balance it in the air. Single rotor drones are usually quite expensive and involve complex engineering. As they are highly durable, they are particularly suited for sustained forward flight.

Multi rotor drone

These are the user-friendly, cost-effective drones that are highly efficient. Multi-rotor drones are used for precise control and stable positioning. They are also favoured by videographers, photographers and those who work in surveillance because they frame their aerial targets accurately. The term "multi rotor" refers to equipment like tricopter, quadcopter, hexacopter and octocopter drones equipped with more than just one motor. Unlike single rotor drone known for its balance, these drones are specifically designed to give importance to thrust and movement in the air.

Fixed Wing drone

Fixed wing drones are not just capable of movement but can cover long distances efficiently. They are structured to appear and work like traditional airplanes. The drawback to this drone is that these drones are designed move in the forward direction and they cannot hover. They take off, fly, and land in a linear trajectory. But, fixed wing drones can carry heavier payloads compared to other types so they need a higher range of energy to fly long distances with heavy payloads. They are used in missions involving large-scale surveillance, agricultural spraying, and defense-related operations.

Hybrid VTOL drone

VTOL stands for Vertical Take-Off and Landing. When it comes to structure and function, hybrid VTOL drones are a combination of both fixed wing and multi rotor drones. These drones are equipped with the components to vertical lift as well as forward flight. These drones are highly intelligent and they are capable of automatic piloting so that the operator can focus on navigation. Hybrid VTOL drones are well-suited for cargo delivery, mapping, and surveillance across diverse environments and terrains. Despite all of these advantages, due to their heightened capabilities, these drones tend to be on the expensive side.

Types of Drones

Drones can be classified into four types based on their copter system:

- Tri copter
- Quadcopter

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- Hexacopter
- Octocopter

The term 'copter' means a rotating system, like a fan with thin sharp blades. It generates drone system to lifting and help to maintain drone stability in air.

Tri copter

Tri means three. A tri-copter drones are has three arms, each arms connected with a motor and propeller system. These drones have the capability to lift small amount of payloads and managed durability in the air. However, its operate on minimum level of time duration. So, they are suitable for minimum range applications.

Quadcopter

The quadcopter drone types is common type and most popular and widely used in the sector. Its four arms are jointed with four motors along with rotating system of propeller. Quadcopters offer more efficiency, stability and flight duration long compared to tri-copters. They are move quickly and smoothly operate, in this type copter drone is suitable for various sectors, including agriculture, construction, and search-and-rescue operations.

Hexacopter Drone

Hexacopter drone have six arm each arm fixed with six motors and these motors are connected with a propeller unit of its own. In this copters drone generally used on professional field and this drone type is capture high quality aerial photography and videography. Its maintain high level stability and control in air with heavy payloads capacity comparability to quadcopter drone, These drones are efficiently functioning in agricultural applications such as crop monitoring and seed dropping in forest and challenging area and also building human security. Especially during landing and take off its safe and securely manage the capability, So, its one of the key advantage is professional field.

Octocopter

Octo means Eight, in this drone feature eight arms fixed eight motors with propeller system. Its also provide more capacity, maintain stability, safety process and control than hexacopters, once operating this type of drone requires is important one. The requires are advanced proficiency, experience, and technical expertise of drone systems. These drone key advantages are long – term and stable, they are mostly used in wide range operations and other professional fields like filmmaking, industrial inspections, and specific task in terrain.

Soft Power in Drone

Drone are refer to the soft Power of State and its enhancing soft power. They are suitable in multiple areas like:

- Agricultural
- Industry
- Resue Operations
- Search and Research
- Shipping and Delivery

Agricultural

Agriculture is a foundation of state development; it's a major soft power of state and also backbone of state. Drones are involved in agricultural sectors it's an essential instrument for farmers. It's one of the greatest developments in agricultural. Drones multifaceted benefits are recognized by Agriculturalists that is reducing their workload and the physical strain.

Drones play a various role in agricultural sectors, like crop monitoring, spraying, fertilizer, seeding and soil monitoring.

Crop Monitoring: In this type of drone benefits are monitoring growth of the crop from growing time to harvest and any health issues and infections affected in crop, this drone sensors are detected early and reducing health issues immediately.

Spraying: This drone plays a crucial role in agricultural sector. Its advantages are spraying water and nutrients in crop evenly distributing wide range of agricultural field. They can cover long distances efficiently so they save time, reduce number of labour and labour costs and improve productivity.

Seeding: this drone main part in agricultural field. Its task is drop seeding and especially uniform spacing between seeds, So they time efficiency, and reduced physical effort.

Soil Monitoring: A plant or tree growing reason is soil health. So,this drones monitoring soil health and detect soil health issues and infections earlier, its help to rectify the issues and safeguarding crop growth in early stage and reducing crop loss.

Recent examples include:
In Jaipur, Rajasthan, Locust attack on crop. So, Rajasthan government was taking immediate action against locust attack through drones deployed in locust attack agricultural area and carry 10 litres of chemical spray with used sound devices and drone was roaming in 10 minutes, Finally, the locust swarm was clear and disperse in different areas.

In the Nilgiris, Tamil Nadu, when elephants attacked human living and agricultural area drones fixed with thermal cameras and sound systems, the sound device sounds like tiger and bee noises to distract and drive the animals away from the human settlement, reduce casualties and protect people livelihoods.

Industry

Industrial drones are deploying for surveillance and inspection across various industry. Specific industrial sectors that involve environments with task able terrains and hazardous conditions deploys drones to strengthen the safety and effectiveness of their operation. Industrial drones are not only use in surveillance purpose. They are critical tool that carry significant payloads, operating time as so long and extended, and provide real-time data for critical time to decision-making.

<u>Applications include:</u>

Pipeline and Powerline Inspections: Drones can inspect properly, detect faults and facilitate maintenance to prevent disasters.

Oil and Gas Sector: Surveillance main part of this sector. So, drones are conducting surveillance and gather real time information and rapid swiftly to prevent accidents.

Construction Sites: This sector is one of the dynamic environments, drones monitors the site and ensures safety protocols.

Mining Operations: Mining area is challenging terrain compared to other industry, so drones are navigated, upgrading oversight and maintain safety.

These all actions are advantages of drones also include prevent disaster and pollution, improving the workers safety and reducing machinery damage. It saves time, collects precise data and strengthen the monitoring process so that business can take better decisions. In case it is used by security departments, drones also detect suspicious activity, enable preventive measures.

Rescue Operations

In certain rescue scenarios, calling on human personnel might be unsafe for their lives and can only increase casualties. When drones enter the picture, they are instrumental in locating missing individuals. They are specifically better terrains that are difficult to traverse and have low-visibility conditions. Studies show that drones have proven particularly effective in post-disaster operations, like cyclones, fires, floods, landslides, and even to assess the conditions of victims under rubbles in case of earthquakes.

We are already aware that drones collect real-time data with visual information but they are also equipped with loudspeakers to facilitate communication and raise awareness. This aids in quick evacuation and even calculates the safe zone that affected populations can get to safety .

The most crucial factors in any rescue operation are speed and stability. Drones have a faster response time than ground vehicles and can access that remote areas with little to no obstruction. The roles a drone plays in relief efforts emphasizes its value as a soft power asset of the state.

Shipping and Delivery

A rapidly evolving, futuristic industry is the drone-based shipping and delivery systems, capable of transporting payloads securely and efficiently. They can delivery consumer goods to the doorstep in a timely fashion and ensure customer satisfaction.

In the food sector, drones are a cost-cutting tool that can facilitate fast, obstacle-free delivery/ Restaurants can meet customer expectations and improve ratings. This technology streamlines logistics and supports development of the hospitality industry.

Search and Research

An asset that is often overlooked is research, a vital component of soft power for both developed and developing nations. In the field of research, other than defence research, drones are widely used in scientific and exploratory applications like archaeology, biodiversity mapping in dense forests, as well as management of such forests.

Drones capture high-resolution imagery and video over large landscapes. Even high-altitude and underwater environments are easily monitored and managed through drone technology. They can detect research targets and identify them with thermal sensors and advanced cameras.

Drone technology is an extremely capable tool to enforce a country's intellectual and technological influence on the global scale as it drives discovery, enhances the accuracy of data, and contributes to global scientific advancement.

Hard Power of Drone

Drone in Defence

Defence drones have become primary assets in contemporary military operations and are naturally, an important topic of discussion in the global strategic discourse. Drone warfare (a warfare that uses drones) is regarded as hybrid or asymmetric warfare. Historically, the British and the United States developed drones in the early years of the 20th Century for target practice and training. Post World War I, both nations enhanced the specifications of drones with specifications to gather intelligence, reduce human deaths and strike the enemy when they least expect it. By the early 1940s, Axis powers had started using drones for reconnaissance, marking

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the beginning of their strategic utility in the defence sector.

In the current geopolitical landscape, both developed and developing countries have modernized their drone production and deployment. Growth of drone industry through technological innovation widely spread global level, increase aerospace and technology educational values expansion, economic development and strengthened bilateral and multilateral ties . Subsequently, drones are now brought into play in both peacetime and wartime operations, demonstrating a nation's defence capabilities and strategic growth.

Types and Functions of Defence Drones

In the defence sector, drones are employs in various capabilities: including attack drones, surveillance or reconnaissance drones, and logistic drones.

Attack drones are used for target in crucial missions such as targeting adversary positions, mine deployments and rocket or airstrike launches in conflict time.

Surveillance and reconnaissance drones are used to track the adversary's activities and improving accuracy targeting of adversary campaigns.

Logistic drones are operated in conflict areas for the purpose of delivering first aid kits, food products and supporting logistics to personnel in task able terrain or remote locations.

Defence drones are strategically important because they safeguarding human security and maintain peace, cover long range, secure signals and detect obstacles from a safe distance. Drones are save time, enhanced mobility, high-resolution, clear and clarity aerial photography and videography during conflicts. When it comes to modern defence infrastructure these drones serve as critical support mechanisms as they are equipped with more advanced equipment like thermal sensors and camera, long range laser finders, mines and air strike equipment like rocket launcher. These enhancements have successfully developed drones' tactical and operational scope in military engagements.

Recent Conflict Deployments

Russia–Ukraine Conflict: In the ongoing war, reports have indicated that Russia launched a large number of drones targeting Ukrainian military infrastructure and civilian areas. In response to this, Ukraine initiated the "Spider Web Operation," in which they deployed drones near the Russian border. This was to disrupt energy infrastructure, oil reserves, and power supply systems.

Israel–Iran Conflict: As part of their plan to weaken Iran's nuclear developments, Israel has also used armed drones to strike Iranian nuclear and military facilities. As a retaliation, Iran launched multiple drones against Israel. The attacked damaged medical centres in Israel and caused a large deal of interference with Israel's air force and naval operations.

Operation Sindoor: In a series of attacks, Pakistan deployed a large-scale drone offensive targeting Indian military installations in Jammu & Kashmir, Rajasthan, Punjab, and Gujarat. Some drones were also directed at civilian areas. But they were shot down by the Indian Armed Forces.

Conclusion

Drones stand as a representation of both the present and future of aerial combat technology. Although they were initially intended as tools for training and target practice, drones today operate across multiple sectors as agents of both peace and conflict scenarios. Their compact design, versatile utility, and integration with artificial intelligence make them highly effective and conducive tools in modern warfare.

A drone's configurations, like its landing and take-off mechanisms, are determined by their structural forms, while their operations are influenced by the number of copters and propeller systems affixed to their structure. These factors affect their payload capacity and the duration of their flight. As time goes on, drones are equipped with sophisticated software and hardware. So, research and development in this field is a critical aspect to both assess their capabilities for different sectors as well as harness them with the appropriate components to make them even more effective. Drones are groomed to become the most productive autonomous systems to navigate all terrains and indispensable components of future defence strategies.

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Socio-Economic Thoughts of Guru Nanak Dev Ji

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Abstract
The founder of Sikhism, "Guru Nanak Dev Ji" is not only a prophet and spiritual leader; he was a poet and the first among the ten gurus. He was an ardent propagator of gender equality and social justice and a reformist in caste discrimination and untouchability. Guru Nanak Dev ji advocated one God and believed in equality and fraternity. In his teachings, he always emphasised the unity of people and the significance of leading a moral life through honesty, devotion and sharing earnings with the needy. Guru Nanak Dev Ji's economic and political philosophy is universally applicable, aiming to establish social justice and equality. It holds that values, vision, and strategic equity should guide governance at all societal levels in order to guarantee the welfare of all individuals without any discrimination on the basis of caste, creed, gender, identity, race, region or religion. He also believed in honesty in labour and wealth creation and supported distribution of surplus wealth amongst the needy. This paper traces socio-economic thoughts of Guru Nanak Dev Ji, transforming the world towards equality and happiness.

Introduction

Guru Nanak Dev Ji is an Indian prophet, poet and spiritual teacher. He was the first among ten Sikh gurus and the founder of Sikhism. Guru Nanak Dev Ji was born in Talwaṇḍi village in the Delhi Sultanate's Lahore province (now Nankana Sahib, Punjab, Pakistan) on April 15, 1469. He travelled (Udasi) to many places, including the Middle East, Afghanistan, Pakistan, India, and parts of Tibet. Wherever he visited, the people had a great respect and response to his vision of humanity and equality. He often opposed gender inequality, untouchability, caste discrimination, and social injustice. His universal message to people was the oneness of God (Ik Onkar). According to him, God dwells in every creation and constitutes the eternal truth. He thus represents a distinct spiritual, social, and political platform founded on equality, fraternal love, dignity, and morality. The Sri Guru Granth Sahib, the Sikhs' sacred holy book, contains 974 lyrical hymns that contain all of Guru Nanak Dev Ji's hymns. This book is part of the Sikh religious belief that the spirit of Guru Nanak Dev Ji's sanctity, divinity and religiousness had descended upon each of the nine subsequent Gurus when the Guruship was devolved upon them. Guru Nanak Dev Ji's birthday is observed as Gurpurab in India.

In the context of socio-economic thought, Guru Nanak Dev Ji's teachings often emphasised the significance of honest labour, social equality, social justice and quality in the economic system in which everyone has the opportunity to earn income through their skills and ability. A Gurdwara (Sikh temple) is the spiritual place for teaching ethical values to young

Sikhs and understanding different religions. Additionally, Sikhs are advised to support people through education and healthcare initiatives across India, which demonstrates their humanity. Guru Nanak Dev Ji's teachings went far beyond spiritual development and also touched on topics that are highly relevant to social and economic development. His philosophical thoughts of integrity, simplicity and equality offer valuable guidance for anyone navigating wealth and management. The present study attempts to gain insights into the knowledge of Guru Nanak Dev Ji's socio-economic thoughts, balancing society with meaningful and ethical living. In the following discussion socio-economic thoughts of Guru Nanak Dev Ji are described in detail.

1. **Social Thoughts**

The social philosophy of Guru Nanak Dev Ji was based on justice, equality and service. He fought for women's rights, strongly opposed the caste system through institutions like the langar (community kitchen) and encouraged selfless service (seva), bringing harmony within the community. In his teachings, he always emphasised the unity of people and the significance of leading a moral life through honest living, devotion and sharing earnings with the needy. The following heads highlight the social thoughts of Guru Nanak Dev Ji.

1.1. Social Equality (Sangat and Pangat)

Guru Nanak Dev Ji always fought for social equality by stressing selfless service, opposing the caste system and advocating for gender equality. He also believed that all people are equal in God's eyes, regardless of gender, caste or creed. He introduced the concepts of pangat and sangat in this context. The concept of pangat (gathering) promotes Langar (community kitchen) service, where people from various communities could eat together, which means to remove social barriers. The Sangat (congregation), on the other hand, promotes group participation and decision-making that fosters equality and unity among people to establish a casteless society.

1.2. Honest Living (Kirat Karo)

In his hymn Japji, Guru Nanak Dev Ji said the earth is a dharmsal that God created in the universe and human life is considered the highest form in God's kingdom. The Dharmsal guides the human need for earning through honest work and sharing earnings with the needy. Guru Nanak Dev Ji emphasised the importance of honest living (Kirat Karni), which means earning an honest living through hard work and ethical means. Guru Nanak Dev Ji also believed that honest living is a crucial part of a spiritual life and that one should earn their livelihood with integrity, contributing to society. His teaching promotes self-reliance, productivity and a rejection of dependence on others through unethical means. His teachings also emphasise the importance of working hard and earning an honest living as a way to serve God and society.

1.3. Social Welfare

Guru Nanak Dev Ji also emphasised the importance of non-discriminatory charitable organisations like Dharmasala to promote social welfare among people. Wherever there was famine or drought, Sikh gurus would plan relief efforts with food and medicine. They also help the needy farmers by sinking wells and building tanks for drinking water and

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irrigation purposes. The charitable funds would be generously utilised to assist the sick and those in need. Gurdwaras became significant places for providing help to the deprived in the form of free food, lodging, and medical assistance, which continues to be provided even now throughout the world.

1.4 Social Reforms

Guru Nanak Dev Ji was a significant social reformer who fought against the social inequalities that prevailed during his period. His teachings strongly emphasized the universal brotherhood that all humans are equal in the eyes of God. He combined spiritual enlightenment with ideas of social reforms and moved against superstitions and rituals that had no rationality. In his period, Indian society was over-ridden with several social problems, including the caste system and untouchability, which were rampant and had failed to offer a dignified life to a part of the Indian people. Priests were powerful individuals, who served as intermediaries between the people and God. They insist karma usually means carrying out rituals. Guru Nanak Dev Ji believed that karma is good actions rather than rituals; religious rituals are superstitions that have no value, and priests are irrelevant, as everyone has direct access to God. Being religious did not mean withdrawing from society for mystical and slavish devotion and becoming a sadhu. Rather, a good life is lived within and as a part of the community. But he highly emphasised equality and dignity for those who are vulnerable in society and practised the community kitchen (Langar) against untouchability and the caste system.

1.5. Caste System

Guru Nanak Dev Ji's teachings advocated the concept of Sangat and Pangat, which means people from different communities come together, eat together in the langar and participate in spiritual activities without any discrimination. Because the people were separated on the basis of caste, the social status was determined according to birth status. There was less interaction between the different castes. People with the most wealth and power were usually from the higher castes, like Brahmins, Kshatriyas, and Vaishyas. Guru Nanak Dev Ji emphasised equality and the removal of social evils like caste discrimination and social injustice. He took more efforts to create a more justice and equitable society. The Sikh Gurus were against the caste system at all times. They thought that it was unfair to create inequality in human society. People belonging to the Shudra caste, referred to as untouchables were worst treated in society and they weren't allowed to be part of social, economic, or religious activities. They were even kept separately from others in their native land. These people weren't even allowed to worship in temples. This caste-based practice was strongly opposed by Guru Nanak Dev Ji, who said that everyone is equal before God regardless of caste and that it is all nonsense.

1.6. Gender Equality

Gender equality was advocated by Guru Nanak Dev Ji, who also reiterated his opposition to the deeply rooted and outdated patriarchal values that have long dominated society. He also believed that men and women should be treated equally in terms of religious beliefs. The status of women declined due to social constraints, particularly female infanticide. Sikh gurus are specifically instructed to have no social relations with families that practise female infanticide. In patriarchal society, a male-dominated structure enforces traditional gender roles, often portraying women as inferior and subordinate, restricting their opportunities, legal rights and control over their own lives and bodies. Social factors such as motherhood, childcare, and other household duties are linked to women's roles and have led to their lowering. The attitude towards neglecting the girl child's education and approval of marriage at a young age was also considered to be another factor influencing women's status. Sikh gurus opposed sati, female infanticide and the dowry system, but they advocated widow remarriage. A woman in Sikhism does not change her name after marriage, and a widow is allowed to take part in any religious ceremony and is regarded as being equal in society.

1.7. Women's Empowerment

Since God created all creatures, gender discrimination in religious practices was unacceptable to Guru Nanak Dev Ji. He strongly opposed the notion of inferiority against women and insisted everyone respect women because they gave birth. Guru Nanak Dev Ji believed that women act in a gentle, modest and forgiving way and opposed treating women as a minority group. In Sikhism, women are allowed to participate as equal members in all religious functions. Guru Amar Das, the third Sikh Guru, appointed four women to Manjis in the middle of the sixteenth century to teach both men and women the principles of Sikhism. In the early eighteenth century, during the reign of Guru Gobind Singh, the tenth Sikh Guru, a group of Sikh warriors was led by women on the battlefield. One among them was Mata Bhag Kaur, who led a group of Sikh soldiers against the Mughal forces in 1705. In Sikhism, women are urged to participate equally in the workforce and in occupations. Physical strength, open-mindedness and a healthy sense of self-esteem demonstrate that women have the same rights and benefits as men.

2. Economic Thoughts

The teachings of Guru Nanak Dev Ji also offer a perspective on economic thought that emphasized honesty, hard work and wealth creation. He advocated for a balanced approach to wealth creation and strongly opposed excessive materialism. Guru Nanak Dev Ji's economic and political philosophy is universally applicable, aiming to establish social justice and equality. It holds that values, vision, and strategic equity should guide governance at all societal levels in order to guarantee the welfare of all individuals without any discrimination on the basis of caste, creed, gender, identity, race, region or religion. Although he protested against oppressors, invaders and exploiters, he was constantly concerned about people's customs and cultures.

2.1. Wealth (Vand Chakko)

The teachings of Guru Nanak Dev Ji insisted on people sharing their wealth, particularly with those who are less privileged. According to him, the accumulation of wealth is only made possible by acts of dishonesty and offense. The well-known tale of Guru Nanak Dev Ji's meeting with Lahore's richest man, Duni Chand, emphasizes his apprehension regarding wealth accumulation. At that point, Guru Nanak Dev Ji gave Duni Chand a needle and said, "Please keep it with you and give it to me in heaven." After a while, Duni Chand realized that nothing could be taken to heaven. Guru Nanak Dev Ji stated that since nothing can be taken from the world after death, wealth too could not be carried. This was the message for everyone, especially those who accumulated wealth. Guru Nanak Dev Ji always insists on distributing surplus wealth to those in need and for any charitable purposes. Asserting wealth is both an illusion and a material possession. According to Guru Amar Das, those who worship material wealth are blind and spiritually deaf.

2.2. Kirtan and Kirt Karni (KIRT) Society

The concept of Kirtan and Kirt Karni emphasized the value of doing honest work and making money in a morally righteous way. Guru Nanak Dev Ji advocated the concept of KIRT, which is embodied in "Kirat Karo (hard work), Vand Chhako (share), and Naam Japo (worship)," promoting equality, social justice and selfless service. This has helped society in achieving its goals by implementing business and economic principles. He also promoted equality and social responsibility by advocating for a society in which everyone works honestly and donates their earnings to the less privileged.

2.3. Workforce (Das Nauhan Di Kirat)

Guru Nanak Dev Ji advocated that one should pursue a career in which one is skilled, regardless of the family's occupation. He believed that everyone should have equal access to work and occupational opportunities. In Sikhism, discrimination based on caste, colour or creed is never allowed; therefore, anyone with the required skills can work in any field. Women are given equal status with men in all areas of occupation and are a part of the workforce. Every labour is honourable and no work is either inferior or superior to the other. Workers should adhere to the great principle of hard work and honest living on earned income. Making money through gambling, racketeering, cheating or other unfair means was never permitted in Sikhism. Sikh gurus travelled widely across the continent and advocated the mobility of labour and trade. Professionals like labourers, preachers, and teachers, they felt, strive for excellence in their fields.

2.4 Exploitation

Guru Nanak Dev Ji stood against exploitation of any kind, including gender, religious, social, and economic exploitation. He opposed the oppressive structures of the caste system and fought for the rights of marginalised people, emphasising equality, justice and compassion. In addition, he urged society to treat everyone with dignity and respect and to prevent them from being exploited or suffering. Guru Nanak Dev Ji opposed the exploitation and mistreatment of farmers and the lower classes. He advocated for social justice by eliminating caste discrimination, honest work and sharing earnings with the needy. The goal of Guru Nanak was to create a more inclusive society, where everyone, including farmers, could live with dignity and respect. His every effort was to bring social justice to the society that was emphasising the concepts of humanity and equality.

2.5. Tax System

Guru Nanak Dev Ji acknowledged the necessity of a tax system but opposed involuntary tax collection. He also urged the rulers to eliminate the tax compliance requirements, saying that taxes should be uniform and not based on religion. The imposition of death duty was highly criticised at the time. Additionally, Guru Nanak Dev Ji urged rulers to provide social security and welfare programmes to the sick and underprivileged. Subsequently, Sikh Gurus urged the use of funds for the construction of new cities and the digging of wells and canals in areas affected by drought, and they advised rulers to maintain appropriate accounting procedures.

2.6. Administration Services

Guru Nanak Ji advocated the establishment of Gurdwaras for the sake of charity and community integrity. In Sikhism, the practice of offering at least one-tenth of the earnings for the purpose of charity and community assets is emphasised. Guru Amar Das, the third Sikh Guru, introduced the Manji system for an effective missionary and administrative system. This system made it possible for more structured supervision and communication, which helped spread Sikh teachings around the world. The Sikhs raise funds through voluntary contributions, which are then used in local congregations. The remaining funds are deposited at the guru's headquarters. The banking services were also utilised for money transfers. The Sikhs would be advised to lend and make contributions in kind or in cash to the needy. Each year the budget was made, and if there was a deficit, the expenses were adjusted with the receipts.

2.7. Investment

Guru Nanak Dev Ji advocated investment and discouraged accumulating wealth and idle savings. He urged avoiding unproductive consumption by practising discipline and simple living. Guru Nanak Dev Ji emphasised the significance of investment in trade and industry since it creates employment. He also opposed monopoly power, excessive profit and labour exploitation in any business establishment. According to Guru Nanak Dev Ji, since God is keeping an eye on everything that people do, making money must be sincere, and any excess should be given to others. Instead of acting dishonestly and hoarding wealth, Sikhs are specifically advised to have a long-term vision and build a reputation as honest business people. It is expected of a person to cultivate the virtue of detachment and avoid anxiety in all economic activities.

2.8. Modern Economics

The teachings of Guru Nanak Dev Ji provide insightful perspectives on modern economics while highlighting moral behaviour, social justice, anti-materialism, environmental degradation, and sustainable development. It advocated for honest work, avoiding exploitation, and promoting a holistic view of economic activity that balances individual needs with social responsibility. Guru Nanak Ji's teachings place a strong emphasis on conducting business ethically and giving back to the community. It also directs businesses to become more sustainable and responsible. Further, his teachings, which focused on satisfaction and avoiding excessive consumption, can inspire a shift towards a simple and honest life. Guru Nanak Dev Ji's economic thoughts on honest work, social equality, and ethical business practices are still relevant to the modern economy, offering a systematic framework for creating more social justice and sustainable economic development.

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Conclusion

Guru Nanak Dev Ji wants to create a world as real without being eternal through his vision of humanity and equality. He often opposed gender inequality, untouchability, caste discrimination, and social injustice. Guru Nanak Dev Ji emphasised the importance of leading a healthy lifestyle by pointing out that the body is a temple of God and that God resides in all creation. He also emphasised that everyone must read religious texts, comprehend them, and apply them logically in their daily life. They must also strictly stay away from superstitions, mythic powers, and rituals. Guru Nanak Dev Ji's socio-economic thought on social reform, women's emancipation, exploitation, investment, employment, and the workforce has made a significant impact on society. He also highlighted honest living, earning through honest means, and regular contribution to charity. In the pursuit of economic well-being, one should follow certain principles in his life, like meditation, honest work, and sharing earnings with the needy. According to him, human life is full of happiness without worrying about heaven, hell, or rebirth. The teachings of Guru Nanak Dev Ji transcend caste, religion, and social class, providing a reality of society that is more compassionate and unified. Even though Guru Nanak Dev Ji lived in the fifteenth century, his teachings were still relevant today because they contained virtues like equality, humility, and the oneness of God. His teachings in the Guru Granth Sahib have had an enduring impact on the world.

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Mental Wellbeing of Women in India A Study on Causes Consequences and Remedies

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Abstract
Mental Health is very important for all. It serves as an important indicator of performance of individuals. A person with sound mental health will be able to face any challenge in most optimistic manner. The mental health soundness pages the way for longevity and cardio vascular health. Women play an important role in economic development process so it is imperative to safeguard her health and happiness. This paper highlights that domestic violence, poverty and low education causes mental instability among women. The mental problems vary with demographic factors A questionnaire containing 5 questions was given to 50 working women and was analyzed in a descriptive manner. As mental health constitutes most important role this study is of great importance.

Key words: Mental Instability, Domestic Violence, Poverty, Low Education

Introduction

Mental health plays imperative role in an individual. This can be assessed out of domain of physical health, spiritual, emotional, social, and quality of living. Positive wellbeing enhanced longevity while negative wellbeing increased mortality. Mental wellbeing is associated with psychological wellbeing concerning with the state of mind. This wellbeing of mind gets accentuated with acceptance, concern for each other, love, friendship, sharing, caring, forgiving, gratitude, life satisfaction, caregiving, personal growth and compassion. Empathetic behaviour enhances quality of living. As sound physical health depends on sound mind due importance should be given to promote mental wellbeing. Happiness can be the most important factor to be imbibed as being happy and making others happy can bring about development at micro and macro levels. A happy man can constitute happy family and sum total of all th happy families can constitute happy Nation. Studies indicate that there is connection between mind and body, mood and outlook of a person. Sociability, adaptability of a person according to situations, resilience serves as a drive and motivation by boosting hormones. A man is a product of his thoughts and each Invidia is unique with biological and acquired traits. Understanding the basics of creation can solve many problems connected with mind. Studies indicate ther is relationship between psychology and productivity. Mental illbeing people have trouble concentrating, and memory problems crop up. Anxiety, fear, sleeplessness culminates to depression. The persons who suffer from the clutches of depression constitute great burden and are estimated to cost billions in lost production and healthcare cost each

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year. Care should be taken to protect and maximise mental health through work and life balance, prioritising leisure, relationships, and networking. Studies have found that there is profound link between mental wellbeing and cardiac health. Psychotherapy, pharmacological treatment modification of lifestyle, digital health technologies can bring about wellness of mind. A stressful person lowers his lifespan. The economic loss between 2012-2030 is estimated at USD 1.03 trillion. Recognising the interconnectedness between body and mind proactive measures such as healthy eating, stress management practices improves physical and mental health. Optimism can be greatest health asset as it lowers cardio vascular diseases. Setting goals, leading life with a purpose physical activity enhances wellbeing. In this regard studies found 2 approaches which are theoretical for psychological wellbeing of individual. One pertains to Eudaimonic approach which defines wellbeing according to one's ability to identify meaningful life pursuits and strive to achieve best. The other one is Hedonic approach which defines wellbeing according to pursuing and attaining pleasure and happiness. Longitudinal Studies indicate that positive effect was associated with lower glycosylated haemoglobin levels. Studies indicate there is a positive correlation between mental wellbeing and social outlook. The relationship is bidirectional as improved mental wellbeing leads to better social outlook and strong social conditions can contribute to better mental health. Social interaction boost mental health while loneliness, isolation create mental problems. Social drivers like poverty, employment, discrimination, education, nutrition, housing can contribute to mental health needs. So, developing countries should concentrate on reforms to ensure poverty is attacked, employment opportunities are provided and the basic needs of food, clothing shelter needs are provided for the achievement of Sustainable Development Goals. There is close integration between all the sustainable Development Goals.

Study of women

Women constitute a vibrant force in the economy . Apart from the traditional role of being care giver, today there is no field without her. Recognising the dynamic role played by women at the household and global level it is high time to take care of her physical and mental health. Due recognition, sharing responsibilities, appreciation can enhance the likelihood of mental wellbeing. Equal importance in decision making, stopping violence enhance the wellness of mind. Setting high goals, doing exercises, yoga, meditation, relaxation , setting time for the family, switching off electronic gadgets and respecting persons in the family, building relationships can enhance self-esteem.As women gets educated , she enters the job portels, start earning and supporting the family. There can be improvement in standard of living as the income earned by doing employment can be saved, invested and capital can be formed. This is required for economic development as a Nation cannot progress with one half of the population with nil contribution. It is high time that all the developing countries realise the potential of women and give due care and recognition at household and

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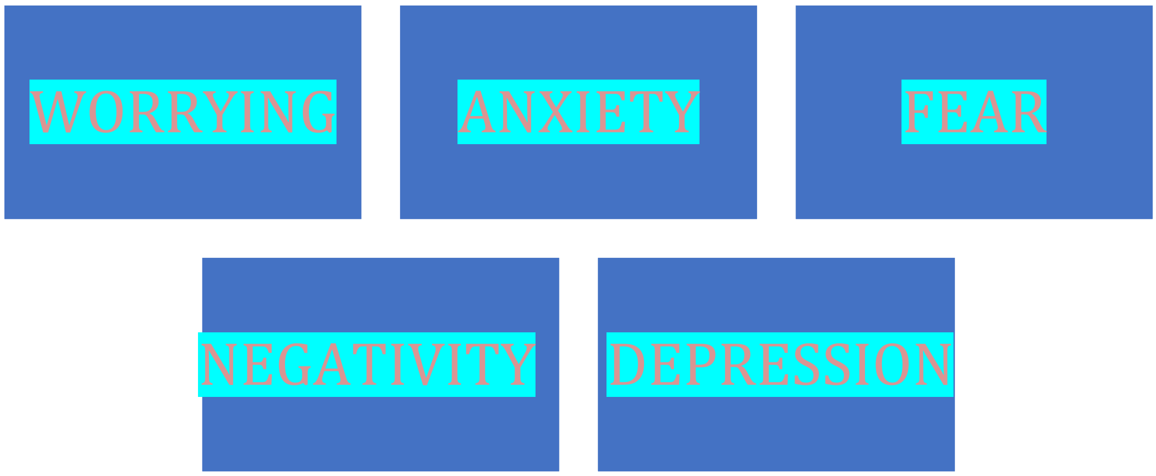
outside levels. Enhanced participation of women in work can enhance GDP.

Nature of the Problem

Mental wellbeing plays an important role as it enhances longevity of the person. Studies indicate that mental sickness culminates to mortality. A good mental health brings psychological wellbeing and positive cardiac health. It brings positive outcomes and development. A person with good



mental health can handle pressures in a positive way and can be as an asset to any organisation. Mentally sick persons are liability as they hamper development by spreading negativism. Mentally sick persons are economic costs to the society and burden to the economy.

Research Questions

a).What factors affect mental health

b).What are the consequences of mental illbeing

c).How to evaluate the mental wellbeing of women

d).What measures to be suggested to ensure mental wellbeing of women

Review of Literature

Jerome Bruner in his book on Acts of meaning for lectures of mind and culture argues through cognitive revolution, with its current fixation on mind as “information processor,” has led psychology away from the deeper objective of understanding mind as a creator of meanings. Mind constitutes Only by breaking out of the limitations imposed by a computational model of mind can we grasp the special interaction through which mind both constitutes and is constituted by culture. Studies indicate about the correlation between mental wellbeing and physical wellbeing, diet, finance, cardiac health, productivity, morale, addictions, thus highting the need to take care of mind.

Methodology

This study is based on the mental wellbeing of 50 working women. A structured questionnaire containing 5 questions on feeling cheerful and good spirits, feeling calm and relaxed, being active and

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vigorous, feeling fresh and rested and routine life filled with interest has been asked to the respondent. These questions indicate a sense of positivism which can enhance the spirits and make people vibrant. The women respondent were made to reply and the number has been cumulated and shown.The results were analysed in descriptive manner

Factors Affecting Mental Wellbeing of Women

- There is direct correlation between biological factors lile physical health, age, genetics, diet and sleep
- Psychological factors like attitude, perception, learning, belief and addiction affect positively and negatively
- Social factors like relationship, family, housing, work, culture, and environment affect wellbeing
- Alcholol affect mental wellbeing as it affects feelings thought an behaviours it gives chemical changes to brain and lead to negative thoughts and depression.
- Social problems like poverty,unemployment, absence of livelihood, financial difficulties affect mental health
- The relationship between diet and mental health is complexes what we are depends on what we eat.
- Eating regularly and staying hydrated with regular exercise can boost mental wellbeing
- Nuts,fruit and vegetables enhance vitamins and minerals and carbohydrates and protein brings strength to the body.
- Small meals together with avoidance of junk food keeps blood pressure and blood sugar levels at correct levels.;
- Healthy body enhances the mind capacity and prevents mood swings, anxiety and fear
- Low education, irregular health, lack of employment, poverty, domestic violence, lack of recognition, accentuates the mental sickness among women.

Consequences

As mental sickness culminates in to cardio vascular problems, diabetics, chronic disorders, asthma, arthritis sleeplessness and finally depression due care need to be taken to keep mind fresh . and engaging. This improves the quality of living.

A optimistic person brings a ray of hope of I WILL I CAN WE WILL WE CAN and motivates towards achievement. A depressed person who is mentally sick pulls down everyone as negativism spreads bringing havoc at household and macro levels.

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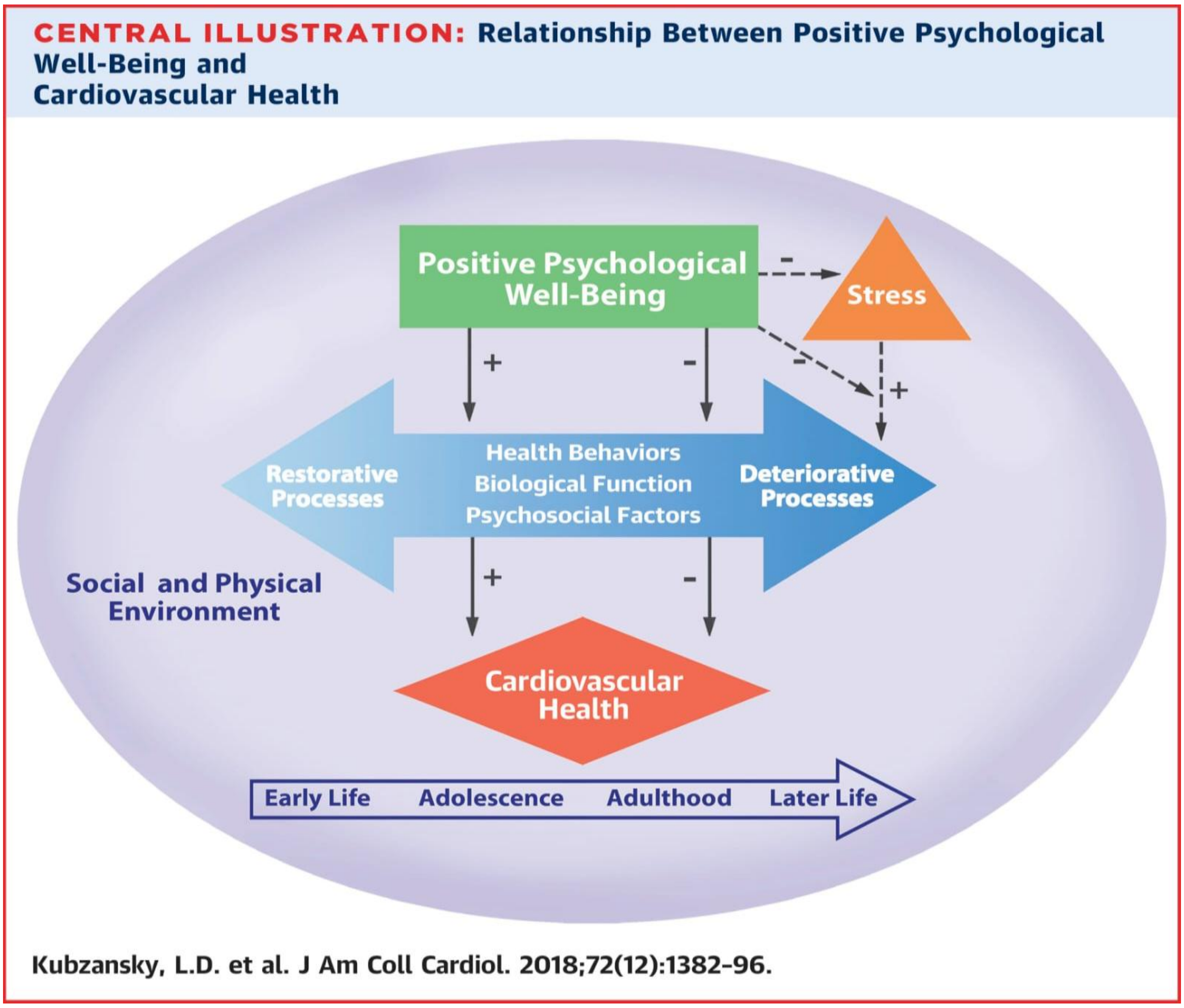

Reduced stress improves mental wellness eradicating cardio vascular problems to greater extent thereby enhancing longetivity.

Data Analysis and Interpretation

Classification on the Basis of Age

Age	FREQUENCY	PERCENTAGE
25-35	15	30
35-45	25	50
45-55	10	20
TOTAL	50	100

The data collected belong to working women of age group from 25 to 55.Among the working women 30% belong to 25 to 35 age group. 50% belong to 35 to 45 age group and 10 percentage belong to 45 to 55

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age group.The majority of the respondents belong to the age group of 35 to 45.

Classification on the Basis of Employment

Employment	FREQUENCY	PERCENTAGE
Teachers	30	60
companies	20	40
TOTAL	50	100

The respondents belong to the employment category of teaching and those women working in companies. Out of 50 respondents 60% of women work in teaching profession and 40% in companies.

Classification on the Basis of Income

Employment	FREQUENCY	PERCENTAGE
25000-35000	25	50
35000-45000	25	50
TOTAL	50	100

The respondents belong to the income ranges from 25000 to 45000. Nearly half of the respondents income ranges from 25000 to 35000 and another half of the respondents income ranges from 35000 to 45000

Classification on the Basis of Structure of the Family

STRUCTURE OF FAMILY	FREQUENCY	PERCENTAGE
Joint	10	20
Nuclear	40	80
TOTAL	50	100

Majority of the respondents belong to nuclear family and only 20 percentage of respondents belong to joint family.

Classification on the Basis of Causes of Mental illness

Causes If Mental Illness	**Frequency**	**Percentage**
Low education	10	20
Poverty and domestic violence	40	80
TOTAL	50	100

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Majority of the respondents stated poverty and domestic violence as important cause of mental ill health

Classification on the basis of Who Index

Parameters	All The Time	Most of The Time	More Than Half of the Time	Less Than Half the Time	Some of the Time	Total
I Have Felt Cheerful in Good Sprits	0	10	10	20	10	50
I Have Felt Calm and Relaxed	0	10	15	15	10	50
I Have Felt Active and Vigorous	0	10	15	13	12	50
I Woke Up Feeling Fresh and Rested	0	10	10	15	15	50
My Life Has Been Filled with Things That Interest Me	0	13	13	10	14	50

In a question asked on feeling cheerful in good spirits out of 50 respondents 10 respondents felt most of the time, 10 respondents felt more than half of the time and 20 of them felt less than half the time and 10 of them felt some of the time. This clearly shows that majority of the respondents felt cheerful in good spirits in less than half of the time.

Out of 50 respondents 10 of them felt calm an relaxed most of the time,15 of them felt calm and relaxed more than half of the time, i5 of them felt calm and relaxed less than half of the time,and 10 of them felt calm some of the time. Out of 50 respondents who answered for being feeling active and vigorous 10 respondents felt most of the time,15 of them felt more than half of the time,13 felt less than half of the time and 12 felt some of the time

Out of 50 respondents who answered to the question on waking up in the morning feeling fresh and relaxed 10 of them are most of the time,10 of them wake up fresh for more than half of the time, 15 less than half of the time and 15 some of the time

Out of 50 respondents who answered to my life has been filled with things that interest me 13 of them felt most of the time, 13 felt more than half of the time,10 felt less than half of the time and 14 felt some of the time. It is observed that all the respondents did not feel cheerful calm, active ,fresh and highly interested all the time. A self examination on all the above parameters would evaluate the ones quality of life.

Discussion

This paper throws light on women's mental health problems causes and consequences

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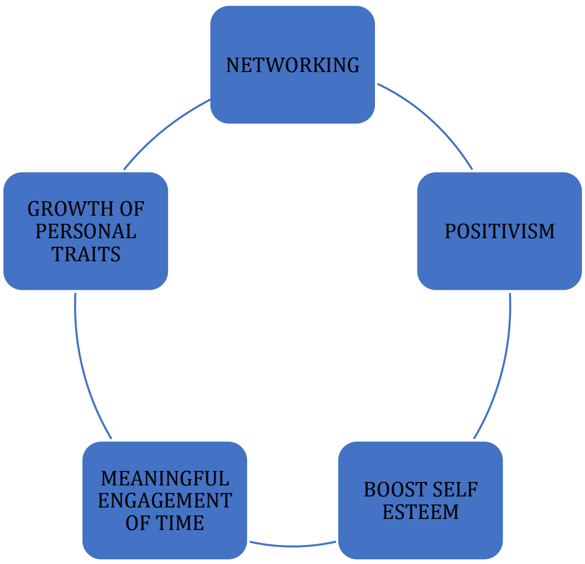
and remedies which can add to formulations of policies to restore sound mental health.

Measures To Boost Mental Wellbeing



Conclusion

Mental wellbeing is very important as it can play an active role in enhancing efficiency and productive powers of an individual. Mentally strong women serve as all rounders maximising excellence in all their academic pursuits. Being as beacon of light to the family and outside world, their contribution need to be recognised, praised to enhance their morale. Positivism coupled with happy environment can maximise productivity .A happy and healthy India is a progressive India

Suggestion to Boost Mental Wellbeing

- Mental wellbeing can be presser deved by eating well and sleeping well
- Develop networks and always talk talk talk
- Exercise walk walk walk as it keeps your entire body healthy
- Develop good hobbies
- Keep faith in God
- Always aim high set new goals and strive to achieve
- Be positive say no to negative thoughts
- Be jovial , relaxed raise self esteem
- Listen to others
- Appreciate others boost morale
- Be happy and make others happy
- As individuals we can follow correct dietary practices ,
- At corporates, yoga can be arranged and any activity that creates pressure stress should be avoided.

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A Study on the Political Culture of Violence in Manipur

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Abstract:
Manipur is a multicultural and multiethnic state of India. The region is familiar to the rest of the world through its soft power like culture and sports. But the less known and less explore area of this region is the political conflicts and various movements associated with claiming a political identity of its own. Being a multiethnic state, political demands have been made by various stakeholders from the ruling government, both centre and state. Any form of political demands is met with violent response from the government in power. Likewise, a situation has reached in which violence has become a mandatory tool for anyone living in Manipur to assert any form of political demands. By looking at the various cases of social and political movements in Manipur, the article seeks to highlight violence, in its origin, and look at how it is used, both as a repressive and an ideological instrument, to regulate and maintain the overall society of Manipur.

The article also argues how violence has crept everyday form of human interaction where language of violence has become a norm rather than exception and is shaping the political culture of Manipuri society. Moreover, the article seeks to engage in the discourse associated with violence in Manipur by looking at how violently affected people of Manipur has oriented themselves in forming a political identity of its own. The article also highlights how pain and fear are being used to further the political culture of violence in Manipur. The article concludes by arguing that political culture of violence has led to the development of existential crisis, within and amongst the various community, living in Manipur.

Keywords: Bio power, Manipur, Repressive State Apparatus, State of Exception, Violence.

1. Introduction

The ongoing conflict between the Meitei and Kuki communities has brought Manipur in the limelight once again. This troubled region has faced numerous forms of violent conflict in the recent past. Studies on conflict have focused on overlapping territorial claims which have generated tensions and distrust between the Meitei, Naga and Kuki communities (Das, 2023), existential insecurities triggered by the fear of losing land (Group, 2025), issues of exclusivity, governance and integration (Singh M. A., 2010), old grievances of land rights and feelings of political and administrative marginalization (Chaudary, 2024), etc.

The conflict in Manipur is complicated due to the emergence of various armed insurgents' groups. Violent confrontations between insurgents and the state have led to internal security problems in India (Mathew & Josheph, 2018). Moreover, conflict in society can also been looked at from the lens of violent phenomenon of 'Mob justice' (Lukram, 2022).

During any conflict and crisis in Manipur, headlines of any news would be death and killing of civilians, non-state actors, or security forces. Moreover, a simple disagreement between individuals would instantaneously lead to violent skirmish between themselves. In all of the factors responsible for conflict scenario in Manipur, a single thread pulling them together is the issue of violence and how it has manifested and reshaped the political culture of Manipuri society. The study focuses on the issue of violence and how it has maintained the status quo political power in Manipur while highlighting that living has been reduced to a choice between survivability and death.

2. Statement of the problem

Conflict studies in multi ethnic regions of Manipur have been focussed on factors like ethnicity, religious, tribes, etc. The ongoing conflict between Meitei and Kuki community has been looked at how media portrayal of certain stereotypes for a specific community led to conflict (Pautunthang, 2024). Moreover, (Hussain, 2025) has argued that this conflict is furthered complicated due to the politics of land associated with who is indigenous (yelhou-mee) or not. But the researchers fail to study why people have resorted to violence in any forms of political demands in Manipur and why is there a lack a democratic dialogues and discussions within and amongst the conflicting parties. This study fills up the above gap while arguing that violence has shaped and maintained the political culture of majority of Manipuri.

3. Objectives

- To study the functioning of Repressive State Apparatus in Manipur.
- To study violent psyche of community and individual in Manipur.
- To study how violence is used in ethnic mobilisation during conflict in Manipur.
- To study the relationship between violence and politics of pain during conflict in Manipur.

4. Review of Literature

(Singh & Hanjabam, 2012) studies how some sections of the educated Meitei population have tried to develop a distinct national identity of Manipur. (Urmila, 2010) has highlighted the civil society movements in Manipur by studying the emergence of All Manipur Students Union (AMSU) with its demands for basic needs of the people, followed by regional aspirations in Manipur in the form of local-outsider perspectives. (Singh N. J., 2022) has studied the emergence of valley-based insurgents' movements in Manipur with its ideology of anti-colonial and Marxists movement against what they termed as colonial question in Manipur. The question of violence used by these insurgents' movement can be studied while analysing the work of (Fanon, 1963) in which he argues that anti-colonial movement is always a violent phenomenon.

The response of the state towards the democratic and insurgents' movement in Manipur can be looked at through the prism of 'State of Exception' (Agamben, 2005) in which there is difference in treatment of people because of their racial orientation (Mbembe, 2019). This has led to the phenomenon of the existence of 'Bare Life' (Agamben, 2017) for the people of Manipur.

The 'Repressive State Apparatus' (Althusser, 2014) has used direct violence in a repressive and ideological manner to subdue the democratic voice of the people. (Arendt, 1970) has held that bureaucratization of public life attracts people to violence. People of Manipur has repeatedly use 'Mob violence' (Laishram & Singh, 2023) and this form of violence is orchestrated by the community against individuals.

(Meitei, 2014) has argued that contemporary political class in Manipur has exploit ethnicity for its own advantages. (Foucault, 2003) contends that in biopower system, killing is acceptable if it eliminates the biological threat to and the improvement of the species or race. During the ongoing crisis between Meitei and Kuki in Manipur, death is acceptable if it leads to the elimination of the supposed ethnic enemies. (Ahmed, 2004) has argued that, in stories of death, there is differentiation between forms of pain and suffering and also between those stories that are told and those that are not told. Through the above mechanism, the distribution of power is secured during any conflict while killings of civilian are being normalised in Manipur.

Violence in Manipur is 'Law-preserving violence' (Benjamin, 2021) and hence not engaging in it may be the most violent thing to do (Zizek, 2008). This can provide us with a new alternative on understanding violence so that we can save ourself from the repeated histories of pain and suffering caused by it.

5. Methodology

The study adopts a qualitative and interpretive approach to analyse the political culture of violence in Manipur. Employing thematic review of literatures, through critical analysis on certain socio-political issues, have allowed us in interrogating how violence operates as repressive and ideological instruments in Manipur. Primary sources were collected through oral narratives. Those narratives were interpreted in line with the theoretical underpinning of the paper. Secondary sources including books, research articles, government documents and reports and news articles were extensively used. The study is based on case studies and key events to analyse the significant social narratives, signs, and symbols of the society.

Theories by Agamben, Althusser, Arendt, Fanon, Foucault, Mbembe and Zizek were integrated and synthesized to construct a framework for understanding violence and how it has reshaped political culture of Manipur. Due to the challenges and limitation of conducting empirical fieldwork in conflict-ridden state, the study prioritises secondary literature sources, government documents and reports for reliability and validity.

6. Findings and discussions

6.1 Violence and State

After Manipur became part of Indian Union in 1949 through 'Merger Agreement' and classified under part C state, the educated sections of Manipur society, mostly from the Meitei population, had argued for a case against Manipur being a part of India. They have questioned the 'Merger Agreement' arguing that it is 'null and void' and illegal, as the treaty was signed between the King of Manipur (who was not a rightful person) and government of India (Singh & Hanjabam, 2012). The Communist insurgency movement started by Hijam Irawat (Girani, 2020) was still on the scene in Manipur society during that time and some sections of Meitei population were already talking about a national identity of Manipur, as a distinct and separate from the national identity of India.

Civil society movements had also started its democratic movement in Manipur during 1960s. While responding to artificial famine of Manipur in 1965, students had protested against the food scarcity and hoarding. This has finally led to the formation of All Manipur Students Union (AMSU) in 1965. AMSU, later on, has turned their demands for regional identity of Manipur in which Anti-Foreigners Movement of 1980 has been on its agenda (Urmila, 2010). It is to be noted here that the demands of AMSU were met with police brutality and open firings which have led to the death of students in both of the above cases. As such, the democratic movement of civil society organisations in Manipur was replied with repressive violence from the side of the state in Manipur.

Side by side, valley-based self-proclaimed revolutionary movements, firstly United National Liberation Front (UNLF), followed by Revolutionary Government of Manipur (RGM) was formed in and around 1960s. Later on, in the late 1970s up until late 1990s, various self-proclaimed revolutionary groups like People's Revolutionary Party of Kangleipak (PREPAK), Peoples' Liberation Army (PLA), Kangleipak Communist Party (KCP), Kanglei Yawol Kanna Lup (KYKL), etc have cropped up in the valley of Manipur (Singh N. J., 2022). These insurgency movements have talked about political and national identity of Manipur along anti-colonial and Marxist ideology while using violence as a means to attain its objectives

The government of India has used coercive and repressive power of state to subdue insurgency movements in Manipur and treated these movements as some sorts of misguided groups while clubbing them under various tagline of Proscribed Terrorist/Extremist Groups or Active Terrorist/Insurgent Groups. Instead of dealing these movements in a political way, law like Unlawful Activities Prevention Acts (UAPA) is being used for any members of these self-proclaimed revolutionary groups while arresting and in jailing them. Manipur, along with the erstwhile Jammu and Kashmir, top the list in the number of cases registered under UAPA (Hindu, 2019). It is to be stated here that, right from the very beginning, the government has used repressive power of the state with violence to subdue and resolve insurgency problems in Manipur.

Manipur is Georgio Agamben's 'State of Exception' (Agamben, 2005) where various laws of the Indian State like Armed Forces Special Powers Act, (AFSPA) is being used continuously to otherised Manipuri people from the mainstream Indians. Achille Mbembe has argued 'that colonies could be ruled in absolute lawlessness was due to the racial denial of any common bond between the conqueror and the native' (Mbembe, 2019, p. 77). Manipur is racially different from the rest of Indian since majority of them belong to the mongoloid groups of people. This has led to a situation of continued enforcement of violence as a means while security can act without impunity of law in order to quell any form of protest and demands by the people. The line of demarcation between who is citizens and who is insurgents is not very cleared in Manipur.

"National liberation, national awakening, restoration of the nation to the people or Commonwealth, whatever the name used, whatever the latest expression, decolonization is always a violent event" (Fanon, 1963, p. 35). Likewise, the self-proclaimed revolutionary groups in Manipur, which talk along the line of decolonisation or the anti-colonial movement, have also used violence as a means to attain their political demands. In order to counter such violent movements, Manipur has long been categorised as 'Disturbed Areas' so that security forces under AFSPA have been dominating the scene of Manipuri society. This can be summarized by a phenomenon, referred to as '*Matam se Fatte*, *Chatthokanu'*, loosely translated to mean 'Times are bad. Don't go out'. This phenomenon was and still is a dominant form of discourse, offered by families to their young and adolescent siblings, in order to protect them from the clutch of violence and death manifested in Manipuri society.

"One of the essential characteristics of the state of exception—the provisional abolition of the distinction among legislative, executive, and judicial powers—here shows its tendency to become a lasting practice of government" (Agamben, 2005, p. 7). Manipur, along with Uttar Pradesh, top the list of frequent imposition of President Rule (Express, 2023). The Indian state has repeatedly used extra constitutional means to otherised Manipuri society. This otherization has developed into a phenomenon of ghettoization of the Manipur society as a whole.

Louis Althusser has argued that 'Repressive State Apparatus' has used direct violence and coercion in order to legitimise and normalise the very foundation of ruling class in the state (Althusser,2014). There are numerous sign and symbols, adjacent to the gate of Army and Assam Rifles camps in Manipur, with the wording entitled 'Friends of the Hill people'. Assam Rifles and Army (which represents the repressive and coercive institution of the state) is asked by the Supreme Court of India to be answerable for 1528 extra judicial killings in Manipur between 1980 and 2011 (Hindu, 2017), These repressive institution of the state is also engaged in ideological manner in order to maintain symbolic and substantial relationship with the people by highlighting that they are also 'Friends' of the hill people.

"The declaration of the state of exception has gradually been replaced by an unprecedented generalization of the paradigm of security as the normal technique of government" (Agamben, 2005, p. 14). Assam Rifles has also flagged of a campaign named as 'Friends of the Hill People Expedition' for Peace (India, 2016). Here 'Friends' and 'Peace' is campaigned by repressive state apparatus of Indian state. Various Civic Action Program have been conducted in Manipur by Assam Riffles. It is safe to say that government has engaged the 'Repressive State Apparatus' of the

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state as an administrative part of it while partnering them in various developmental activities in the far-flung villages. Manipur has become a place where violent institutions of the state is used both in a repressive and ideological manner.

6.2 Violence of the individual and the collective

The common people are reduced to precarity so that whomsoever power at the Union or State government has continuously used violence to resolve any form of democratic movements in Manipur. The state government in Manipur acts in a bureaucratic manner and is not answerable and accountable to its people. Bureaucratization of public life is being normalised in Manipur. Hannah Arendt has argued that "greater the bureaucratization of public life, the greater will be the attraction of violence" (Arendt, 1970, p. 81). So, the people of Manipur have resorted to violence as a way of achieving their political demands.

Whenever there are any conflicts or misunderstanding between individuals in Manipur, the normal case scenario will be firstly a violent confrontation between the conflicting individuals and later on discussion on what had happened. There is saying in locals amongst the people of Manipur, with a patriarchal connotation of *'Nupanabu hanna wainou, konna wari sanou'* which can be loosely translated as "since you are a man, fight first and talk later." This patriarchal understanding of relationship of man with being violent and normalisation of it has developed a subjective psyche of violence amongst the mind of Manipuri people.

Moreover, a specific form of violence, committed by community against any individuals and is outside the purview of law, is being orchestrated in Manipur. This can be understood through the concept of 'Mob violence'. 'Mob violence' has been a persistent problem in the Indian state of Manipur for many decades. Suzanne Laishram & Kshetri Rajendra Singh has argued that vigilantism in the form of 'Mob violence', in which individuals take the law into their own hands and punish suspected criminals without due process of law, has had a profound impact on the local community and has been a source of concern for the government and law enforcement agencies (Laishram & Singh, 2023).

Mob violence, along with the subjective violent psyche, and compounded by violence perpetuated through the 'Repressive State Apparatus' of the state have led to a situation where common people in Manipur has led a life which can be characterised by Agamben's 'Bare life' (Agamben, 2017). Manipuri society is also regulated and maintained through the paradigm of security. This has finally culminated into a situation where violence is part and parcel of political life in Manipur. Hence, violence has become a political culture for the people living in Manipur and any sorts of political mobilisation has used it to achieve its political objectives.

6.3 Biopolitics and ethnic violence in Manipur

Manipur is a multiethnic state of India. Nameirakpam Bijen Meitei has argued that colonial ethnic categorisation has been imposed and used by contemporary political class in Manipur to perpetuate the colonial system and instrumentally used cultural identity like ethnicity to their own advantage. This has been a feature of what he termed as 'exploiting ethnicity' (Meitei, 2014). Since violence acts as a regulatory mechanism in Manipur, the political class of each and every ethnic community has used the discourse of violence to achieve its political objectives during any ethnic conflict in Manipur. As Achille Mbembe has argued that "the state's progressive loss of the monopoly of violence has ended in a gradual devolution of this monopoly to a multiplicity of bodies operating either outside the state or else within it but in relative autonomy" (Mbembe, 2019, p. 35), the political class in Manipur has devolved the monopoly of violence to its ethnic counterpart. This has led to a situation where state monopoly over violence is threatened and taken away by various ethnic groupings in Manipur. The ongoing violent conflict between the Meitei and the Kuki in Manipur can be seen in the above light where repressive institutions of the state like Police, Assam Rifles and various others, instead of avoiding violence, has acted as a neutral observer or even perpetuators (Watch,2023) and the violent acts are committed by the individuals which are mobilised under specific ethnic markers.

Since Manipur is a multiethnic state, the discourse of ethnicity has been a prominent feature for long. Foucault has argued that "in biopower system killing or the imperative to kill is acceptable only if it results not in a victory over political adversaries, but in the elimination of the biological threat to and the improvement of the species or race" (Foucault, 2003, p. 256). The ongoing ethnic clash between the Meitei and Kuki in Manipur has used the narrative of being indigenous (*yelhou-mee*) and outsiders (in the form of illegal Immigrants, refugees, etc) and terms like *Ee-Sengba* (pure blood), separate homeland, sons and daughter from the same ethnic stock and mobilisation of people based on the same ethnic origin has been used repeatedly. Moreover, killings of a members of the supposedly ethnic enemy are a source of pride and joy for individuals within the ethnic community who has done the killings. These killings have been channelised and proclaimed as a restoration and attainment of power, both for the individuals and community, within a particular ethnic grouping.

Despite experiencing multiple cases of communal and ethnic clashes like Naga-Kuki clash (Butalia, 2008), Meitei and Meitei Pangal clash (Syed, 2023), Meitei and Naga clash (Singh, 2014), it still does not end the violence perpetuated in the name of a particular ethnic community. Achille Mbembe has argued that "Because the security state presupposes that a "cessation of hostilities" between ourselves and those who threaten our way of life is impossible—and thus also the existence of an irreducible enemy that ceaselessly metamorphoses—this war is henceforth permanent" (Mbembe, 2019, p. 54). The security state in Manipur, through its political class, has exploited ethnicity and developed a phenomenon in which yesterday enemies, who supposedly threaten our way of life, get metamorphoses into a different one and hence violent conflict is never over in Manipur. The violent order of Manipuri society has repeatedly called people to mobilise themselves along specific ethnic grouping, as against other, in order to prepare for violent confrontations, in the present and in the days to come, so as to preserve and maintain the status quo political power.

The ongoing communal clash between Meitei and Kuki of Manipur has led to the

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lost of more than 200 lives (Scroll, 2024). Those who have killed during this conflict have been raised to the status of martyrs and their photograph and names have been displayed in various places of Manipur. Foucault has argued that "death is outside the power relationship. Death is beyond the reach of power, and power has a grip on it only in general, overall, or statistical terms. (Foucault, 2003, p. 248). Sovereign power in the state of Manipur has been maintained and exchanged through killing in the name of ethnicity where death matters only in numbers and statistics for sovereignty to have its meaning.

But death has been circulated onto something else. It has been circulated and reached onto the collective psyche of each and every ethnic community in Manipur. The photographs of the death and murdered people, along with the status of being a martyr and the manner in which they have been killed, are being circulated into the social space of Manipur, thanks to social media and internet. As Sara Ahmed has argued that "The differentiation between forms of pain and suffering in stories that are told, and between those that are told and those that are not, is a crucial mechanism for the distribution of power" (Ahmed, 2004. P. 32), the cries and pains of the families who have lost their loved ones in this ongoing conflict have, instead of narrating multiples stories, only one voice to hear. And that is the voice of revenge against their supposedly ethnic enemy. This has led to call for more violence, organised and mobilised under particular ethnicity, asking for more death of their supposedly ethnic enemies, and the cycle of violence continues. Violence along with the calling for more death have finally entered the social spaces in Manipur.

7. Conclusion

In the dark times
Will there also be singing?
Yes, there will also be singing
About the dark times (Brecht, 1976:320).

*Manipur has descended into dark times. Numerous films, songs, etc. have been produced during the ongoing conflict. There are songs and it is not about the dark times but songs about being patriotic and sacrificing oneself for the sake of motherland. There are songs and calls about uniting oneself along ethnic line and fight to annihilate our supposed enemies. But who are our enemies? Slavoj Zizek has argued "*I know it, but I refuse to fully assume the consequences of this knowledge, so that I can continue acting as if I don't know it" (Zizek, 2008, p. 61). The critical outlook of people in Manipur knows that violence along ethnic lines has been a dominant feature of Manipuri society for long. They stood against it but refused to voice against it.

But what are the social and political factors that silences the voice of those who are against this continuation of what Walter Benjamin called 'Law-preserving violence' (Benjamin, 2021). Is it the patriarchally oriented subjective violence or communally sanctioned 'Mob violence' or is it the security state (behind state of exception) which is responsible for having a precarious and bare life for all of us?

Do we need Walter Benjamin's 'Divine violence' (Benjamin, 2021) or as Slavoj Zizek has argued 'Sometimes doing nothing is the most violent thing to do' (Zizek, 2008, p. 217) so that we can redeem ourselves from the life in which we are currently living.

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Artificial Intelligence and its Role in Work Retrenchment: Emphasising the Case Study of IBM Restructuring

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Abstract
The significant transformation of AI has substantially altered the entire view of the global workforce. It has altered performance standards and significantly raised concerns regarding displacement and work retrenchment. This paper views the nature of AI and its dual role in creating a potential set of new workforces and the severity of consequences in various sectoral management. Furthermore, the core of this paper remains to explore the Socio-Economic aspects and implications with regard to the workforce. The findings highlight the necessary precautions and rebuilding with regard to workforce participation. This study also explores the current scenario by looking into the case study of IBM's restrictions.

Key Words
Automation, AI, Workforce, Restructuring

Introduction

AI has remained as a constant framework of betterment with its said implications and variations. The 21st century has paved the way for such advancement in technology. AI has captured the attention of various sectoral aspects, gaining its importance. While these probable innovative measures pave the way to efficiency and better working standards, it has also abruptly disrupted the workforce. This has created a basic rift in the current paradigm. As companies emphasise and promote the need for AI integration, it also paves the way for continuous layoffs and work displacement.

Research Questions

- This phenomenon raises the pressing questions: Does AI eliminate more jobs than it creates?
- What policies can mitigate the social and economic impacts of automation?

Review of Literature

Technological Displacement Theory: The author highlights the significance and capacity of the active labour force to adapt towards short-term decreased workforce rates and income inequalities.

Ethical and Social Implications: Dignum (2018) highlights the ethical dimension of AI adoption, stressing fairness, transparency, and human dignity as crucial elements in technological deployment.

Methodology

The present study was conducted through a combination of online and offline interactions, which also includes a combination of primary and secondary data. Here, the majority of them belonged to the age group of predominantly 20-45. Therefore, the present study focuses on those who are actively involved in the process of employment belonging to different sectors. The sample is selected using convenience sampling, and the size is confined to 15-20 individuals belonging to different positions, keeping the questions open-ended. For the process of data collection, anthropological methods,

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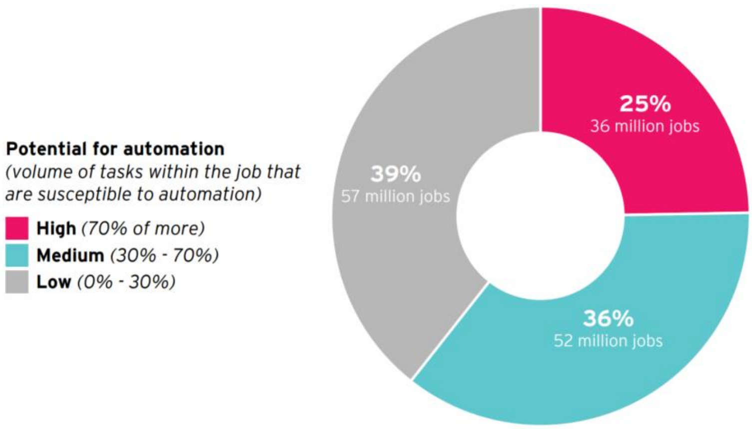
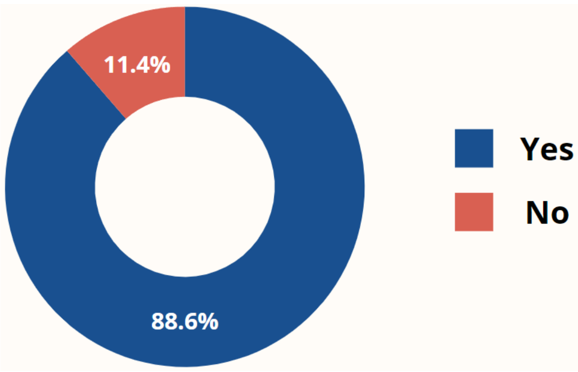
survey, questionnaire, interview and case study were adopted to know the different aspects addressing the research question. However, during the study, a semi-structured questionnaire was utilised, based on which it had mostly open-ended questions to adhere to the current scenario. Since the study is said to be exploratory in nature, priority was given to open-ended questions highlighting the present conditions. From the table, the "Age Group" wise distribution of the total study population shows that such awareness and active participation are predominant in the age group of early 20s, and such participation is said to be above 50% in such practices. However, the age group distribution also indicates that around 25% of the population involved in such practices are said to belong to the age group of 30 and above. It was also observed that greater government intervention through abundant schemes and policies can promote the necessity of skill upgradation and adapting to the current scenario.

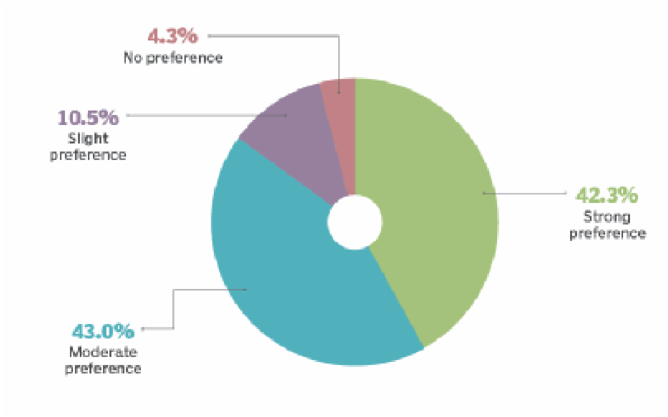
Pie chart representation of the collected data



General Workforce susceptible to Automation (Age of Workforce – 20 – 45)
Image1.1



Perception of Individuals who feel AI remains a constant Threat.
Image 1.2



Individuals' Perception of AI being a tool for Standardization
Image 1.3

Findings & Analysis

Automation of Routine Tasks

Manufacturing, logistics, and administrative sectors have been most affected by robotic process automation (RPA) and machine learning tools that replace repetitive human functions. For instance, AI-enabled assembly lines and self-checkout systems have reduced the need for human operators.

Algorithmic Workforce Management

Companies now use AI for performance evaluation, scheduling, and predictive analytics, which can indirectly lead to retrenchment decisions. Automated systems can identify "redundant" roles more efficiently than traditional human resource departments. This has considerably cut down human errors that take place during such a delicate process.

Economic Efficiency Ratio Against the Factor of Human Costs

It is to be noted that the continuation of AI integration reduces the overall cost but results in the mass layoff of the workforce. The immediate condition would be the displacement of the labour force in continuously destabilize conditions. This measure seems to affect those who are said to be digitally illiterate. The participants are in constant fear of losing their current jobs in the given scenario.

Lack of Skills among the workforce

Workers who do not possess access to work-based upgradation face the long term risk of work destabilisation.

Psychological and Socio-Economic Aspects of Workforce

Stress is directly linked to job security. Hence the workforce seems to undergo stress factor-based situation due to constant stimulation at the workplace.

Case Study: IBM and the Impact of AI-Driven Workforce Restructuring (Explained as a Case Study)

IBM remains as one of the top tech firms around the globe. It has started its automation process since 2010 and henceforth practised restructuring in order to promote efficiency and productivity.

The organisation started emphasizing the need of AI based tools and regulations as part of their core transition.

Human Resource Handling:

The *AI* remained as a key part of analysing performance of employees and also track their process.

Customer Support:

Many first line of customer support work was replaced by the process of Chat bots and automatic response prompts.

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Streamlining Process:

RPA was used to replace petty works and administrative tasks to a great extent by streamlining the process.

According to reports from 2020, IBM had terminated numerous thousands of employees worldwide, with a significant number of them employed in administrative and IT service departments. Automation and efficiency initiatives were identified as contributing factors.

The IBM instance serves as an example of numerous important ideas.

AI-Related Layoffs and Their Connection to Human Resources

Dire Need for Upskill and Restructuring

Ethical Process and Human Centric AI

The IBM case study helps to understand the situation about the transition and talks about the things that can be incorporated to the said process to make the transition easier. The corporates play a key role alongside the measures taken by the government. The transition requires planning, transparency, and Human Centric approach instead of focusing on the process of cost reduction.

Recommendations

Mitigation and Policy Recommendations

Restructuring Programme Specific to AI

Corporations and Governments should be involved in continuous investments in the labour workforce to integrate with the current AI work culture.

Regulations, Rules, and Restrictions

Constant regulatory protocols need to prevail to protect the workforce from exploitation. These rules and regulations should promote fair and transparent practices.

Social Assurance

The employer needs to provide a set of benefits as a said cushion for the process of transition, which promotes social assurance.

Human Specific AI Design and Designation

Probable exploration of Human Specific AI design and creation of a special Designation centring the human aspects can promote productivity rather than the replacement of the workforce.

Conclusion

AI remains both a tool for continuous improvement as well as a tool that remains disruptive to the current labour workforce. Therefore, the future planning for the use of AI requires perception and forecasting, which can help preplan and also curb the difficulties faced by human resources. The AI approach needs to remain human-centric which will help the workforce navigate through such advancement. The government and corporations also have a key role in helping the workforce achieve such set standards.

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Applying Bhawagad Geetha to the Study of Pakistan's Hate India Policy

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Abstract

Recently, Pakistan has been portraying India to the world as the one making provocative moves against Pakistan, while suggesting that Pakistan does not always observe restraint. Moreover, Pakistan has also been making hue and cry that all over the world that India is a threat to Pakistan. This article claims that such statement of Pakistan is false and is intended to make only to divert the internal attention of Pakistan from the troublesome domestic affairs and to divert the world attention to the Jammu and Kashmir issue. In this article an attempt is made to explode the myth that India can be a threat to Pakistan by exploring the hidden connection between Pakistan's attitude with that of India's classic epic Bhagawad Geetha, thereby suggesting that the Pakistan's internal dire security situation is nothing but the negative repercussion of the aggressive external policy of Pakistan itself. An in depth analysis is being made to drive home the message that Pakistan must learn lessons from her own irrational behavior so as to save herself from the self-destructive path. The main contention of the article is that the main threat to Pakistan does not comes from India rather it directly comes from Pakistan particularly emanating from her hate India policy.

Background

India and Pakistan who are currently at loggerheads over the issue of cross-border terrorism in the Jammu & Kashmir were similarly placed even in the immediate aftermath of the partition in 1947. However, at that time it was not terrorism but the accession of J&K that was an issue. More than six decades have gone by without a solution to this vexed problem. This long period is interspersed with wars, talks, pacts, silence, track II approaches, confidence building measures (CBMs), and all else yielding no tangible results. Both sides have accused each other of not being sincere in resolving the issue. This paper is an impartial attempt to find out the real cause of this conflict that has added a new catastrophe of nuclear winter into sub regional tensions and also a big drain on the exchequer. There is no point in just blaming others for the lack of peace in the subcontinent. It has also been made out that both the countries have allowed themselves to be used as tools in the manipulations of international politics leading to the present sorry state of affairs. Rather to look it from the non-entity point of view, which is predominant on the side of Pakistan than in India, is a single most important factor called exaggerated fear or pseudo-fear of the charlatan rulers of Pakistan. Even though many experts have been attributing many causes to the India–Pakistan imbroglio, this paper traces the origin of conflict to this PSEUDO-FEAR of Pakistan

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as a single most important component responsible for the hampering of the prospects of peace between the two countries to this day starting from the day one of their existence.

The root cause of this fear can be traced back to the carnage that accompanied the Partition of the British India. After realizing that there is no legitimate cause to achieve Pakistan state, some so called elites in Muslim League had instigated carnage and bloodshed on the imaginary grounds among the hitherto peacefully living people on the basis of the fabricating theory that the majority Hindus will destroy them in future. However, in spite of several insubstantial theories, the fact that these conspirators were able to succeed in creating Pakistan is a tragic side of the history. Nevertheless, the mountebank politicians of Pakistan were not satisfied with the shape and size of a country they got after Partition from the erstwhile British Empire. Their ambition of carving out all the Muslim majority areas of erstwhile British India particularly from the region of the north western India in to a single country, however, was shattered, when the Muslim majority Kashmir State ruled by a Hindu King did not accede to Pakistan. Henceforth, the successive rulers of Pakistan started seeing the Partition arrangement as an incomplete one which, they think, will be completed only with the accession of Kashmir with Pakistan. On the other hand, India felt the partition process as complete wishing to live with Pakistan peacefully as fait accompli.([i]) But Pakistan could not come to the terms with the ground reality which is against the very raison d'être of Pakistan's existence as a sole custodian of the entire Muslims of Indian sub continent. Adding fuel to this factor was the fact that India has more Muslims many of them living very well taking advantage of the democratic secular values imbibed by the democratic state.

So Pakistan cannot digest this frustrating fact as after all national security is nothing but the protection of a country's security from the threat to its existence stating that the Hindu India will gobble her in near future. But Pakistan's misplaced fear about India ends in suspicion about India's ambitions ultimately ending up with faulty threat perceptions and consequent unwanted military preparations and tensions. This is the typical case of the false justification of one's own vital national security goals emanating from misperceptions and sense of insecurity leading ultimately and tragically precipitating and imposing misguided wars with India.

Pseudo-Fear and Pakistan's Actions

The disappointment of Pakistan to get the desired strategic land areas over a period of time transformed into a fear psychosis and paranoid syndrome not only in the minds of the people living on the eve of partition, but transforming successfully to the forthcoming generations as well the same antagonistic mindset through the process of generation of enemy campaign, demonization, enemy image, deliberate distortion of history or falsification of historical facts. There is a general view that Pakistan uses this fake fear very conveniently and frequently as a trump card vis-a-vis India for two reasons Viz.,

1) To bring external powers into the vortex of Indo-Pak. Conflict, and

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2) To divert the internal attention of the Pakistanis from the troublesome affairs of the state.

The fact that India helped liberate Bangladesh by dismembering the East Pakistan added to the fears of Pakistan which felt that India was solely responsible for this dismemberment forgetting that it had more to do with its oppressive policies against the Bengali Muslims who were Pakistanis by division of the country. Despite serious efforts by India to mitigate the evil effects of such activities on India and Pakistan relations in general and on our national security in particular, these sinister designs did spoil the entire cordial climate of India – Pakistan relationship. This was also aided and accentuated due to the overall international strategic environment like cold war, global war on terror. As a result Pakistan which is supposed to be the epic center of world terrorism is projected as a partner in the war against terrorism by the vested interests. This kind of totally fallacious assessment shows the insensitivity of certain powers to the security concerns of India and their practice of hegemonism in the international relations of the world as their national policy. This is what exactly happened when the then Chinese Premier Wen Jiabo praised Pakistan for her efforts against international terrorism during his Pakistan's visit in December 2010. Pakistan irrespective of the nature and extent of assistance from the western powers especially USA still continues to channel all its energy against India with both a fear psychosis and vengeful attitude. The effectiveness of Pakistan in her new assigned new role as a coalition partner in the ongoing war on terror is suspect. Pakistan is still reluctant to severe her ties with the terrorist groups who it thinks can be groomed against India to disintegrate her at whatever convenient time in future. Secondly it is also working to install a pro-Pakistan government in Afghanistan.

As long as Pakistan continues to harbour such kind of baseless fear in her mind about India's intentions, no amount of assistance from the west or assurances from India in the form of confidence building measures (CBMs), would impact on Pakistan's mentality. This is the reason perhaps why some of our confidence building measures were transformed in to confidence bursting measures by Pakistan. The more it generates such misplaced fears, the more it degenerates in to the unrecoverable abyss of mayhem and national and international tragedy. The regular destruction of democracy in Pakistan due to coup de tat, the assassination of Pakistan's former Prime Minister Benazir Bhutto, the daily occurrences of bomb blasts inside Pakistan's cities, extreme forms of religious fundamentalism and the weak economy were the few manifestations of the devastating consequences of such fabricated deep-seated fears against India. It is this unwanted fear that made the idea of Pakistan state a reality, it is this fear that forced Pakistan to impose wars on India and ultimately it is the same baseless fear that forces Pakistan to wage an undeclared war against India forcing it to press the self destruction button. The fear of the nuclear trigger falling in to the hands of terrorists haunts both Pakistan and the donor country USA. The advent of two nuclear powers in South Asia, discoveries of nuclear trafficking, and insurgencies and terrorism that threaten important U.S.

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interests and objectives directly have transformed the region from a strategic backwater into a primary theater of concern for the United States.[ii] The earlier it recovers from such schizophrenic outlooks, the better it may be for Pakistan to hold a responsible position in the comity of nations. Otherwise Pakistan won't be Pakistan and will be PAKI"SATAN" to the entire world much against the wishes of the founding father of Pakistan.

Bhagawad Geeta and Pakistan

The spiritual power and outlook of the author of the Bhagawad Geeta, Rishi Ved Vyasa was so tremendous that his work is still viewed as relevant even in the context of the problems of the 21st century. In my opinion the sage author had an intuition to visualize the present Pakistan's fate even before 2000 years ago. This is the place where we can draw a bit of lesson from our epic Bhagawad Geeta which is coincidentally directly related to war. Of course, my aim is not to compare India-Pakistan wars with that of Kurushetra war. Rather it is to extrapolate what Geeta contains as an advice to Arjuna by Lord Krishna. The applicability is derived from a very small verse from the 2nd chapter of the Geeta entitled the Knowledge of Yoga that actually goaded me to relate it with the plight of today's Pakistan. However, it does not mean that other stanzas are not important. Thus goes the relevant stanza:

"When a man thinks of objects, "attachment" for them arises; from attachment "desire" is born; from desire arises "anger", from anger comes "delusion", from delusion "loss of memory"; from loss of memory the "destruction of discrimination" ; from destruction of discrimination, he "perishes".([iii])

This ladder of fall, which was conceptualized 2000 years ago with reference to human beings, can still be applied to Pakistan too. Let's see now how it suits to Pakistan's behavior, after all, all pernicious decisions disastrous to Pakistan were made by crooked human beings in their positions as Generals or dictators. When Pakistan thinks of Jammu & Kashmir as soon as the attainment of independence, Pakistan due to her concocted two nation theory started giving emphasis on the false "attachment" to the Muslims of the subcontinent, thereby she started relishing in the "desire" to look upon herself as the so-called sole custodian of entire Muslims of India. This was unfortunately reinforced by the cold war dynamics of the yesteryears. When Kashmir was acceded to India and India declared herself to the secular ideals, Pakistan in sheer "anger", went to war against India on four occasions and still continues to wage proxy war by many means. Clausewitz described the war as, "by other means", she had lost the touch with reality and living in her own world thinking that external forces and the nuclear umbrella would come to rescue in case of war. Here Pakistan had already entered in to the next stage of the ladder called "delusion" which can be interpreted in the military parlance as the false notion of security, underestimation of enemy's power or exaggeration of threats emanating from India. I remember an anonymous quote that "Truth may sometimes hurt but delusion harms."

Actually speaking our former Finance Minister Pranab Mukherjee told that

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"Naxalism is the biggest threat to India's security and peace". (Dec. 29, 2010 The Hindu). In this process further Pakistan "loses the memory" of the fact that India is 10 times mightier than Pakistan, Pakistan is no way matching India in terms of military capability, population, geography, strategic depth, economy and other such parameters of National Power Potential. At this stage Pakistan started behaving like hegemonic power or like animal imposing wars on India forgetting to "discriminate" between good and bad, strong and weak, moral and immoral, fair and unfair. Ultimately Pakistan "perishes" in the form of more and more suicide attacks from her own terror groups.

Lessons to Pakistan

In hindsight, looking at the gruesome assassinations, bomb blasts, suicide killings, internal squabbling inside Pakistan, one can come to a conclusion that Pakistan, as indicated in the Geeta, is sure travelling on the path towards self-destruction. In fact, Pakistan has been hoisted with her own petard. However, it is not in India's interests to allow Pakistan to perish by herself. After all, as a torch bearer of an ancient civilization, culture and ethos, India must guide the whole world by her luminous thoughts, knowledge and wisdom bequeathed to us by her ancient seers. Unfortunately, Pakistan lacks such kind of secular ethical treatise to guide her and even if existed it would have conveniently been misinterpreted to the chagrin of Pakistan by demagogues. This is very aptly supported by Stephen P.Cohen who said that "when the integrity of Pakistan is at stake, and India, notably, has an interest in preventing the collapse of a nuclear-armed Pakistan" [iv]… I am reminded here of the inspiring vision of Maharishi Sri Aurobindo, which he set out in his historic radio broadcast for August 15 1947:

"I have always held and said India was arising, not to serve her own material interests only, to achieve expansion, greatness, power, and prosperity though these too she must not neglect and certainly not like others to acquire domination of other peoples, but to live also for God and the world as a helper and leader of the whole human race."([v]) Despite the greatest provocation post the Mumbai terror attacks and with clear evidence that the attack was planned and executed from Pakistan, India did not go to war. There was a strong criticism in India for not responding to such an attack that claimed innocent lives. Therefore, India's approach to Pakistan which has the concurrence of her ancient strategic thoughts of how to avoid a great tragedy, particularly assumes as an important strategy in the nuclear era. In order to avoid the tragedy, Pakistan ought to take note of the advice propounded by Geeta. One of its central theme, advocates that one should not hesitate to kill kith and kin in case they are not following righteous acts. Therefore Pakistan must not misjudge India for her idealistic stand which has realistic element attached to it. This should obviously applicable to the home grown terrorists who are supported by the ISI and sections of the state machinery. For example, Pakistan will have to act resolutely against all terror camps and also address the issues of good unneighborly relations. This is what India keeps on insisting on Pakistan to do so as an important condition to break the Indo-Pak stalemate. For instance, in the list of 20

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most-wanted fugitives whose extradition Delhi had sought in 2008, following the attacks in Mumbai, Pakistan however, continues to dodge us in this regard without initiating any action against those terrorists. Having nurtured the anti-India groups, successive Governments have found it hard to handle the outgrown Frankenstein.

What is important is dharma and not adharma. Pakistan, instead of giving round-the-clock security cover to these terrorists through ISI officials, ([vi]) must crack down on these religious extremists and fanatics if at all it wants to survive on the earth peacefully. The essence of the entire spiritual works, irrespective of religions they belong to; revolve around the theme of Goodness and Fairness. These fanatics kill the real spirit of Islam which is known for its peacefulness, love, brotherhood and charity and makes Pakistan a deadly place to live in through suicide blasts and militancy. Pakistan must never mind who is telling what. What matters is the ultimate supreme truth which is common leit motif of all the religions of the world.

If Pakistan is really interested in peace, then it is imperative that our relationship must be built upon with these convergences rather than on divergences which have actually been responsible for the one step forward and two steps backward syndrome. Wherever that good universal truth exists, Pakistan must take inspirations, irrespective of its origin, from such scriptures without dilly-dallying further setting aside other silly and wily factors like petty politics, vested interests, fanaticism, parochialism and illiberalism in the larger interests of perennial peace of the humanity. This is the last chance for Pakistan to come out from the great hallucination of the so-called pseudo fear in which she has been living since 1947 and to reestablish herself anew as a liberal and democratic state of the 21st century.

Moral of the story is Once enemity hostility ended, the ruler should treat honourly the captives or prisoners of war of the hostile nation.

He should behave in such a manner that the people should say he is far better than the original, native ruler.

His motive or objective is not to suppress the people but to establish dharma.

While others want to be only the master of the world, India insisted to be both master as well as servant to the world. Master to the bad people and servant to the good people.

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Molecular Confirmation of *Aeromonas hydrophila* Isolated from Infected *Channa striata* via Virulence Gene Base Pair Analysis using PCR

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Abstract
Aeromonas hydrophila is a gram-negative, motile pathogenic bacterium that primarily infects freshwater fish, causing septicaemia and epizootic ulcerative syndrome (EUS), with *Channa striata* (Murrel) being highly susceptible. This study aimed to confirm the identity of *A. hydrophila* isolated from infected Murrel by detecting specific virulence genes and comparing their base pair sizes using Polymerase Chain Reaction (PCR). Gut and liver isolates were screened for five virulence genes: *aeorA* (aerolysin), *act* (cytotoxic enterotoxin), *alt* (cytotonic enterotoxin), *enol* (enolase), and *hlyA* (hemolysin). PCR amplification and gel electrophoresis revealed the presence of *act, alt, fla*, and *hly* genes, while *aeroA* was absent, indicating strain-specific variability. These results confirm the pathogenic identity of the isolates and emphasize the value of molecular diagnostics for early detection and management of bacterial diseases in aquaculture. The findings provide crucial insights for implementing best practices to prevent *A. hydrophila* outbreaks and ensure sustainable Murrel culture.

Keywords: *Channa striata, Aeromonas hydrophila*, virulence genes, PCR, freshwater aquaculture

Introduction

Aquaculture was a rapidly growing industry in India, with an annual growth rate exceeding 7%. Freshwater aquaculture accounts for approximately 95% of the annual 5.77 million tons of aquaculture production. Induced carp culture, polyculture of the three primary Indian carp species (*Catla catla, Labeo rohita,* and *Cirrhinus mrigala*), and "synthetic carp culture," which incorporates three exotic carp species (*Hypophthalmichthys molitrix, Ctenopharyngodon idella*, and *Cyprinus carpio*), have all contributed to a notable increase in the production of freshwater aquaculture. There is now more diversity in the industry thanks to the addition of carp, catfish, and small- to medium-sized guillotine fish. In West Bengal and Andhra Pradesh, aquaculture was a common way to produce freshwater fish. A yield of three to six tons per acre is produced annually by the system's diversification. The yearly output of state and private hatcheries produced more than 40 billion carp fingerlings. Fifteen million tons of fish will be consumed by 2020, with nine million coming from freshwater aquaculture. Input, social, and environmental restrictions on aquaculture in India must be addressed by technological development, horizontal and vertical expansion, and climate change adaptation and mitigation. (P. Jayashankar, 2018)

Aeromonas hydrophila is a rod-shaped, Aquatic-type gram-negative bacteria that can also be found in food, drinking water,

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sewage, and wastewater. It is regarded as a developing pathogen that causes more systemic illnesses such necrotising fasciitis, cholera-like sickness, bacteremia, meningitis, peritonitis, and haemolytic uremic syndrome in addition to gastroenteritis and skin infections.Citation[4-7] *Skin and soft-tissue infections have been linked to A. hydrophila* strains that were isolated in regions affected by natural catastrophes like hurricanes and tsunamis. (Hiransuthikul N et al., 2005) *A. hydrophila* is also a well-known fish pathogen that causes a variety of illnesses, such as red sore disease in bass and carp, ulcerative infections including epizootic ulcerative syndrome in catfish, cod, carp, and goby, and motile aeromonad septicaemia in carp, tilapia, perch, catfish, and salmon. (Janda JM et al.,2010) The pathogenesis of *Aeromonas* infection is complex and multifactorial; it includes O-antigens, capsules, lipopolysaccharide, the S-layer a single, polar flagellum expressed constitutively, lateral inducible flagella, and iron-binding systems; with regard to extracellular products it encompasses hemolysins and enterotoxins, Since *A. hydrophila* was first recognized as a significant opportunistic pathogen for humans, many efforts were dedicated to find methods for a correct identification.

The virulence genes aerolysin, hydrolipase, elastase, lipase, cytotonic enterotoxin (ast), lateral flagellum (laf), and polar flagellum (fla), as well as to assess how environmental factors affect the expression of some of these genes, their growth in vitro, and their pathogenicity in vivo. Thirty-five isolates were screened for the presence of these virulence genes using the polymerase chain reaction (PCR). Tests were conducted on six isolates with distinct virulence gene profiles to determine their in vivo pathogenicity and in vitro growth under varying pH, temperature, and ammonia conditions. Aerolysin, lipase, and fla gene expression were measured by RT-qPCR. The growth of *A. hydrophila* was affected by every environmental component that was evaluated, whereas the pathogenicity of the bacterium was affected by pH and ammonia concentrations. Bacteria cultivated in higher ammonia concentrations showed enhanced expression of the fla gene. Numerous environmental conditions impact the death rate determined by *Aeromonas*, highlighting the need of controlling it in fish farming to prevent increased financial losses linked to outbreaks of bacterial diseases. (Ruan E. F. Abreu et al.)

The virulence factors of bacterial pathogens determine their pathogenicity and toxicity. Aerolysins (*aer*), cytotoxic enterotoxins (*act, ast*), cytotonic enterotoxins (*alt*), polar fagella (*fa*), serine protease (*ser, ahp*), elastase (*ahyB*), enolase (*enol*), lipase (*lip*), haemolysis (*hlyA*), DNases (*exu*), glycerophospholipid cholesterol acyltransferase (*gcaT*), and type III secretion system (*ascV*) are among the virulence factors in *A. hydrophila* that are important in bacterial pathogenesis. (Nawaz et al. 2010).

Andhra Pradesh, with its 0.8 million hectares of inland water bodies generating 1.24 MT yearly, is the second largest region in the nation for fish farming. A variety of aquatic animals is consumed by Murrels, who are predators. But the elevated their strong market worth, high demand, and ability to endure bad weather make them viable aquaculture candidate species. Technology and culture are typical for the striped Murrel. In India, the demand for and market value of

Murrel are very high. When cultivated with the greatest care, it offers enormous promise for Murrel culture in freshwater environment and management practises. Due to their flavor, lack of intramuscular spines, and therapeutic significance, Murrels are a special class of air-breathing fish that are highly valued as food fish. (Haniffa et al., 2004). Because they breathe air, Murrels are able to survive in oxygen-depleted aquatic environments; thus, they are appropriate for profitable culture under superficial frameworks. To the extent that the head allows called snakeheads because their appearance mimics that of snakes. Approximately In the global context, 28–30 Channa species have been documented; 8–10 of these species is found in India. These fish are members of the *Channidae* family and another order, Perciformes. There are now 51 snakehead species that have been identified by science. The most significant species of snakehead fish cultivated in India include *C. punctatus, C. striatus*, and *C. marulius*, among others. Although they are farmed for food in Thailand, the Philippines, Vietnam, Taiwan, and Cambodia, snakeheads are native to Asia and Africa. Even so, there is little knowledge of the Snakeheads' traditional practices in India, which limits their culture.

Since its natural habitat in the bottom parts of marshy waters, where the bacterial population is often 10–20 times higher than in the water column (Lewis and Bender, 1961), it may be more vulnerable to infection that occurs during culturing. Additionally, C. striata is acknowledged as one of the most species that are susceptible to developing epizootic ulcerative syndrome (EUS) fatalities and severe ulcerations (Allah Dad Talpur et al., 2014). It is believed that the microbe *Aeromonas hydrophila* has a scientific and commercial due to its fish-pathogenic properties, it is of interest (Austin et al., 1998). An infection with *A. hydrophila* can result in extremely high death rates among the aquatic creatures.

The current study was conducted to isolate and verify *Aeromonas hydrophila* as the bacterial pathogen responsible for infections in Channa striata by targeting virulence-associated genes through Polymerase Chain Reaction (PCR) analysis. With the rising occurrence of *A. hydrophila*-related infections in freshwater aquaculture and its effects on economically significant species like Murrel, the research sought to identify toxic gene patterns that indicate the pathogenic potential of the isolates. Specific virulence genes, such as *aerA* (aerolysin), *act* (cytotoxic enterotoxin), *alt* (cytotonic enterotoxin), *enol* (enolase), and *hlyA* (hemolysin), were chosen for molecular detection to confirm bacterial identity and pathogenicity. The results of this study offer molecular evidence that supports the involvement of A. hydrophila in disease outbreaks among *C. striata*, thus enhancing diagnostic precision and disease management approaches in aquaculture systems.

Materials and methods

Isolation and Identification

The Infected fishes were transported to the lab in polythene bags along with fresh water. After being washed in Distilled water, the live fish were transferred to the plastic tray. Using forceps and scissors, samples of the fish's liver, kidney, and gills were extracted, and they were then broken up in a petri dish with trypticase-soy broth added for enrichment (Nawaz et al. 2010). The culture was streaked onto Aeromonas selective agar

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(Hi media, India) after enrichment, and it was then incubated for 12 to 18 hours at 35 °C. After determining the colony and bacterial morphology, the presumed colonies of round, reddish-colored, transparent to slightly opalescent bacteria were chosen and re-isolated three times for purity (M1890, Hi medium). Additionally, in accordance with Bergey's Manual of Determinative Bacteriology (Holt et al. 1994), the isolates were examined for motility, oxidase, catalase, Voges-Proskauer (VP), indole production, citrate utilisation, glucose fermentation, H2S production, urease production, arginine dihydrolase, lysine decarboxylase, ornithine decarboxylase, arabinose fermentation, inositol fermentation, and mannitol fermentation.

Pathogen Detection using Polymerase Chain Reaction (PCR)

A dependable and accurate laboratory test for identifying pathogens, or organisms that cause disease, in a range of samples is the polymerase chain reaction (PCR) with broad spectrum of uses, such as antimicrobial resistance profiling, early biothreat agent detection, and surveillance.

Molecular identification of virulence genes

A total of 2 isolates were screened for 5 potential virulence genes, namely *aerA* coding for aerolysins, *act* coding for cytotoxic enterotoxins, *alt* coding for cytotonic enterotoxins, *enol* coding for enolase, *hlyA* coding for hemolysin using PCR. The PCR reaction mixture of 10μL consisted of 8μL of Master Mix 1 μL of specific primers (forward and reverse primer), 2 μL of DNA template, and 2.7 μL of nuclease-free water. The primers used for target gene amplification, amplicon size, and annealing temperatures are shown in Table 1. The PCR amplification of virulence genes was carried out in CFX96™ Real- Time system, which consisted of an initial denaturation at 94 °C for 3 min, followed by 35 cycles of denaturation at 94 °C for 45s, annealing for 45s (Table 1), extension at 72 °C for 1 min, and a final extension at 72 °C for 5 min. The PCR products run on 2% agarose (70 volts for 40 min) in an electrophoresis unit were captured digitally using a gel image system/ gel documentation.

DNA Extraction

1. Take 2μL Eppendorf tube add small amount or loop full of culture from plate and add 200 μL of DEPC (Nucleus free water).
2. Then tubes are kept in dry bath for 95 °C for 10min.
3. After dry bath, centrifuge for 10,000 rpm for 10min.
4. Collect 100 μL of supernatant carefully and put in new Eppendorf tube.

Master mix preparation

Here, we use AMPLICON Master mix (Master mix contain Taq DNA polymerase, buffer and mgcl$_2$)

Master mix for 1st reaction,

Master mix	- 5.5 μL
Forward primer	- 0.4 μL
Reverse primer	- 0.4 μL
Nucleus free water	- 2.7 μL
Template DNA	- 2 μL

We have 3 samples and positive and negative control, so totally 5 reactions.

Master mix
- 5.5 µL × 5 = 27.5 µL
Forward primer
- 0.4 µL × 5 = 1.0 µL
Reverse primer
- 0.4 µL × 5 = 1.0 µL
Nucleus free water
- 2.7 µL × 5 = 13.5 µL

Note: In master mix preparation, we add 1st nucleus free water, then add master mix & primer.
Like this we have to prepare 4 sets

Master mix & sample loading:
Take 20 PCR tubes labelled with respective names then add 8 µL of Master mix and add 2 µL of DNA template in each PCR tubes.
Take 2 PCR tubes for (+) ve and (-) ve control then add 8 µL of Master mix into both tubes then add 2 µL of known DNA extract into (+) ve control and add 2 µL of nuclease free water into (-) ve control tube.
Then vortex all the PCR tubes.
All the PCR tubes were kept in Thermocycler.

Condition for thermocycler

aerA, alt, enol & *hlyA* - 34 Cycle		
Steps	**Temperature**	**Duration**
Initial denaturation	94°C	5min
Denaturation	94°C	45sec
Annealing	58°C	45sec
Extension	72°C	1min
Final extension	72°C	5min

GEL preparation
Measured 3g agarose powder and it was diluted with 200ml of 10X TAE buffer
It was heated with oven until it become transparent
Then added 3 µL of EtBr into gel solution
Fixed the gel comb into gel cassette before we adding gel solution
And gel solution was poured into gel cassette
Leave it for solidification at 45mins

GEL electrophoresis
- After solidification, carefully removed comb from the gel for well creation of well.
- Then the gel was taken from the gel caster and then it was placed on the gel electrophoresis unit.
- And the gel was immersed with TAE buffer.
- Add 5 µL of DNA ladder into first well, then add 6 µL of PCR samples, then add 4 µL of negative and positive control, again lastly added 5 µL of DNA ladder.
- Then set the voltage at 80-85V, time at 45min and run the gel electrophoresis unit.

GEL documentation
The gel was placed on the UV transilluminator under UV light and the DNA band was visualized on the gel documentation system.

Results
PCR amplification of specific virulence genes in Aeromonas hydrophila isolates obtained from infected Channa striata produced clear bands that matched the anticipated base pair sizes (Figure 1). Among the isolates examined, the genes *act* (cytotoxic enterotoxin, 300 bp), *alt* (cytotonic enterotoxin, 500 bp), *fla* (polar flagellum, 600 bp), and *hly* (hemolysin, 600 bp) were identified, confirming the existence of important pathogenic factors. Notably, the *aerA* (aerolysin) gene was not found in either

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the gut or liver isolates, indicating variability that is specific to the strain.

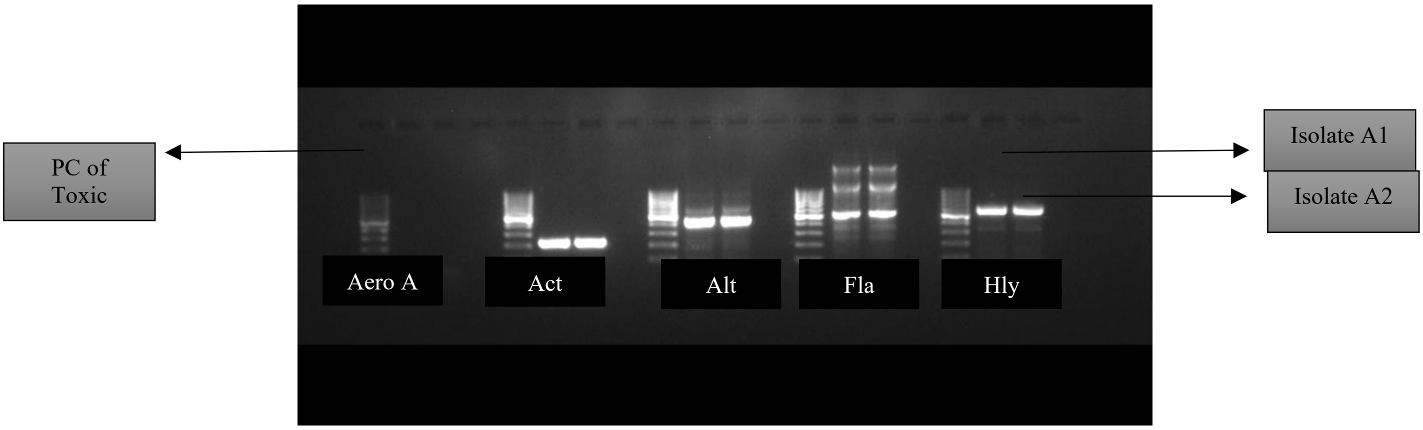

Figure 1. Gel documented Toxic gene base pair confirmation of isolated bacteria

S. No	Isolate/ Sample	Isolate/ Sample	Name of the gene	Product Size (bp) for both isolates	Presence/ absence
1.	A1 isolate from Gut	A2 isolate from liver	aero A	Negative	Absence
2.	A1 isolate from Gut	A2 isolate from liver	Act	300	Presence
3.	A1 isolate from Gut	A2 isolate from liver	Alt	500	Presence
4.	A1 isolate from Gut	A2 isolate from liver	Fla	600	Presence
5.	A1 isolate from Gut	A2 isolate from liver	Hly	600	Presence

Based on the base pair comparison of the virulence genes *alt*, *act*, *hly*, and *fla*, gel electrophoresis revealed distinct bands corresponding to each amplified gene, as visualized using a gel documentation system (Figure 1). These results confirm that the isolates obtained from infected *Channa striata* harbor multiple virulence genes, thereby validating their identification as *Aeromonas hydrophila*. Further biochemical characterization will provide additional confirmation and a comprehensive profile of the pathogen.

Discussion

In this study, *Aeromonas hydrophila* was successfully isolated and identified from diseased samples of Channa striata using both biochemical and molecular techniques. The amplification of specific virulence genes through PCR confirmed the pathogenic nature of the isolates. The detection of *act, alt, fla*, and *hly* genes in isolates from both the gut and liver strongly indicates their involvement in bacterial virulence and infection of the host. The identification of cytotoxic enterotoxin (*act*) and cytotonic enterotoxin (alt) genes suggests the enteropathogenic character of this bacterium, while *fla* and *hly* genes are associated with motility and haemolytic activity, respectively. The lack of the *aeroA* gene in the isolate's points to potential strain-specific differences among populations of *A. hydrophila*, as noted in previous research (Nawaz et al., 2010; Abreu et al., 2016).

The expression of various virulence genes illustrates the complex pathogenicity of *A. hydrophila*, influenced by environmental factors such as temperature, pH, and ammonia levels within aquaculture settings. Similar observations have been made by Ruan E.F. Abreu et al., who showed that environmental conditions can modulate virulence gene expression and increase bacterial infectivity. The high prevalence of enterotoxin and hemolysin genes found in this study underscores the adaptability of *A. hydrophila* to freshwater ecosystems. This highlights the necessity for ongoing surveillance of bacterial pathogens in aquaculture to avert disease outbreaks and mitigate economic impacts.

Moreover, the molecular methodology employed in this research, particularly the use of PCR for profiling virulence genes, offers a dependable and swift means to confirm *A. hydrophila*. This molecular identification method is preferable over traditional biochemical techniques, which may struggle to differentiate closely related *Aeromonas* species. Consequently, the results emphasize the vital role of incorporating molecular diagnostics into pathogen surveillance programs within aquaculture to safeguard fish health and promote sustainable production.

Conclusion

This investigation confirmed that *Aeromonas hydrophila* is the pathogenic bacterium isolated from infected *Channa striata* by using PCR analysis to target virulence genes. The amplification of *act, alt, fla*, and *hly* genes established the pathogenic characteristics of the isolates, while the absence of *aeroA* signifies genetic variation among *A. hydrophila* strains. The findings affirm the effectiveness of molecular methods for accurate pathogen identification and underline their significance for timely diagnosis and disease management in aquaculture. Overall, this study provides important molecular insights into *A. hydrophila* infections in Murrel fish and lays the groundwork for the development of effective management and preventive measures in freshwater fish farming.

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An empirical study unboxing the GOBAR-Dhan potential fuelled by a Nation Branding initiative, crafting an archetype!

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Abstract

India an emerging economy, unfolds responsiveness propagating a developmental aspiration. The nation has assertively reverberated responsiveness to Climate change issues with thrust on sustenance and equanimity. It addresses the dual frontiers, strengthening internally and contributing globally. In its developmental stride it has not forsaken the mother Earth, and this garners international repute for the India, as a nation. The study adjudges the environmental, economic and social significance and impact of the GOBAR-Dhan scheme in the country India through an effective Nation Branding mechanism. It elaborates on the essence of Nation Branding in popularizing the GOBAR-Dhan's reach within the country, as a remarkable display of a greener initiative. It's an innovation that's unique, which in an equation subtracts waste from the environment and on the other side adds sustainability into people's lives. A statistical enquiry employing correlation and regression methods of analysis had been conducted to test the objectives. The parameters chosen for the study are GDP, Rural Income, CBG plants and Environmental Performance Index (EPI). An important finding emerges as a realisation; that's duty upon every individual forming part of this eco-system. This realisation is necessitated as it gives distinguishable repute to the nation and pacifies exaggerations of pessimism going forward. The underlying intent is to shape the understanding of the 'Nation Branding' and its untapped power to drive growth both economically and environmentally.

Keywords: Circular economy, Developed economy, GOBAR-Dhan scheme, Nation Branding, Sustainability.

Introduction:

India is an emerging economy has travelled far to become self-reliant by all means. Self-reliance is that power-connotation of the independent India which shall enlighten its path to development. There are numerous frontiers to this aspirational account. A strive to automation and progressive technology cost an environmental depletion, draining energy savings in a continuous fashion. As these challenges continue to obscure the ultimate destination; but calculated propositions can overcome tide with time. Government and budding talent in our country have been working in unison to direct the flow of development causing least externalities (Aronczyk, 2024). Determination of the right approach is crucial for the successful implementation of the national endeavours. Agile and lean methodologies work on the similar principle and have wider application

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across domains (Holmes & White, 2024). While India is doing its bit, an acknowledgement of the profound impact across the borders is a great deal in disguise. Sustainability and Climate change crisis have an extended reality beyond our existence as will have a long-term impact on the generations to come.

Risk-reward ascertainment helps in decision-making; lean manufacturing techniques direct the process flow and implementation with agility are all probable solutions but why has it failed to garner consensus or is it lacking reach among the masses? Negotiating tailwinds across the nation builds confidence indigenously and sails through a magnificent vision in the global arena.

Circular Economy Adoption:

This conceptually enriching novelty has embedded significance. Globally acclaimed practice which every nation has stalled subject to emptying of renewable reserves of resources. There is an economic sharing infused in the process whereby reduce, reuse and recycle are the existing norms. The urge to reconcile the depleted havens has to be attended to cautiously and with immediate effect. Usually, things that begin with an acute crisis, open doors to innovative solutions (Vinyals-Mirabent et al., 2025). The paradoxical situation is hilarious, whereby scarce resource is a concern but management of excessive waste is a greater concern. Opportunity makes both the ends meet and that's exactly where, sustainability is indicative of Circular economy adoption. Circular economic practices modulate production process and consumption habits extending life-cycle of the products. This linearity inhibits probable solutions to the existing problems at multiple fronts. Adoption of circular economy is both a healthy and an economic opportunity.

India's Readiness for Adoption of Circular Economy:

Government of India has opted for serious course of action with regard to the implementation of circular economic methodologies. The policy implications have had a proven track record of environmental conservation to elevated levels of responsible ordinance and adherence. National Resource Efficiency Policy (NREP) and Extended Producer Responsibility (EPR) are two essential policy applications of Circular economy. The former aims to create a model of production and consumption whereby the existing materials are reused or refurbished after repairing or recycling until its last breath. Efforts are taken to extend the survival pane of the products. The latter is dualistic approach to post-consumption management, proper disposal is advocated (Maiz-Bar et al., 2025). Key stakeholders and Government customise the reach and adaptability to improve its functionality as the nation prepares for a better tomorrow.

The Gobar-Dhan Scheme:

'Wealth from Waste' a tropical colloquialism surprisingly offers solution to detestable levels of degradation. It instils waste management and reproduces a reservoir of renewable resource which is environmentally rewarding. It assists a shift in habit from frugality to prudence. GOBAR-Dhan which stands for Galvanizing Organic Bio-Agro Resource Dhan was launched by the Government of

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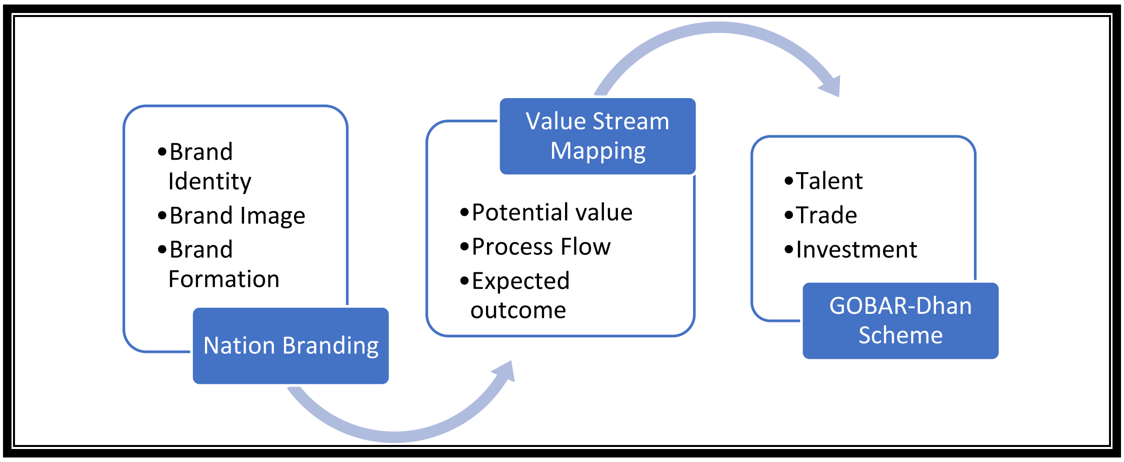
India in the year 2018 under the Swachh Bharat Mission. It envisions a cleaner environment generating livelihood from conversion of organic waste into valuable resources like Bio-gas, Bio-CNG and organic manure. Aspects of benefit that are derivatives of the GOBAR-Dhan scheme positively impacts the nation. Improved sanitation post-achievement of the ODF (Open Defecation) status has led to the achievement of Healthy living. It has had a significant economic impact; promoting entrepreneurship and increased income levels.

Successful Implementation of Gobar-Dhan Scheme:

Indore, a fast-fashion capital of Madhya Pradesh is a live embodiment of successful implementation of the project GOBAR-Dhan in India. It has installed Bio-CNG plant on a large scale, also acclaimed the status of being one of the largest in Asia. The plant is known to process reasonable amount of wet waste on a daily basis. The Bio-CNG produced from the existing capacitators fuels public transport and its by-products sourced as organic manure. The key-takeaways from the case-study of Indore are that, such a successful execution could be facilitated by Public-Private partnership model. Residents of the city are the real resource as every individual and entities have agreeably assisted in waste segregation right at its source. These factors contributed to its success (Tahiru et al., 2024). The state of Haryana follows suit as it has had an early realisation of the potential underserved by the economy.

Figure 1: Intra-national Branding Framework



GOBAR-Dhan Scheme though an environmentally conscious measure, exhibits acquaintance across domains. It borrows standardization from Lean manufacturing addresses economic externalities and going forward attributes a brand for the nation. The study proposes a framework whereby a value-stream mapping of the entire process's experiences and perspectives are combined to generate understanding and awareness on the GOBAR-Dhan Scheme. The scheme's implementation passes through several stages.

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In the pre-implementation phase, it maps the process flow of procurement to production, this strengthens the tenets of Nation Branding employing talent, auguring investment and organizing trade via exports. Embedded attributes of the scheme mapped unto formation of a nation brand unfolds scepticism about its relevance. Relativity lies in the gap that has obstructed the flow of value of the GOBAR-Dhan initiatives to various states of India. The value mapping enables transmission of emotional and economic relevance alongside building an international repute. Simplistically, a theory on Value Stream Mapping from operations management helps in technical understanding and implementing the GOBAR-Dhan scheme across states. In order to augur acceptance globally, acknowledgement and awareness ought to occur which is possible through Nation Branding.

Objectives of the Study:

- To assess the environmental impact of the GOBAR-Dhan scheme
- To adjudge the economic significance of the GOBAR-Dhan scheme
- To understand the developmental role of GOBAR-Dhan scheme
- To ascertain the importance of Nation Branding in the GOBAR-Dhan scheme
- To establish the aspirational reach of the scheme through the branding efforts

Research Questions:

- How would an economy assess the environmental impact of the GOBAR-Dhan scheme in India?
- How would an economy assess the economic impact of the GOBAR-Dhan scheme in India?
- How would an economy assess the developmental impact of the GOBAR-Dhan scheme in India?
    - What sort of relevance does Nation Branding have with the GOBAR-Dhan scheme?
    - Does Nation Branding play an assistive role in the nation-wide advocation of the GOBAR-Dhan scheme?

Review of Literature:

Circular Economy Hustling a Way Out to Sustenance:

Circular economy is a pervasive mechanism, that’s gaining attention of stakeholders of various industries. As the world has awakened to the reality of climate change and global warming a pressing need to adopt sustainable practices has turned out to be the basic norm (Rancier, 2024). Beginning from the birth unto the death a life cycle is run by various processes and instruments. In order to make this pretty short to long cycle of life sustainable, habits and practices ought to undergo a transition. Cataclysmic events have made it evident that globe demands a shield against climate change. A trending feature of the doctrine that most economies discuss on the international diasporas is the circular economy. Recent study discussions have reaffirmed that circular economy is a vital tool to combat climate change (He & An, 2024). Various efforts and initiatives by the economy have been seriously undertaken with this regard. Series of consultations on designing trade-in programs based on the principle of Circular Economy have been

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directed towards creating sustainable economy. Another significant principle in the realm of applicable circular economy practices, is a transition from a Linear Economic (LE) system to circular economy. The former shared an ideology of the past take-make-use-dispose while presently operates on the doctrine of Reduce, Reuse and Recycle (Gorski & Badea, 2025).

Absorption of Circular Economic Practices:

Circular economy principles have found wider application in significant domains worldwide. The sectors that have greatly benefited are the Industrial sector, Logistic sector, Petroleum industry and Agricultural sector. While the agricultural sector serves dual purpose as it used as an input into the process as a raw material for generation of renewable resources and secondly streamlines agricultural production hence promoting the entrepreneurial family farming (Díaz-Duarte et al., 2024).

The green technology which the major industrial houses are allocating a larger amount of investment to has stirred an industrial revolution globally. The most absorptive application of circular economy principles is promoting green logistic, right from procurement up to the stage of delivery. This transition can save billions monetarily, considerably reduces carbon footprint, reduces waste and achieves full-capacity utilization at zero-cost to the environment (Castillo-Díaz et al., 2025). Even the downstream petroleum industries have been succinctly moderated by green logistic and continues to develop pocket-friendly sustainable solutions.

Corporate Sustainability the New Norm!

Execution of the Circular economy practices is not as simple as it appears on the spreadsheets. Capital Investments, Technical know-how, Upgradation of the current faculties, Upskilling of the human resource and economy’s preparedness are necessary criteria whose fulfilment is implicit on the propagators. As these practices are capital intensive, large impetus is placed on the achievement of Corporate Sustainability (Jiménez-Martínez & Dolea, 2024). Experimenting with methods of Circular economy in the fields of Business management and Accounting are being conducted to attain Corporate sustainability. A few organisations are keen on achieving the Triple Bottom Line (TBL) that works on the principle of three P’s (People, Planet and Profit). Any sustainable initiative should address people’s needs, safeguard the planet as a home to vary many species and have a profitable orientation (Magalhães et al., 2024). Corporate Sustainability bestows economic strength and socio-acknowledgement among the masses.

Country-Specific Challenges Vying Adoption of a Circular Economy:

Spain was first to recognise the conversion potential of agricultural waste into a renewable resource. It dealt with the perception challenge to effectively initiate a transition from conventional practices. Ghana, Tamale is another region who had an early realisation and had taken effective measures for the implementation of the Circular Economy practices. Poland and Portugal’s approach to building a Circular economy had a different perspective (Starzyk et al., 2024). They promoted the

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use of renewable material 'Wood' for the construction of single-family house. This is environmentally and economically benefitting. Another developed economy's approach, whereby upcycling experiments were conducted for treating food by-products for human consumption. It was seen to mitigate the effects of climate change and noticeable results were honoured by the citizens of Canada who had a significant contribution in undertaking this experiment.

Research Gap:

Nation branding a renowned marketing approach that interested every nation in its introductory years. The evolvement of literature around nation branding and its extensive application has awestruck a lot of countries. A branding exercise that was merely considered a marketing phenomenon had the potency to turn around political tables, motivate an economic development and resonate solidarity and robustness across the borders (El-Dabt et al., 2025). The gap identified by the study adds to its advantages a newer application. Generalization about Nation Branding was that it is a tool for creating an identity to build global recognition, or rather a powerful medium for gaining conformity to an identity from their very own countrymen. What was unrealised until then was that it is a bearer of unity and mirrors solidarity. Therefore, Nation Branding internally sets in acceptance over a nation's identity and progressively upgrades distributing coherence along with its stakeholders (citizens) graduating succinctly.

GOBAR-Dhan scheme was one such endeavour; journeying from awareness to accomplishment. The study captivates assertively, that Nation Branding can do it all! While the scheme has a pre-stated game-plan; its positioning in the architectural grandeur of Nation Branding can be immensely rewarding. The study has tried to address this gap by making ends meet, such as the GOBAR-Dhan's advantageous stance with Nation Branding's faming network, unboxing national motive encompassing the Global truth, soon to be a shared notion in the years to come.

Research Methodology:
Qualitative Aspects of the Study:

Qualitative aspects of the of GOBAR-Dhan Scheme bears an aromatic significance as it taps the intangible cues. It reminds of the nutritive Indian soil which nourishes and nurtures lives. These abstractions share eulogy with Nation Branding tenets. While the scheme fulfils its pre-emptive objectives and reverberates expected outcome subtle associations take form. The associations are perceptions of the prospective audiences that look up to these measures as revolutionary ordeals, that's builds an identity from deeper imaginations to craft an image. When identity blends with an image it forms a Nation brand. Nation Branding accelerates the entire journey from Brand formation unto successful implementation mapping hidden treasures bearing resource reservoirs. The study epistemologically graduates every construct assessing them on conceptual grounds to derive relevance amidst the pressing need to tackle the climate change crisis.

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Data Collection:

In order to assess the developmental role of the Gobar-Dhan scheme introduced by the Government of India, national and international performance indexes were analysed. Nation Branding as a marketing medium, possesses persuasive potentialities which can facilitate successful implementation of the GOBAR-Dhan scheme to generate expected outcome that emanates from the Nation Branding tenets and coincides with a nations' developmental goals. A non-random purposive method of sampling was chosen to employ various indicators to testify the objective of the study. The Environmental Performance Index (EPI) shall assess the positive and negative impact on the environment, the number of profitable CBG plants set up were measured alongside the rural income of people in the state of Madhya Pradesh where the scheme had been widely implemented was also considered as an essential part of analysis. The GDP of the nation was set up in the study as an indicator of economic health of the country and measures the contribution of the tenets of nation branding.

Methods:

Quantitative approach adopted by the study summarizes two important aspects of the study. Foremostly, the economic parameters chosen has qualified representations over a longitudinal range making it an observational study. Secondly, gaining cognizance of the existing relationships between the parameters was achieved through a Correlational Analysis. Therefore, the study employed a Quasi-Correlational method of analysis and regressed it further to determine the extent of dependence between the factor of analysis. The study formulates conceptually, drawing conclusions empirically.

Graphical Illustration:

Figure 2: Graphical representation of relationship between Environmental Performance Index and GDP

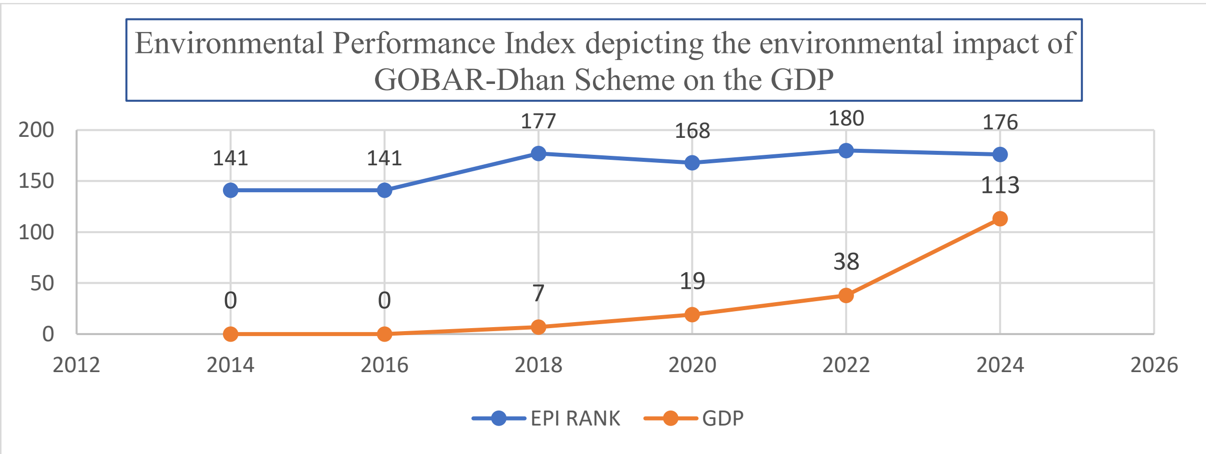

Fig. 2: depicts how Environmental Performance Index improved post implementation of the scheme which in turn shows a positive impact on the GDP of the nation.

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Interpretation: It can be seen that as the Environmental Performance Index rank improves, it also shows an increase in GDP year on year (GOBAR-Dhan was launched in April 2018).

Figure 3: Graphical representation of number of CBG Plants set up in India and its contribution to GDP of the nation

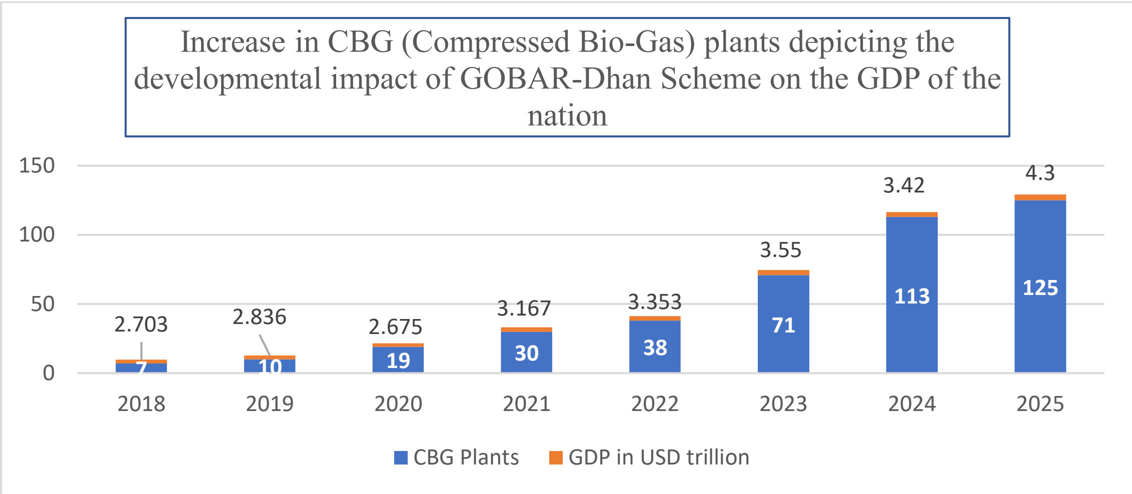
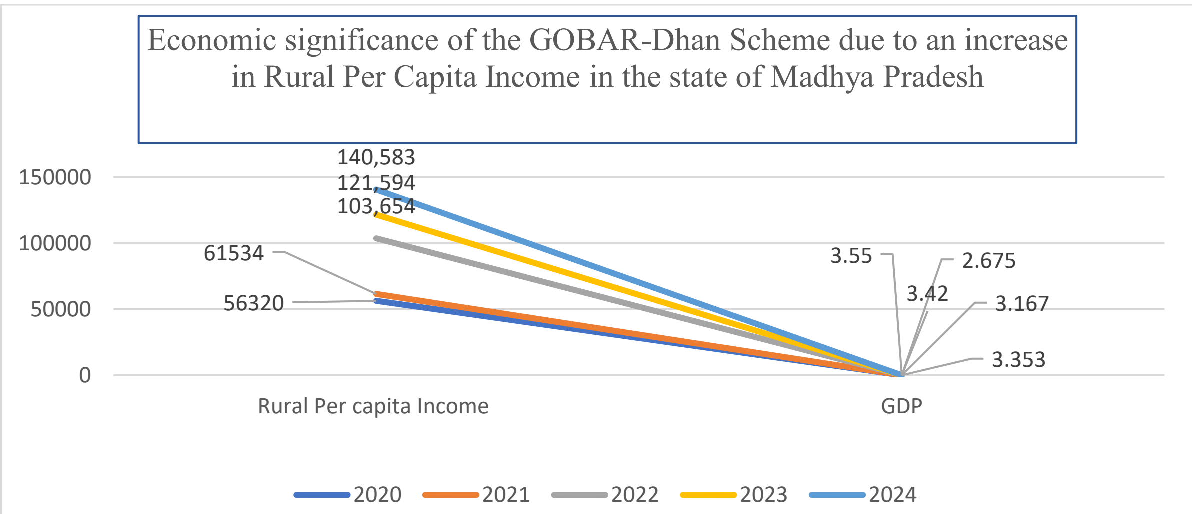


Fig. 3: depicts how an increase in the number of CBG plants across the state, post implementation of the scheme had a positive impact on the GDP of the nation.

Interpretation: It can be seen that as the number of CBG Plants installed in India increased, GDP also shows an increasing trend coincidentally.

Figure 4: Graphical representation of Rural Per Capita Income and its contribution to the GDP of the nation



(*Kindly click on the data labels to know the GDP and rural income for the respective years*)

Fig. 4: depicts the increasing rural per capita income contributing significantly to the GDP of the nation.

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Interpretation: It is evident from the above chart that as the rural income increased post the installation of the CBG plants year on year in the state of Madhya Pradesh respectively, similarly the GDP of the nation also showed an increasing trend.

Hypothesis

H1: There is a significant association between the EP Index and the GDP of the nation

H2: There a significant association between the number CBG Plants installed with regard to the GOBAR-Dhan scheme and the GDP of the nation

H3: There a significant association between the Rural Income of the farmers in the state of Madhya Pradesh and the GDP of the nation

Data Analysis:

Correlational Analysis:

A correlational analysis was conducted between the various performance indicators assess in the study. The study showed a positive correlation between the (i) Environmental Performance Index (EPI) and GDP of the nation (R = 0.90855), (ii) Rural Income of the householders in the state of Madhya Pradesh and GDP of the nation (R = 0.82868), (iii) Number of CBG plants set up in India and its contribution to the GDP of the nation (R = 0.88175). Each of these indicators of performance showed an increasing trend and GDP of the nation correspondingly increased showing a positive correlation.

Regression Analysis:

H1: There is a significant association between the EP Index and the GDP of the nation

Table 1: showing results from Regression Analysis of GDP and EPI

Results from Regression Analysis	
f-value	14.1892
Standard Error	5.16E-03
t-Statisitic	3.766859
P-value	0.03274
Equation	GDP = -0.0403 + 0.01943 EPI Rank

Interpretation:

The results obtained from the regression analysis between Environmental Performance Index (EPI) and the GDP of the nation had shown a positive correlation. A higher f-value=14.1892 indicates that model is a better fit for data and a low standard error confirms the robustness of the model. In simple terms, a larger the t-statistic and the smaller the p-value, gathers evidence against the null hypothesis, supporting the conclusion that the independent variable (EPI) has a significant impact on the dependent variable (GDP). The regression equation explains the extent to which the GDP is impacted by the EPI and assess' the environmental impact of the Gobar-Dhan scheme.

H2: There a significant association between the number CBG Plants installed with regard to the GOBAR-Dhan scheme and the GDP of the nation

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Table 2: showing results from Regression Analysis of GDP and Increasing number of CBG Plants in the Country

Results from Regression Analysis	
f-value	20.9651
Standard Error	2.25E-03
t-Statisitic	4.57877
P-value	0.00378
Equation	GDP = 2.71905 + 0.0102942 CBG Plants

Interpretation:

The results obtained from the regression analysis between increasing number of CBG plants set up in India and the GDP of the nation had shown a positive correlation. A higher f-value = 20.9651 indicates that model is a better fit for data and a low standard error confirms the robustness of the model. In simple terms, a larger the t-statistic and the smaller the p-value, gathers evidence against the null hypothesis, supporting the conclusion that the independent variable (Number of CBG Plants) has a significant impact on the dependent variable (GDP). The regression equation explains the extent to which the GDP is impacted by the increasing number of functional CBG-plant set ups and assess' the developmental impact of the Gobar-Dhan scheme.

H3: There a significant association between the Rural Income of the farmers in the state of Madhya Pradesh and the GDP of the nation.

Table 3: showing results from Regression Analysis of GDP and Rural per Capita Income

Results from Regression Analysis	
f-value	6.57603
Standard Error	2.98E-06
t-Statisitic	2.56437
P-value	0.0829
Equation	GDP = 2.49 + 7.651E-06 Rural Income

Interpretation:

The results obtained from the regression analysis between Rural Income of the householders in the state of Madhya Pradesh and the GDP of the nation had shown a positive correlation. A higher f-value = 6.57603 indicates that model is a better fit for data and a low standard error confirms the robustness of the model. In simple terms, a larger the t-statistic and the smaller the p-value, gathers evidence against the null hypothesis, supporting the conclusion that the independent variable (Rural Income) has a significant impact on the dependent variable (GDP). The regression equation explains the extent to which the GDP is impacted by the increase in rural income and assess' the economic impact of the Gobar-Dhan scheme.

Findings:

- Gobar-Dhan Scheme's expanse in the state of Madhya Pradesh was measured using the Environmental Performance Index (EPI). The index was measured against the Compressed Bio-Gas plants installed in the state of Madhya Pradesh post the introduction of the GOBAR-Dhan scheme. Primary environmental analysis reveals that installation of CBG plants have negligible effects on EPI and renders it effect in isolation unmeasured.

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- Economic significance of GOBAR-Dhan scheme has shown some sort of relation between the rural income and GDP of the nation. This hints at an entrepreneurial culture that would boosts employment levels and appraise the existing levels of income. Such conscious initiatives ought to be encouraged in the rural set up and should be the norm of an agrarian economy that is on its path of progression.
- The developmental significance of the scheme had shown an indirect impact on the GDP of the nation. This GDP in turn influences the EPI index and strengthens the nation's position in the global arena.
- A responsible measure in the interests of the environment has several dimensions whose consideration at the national and international levels should be thoroughly examined to derive at a decision for the masses.
- Finally, Nation Branding plays a crucial role in economical, developmental and environmental application of such initiatives.

Discussion:

Nation Branding spreads the word of caution (environmental), pacifies visualization of a better tomorrow (economic), communicates a nation's ideologies with ease (developmental) and renouncing (repute which a nation deserves globally) existing perceptions about a country with retrospective effect. A nation that builds a brand is believed to have achieved something remarkable, therefore afloat optimism about the nation. Countries with powerful brand are usually ranked high on attractiveness, whether it is a unique holiday destination, products coming from that particular country or it being people's preferred destination for higher education or a dream job or the growth potential of the economy making it investor-friendly. Everything in place is performative and apt positioning it informative. It is commendable that Gobar-Dhan is righteously performative which needs to be channelised in the right direction so that it can be rewardingly informative.

Policy Implications:

GOBAR-Dhan scheme can be environmentally soothing and economically rewarding. Nation Branding serves dual purpose: i) builds an identity ii) generates responsiveness. A nation acting responsibly to conserve the environment is immensely rewarded in the long term. A goodwill builds an identity that serves generations, benefitting both economically and environmentally. Its economic benefits are mirrored through the tenets of nation branding. A powerful brand attracts investment, trade and talent of an expected calibre into the country. Talent attraction and retention are the underlying objectives of a Nation Branding campaign per se. Investment and Trade are shared outcomes of a successful nation branding campaign. A nation's preparedness and fundamental awareness of the policy initiations are essential for a robust nation branding.

Limitations & Scope for Future Research:

Certain limitations of the study were with regard to the data set used for the analysis. Post the implementation of the scheme, it had been just few years that have passed by and does not necessarily guarantee its long-

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term success. This provides room for future research whereby the scheme's performance and its impact on various other economic indicators could be examined. Moreover, this study found no conclusive evidence regarding the relationship between the scheme (GOBAR-Dhan) and the Global environmental index (EPI). An impactful relationship could be awaited in the years to come, as it would be a powerful validation of the Gobar-Dhan initiative. If the scheme sails further, it should apparently address the Climate change crisis at the international levels and carve-out a proven plan of sustenance.

Conclusion:

GOBAR-Dhan scheme enriches the rural households with fertile soil, waste reduction and utilization. The automation of certain process due to the in-house generation of bio-gas from organic waste facilitates quality-living. The environmental benevolence should not be exhausted to the extent of extinction. While an investment in the GOBAR-Dhan scheme is an additional source, parallel measures to save the environment should be taken. Wealth creation is the result of savings and investments opting out of frugality and counting on discretionary. Resource is a sort of wealth which needs to be created and built over the time and gift every generational decade if not the best at least a better place.

Nation Branding evokes a sense of 'Nationalism' and advocates to the world about its environmental responsiveness. This is not a populist manifesto, but an identity, that if communicated, crafts an image for the nation. This builds recognition and reliability among the global audience.

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A Study on the Socio-Economic Challenges and Working Environments of Migrant Workers in Chennai

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Abstract
In India, regional migrant workforces encounter many challenges at diverse stages, especially in areas such as Tamil Nadu's Chennai District. These problems include disparities, redundancy, a deficiency of skills, and provincial differences. This approach is empirical in nature based on both primary and secondary data. The primary data was collected using an interview schedule prepared as per the objectives of the study. The secondary data was collected from government websites and magazines. The population is unknown and hence the researcher has adopted a snow-ball sampling method for drawing samples from the total population. The sample size is seventy from the selected study area Chennai district. The percentage analysis was used for computing average results of the collected data for tabulation. A noteworthy 41.4% (29 out of 70) of those surveyed worked in the construction industry, which is a major portion of the migrant workers. It is suggested that the Migrant workers have to learn the regional language of the place where they are migrated for their employment. As per this study migrant workers in Chennai are facing lack of facilities rather than social challenges.

Keywords: Primary data, Snow-ball Sampling, Average, empirical, construction industry, lack of facilities.

Introduction

It is estimated that 120 million Indians migrate seasonally each year from rural to urban areas in order to work (CMIE, 2020). The population, which includes construction workers, daily wage workers, self-employed people, and those living on the minimum wage, is wealthy and situated at the nexus of residential, social, and occupational vulnerability. The World Bank (2019b) reports that between 1991 and 2019, the proportion of employment in agriculture to total employment fell from 63% to 43%. This labour Migration is increasing from farming to industrial and service sectors like construction and other casual work in urban areas. The Census of India (2011) states that the primary cause of migration to urban areas is rural distress. Urban migration has been fuelled by the loss of millions of livelihoods in agriculture and related fields, especially among Dalit, tribal, and other backward workers. The majority of distressed migrant workers have moved to cities in search of better jobs that will raise their incomes and improve their quality of life.

According to Bustamante (2011), those migrants are at risk as human rights subjects. The same individual who migrates has greater material and human resources at his disposal for self-defense. Tamil Nadu (TN) is one of the primary destination states for over a million migrant workers from other states, many of whom are unskilled, low-wage labourers. These migrants have significantly boosted the economies of both the states and the source states.

10.2 lakh migrant workers from West Bengal, Uttar Pradesh, Bihar, Jharkhand, Odisha, and the northeastern region were employed in Tamil Nadu in 2015–16, according to an initial survey. However, the number was 34.87 lakh according to a Press Information Bureau (PIB) statistical survey on migrant workers that was released in April of last year. The rapid growth of the manufacturing and service sectors created a huge demand for workers in a wide range of activities. Both construction and small and medium-sized manufacturing businesses were suffering from a severe labour shortage. By this time, migrant workers from the east and northeast of the country started flooding into a number of industries. The entire manufacturing and service sectors of the Chennai hub are increasingly dependent on migrant labour. According to the Economic Survey (2017), a significant number of migrants from Hindi-speaking states like Uttar Pradesh, Bihar, Madhya Pradesh, Orissa, and Jharkhand in the northeastern states were drawn to states like Delhi, Maharashtra, Tamil Nadu, Kerala, Karnataka, Andhra Pradesh, and Gujarat. Tamil Nadu and Kerala have seen increases in internal migration rates, which is indicative of the southern states' increasing influence on India's migration patterns (Government of India, 2017). The southern states have significantly more economic development, employment opportunities, and daily wages (Reja and Das, 2018).

The Economic Survey (2016–17) states that opportunities for survival are difficult. Anxious migrant workers must adjust to new languages, cultures, ethnic groups, climates, dietary customs, and workplace cultures. They have become isolated, alienated, and vulnerable as a result of these negative factors. Language barriers, exclusion, xenophobia, health risks, accidents and fatalities, gender discrimination and violence, exploitation, discrimination and non-payment of wages, human trafficking, and bonded labour in Tamil Nadu are just a few of the rights violations that distressed labour migrants in India are susceptible to, according to the Labour and Migration Unit's findings. There are numerous manufacturing facilities, small-scale businesses, and large and medium-sized factories. The state is home to over 40,000 industrial facilities. Both skilled and unskilled labor are in high demand across various units. Chennai, Thiruvallure, Chengalpattu, Coimbatore, Tirupur, Salem, and Erode districts are home to these units. Due to the high demand for unskilled and semiskilled labour, migrant workers from North India began to pour into these Tamil Nadu districts. Tamil workers are insufficient to perform these tasks and support the state economy. Given the aforementioned information, the researcher has considered the socioeconomic difficulties that migrant workers encounter as well as their working conditions in Chennai for this study.

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Research Gap

The nature of this study is descriptive. For this study, both primary and secondary data would be gathered. A well-structured interview schedule was used to gather primary data, and state government documents, the Economic Survey, the Reserve Bank of India, the Planning Commission of India, the Government of India, the Ministries of Labour and Social Welfare, and the Constitution of India were used to gather secondary data. Seventy is the sample size. The snow-ball sampling method is used to select a sample from the entire population because the population is unknown. The reliability of the variables chosen for the study is examined using Cronbach's alpha test. The Tamil Nadu district of Chennai serves as the study area. The Chennai district's north and south were used to choose the sample respondents.

Research Objectives

The objectives of the study are:

1. To know the socio-economic status of the migrant workers in Chennai.
2. To study the socio-economic challenges faced by the Migrant workers in Chennai.
3. To investigate the working conditions of the migrant workers in Chennai.
4. To offer valuable suggestions to enhance the standard of living of the migrant workers in Chennai.

Methodology

The nature of this study is descriptive. For this study, both primary and secondary data would be gathered. Seventy is the sample size. The snow-ball sampling method is used to select a sample from the entire population because the population is unknown. The reliability of the variables chosen for the study is examined using Cronbach's alpha test. A well-structured interview schedule was used to gather primary data, and state government documents, the Economic Survey, the Reserve Bank of India, the Planning Commission of India, the Government of India, the Ministries of Labour and Social Welfare, and the Constitution of India were used to gather secondary data. The Tamil Nadu district of Chennai serves as the study area. The Chennai district's north and south were used to choose the sample respondents.

Results

According to this data, 32 out of 35 labour marriages are child marriages (45.7%), 21 out of 30 labour marriages are lawful marriages, and 17 out of 24.3% are not aware of either child marriage or marriage at legal age. There were 14 regional labour migrants, with a 20% share. Two children, 48 of whom had three children (68.6%), and 8 of whom had more than three children (11.4%). Of those charted, 14.3% said their children did not receive any recognized education. 52.9% of respondents selected "Primary Education," representing substantial access at this level. Furthermore, 31.4% of the Children of the respondents crossed secondary level education.

Just 1.4% of the kids of the migrant workers had earned a "Diploma," which shows their empowerment in Education. The educational accomplishment of children of interstate migrant workers is shown as per the above data. The fact that 17 out of 70 respondents, or about a quarter (24.43%), lived in provisional sheds which are not having proper facilities for the daily routine. The vulnerability of certain migrants is highlighted by the fact that 12 out of 70 respondents, or 12.9% of the total, described living in polythene sheet sheds. Although the quality of living environments varied, 62.9% (44 out of 70), lived in hired accommodations, indicating their stable living environments. Of those surveyed, 62.9% (44 out of 70) resided in buildings, which offered greater comfort and solidity than sheds.

7.1% of the respondents working at Brick kiln industries in the study area. A noteworthy 41.4% (29 out of 70) of those surveyed worked in the construction industry, which is a major portion of the migrant workers. Additionally, 8 out of 70, or 11.4%, were engaged in road construction for their employment. Finally, forty percent (28 out of 70) worked in a variety of other jobs, such as manufacturing and agricultural labour. Just two people, or 2.85% of the total, were skilled workers, while 68 people, or 97.14 percent, were unskilled interstate migrant workers.

Just 2.9% of respondents report fair wages, and only 15.7% of respondents, regardless of gender, receive equitable pay. 95.7% express health concerns, and 94.1% acknowledge hazardous working conditions. 45.7% of bonded labourers are affected by workplace discrimination, which affects 76.8% of workers. Remarkably, 97.1% are ignorant of labour laws, and 94.3% lack workplace safety. Just 2.9% of respondents have access to restrooms, and only 1.4% say their living environments are dignified. The vital need for all-encompassing interferences to improve these workers' lives is emphasized by this data.

Discussions

The interstate migrant workers from Tamil Nadu's Chennai District are the subject of this study. Debt, lack of land, unemployment, poverty, and poor irrigation were major causes of migration. They worked in a variety of industries, including road construction and maintenance, frequently in dangerous settings that resulted in health problems because of stress, poor sanitation, heavy workloads, and environmental factors. Migrant workers have lived in provisional sheds, tents and rented houses. However, the major portion of the migrant workers are living in a rented house. Thus, the living conditions of the migrant workers are good in facilities. The family size of the migrant workers is comparatively larger than the domestic people living in the study area.

Gender-based wage inequalities, bonded labour, inadequate security, poor sanitary facilities, a lack of knowledge about labour laws, and fair living conditions were among the difficulties encountered at work. Lack of safety measures and discrimination were also there in front of migrant workers. The majority of workers are not undergoing proper training, making the lack of opportunities for skill enhancement another problem. Due to technological development unorganised workers are losing their employment. In order to address the various needs of interstate migrant workers and guarantee their rights, safety, and well-being, this study emphasizes the urgent need for a comprehensive strategy for the above mentioned issues faced by the migrant workers.

Suggestions

Migrant workers have to learn the regional language of the place where they are migrated for their employment. Speaking regional languages may help migrant workers to access all facilities they require and the socialization is very easy for them to lead their life. It is suggested that Migrant workers should complete all the legal formalities pertaining to their employment and accommodation for their safety. Employers should arrange proper accommodation for the migrant workers instead of giving provisional places for the stay and ensure the safety of the workers at the workplace and at their stay. All the basic amenities should be arranged by the employer and that is to be maintained regularly for the welfare of the workers. Workers should give importance to their health and hygiene and also reasonable attention should be given to their family members including Children. Health insurance policy can be taken for protecting worker's health and their family by the employer and should be renewed up to date of their employment.

Conclusion

In general, Migrant workers are facing different challenges in various states where they migrated. But in Tamil Nadu the migrant workers felt good in terms of their socialization with domestic people. In Chennai the basic facilities for the workers are arranged moderately that needs to be developed. The safety measures are followed by the employer in case of manufacturing and construction. In other sectors safety measures are to be improved by the employer. The fringe benefits are not properly provided to the migrant workers. Social isolation is also a challenge faced by the workers since they do not know the regional language. The welfare associations for the migrant workers are very less in number and not active in protecting the welfare of the workers. As per this study migrant workers in Chennai are facing lack of facilities rather than social challenges.

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AI-Driven Disease Detection in Medical Imaging: Big Data and Adaptive Dual-Channel Pulse-Coupled Neural Networks Optimized by Fire Hawk Algorithm in Public Health and Administration

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Abstract
Traditionally, COVID-19 detection using computed tomography (CT) and chest X-rays (CXR) imaging relied upon the interpretation done by doctors and researchers, which makes it prone to diagnostic errors. The current study presents a sophisticated AI-driven technique that applies Window-Aware Guided Bilateral Filtering (WGBF) to preprocess the input data, a Modified ResNet-152 network to extract characteristics, and an adaptive dual-channel pulse-coupled neural network optimized by Fire Hawk Optimizer (ADP-CNN-FHO). The WGBF technique enhances the quality of the image with less noise and preserves the critical details. The Modified ResNet-152 network extracts deep, meaningful characteristics from CT and CXR images, and the ADP-CNN-FHO model provides adaptive dual-channel processing and optimization to enhance the performance of categorization. The suggested method achieved 99.89% accuracy, a recall of 99.85%, a specificity of 99.83%, and an F1 score of 99.82% on benchmark datasets. This establishes better performance in comparison with conventional and AI-based methods existing within the domain. This method is less prone to human error and accelerates the diagnosis of COVID-19 while it is also a scalable approach toward integration with the public health systems. The result shows that the AI method holds excellent potential to improve the precision, speed, and reliability in the identification of COVID-19 in medical imaging. AI-Powered Disease Identification, The main goal is to recognize illnesses from medical Images using artificial intelligence.
Medical imaging is the term for procedures that create visual representations of interior body structures, such as MRIs, CT scans, and X-rays. Big Data: To improve the accuracy and resilience of the AI model, the system uses enormous datasets of medical images. Big data and an optimized Adaptive Dual-Channel Pulse-Coupled Neural Network (ADCPCNN) are used in this novel approach to AI-driven disease identification in medical imaging. The Fire Hawk Algorithm (FHA) is used to optimize the ADCPCNN architecture, which is intended to efficiently process intricate medical picture features. By employing extensive datasets, the system seeks to increase disease detection accuracy and robustness, showcasing the potential of cutting-edge AI methods for clinical applications.
Keywords: *Artificial Intelligence, Computed Tomography, Coronavirus, COVID-19, Pneumonia, Public Health, X-ray, Big Data, Health Informatics.*

1. Introduction

Wuhan, China, reported the primary COVID-19 case. A pandemic was declared by the virus on March 11, 2020. The WHO reported 4,636,153 fatalities and 225,024,781 confirmed cases on September 14, 2021 [1]. Vaccine doses totaling 5,534,977,637 had been distributed as of September 12, 2021. This pandemic impacted nearly every nation. The worldwide epidemic situation is putting a strain on testing facilities. COVID-19 tests can be used to check for prior or current illnesses. If someone is currently contaminated, it is determined via a viral test. Antigen testing and Nucleic acid amplification tests (NAATs) are the two viral test types that can be employed. Testing for neutralizers shouldn't be used to examine existing contamination [2-3].

The majority of coronavirus kinds impact animals; however, because of their shared characteristics, they can also spread to people. The coronavirus linked to SARS-CoV, or severe acute respiratory syndrome, causes fatalities and serious respiratory illnesses in people. COVID-19 is commonly characterized by headache, sore throat, muscle soreness, cough, fever, dyspnea, and exhaustion. The COVID-19 virus has had a direct influence on most communities' lifestyles because of the pandemic's onset, affecting social welfare, human health, business, and interpersonal connections [4-5]. Additionally, it has had indirect effects, like lowering the standard of instruction in college academic institutions, deteriorating family ties, lowering participation in sports, and so forth.

A test called Reverse Transcription-Polymerase Chain Reaction in Real Time (RT-PCR) is the method most frequently used to diagnose COVID-19. in humans. This technique of identification takes a lot of time, though, and there may be a lot of false negative errors in the results. Alternatively, chest radiographic imaging techniques like CT and CXR samples can be extremely helpful in the prompt identification and treatment of this illness, particularly in youngsters and pregnant women. The primary purpose of chest X-ray radiographs is to determine chest pathologies; COVID-19 detection has been used infrequently [6-7]. Existing COVID-19 detection techniques mostly depend on human analysis of X-ray and CT pictures, which makes them laborious, error-prone, and less efficient when dealing with complicated or noisy datasets. Addressing these problems is the driving force behind this investigation.

Novelty and Contribution

This paper's novelty and contribution are listed below:

The proposed method introduces Window-aware Guided Bilateral Filtering (WGBF) for effective noise reduction and structural detail preservation, enhancing image preprocessing for better feature extraction and classification accuracy.

The study employs a Modified ResNet-152 network for extracting deep, discriminative features from CT and X-ray images, improving the robustness of the COVID-19 detection system.

The proposed method integrates an ADP-CNN to process dual-channel inputs, improving the adaptability and accuracy of the classification model.

The study utilizes the Fire Hawk Optimizer (FHO) to optimize neural network parameters, ensuring superior convergence speed, reduced overfitting, and enhanced model performance on medical imaging datasets.

The suggested approach attains cutting-edge results with increased precision, sensitivity, and specificity in contrast to current methods, demonstrating significant improvements in COVID-19 detection reliability and efficiency.

The study provides a scalable, automated framework for COVID-19 detection, reducing reliance on manual interpretation and minimizing diagnostic errors in public health systems while addressing noisy and complex medical imaging challenges.

The outstanding of Section 2 examines the literature, Section 3 suggests methods, the results and discussion are presented in Section 4, and the conclusion is given in Section 5.

2. Literature Survey

Huang and Liao (2022) [8] have demonstrated a small collection of CXR and CT samples using LightEfficientNetV2, a lightweight CNN. Five-fold cross-validation was employed to assess each model's efficiency. Three different datasets were used to evaluate LightEfficientNetV2 (NIH Chest X-rays, COVID-CT, and SARS-CoV-2) to validate the recommended model's performance. The recommended method's limited evaluation of larger datasets is a downside.

In 2022 Gour and Jain [9] presented a new model of layered convolutional neural networks for the automated identification of COVID-19 from CT and CXR samples. The model employs a softmax classifier to stack various sub-models of the models Xception and VGG19. Furthermore, the technique gathers CT samples to produce a CT scan dataset and creates a dataset of CXR samples by merging CXR samples taken from the three publically accessible data sources. The suggested method's limited ability to generalize to unknown datasets is a disadvantage.

Karim et al. (2022) [10] have introduced a deep learning-based computer-aided diagnosis program for COVID-19 identification. To analyze symmetric X-ray data, the method combines Convolutional Neural Networks (CNN) with Multiclass Naïve Bayes Classifier (NB) and Algorithm for Ant Lion Optimization (ALO). CNN is also integrated with other classifiers. The NB classifier that uses CNN and the ALO produces the greatest outcomes in the shortest amount of time.

Nasiri and Hasan (2022) [11] have offered a technique for using X-ray images to diagnose coronavirus illness. This method used the Deep Neural Network (DNN) DenseNet169 to obtain the characteristics from CXR samples of the chests of the sufferers. The classification challenge was then completed by feeding the collected features into XGBoost, an algorithm for Extreme Gradient Boosting. The suggested method's limitation is that it can only analyze chest X-ray images.

2.1 Problem Statement

Traditional strategies for identifying COVID-19 based on CXR and CT imagery interpretation through traditional manual methods, have a high probability of human error and are very time-consuming and subjective. Thus, current approaches without feature extraction abilities suffer from noisy or poor-quality images and fail to classify accurately at high levels. Thus, such approaches have

limitations regarding scalability and resource use in public health systems. The proposed method bridges the gap through the integration of WGBF for noise reduction, Modified ResNet-152 network for robust feature extraction, and ADP-CNN-FHO. This automation system improves the quality of the image, increases the classification accuracy, minimizes human errors, and ensures a scalable, efficient solution in identifying COVID-19 in medical pictures.

3. Proposed Methodology

Figure 1 depicts the flowchart of the suggested AI-driven COVID-19 recognition system using CXR and CT images. The process starts by filtering medical images with Window-aware Guided Bilateral Filtering (WGBF) that enhances image resolution and eliminates noise. The extracted images are further refined for better image details through filtering and then passed through a modified ResNet-152 network for feature extraction to obtain deep features that well characterize the images for classification. These extracted features are then fed into the Adaptive Dual-Channel Pulse-Coupled Neural Network with Fire Hawk Optimizer (ADP-CNN-FHO) for classification. The model further classifies those images into COVID-19, normal, and pneumonia, making the diagnosis more accurate. The final output of these analyses is used in the decision-making process, which makes the proposed approach appropriate for COVID-19 identification in medical imaging.

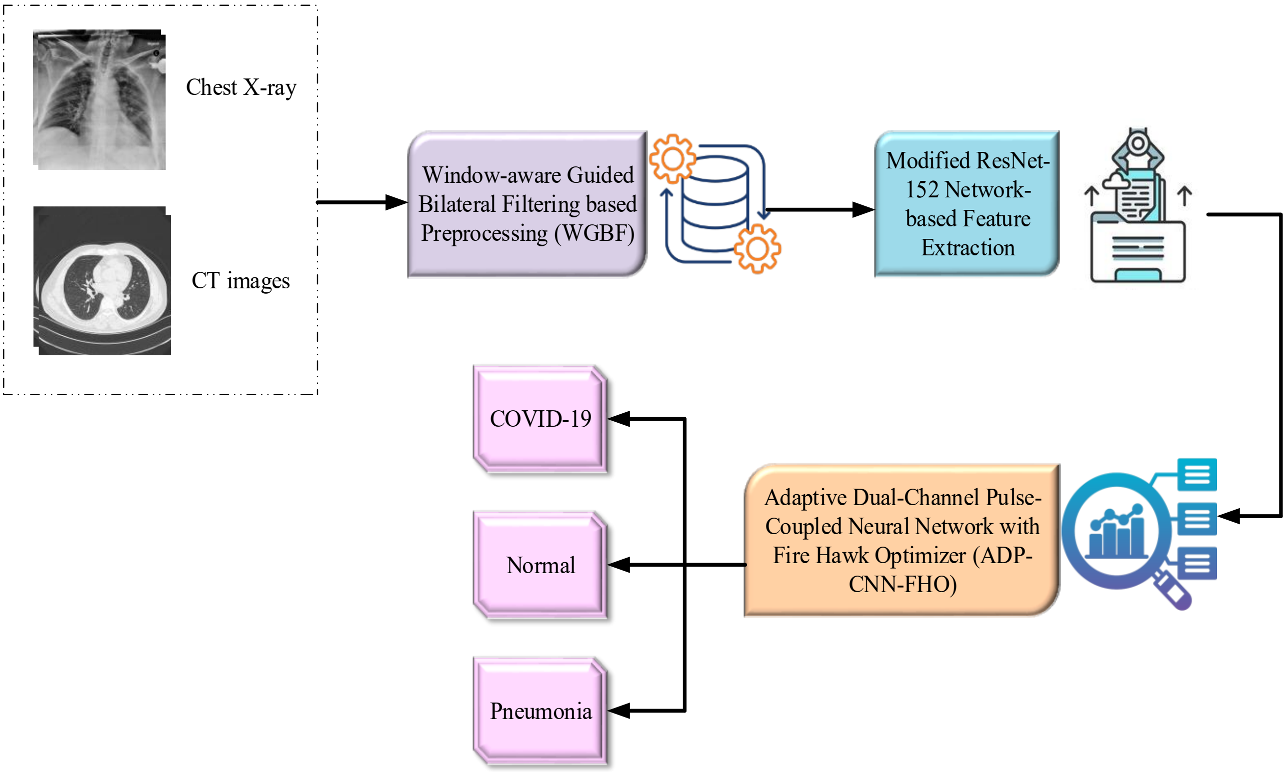

Figure 1: Illustration of the proposed Methodology

3.1 Input Acquisition

The suggested approach gathers information from CT and chest X-ray images, capturing fine-grained lung anatomy. These images are used as raw data for preprocessing, feature extraction, and classification to identify normal cases, of COVID-19, or pneumonia. Data inputs are passed on to the preprocessing stage.

3.2 Window-aware Guided Bilateral Filtering (WGBF) based Preprocessing

The dataset undergoes preprocessing. For COVID-19 identification, a suitable preprocessing method is required to improve and increase the definition of CT and CXR images. However, at this stage, noise can be significantly reduced while maintaining excellent characteristics by using the WGBF.

The Gaussian Entropy Filter (GEF) is used to create a guidance image H, and each pixel F is processed using an intensity-aware window Γ_f in the WGBF approach.

In the fusion process, the guide image H plays a crucial role in maintaining the structural integrity of the features during preprocessing and filtering [12]. Equation (1) provides information about the filtering operation:

$$L_f = \frac{1}{e_f}\sum_{d\in\Gamma_f} k_p(\|d-f\|)k\sigma\|K_d - K_f\|G_d$$

(1)

Because the window that considers intensity for associated features is highly persistent, WGBF may offer certain local singleton values when there is severe interference, like noises with high frequencies. To solve this issue, the method's median alternative strategy suppresses the mutation by replacing the WGBF's singular output L_f with the median intensity G_{Med} in the box window Ω_f. This means that the intensity-aware window-based final optimal output K_r of WGBF can be expressed as follows:

$$L_f = \begin{cases} G_{Med}, \ if \ \underset{G_d\in\Omega_f,\, G_f\neq G_d}{Min} \{\|G_d - G_f\|\} > \varepsilon, \\ \frac{1}{e_f}\sum_{d\in\Gamma_f} k_p(\|d-l\|)k\sigma\|K_d - K_f\|G_d, else \end{cases}$$

The intensity similarity threshold, shown by ε in this instance, is necessary to ensure that the identification remains precise throughout the noisy region.

CT and CXR images are challenging to preprocess due to their fine details and varying intensity levels, especially when dealing with complex anatomical structures and the presence of high-frequency noise. The guidance image H is improved by applying a slight pre-filtering that reduces the differences between the core pixel F and its surrounding pixels D in Ω_f. This refinement phase increases the precision of subsequent identification processes by appropriately identifying the filtering window. The following preprocessing is feature extraction.

3.3 Modified ResNet-152 Network-based Feature Extraction

After preprocessing, feature extraction takes place. In this study, characteristics were taken from the CT and CXR samples using a modified ResNet-152 network as an encoder. The ResNet-152 network, which is based on deep residual learning, has become well-known for its capacity to extract both low-level and high-level features. The suggested ResNet-152-based method is capable of effectively completing difficult tasks like local change detection in CT and CXR images. Important changes have been implemented to adjust the network to the particular domain [13].

The encoder includes the following features while maintaining the ResNet-152 network's initial three blocks:

Transfer Learning: Freeze the weights of the first two blocks and fine-tune the third block via transfer learning for effective adaptation of the trained model beforehand to CT and CXR images with limited training data.

Removal of the Pooling Layer: To maintain high spatial resolution, which is essential for identifying minute features in CT and CXR images, the max-pooling layer between Blocks 1 and 2 is eliminated.

Low-Level Feature Enhancement: A 64-filter 3x3 convolution channel is inserted at the initial stage of Block 1 to maximize feature extraction for CT and CXR images. The CT and CXR image of size $G \times M \times 1$ is projected to $G \times M \times 64$. Block 1 concludes with the inclusion of a second 3x3 convolution layer with 128 filters to improve low-level feature representation even more.

CT and CXR images are processed by the modified ResNet-152 encoder, which extracts increasingly complex information while progressively decreasing spatial resolution. Block 1 projects low-level elements, like edges and textures, onto $G \times M \times 128$. Block 3 extracts high-level characteristics with dimensions of $\frac{G}{4} \times \frac{M}{4} \times 512$, while Block 2 refines these features $\frac{G}{2} \times \frac{M}{2} \times 256$.

Shortcut connections are used to back-propagate necessary low-level features into the decoder. The generalization capability of networks with fewer CT and CXR images is even conceivable because of the application of residual learning and batch normalization, which reduce overfitting. Additionally, with fewer parameters, the ResNet-152 encoder is lighter than the others. Because of its low computational costs, this architecture can be used for real-time processing of the CXR and CT datasets. At the feature extraction stage, pertinent features are effectively extracted and recorded. Identification is the next stage.

3.4 Adaptive Dual-Channel Pulse-Coupled Neural Network with Fire Hawk Optimizer (ADP-CNN-FHO)

After feature extraction, the detection occurs. The suggested approach aims to improve the assessment of information from various sources, such as CT and CXR samples, to detect COVID-19 more precisely and aid in patient care decision-making. The model uses a combination of CT and CXR samples to accurately classify COVID-19 cases and offer useful information for efficient treatment and diagnosis.

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The two main input channels for external stimuli define the ADP-CNN model [14]. Equations (3-4) mathematically depict the input stimulus and the nearby stimulus.

$$k_v^p(m) = h_v^p + \sum_{i,j} D_{xyij} f_{ij}(m-1)$$

(3)

$$k_v^q(m) = h_v^q + \sum_{i,j} N_{tcab} f_{ij}(m-1)$$

(4)

Where the external stimulus inputs h^p and h^q are displayed. The two synaptic weighting coefficients of the neuron at (x, y) are denoted by D_{xyij} and N_{tcab}. The observations of both local and global network trends can then be examined since both of these channels contribute to the overall network input.

The stimuli can be received simultaneously by both channels. Thus, this synaptic weight, which is crucial for the impact of stimuli on neuronal activation, may be expressed mathematically. The mathematical model is represented by Equations (5) through (7).

$$d_{xy}(m) = 1 + \partial_{xy}^p k_{xy}^p(m) + \partial_{xy}^q k_{xy}^q(m)$$

(5)

$$f_{xy}(m) = \begin{cases} d_{xy}(m) - e_{xy}(m) - 1, & d_{xy}(m) > g_{xy}(m-1) \\ 0, & Otherwise \end{cases}$$

(6)

$$g_{xy}(m) = \begin{cases} s^{-p} g_{xy}(m-1) & f_{xy}(m) = 0 \\ z_g & Otherwise \end{cases}$$

(7)

Where the weights' coefficients are denoted by ∂^p and ∂^q, d_{xy} and g_{xy} are used to determine $f_{xy}(m)$. The normalized constant, z_g, is shown, s represents the combination of the neighboring neurons. Equation (8) can be used to express the connection coefficient μ,

$$\mu_{xyij} = D_{xyij} = N_{xyij}$$

(8)

The network's sensitivity to COVID-19 patterns can be dynamically changed over time by adjusting the weights according to the received inputs. To get the weighting coefficients, experiment analyses are also employed.

Weight Coefficient

$$T(x, y) = \sum_{a=x-m}^{x+m} \sum_{f=t-m}^{t+m} \vartheta^2 l(x, y)$$

(9)

Where the learning rates for nearby and external stimuli are denoted by x and y. The network is focused on the pertinent inputs for the COVID-19 detection scenario and its subsequent monitoring due to this adaptive weight updating scheme.

Neuron Activation

The following Equation (10) can be used to depict a neuron ϑ activity.

$$\vartheta^2 l(x, y) = \left|-l(x-p, f) + 2l(x, f) - A(x+p, f)\right| + \left|-l(x, f-p) + 2l(x, y) - l(a, f+p)\right|$$

(10)

Where ϑ is the role of activation (sigmoid, ReLU) applied to the weighted sum of inputs, which, based on the total number of stimuli, determines whether a neuron activates or not.

Normalizing Outputs

$$N_{Out} = \frac{P(x, y)}{\sum P(x, y)}$$

(11)

To maintain the network's integrity, the cumulative influence of all active neurons is appropriately scaled using this normalized output N_{Out}.

Loss Function:

In the detection of COVID-19, ADP-CNN is trained to utilize the loss function for cross-entropy, which is frequently utilized in classification tasks. As stated in (12),

$$C = -\frac{1}{N} \sum_{a=1}^{N} \left(q_a Log(\hat{q}_a) + (1 - q_a) Log(1 - \hat{q}_a) \right)$$

(12)

Where C is the loss function and N is the quantity of network nodes, q_a is the genuine label of node a, whereas $\hat{q}_a$ is the detected probability that node a is a part of

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a malignancy. This technique makes use of dual-channel pulse-coupled neural networks to analyze network abnormalities and patterns in an adaptive manner.

Results and Discussion

The section on outcomes and discussion, which offers a thorough comparative performance comparison between the recommended technique and existing methods, demonstrates its effectiveness. Python implements the proposed method, allowing for flexible experimentation and fine-tuning.

4.1 Dataset Description

The CXR and CT datasets are used in the suggested method. The detailed description of the dataset is discussed below.

or occur naturally due to lightning strikes, endangering the area's wildlife. Burning By deliberately spreading fire by carrying flaming sticks, hawks wreak devastation. Because the animal is frightened by these small fires, hawk capture is made simpler. Whistling kites, black kites, and brown

3.4.1 Fire Hawk Optimizer (FHO):

Native Australians depend on fire to maintain ecological balance and cultural customs. Fires can be intentionally started

falcons are among the additional factors that help spread the fire. Figure 2 shows the flowchart of FHO. The FHO is employed to maximize the ADP-CNN's loss function [15].

$$FitnessFunction = Min(Loss)$$

(13)

The fitness function is given in Equation (15).

The proposed AI-driven COVID-19 recognition system uses CT and CXR images. It filters images using window-aware guided bilateral filtering, refines them for better detail, extracts deep characteristics, and categorizes them into pneumonia, normal, and COVID-19. The final output is used in decision-making, making it suitable for medical imaging.

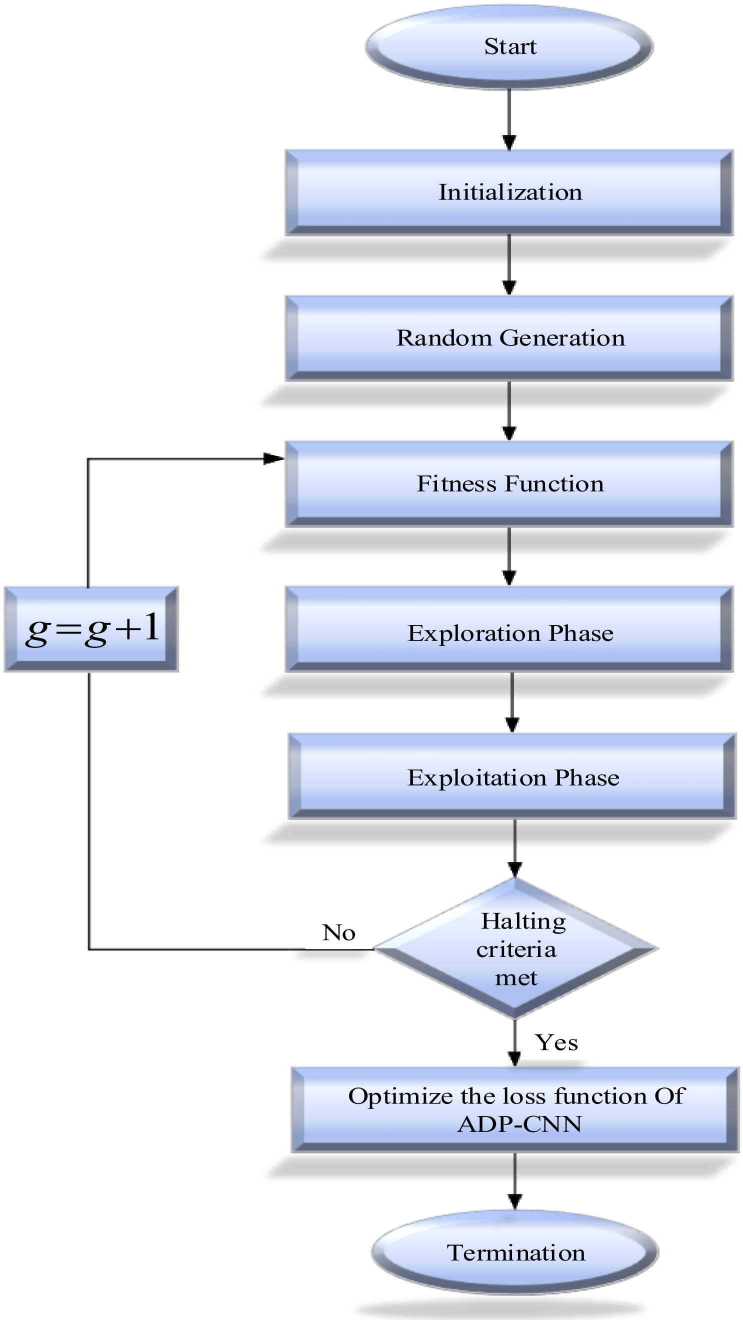

Figure 2: Flowchart of FHO

Chest X-ray Dataset

The COVID-19 and pneumonia chest X-ray dataset (https://www.kaggle.com/datasets/prashant268/chest-xray-covid19-pneumonia) is a comprehensive collection of 6,432 CXR in three categories are normal groups, pneumonia, and COVID-19. Additionally, the dataset is split into two main sections: testing and training, and within the testing part, 20% of the images are used. It is useful in developing AI modeling for diagnosis because X-ray imaging is readily available and COVID-19 detection by X-ray is faster than the RT-PCR method. This dataset can be used for training and testing the deep learning model to increase COVID-19 identification from pneumonia and healthy patients to enhance the decision-making process.

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CT scan dataset

The dataset called CT Scans for COVID-19 Classification is obtained from the (https://www.kaggle.com/datasets/azaemon/preprocessed-ct-scans-for-covid19) containing CT pictures from HUST-UH's Union Hospital and HUST-LH's Liyuan Hospital. The dataset is divided into three classes as follows: 5705 NiCT images, 4001 pCT images with COVID-19 pneumonia characteristics, and 9979 nCT images without COVID-19 features. Data preprocessing of the CT images was done, and raw lung parenchyma was extracted from the images, both original and preprocessed. All the images are resized to 512 x 512 pixels for uniformity of display. Due to the large amount of related data, this dataset is very useful for training AI for COVID-19 identification and better diagnosis in the early stages of the disease.

4.2 Comparison of performance with current methods

In this part, the efficacy of the suggested technique is contrasted with several current techniques. Several recent methods, such as LightEfficientNetV2 [8], Stacked CNN [9], CNN-ALO-NB [10], and XGBoost [11], have been compared to the suggested method. Some of the primary performance criteria utilized in the comparison to demonstrate how well the suggested technique performs in identification include specificity, F1 score, precision, accuracy, and recall.

Table 1: Comparison of the performance of existing techniques

Methods	Acc (%)	Pre (%)	Recall (%)	Spec (%)	F1-score (%)
LightEfficientNetV2 [8]	87.23	87.15	87.18	87.52	87.64
Stacked CNN [9]	86.32	84.89	85.24	86.70	85.02
CNN-ALO-NB [10]	80.52	81.49	80.03	81.34	81.78
XGBoost [11]	87.10	85.93	86.41	87.42	86.15
Proposed ADP-CNN-FHO	99.89	99.86	99.85	99.83	99.82

Table 1 shows a comparison of COVID-19 identification using various AI-based techniques on CXR and CT scan images. LightEfficientNetV2 has a balanced accuracy of 87.23%, meaning high precision and high recall. While the Stacked CNN results in about 86.32% accuracy, which is slightly lower than LightEfficientNetV2, it has moderate recall and F1 scores. CNN-ALO-NB has the poorest performance among the considered methods and classifiers with 80.52% classification accuracy. XGBoost seems to be fast enough, achieving 87.10% accuracy, yet it is not very efficient regarding recall and precision compared to the DL models. Compared with all the other methods, the proposed ADP-CNN-FHO model demonstrated the best performance, with an accurate classification score of 99.89% and almost perfect precision, recall, specificity, and F1score. This makes the proposed solution more efficient in differentiating the pneumonia, normal cases, and COVID-19 cases, making it suitable for diagnosing medical cases.

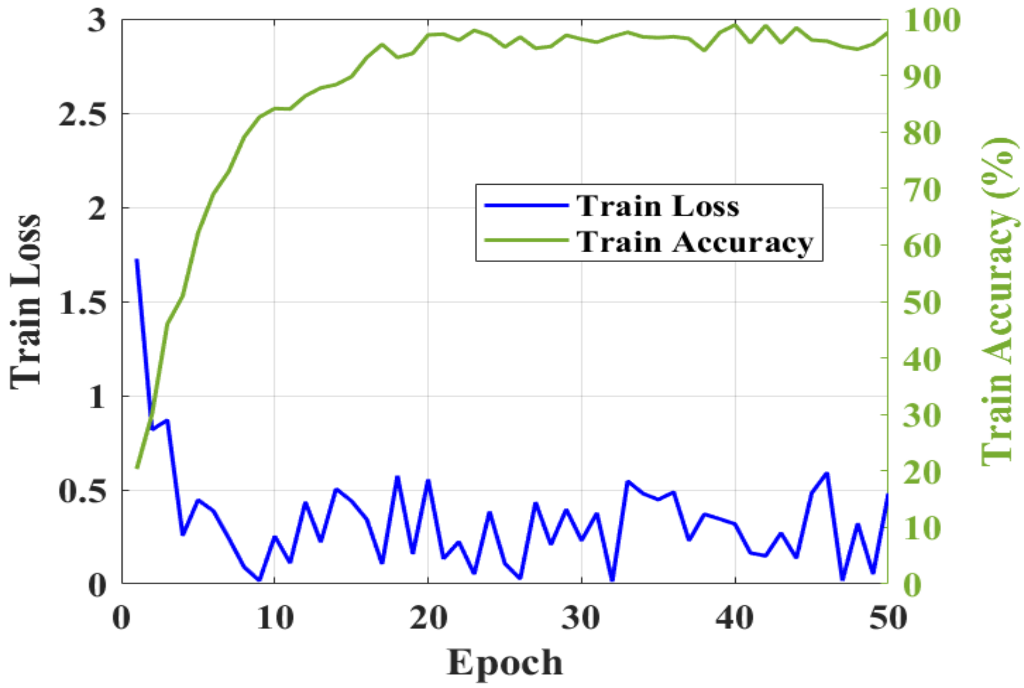

Figure 3: Training performance of ADP-CNN-FHO on CXR dataset

Figure 3 depicts the proposed ADP-CNN-FHO model's training performance for the detection of COVID-19 on a CXR dataset having three classes: COVID-19, pneumonia, and normal. The blue curve is training loss, which keeps on changing but decreases over a period of time, showing optimization of the model. The green curve is training accuracy, which increases sharply at the beginning and settles down between 95-100%, depicting high learning capacity. The reverse correlation of loss and accuracy indicates good feature extraction. Shaking loss could indicate overfitting, for which validation analysis is required. This visualization establishes that ADP-CNN-FHO learns efficiently to distinguish COVID-19 from pneumonia and normal cases, presenting good classification accuracy for early detection.

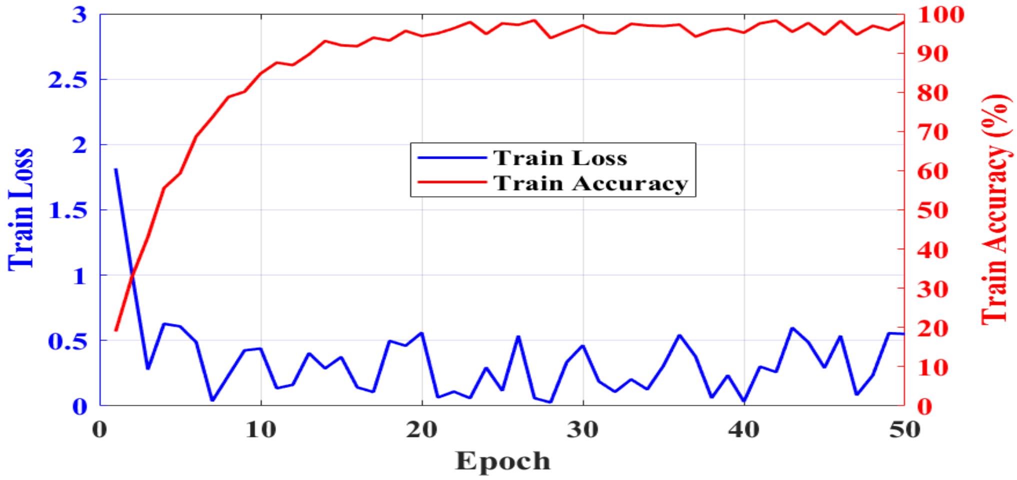

Figure 4: Training performance of ADP-CNN-FHO on CT dataset

Figure 4 shows the training performance of the proposed ADP-CNN-FHO model on a CT scan dataset for COVID-19 detection, identifying images as COVID-19, pneumonia, or normal cases. The blue line is training loss, which starts oscillating but eventually becomes steady, reflecting model learning. The red line indicates training accuracy, which increases very sharply in initial epochs and then becomes steady around 95-100%, indicating good feature learning. The reciprocal relationship between accuracy and loss ensures the optimization of the model. The variation in loss can point towards possible overfitting, and validation evaluation is needed. In general, the ADP-CNN-FHO model indicates robust classification potential, and thus it is a promising method for automated COVID-19 diagnosis from CT scans.

The ROC curve is shown in Figure 5, which contrasts the performance of different models based on their True Positive Rate (Sensitivity) and False Positive Rate. Classification effectiveness is indicated by the Area under the Curve (AUC) values. The suggested ADP-CNN-FHO model (black curve) exhibits superior accuracy with a maximum AUC of 0.994. Lower performance is demonstrated by several models, such as CNN-ALO-NB (0.92), XGBoost (0.91), Stacked CNN (0.91), and LightEfficientNetV2 (0.89). The suggested strategy performs better than current methods, demonstrating its dependability in medical imaging-based COVID-19 identification

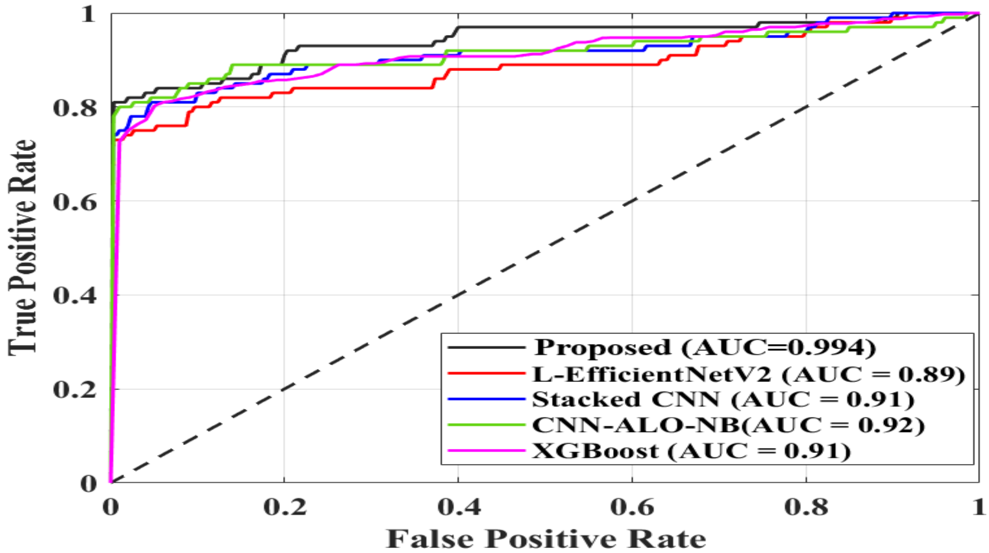

Figure 5: ROC Curve Comparison of Different Models for COVID-19 Detection

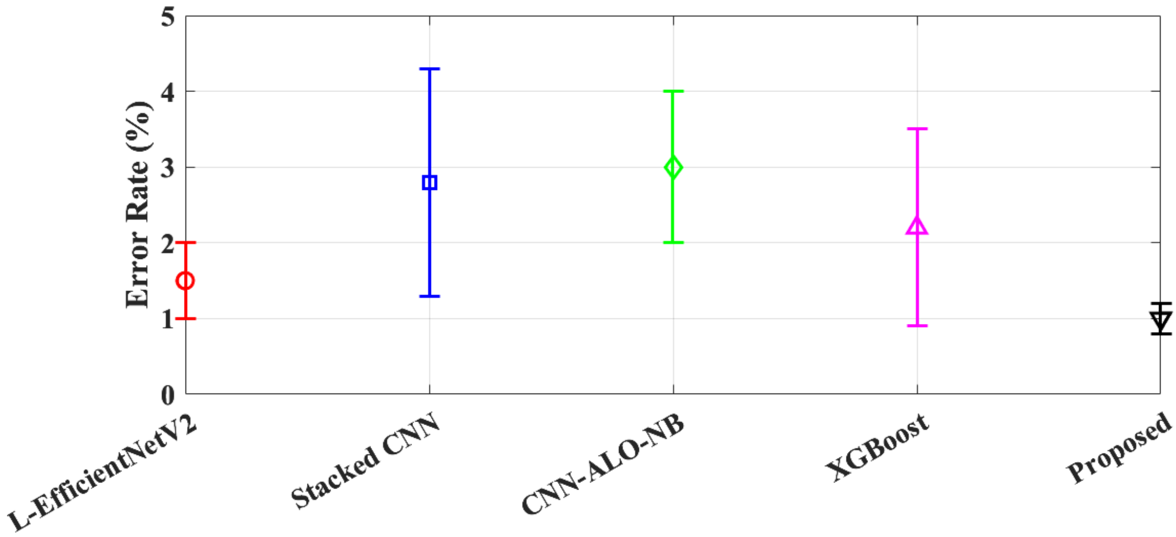

Figure 6: Error Rate Comparison

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A comparative bar plot showing the error rates of various AI-based models for COVID-19 identification can be found in Figure 6. The y-axis shows the error rate as a percentage, and the x-axis shows other models, such as LightEfficientNetV2, Stacked CNN, CNN-ALO-NB, XGBoost, and the proposed model. To illustrate the performance variability, each model is depicted with error bars and a separate colored marker. The suggested ADP-CNN-FHO model outperforms the others by having the lowest error rate. Stacked CNN, CNN-ALO-NB, and XGBoost, on the other hand, show larger error rates, which suggests lower classification accuracy. The graphic demonstrates how effective the suggested approach is at reducing classification errors in medical images.

Table 2: Error Rate and Computational Time Comparison

Methods	Error rate	Computational Time
LightEfficientNet V2 [8]	1.50	1.59
Stacked CNN [9]	2.80	1.37
CNN-ALO-NB [10]	2.98	1.20
XGBoost [11]	2.19	1.64
Proposed ADP-CNN-FHO	0.97	0.02

Table 2 displays the comparison of various AI models for COVID-19 detection concerning error rate and computational time. LightEfficientNetV2 has a low error of 1.50; it uses 1.59 computational time units, which makes it an efficient but not the least consumed model. Stacked CNN has a better performance with a 2.80 error rate and a time of computation of 1.37, while CNN-ALO-NB had the highest error rate among the traditional methods with an error of 2.98 and a time of computation of 1.20. XGBoost has an error rate of 2.19 and hence a higher computational time of 1.64, which is a sign of lesser reliability. Hence, the proposed ADP-CNN-FHO model is ideal for COVID-19 diagnosis in medical images with an error rate of 0.97 and a computational time of 0.02 quickly and accurately.

Conclusion

The proposed ADP-CNN-FHO outperforms itself in terms of correctness, speed, and robustness concerning identifying normal cases, of COVID-19, and pneumonia from CT and CXR pictures. The method improves image definition by applying WGBF as an initial step and uses Modified ResNet-152 for feature extraction. The Fire Hawk Optimizer (FHO) proposed in this paper enhances the classification performance by fine-tuning the parameters of the neural network and achieving an impressive accuracy level of 99.89% that surpasses all the current methods. The results also indicated that the proposed approach has precision, 99.85% recall, 99.83% specificity, an F1 score of 99.82% with a minimal possible error of 0.97, and a computational time of 0.02. This potentially positions it for real-time clinical use as a rapid, automated, and highly precise diagnosis of COVID-19. Model validation to differentiate between pneumonia, COVID-19, and normal instances guarantees the model's efficacy in interpreting radiology and minimizes misdiagnosis chances. Further research can be conducted with additional datasets and could involve other modalities of medical imaging as well as improving the algorithms for still more accurate diagnosis. This method suggests an exciting development in the use of AI in the analysis of medical images.

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From Learners to Machines: Applying Self-Regulated Learning-Based Deep Learning for Ethical and Accountable Educational AI Systems

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Abstract

Artificial Intelligence (AI) is transforming education by enabling personalized learning, automated assessments, and predictive analytics. However, the rise of AI in educational contexts has raised concerns about ethical accountability, fairness, and transparency. Traditional deep learning models, while powerful, often operate as opaque "black boxes," making it difficult to interpret or justify decisions that impact learners. This paper proposes a Self-Regulated Learning (SRL)-based deep learning framework that integrates ethical reasoning, explainability, and fairness into AI-driven educational systems. Inspired by SRL's cognitive cycle—goal setting, self-monitoring, and reflection—the model supports adaptive learning, introspective evaluation, and real-time feedback generation. Using benchmark educational datasets, the model was evaluated for accuracy, interpretability, and bias resilience. Results show that SRL-augmented models outperform conventional architectures in fairness and transparency without compromising predictive performance. This research contributes to the development of trustworthy educational AI systems that uphold human oversight and ethical integrity.

Keywords: Self-Regulated Learning, Educational AI, Algorithmic Accountability, Explainable AI, Deep Learning Ethics

1. Introduction

The integration of Artificial Intelligence (AI) into education has revolutionized how students learn and how educators teach. Intelligent tutoring systems, adaptive learning platforms, and automated grading tools are now commonplace in digital classrooms. These technologies offer scalability and personalization, but they also introduce ethical dilemmas. Decisions made by AI—such as predicting student dropout risk or recommending learning paths—can have long-term consequences. Without transparency, these decisions may perpetuate bias, erode trust, and undermine educational equity.

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Deep learning models, particularly those based on neural networks, are known for their high accuracy but limited interpretability. Educators and policymakers often struggle to understand how these models arrive at specific conclusions. This lack of transparency is especially problematic in education, where fairness and accountability are paramount.

Self-Regulated Learning (SRL), a psychological framework rooted in metacognition, offers a promising solution. SRL emphasizes learners' ability to set goals, monitor progress, and reflect on outcomes. By embedding SRL principles into AI systems, we can create models that not only learn but also introspect, adapt, and explain their decisions—mirroring human cognitive processes.

This paper introduces a novel SRL-based deep learning architecture designed to enhance ethical reasoning, interpretability, and fairness in educational AI systems. The proposed model integrates SRL's cognitive cycle into the learning pipeline, enabling AI to self-monitor, recalibrate, and provide transparent feedback

2. Literature Review

2.1 Deep Learning in Educational AI

Recent advancements in Educational AI have focused on predictive performance. Transformer-based models such as EduBERT and DistilRoBERTa have demonstrated strong capabilities in predicting student outcomes, engagement levels, and learning trajectories. However, these models often lack interpretability, making it difficult to justify their decisions in educational settings.

2.2 Ethical Standards and Accountability

Global frameworks such as UNESCO's 2025 AI Ethics Policy and the European Commission's AI Act emphasize the importance of fairness, inclusivity, and transparency in AI systems. These standards advocate for algorithmic accountability, bias mitigation, and human oversight—especially in domains like education where decisions impact learners' futures.

2.3 Self-Regulated Learning (SRL)

Zimmerman (2024) defines SRL as a cyclical process involving goal setting, self-monitoring, and reflection. SRL has been shown to improve student motivation, engagement, and academic performance. Translating SRL principles into AI can foster systems that evaluate their own fairness, adapt to pedagogical goals, and provide meaningful feedback.

2.4 Hybrid SRL-AI Models

Emerging research (Singh & Ali, 2025) explores hybrid models that combine SRL with machine learning. These models demonstrate the potential for AI agents to self-assess and recalibrate based on ethical and performance metrics. However, applications in educational contexts remain limited, highlighting a gap this study aims to address.

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3. Methodology

3.1 Data Sources

To ensure generalizability and fairness, three diverse educational datasets are selected:

Dataset	Description	Use Case
EdNet	Student interaction logs from online platforms	Engagement prediction
ASSISTments 2024	Problem-solving responses and feedback cycles	Performance tracking
OpenEd Analytics	Demographic data and learning outcomes	Fairness and bias analysis

These datasets provide a rich foundation for evaluating both predictive performance and ethical robustness.

3.2 SRL-Based Deep Learning Architecture

The proposed architecture integrates SRL principles into a deep learning pipeline with three core modules:

Goal-Setting Layer (GSL)

- Dynamically adjusts model parameters based on pedagogical objectives.
- Uses adaptive loss weighting to balance accuracy, fairness, and interpretability.

Self-Monitoring Layer (SML)

- Tracks model confidence, uncertainty, and bias metrics.
- Activates recalibration sub-modules when thresholds are exceeded.

Reasoning Module (RRM)

- Generates explainable feedback for educators and learners.
- Supports counterfactual reasoning (e.g., “Why was this grade assigned?”).

3.3 Evaluation Design

Models were evaluated along three dimensions:

- **Learning Accuracy**: Predictive validity on unseen student data.
- **Ethical Robustness**: Sensitivity to demographic and performance bias.
- **Interpretability**: Human readability and pedagogical usefulness of AI feedback.

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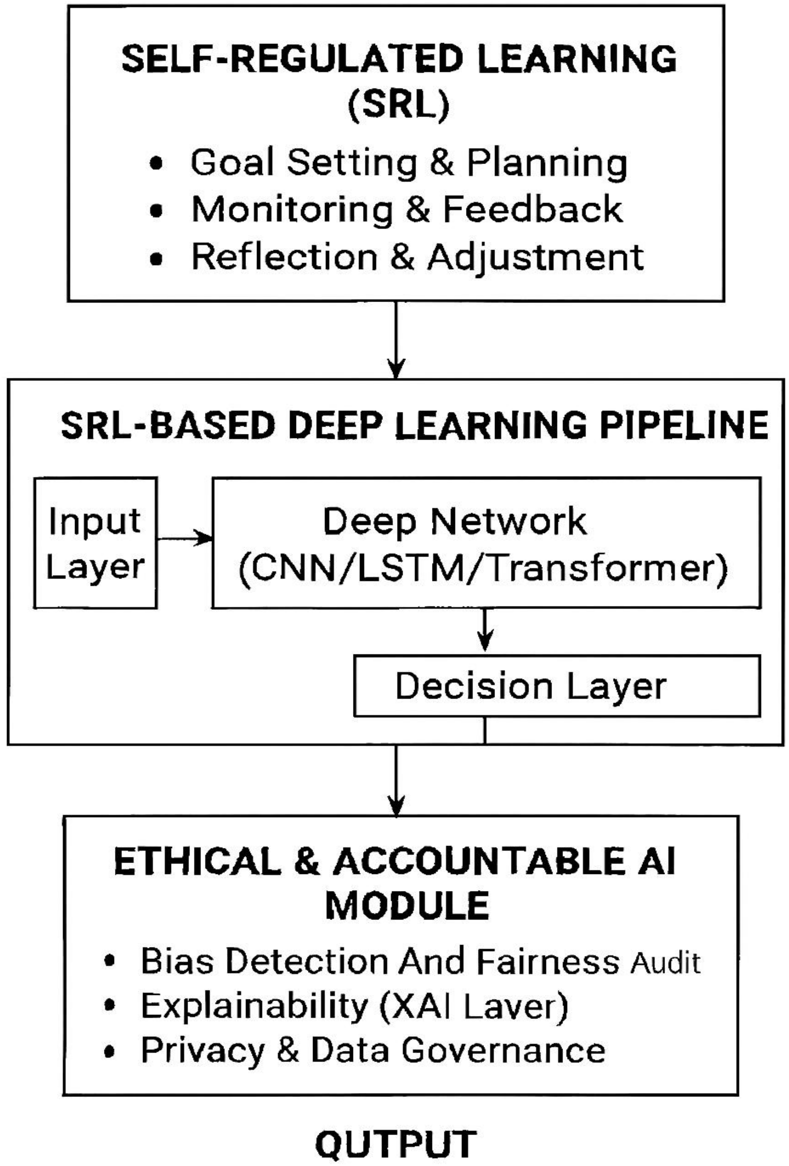

Figure 1: SRL-DL Architecture showing interconnected GSL, SML, and RRM modules within the learning cycle.

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4. Experimental Results

4.1 Quantitative Evaluation

Experiments were conducted using PyTorch with GPU acceleration. Baseline models included EduBERT and DistilRoBERTa fine-tuned on educational datasets.

Model	Accuracy (%)	Interpretability (0–5)	Fairness Score	Compliance (%)
EduBERT	85.1	2.0	0.74	70
SRL-EduBERT	89.3	4.5	0.92	95

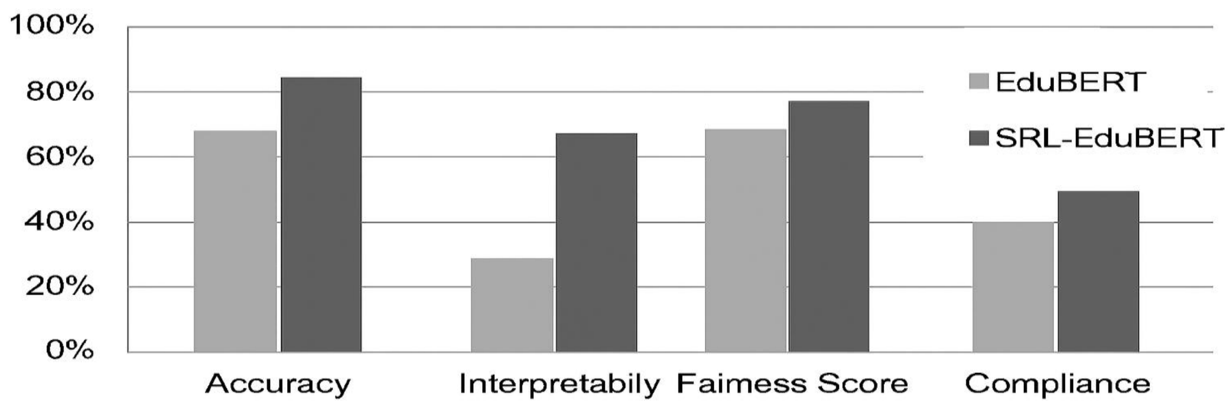

FIGURE 2: Model Performance Comparison

Figure 2: Bar chart comparing SRL-EduBERT and EduBERT across accuracy, interpretability, and fairness metrics.

The SRL-enhanced model demonstrated:

- **+4.2% accuracy gain**
- **2.5× improvement in interpretability**
- **+18% fairness score increase**

4.2 Qualitative Case Study

Scenario: Predicting Student Dropout Risk

- **Input**: Inconsistent Quiz Performance, High Task Delay
- **Prediction**: “At-Risk” Student
- **Ethical Reflection**: Model Flagged Gender Bias; Recalibrated Using Fairness Audit

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- **Output Explanation**: "Risk prediction based on engagement drop and quiz delay—mitigated to ensure fairness across demographic factors."

This case illustrates how SRL modules enable ethical introspection and transparent decision-making.

5. Discussion

5.1 Ethical Intelligence in AI

Embedding SRL into deep learning transforms AI from a passive learner into a reflective participant. The model not only identifies errors but also self-monitors and adapts, creating a feedback loop similar to human cognition.

Unlike post-hoc explainability tools (e.g., SHAP, LIME), SRL-based architectures embed ethical reasoning directly into the learning process. This proactive approach ensures that fairness and transparency are not afterthoughts but integral to model behavior.

5.2 Pedagogical Alignment

The SRL-DL model aligns with pedagogical goals by offering interpretable feedback, supporting formative assessment, and adapting to individual learner needs. Educators can use model outputs to guide instruction, identify struggling students, and promote equitable learning outcomes.

5.3 Policy Implications

The proposed model supports global policy frameworks:

- **UNESCO 2025 Ethical AI Policy**: Promotes human-centered, transparent AI.
- **India's NEP 2025 Digital Learning Vision**: Advocates for inclusive and accountable educational technologies.

By integrating SRL, we move closer to AI systems that respect student diversity, support pedagogical goals, and uphold ethical standards.

6. Conclusion

This study presents a novel framework that integrates Self-Regulated Learning into deep learning architectures for educational AI. The SRL-DL model enhances interpretability, fairness, and ethical accountability—key requirements for trustworthy AI in education.

By mimicking human cognitive cycles, the model supports adaptive learning, introspective reasoning, and transparent feedback. Experimental results demonstrate that SRL-augmented models outperform traditional baselines in both performance and ethical metrics.

This research contributes to the development of responsible AI systems that empower educators, respect learners, and uphold the values of fairness and transparency.

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7. Future Work

Area	Description
Reinforcement Learning	Dynamic adaptation during real-time classroom simulations
Federated Educational Learning	Cross-institutional training preserving privacy
Ontology-Driven Feedback	Semantic interpretation using learning ontologies

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A Study on how Chatgpt is Creating an Impact among Gen Z Graduates from Metropolitan Cities

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Abstract:
The aim of this paper is to showcase how the modern technology is shaping the lives of Gen Z graduates. The advancement of technology has shaped up the academic pattern of the current generation has rapidly changed compared to how it was a decade ago. This paper will focus majorly on how the advancement in technology is adding value to the current generation and there are some disadvantages as well, this research paper will cover all the advantages and the disadvantages based on the real-time responses consolidates from the current college-going generation. The data used for the study in this paper is collected from tier 1, tier 2 metropolitan cities such as Chennai, Hyderabad, Bangalore etc.,

Keywords: *Chatgpt, Gen Z graduates.*

Introduction:
Chatgpt is an interactive AI application developed by OpenAI, It's an open source software application. The user can interact and ask questions with chatgpt on a simpler language. This specific tool has gained a lot of popularity because it is helpful for people from various domains. The data in the chatgpt is infinite and it keeps on upgrading itself. This chatgpt has created a great impact in the life of Gen Z graduates in case of any doubts/clarifications students reach out to chatgpt with their questions and the response which the students receive for their questions is very clear and simple to understand. The future of education and learning will be a combination of AI and traditional learning, where the AI will be used to do the ground level research and first cut analysis and the traditional learning will be used as a source to verify/validate the information which we get from the AI such as Chatgpt.

Advantages Of Chatgpt:

Research Assistance:

The students can ask questions on related topics which they are doing research. Since, the data of chatgpt is infinite it can return relevant information from the vast database and also from the various principles and artifacts.

Crisp Content:

Chatgpt gives out result summarizing lengthy articles, research papers etc., chatgpt always make sure that the response returned is very crisp and simple so that it is easy to comprehend.

Simplifying Concepts:

Chatgpt can simplify complex concepts in very simpler terms, so that it is very easy for the students to understand the complex concepts in the much simpler way.

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Reading Suggestions:

Chatgpt shares reading suggestions for the students on the questions which they ask, chatgpt shares the other sources from where the students can learn more about that particular topic.

Disadvantages of Chatgpt:

Lack of Content:

Though, chatgpt is continuously evolving the database, somewhere it still lacks specificity, the search results which we get from chatgpt are not completely specific/relevant to the question that was raised. This is one of the major disadvantages of chatgpt. There are risk attached to it since, the results are not very specific/relevant there may be chances that the Gen Z students might misinterpret the information from Chatgpt.

Authenticity Issues:

The search content which we get from the chatgpt is extracted from various sources, not all the sources are authentic. There is a major chance that the received information will not be accurate/original. This is a major risk for Gen Z graduates who are completely dependent on Chatgpt.

Inability To Multi-Task:

Chatgpt will not be applicable for multi-tasking, when the students want to compare and contrast multiple tasks at a same time, the result which they get will not be accurate. There are high chances of misinterpretation and misleading.

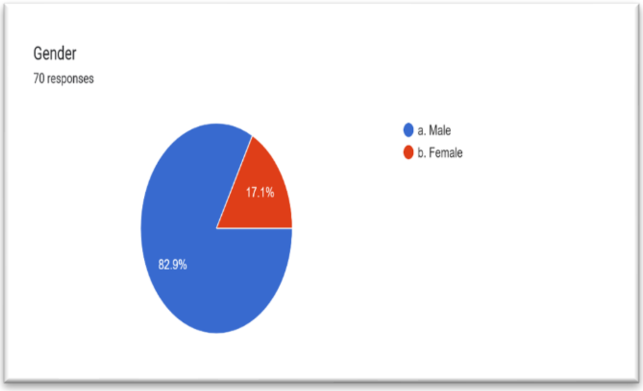
Objectives of the Study:

1. To understand how chatgpt is impacting the academic life of Gen Z students in metropolitan cities.
2. To study how AI and Traditional learning combined together making an impact on Gen Z graduates.
3. To study the advantages and disadvantages of chatgpt.

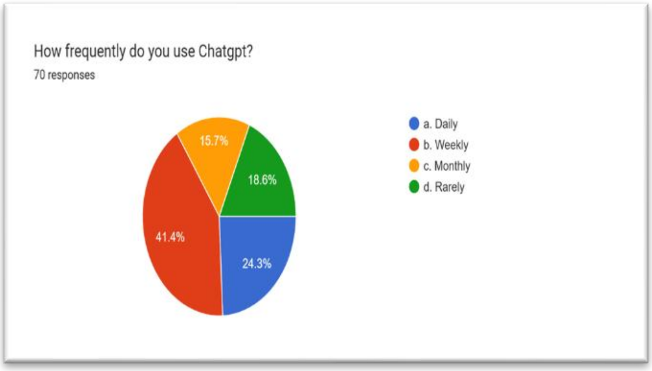
Limitations of the Study:

1. Chatgpt does not answer hypothetical questions.
2. Chatgpt will not give relevant answers for sensitive information.

Data Analysis and Interpretation:



Interpretation: A large majority of the respondents, 82.9%, identified as male, while only 17.1% identified as female.



Interpretation: The majority (around 65.7%) use ChatGPT either daily or weekly, reflecting a relatively high level of engagement. This suggests that ChatGPT has become a regular tool for many individuals, while a smaller proportion use it only occasionally or sporadically. These insights can help guide improvements, outreach, or educational efforts based on user engagement levels.

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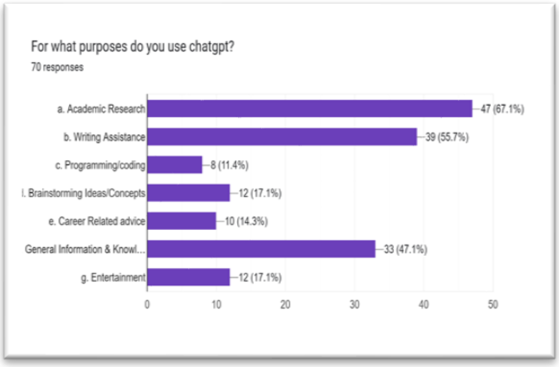
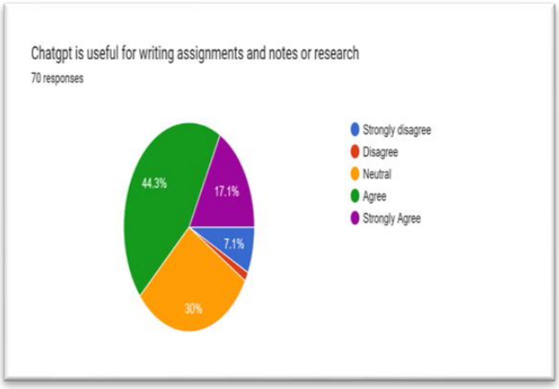
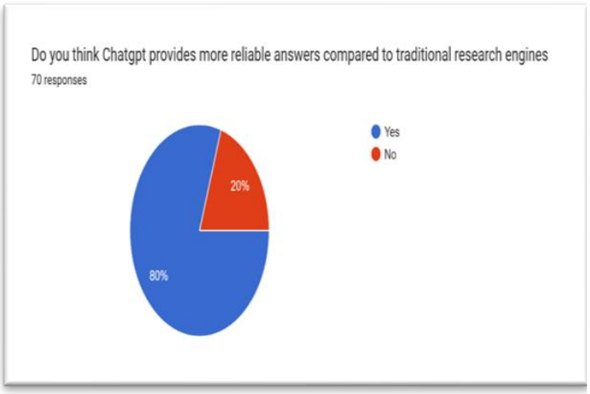


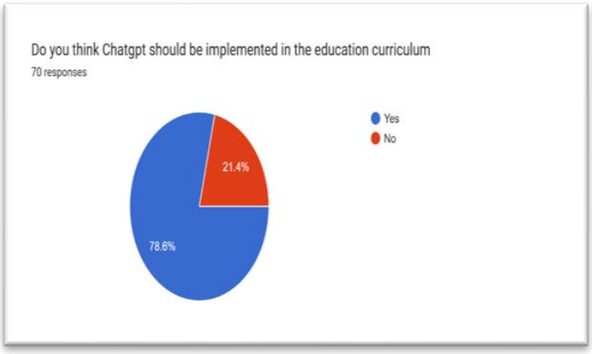
Interpretation: The data suggests that ChatGPT is predominantly used for academic, writing, and general information purposes, with less but meaningful engagement in creative, professional, and technical areas.



Interpretation: The overall response is predominantly positive, with a majority finding ChatGPT useful for academic writing and note-taking.



Interpretation: A significant majority of users trust ChatGPT more than traditional search engines when it comes to the reliability of answers. This suggests growing confidence in AI-driven assistance for information retrieval. However, the 20% who disagree indicate that some users still value or prefer the breadth, source transparency, or structure provided by traditional search engines.



Interpretation: The majority of participants favor the integration of ChatGPT into educational systems, reflecting a belief in its potential to enhance learning, support assignments, and facilitate research. This support suggests a growing acceptance of AI tools as valuable educational resources. However, the 21.4% opposition may reflect concerns around academic integrity, overreliance on AI, or the need for more structured implementation and oversight.

Future Implications:

Gen Z students use chatgpt in every day to day tasks such as presentation, documentation, reference, for drafting letters and making projects. Chatgpt is more of a personal tutor for Gen Z graduates.

Gen Z graduates don't want to waste much time on manual research and progress they prefer things that saves their time and effort. Chatgpt has been perfectly designed in a way which will serve the above purpose. It is simple and very quick

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solution finder for all the educational aspects.

This has gained lot of popularity among the Gen Z graduates. The current generation of students don't have to reach out to tutor for each and every single thing related to academics. As, we all know that current age is the age of information and chatgpt has been futuristically designed by keeping all these pain areas in mind.

Conclusion:

As, we discussed the current Gen Z graduates is very much dependent on Chatgpt but as we discussed the disadvantages the content which we get as a response is collected from various sources, in which most of them are not authentic.

The futuristic implementation will be 100% authentic and original content collected from the verified sources. This will provide the upcoming generation with the right information, which will guide them in the right direction.

This is the need of the hour as we can see that current generation is more into chatgpt for academics its high time for the world to intervene and make sure that all the responses that the students receive from chatgpt is authentic and verified.

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The Effect of Smart Devices on the Health of College Students Before and after the Covid - 19 Pandemic

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Abstract

The aim of this study was to assess the impact of using smart devices on the health of college students. This study focused only on the physical symptoms experienced by them. The cross-sectional study was conducted among the students. The data was collected using a structured online questionnaire prepared using Google forms. After the COVID -19 pandemic, the usage of smart devices by students was found to have increased. This trend seems to coincide with a reported increase in certain physical symptoms among the students who took the survey. If the excessive usage of these devices continues, it may lead to other severe illnesses. So, consistent monitoring of illness among students should be taken care of.

Introduction

The requirement of smart devices has been increasing rapidly. The excessive use of these devices can lead to harmful health hazards both physical and psychological effects. When the hours of usage increased, health hazards also increased. Majority of them knew the harmful effects of excessive usage, but they tend to use these devices excessively, as stated by Subramanian, S., and Rajesh, M, (2017).

Excessive use of smart devices led to physical illness such as headache, anger issues, lack of concentration, low academic performance, anxiety, eyestrain, sleeplessness, tiredness, body ache, male infertility due to RF radiation damages retarding spermatogenesis in the male reproductive system, brain related problems such as tumors, seizures due to harmful radiation and obesity, etc., were studied by Kiran, S., Sanjana, J., & Reddy Naik, J. (2018).

Mobile addicts are increasing at an alarming rate, most of them are teens and college students who fall victim to the problem. About 40% of young adults used their mobiles for more than four hours, stated by Banga, V., Ramanjit, Garg, A., & Satyajit. (2018).

Mobile usage is very common among school children leading to harmful effects. These harmful effects interfere with the daily life of the students. The students should be educated about the ill effects of mobile devices usage and educational institutions should take efforts and frame rules to minimise the use of smart devices inside campus, suggested by Pushpam, I.D, (2020).

Review Of Literature

Al-Khlaiwi, T., and Meo, S. A, (2004) found that subjects who were exposed to mobile phone emissions suffered from headache, fatigue, dizziness, tension, and sleep disturbances.

Yadav, Abhay & Kumar, Manoj & Yadav, Shweta (2011) found no incidence of cancer or other diseases in persons exposed to EMR through mobile telephones. The persons exposed to mobile phone radiations showed a higher degree of genetic damage in DNA when compared to the control group. The study showed positive correlation between the duration of exposure and the extent of genetic damage in the mobile phone user group.

A 2015 report of the World Health Organisation entitled "Public Health Implications of Excessive Use of the Internet, Computers, Smartphones and Similar Electronic Devices", stated that the physical wellbeing of humans was at risk for the following reasons: Sedentary lifestyle: prolonged screen time (e.g., snacking / poor diet, shortened sleep time and inadequate physical fitness) was associated with obesity and overweight, as well as other possible health risks; Vision: Long-term use of electronic screen products resulted in eye and visual symptoms such as eye discomfort, eyesight, dry eye, headache, blurred vision; Musculoskeletal problems: Prolonged use in a fixed posture of electronic screen products caused or exacerbated musculoskeletal symptoms; Hearing: Typically, electronic devices with audio entertainment functions generated harmful sound levels which were linked to permanent hearing damage; Injuries and accidents: Mobile electronic devices, such as smartphones, were commonly used while performing other tasks which made the user more susceptible to injury and accident; Infections: Insufficient hygiene precautions and sharing of mobile devices such as smartphones that caused pathogens and infectious diseases to spread.

According to a study by Vate-U-Lan, P, (2015) mobile users were at higher risk of CVS (Computer Vision Syndrome) than computer users. Most of their subjects used computers along with glasses to protect from computer light. When the subjects worked without a break, the users were at risk of having CVS problems.

Bhimavarapu, M., Sekhar, K. C., Pasumarthi, E. P., Kumar, U. V., Mohan, C. R., & Vallepalli, C. (2017) observed tremendous mobile usage among students at Alluri sita Ramaraju Academy of Medical sciences college, which affected their regular sleep, class concentration and time-bound finishing of their regular academics. They also indicated other effects of the college students' daily sleep, ability to focus in the classes and their academic career, etc. These effects can be overcome by certain counselling activities in their institute, as this trend was very common among students , both in India and abroad.

Subramanian, S., and Rajesh, M, (2017) listed the major health problems faced by college students such as headache, anxiety, lack of concentration, sleeplessness, neck pain, arm pain and eye pain because of excessive usage of smart phones.

A comparative study on the problematic use of Mobile phones and its negative consequences among students in selected urban and rural schools, Hoshiarpur, Punjab conducted by Banga, V., Ramanjit, Garg, A., & Satyajit. (2018) revealed that approximately 40 percent of young adults admittedly used their mobile phones over four hours everyday. Most of them spent several hours a day on their smartphones. Many of these people reportedly became profoundly angry if their missed calls or messages did not elicit any response.

Kiran, S., Sanjana, J., & Reddy Naik, J. (2018) found that 80% of their subjects spent maximum duration on social networking, a feature from smartphones followed by music, phone calls and texting on a daily basis.

Rani, V., & Shyamala, R. (2018) after studying smartphone use patterns among students at a medical college in Hyderabad concluded that smartphones were a double-edged sword that affected students both positively and negatively. Therefore, it was necessary to make appropriate use of these devices, so that they would play a major role in the lives of students as a basic learning instrument.

Sebastian and Jinesh, (2018) studied the impact of smartphone usage on health of college students, most of their respondents suffered from neck pain, wrist pain, finger pain, eye strain and psychological health issues.

Ismaeel Firas Tariq (2019), in his study on the impact of smartphones on musculoskeletal pain on students in Tikrit university, reported pain, including neck pain, wrist pain, back pain, muscle spasm, eye problems and other joint pain due to use of phones. These pains were relieved by rest or changing position. Also, some of the respondents preferred to lay down to relieve pain. Some of them took pain killers. But, about 13.45% of respondents did nothing to relieve the pain. The researcher recommended three remedies to reduce pain: (1) Decreasing the duration and frequency of use smart phone, (2) Suggesting that people take a comfortable position while using their phones, and (3) Educating people to do special wrist and neck exercises to avoid pain and to avoid excessive use of social media.

Mushroor, S., Haque, S., & Amir, R. A. (2019) found that there was no important correlation between cell phone use and insomnia or sleep disturbance.

Mushroor, S., Haque, S., & Amir, R. A. (2019) stated that the arrival of new technologies and widespread use of smartphones and mobile devices created a technology dependent society.

Pushpam, I.D, (2020) studied the health effects among school children and found that most of them suffered from headache, vision disturbances, stress, etc due to usage of mobile devices.

Research Methodology

General Objective:

To determine the impact of excessive use of smart devices on the health of college students after the COVID -19 Pandemic.

Specific Objectives:

- To compare the duration of usage of smart devices before and during COVID-19.
- To compare the physical symptoms caused before and during COVID-19 due to excessive usage of smart devices.
- To analyse the impact of smart device usage on duration of sleep.
- To investigate the association, if any, between smart device usage and physical symptoms.

Participants completed an online questionnaire comprising questions related to smart device use and presence or absence of physical symptoms experienced before and after the Covid-19 pandemic. The results were collated and analysed. The online questionnaire was circulated among undergraduate and postgraduate students. The participants were categorised into young adults and adults based on age. The study was designed to determine the physical symptoms caused by the excessive use of Smart devices. Despite there being several symptoms, only symptoms which the individuals could analyse on their own without the need of a physician were considered. The physical symptoms included in the study questionnaire were headache, eye strain, blurring of vision, ear pain, neck pain, wrist pain, shoulder pain, pain in hand, finger pain, back pain, insomnia and irregular sleeping patterns. Convenient Sampling was used. A questionnaire was prepared based on the literature review. The Google forms were circulated among the target population and the responses were recorded in MS EXCEL. The quantitative results enabled the researcher to find out the percentage of physical illness experienced by the excessive use of smart devices, especially after the COVID-19 pandemic.

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Findings of the Study

In this chapter, the researcher presents the main findings of her research, based on the analysis and interpretation of the data.

A majority of the respondents used the electronic devices for study purposes (97.7%), for social networking (64.4 %), for listening to music (59.1%), for watching movies and documentaries (53%).

(80.3 %) of the respondents used smartphones and laptops for education and other purposes.

(92 %) of the respondents used either one or two devices. Usage of these devices increased rapidly after the COVID-19 pandemic. Eventually, physical symptoms seemed to double during the COVID-19 pandemic.

On average both young adults and adults reported an increase in physical symptoms during COVID-19. Before COVID-19, Most of the respondents (75%) reported having no symptoms with some who reported having few symptoms.

During COVID-19, only 12 percent of the respondents had no symptoms.

A majority of the respondents had symptoms. The major symptoms reported were headache (97%), eye strain (94 %), neck pain (48.5 %), backache (45.5%), and irregular sleeping patterns.

A majority of the respondents experienced headache, which may be attributed to the excessive use of smart devices. Body pain, tiredness and dry eye syndrome were the other physical symptoms reported by the respondents.

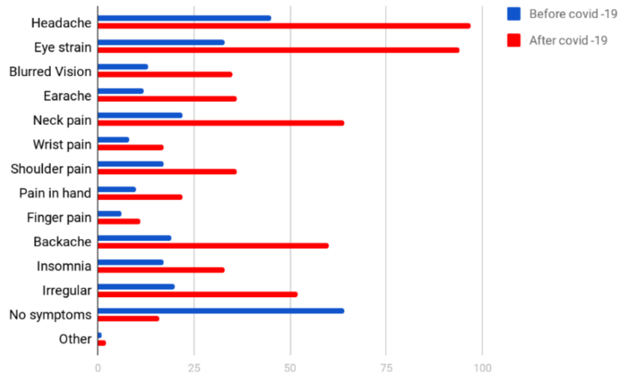
(46.2%) of respondents slept for an average of 6- 8 hrs per day. Insomnia and irregular sleeping patterns had increased during COVID - 19 based on this survey. Duration of smart device usage and duration of sleep seemed inversely proportional to each other.

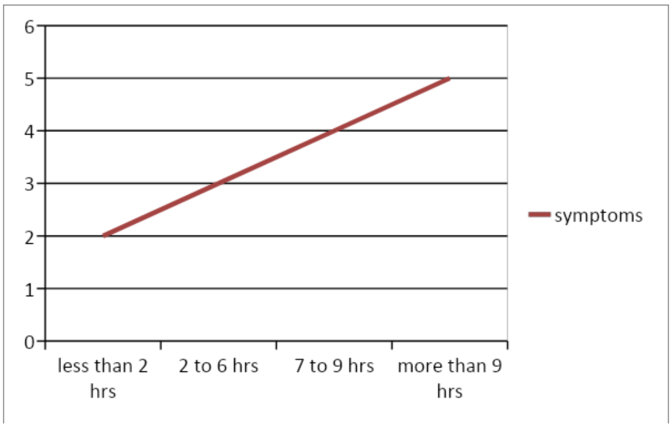
Respondents who worked more hours on their smart devices reported having more symptoms when compared to respondents who worked for fewer hours.

Majority of respondents (80.3 %) seldom took breaks between working hours. Respondents who took frequent breaks reported fewer symptoms and respondents who rarely took breaks experienced more symptoms. Most respondents who took breaks between working hours had fewer symptoms.

Almost all the respondents (97.7%) were aware of the damaging effects that prolonged smart device usage can have on physical well-being.

Based on the findings of this study, an infographic was designed (using canva.com) so that the research findings can be quickly and easily understood by the reader.





Conclusion

After the COVID-19 pandemic, the usage of smart devices has increased due to varied reasons. Excessive use of smart devices has caused adverse effects on almost every aspect of our lives. Despite coming to our rescue during pandemic-induced lockdowns, prolonged smart device usage can adversely affect physical and mental health, personal and work-related activities.

The influence of smart devices and their effects on human health are still being studied by researchers all over the world. The students who participated in this survey used their smart devices for several purposes such as education, work and social networking etc., The increased screen time after the COVID-19 pandemic seemed to cause more physical symptoms in the respondents than before the pandemic. The respondents reported experiencing various physical symptoms such as headache, eye strain, backache, neck pain etc., While smart devices make life very convenient and are a boon to students who can continue their education without interruption even in the midst of the COVID-19 pandemic, appropriate measures should be taken to minimise the duration of smart device usage. It is essential that students take frequent breaks between working hours to reduce the frequency and severity of physical symptoms experienced.

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The Impact of Scientific Research Output by NIRF-Ranked Higher Educational Institutions – a Regional Analysis

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Abstract
This scientometric analysis seeks to assess regional differences in the performance of Indian higher education institutions` Scientific Research Output by reviewing of NIRF 2024 data and comparing the North and South regions Higher Educational Institutions (HEIs). The measurements of research performance based on scientometric indices such as the H-index, i10, exceptional achievement index, and Gini coefficient are proposed for use in the assessment of institutional performance with regard to NIRF parameters particularly quality of teaching, research, facilities and infrastructure. The results show high variation between the Northern and Southern HEIs. While comparing northern and southern HEIs, specifically in Delhi, the institution proves to dominate over southern institutions in terms of infrastructure, funding, and history. Earlier studies also reveal that the H-index and i10-index data indicate that northern institutions are at the top of the ranking, and southern institutions have some gaps in not achieving the same performance. The Gini coefficient also reinforces performance disparity, Northern institutions have a wider gap between elite and average performers, while Southern institutions have competitive but relatively equal performers. From the analysis of scores and ranks, institutions in Tamil Nadu respond to changes in scores more than the national average; therefore, there are prospects for quick improvement of their ranks with investment. Nevertheless, the presented results identify the general need for policy actions concerning augmenting the GERD, developing appropriate facilities, and strengthening financial support across the southern region. This study parallels the existing literature on regional inequalities in Indian higher education and provides suggestions for mitigating these inequalities.

Keywords: Scientometric Analysis, NIRF Rankings, Higher Educational Institutions and H-index

1. Introduction

Universities and colleges are bear tremendous responsibility for furthering the academic, social, and economic development of our nation. Universities and colleges are therefore emerging indispensable to the overall development of the nation and the world through research and innovation, as well as producing a skilled workforce. As such, product ranking methodologies, including the National Institutional Ranking Framework (NIRF) in India, are indispensable for assessing institutions with higher learning productivity. These rankings not only help policy makers plan but also assist students and parents in making appropriate decisions on higher education. In this article, the ranks determine the reputation of institutions that receive funding and make key strategic decisions on the development of universities and colleges (Kumar & Dash, 2019). Hence, these scientometric features of the rankings can sharply focus on the temporal dynamics and drivers affecting institutional performance across the regions of India. For years, two areas – the North region with Delhi's renowned colleges and the South region with Tamil Nadu and Karnataka's leading colleges– have been strong centers of higher education in India. However, disparities in infrastructure, funding, and production call for performance variations in these regions. Such a study is essential for research, but also for policymakers who must face regional disparities in education (Choudhury et al., 2020).

There is now increasing attention on the determinants of institutional performance, research outputs, physical facilities, students, and faculty (Altbach, 2015). Scientometric analysis based on the scope of scientific productivity and citation factors can be extended to introduce the H-index, i10-index, and Gini coefficients to provide a more integral view of national and regional college performance (Rousseau & Egghe, 2016). This research employs a scientometric approach to assess the achievements of the overall ranked Indian institutions, with special emphasis on the North and South delegations. The education prominence of India's characteristics consists of measuring the degree of institutional quality across India's geography. In a study conducted by (Kapur and Mehta, 2017) , the researcher identified that the Indian higher learner-ship is marked by substantial inequalities, whereby a few higher learning institutions capture most of the national and international acclaim. Similarly, students from the North, especially Delhi, and those studying in big institutions such as Hindu College, Miranda House, or St. Stephen's College has emerged in most ranking tests annually. These are traditional academic institutions that have better quantum, funding, research, and national visibility (Chattopadhyay 2019).

On the other hand, the performance of the South region, though includes a few more outstanding institutions such as Loyola College and PSGR Krishnammal College for Women, shows fluctuation performance compared to the West region (Mishra et al., 2020). The South is emerging as an education city where its institutions are shifting from merely being a training ground for students but now concentrates much on research and development, such as the cities of Chennai and Coimbatore. Nonetheless, it has been found that most institutions in the south have lower research output and financial investment than those in the north; overall, institutions in the south are ranked lower than those in the northern region (Bhattacharya, 2018).

By analyzing the NIRF 2024 rankings, the North Indian institution overpowers South India on average scores and ranks. (Raj and Sundar 2021) argued that such differences could be due to differences in state policies, funding, and variations in academic culture. As it is home to more institutions of national importance situated in the national capital, the North receives more public and private investments that raise its infrastructure and research profile (Gupta, 2020). However, despite having many state-affiliated universities, the South does not always have the resources and recognition of institutions in the North (Mishra et al., 2020).

2. Scientometric Approach to Ranking Analysis

Scientometric analysis can be applied to exported and citation data only; however, applying scientometric analysis to the treatment of institutional rank and score normalization and ranking can be treated as an 'impact'. Ranking indicators, such as the fairly recently developed H index, which takes both quantity and quality in terms of citation of papers into consideration, can be employed to assess the overall position of an institution in the ranking system. For instance, the NIRF 2024 rankings indicated that the H-index is higher for the Northern HEIs than for the Southern HEIs, implying that college performance in the North is highly aggregated (Rousseau & Egghe, 2016). For quantitative indicators, such as the i10-index, which traditionally estimates the quantity of highly cited papers, a new analogical criterion can be proposed; for instance, a measure of the number of institutions in top 10 rankings at the national level (Hirsch, 2005). The study conducted in this research demonstrates that the Northern Region has higher i10-index than the Southern Region and affirms previous works that show that Northern institutions are dominant in setting the performance benchmark for the country (Altbach, 2015). These scientometric tools provide a strong foundation for comparing institutions' performance across regions as well as distinguishing the root causes behind the above differences.

2.1 Government Policies and Institutional Support

Governmental policies have an important influence on the education process. In (Rao 2019) opinion, northern institutions have gained interest in the intensification of research and international ranking policies. Some of the funding programs of the central government, such as the University Grants Commission (UGC) and the Department of Science & Technology (DST), have favored northern institutions, however, the growth of IoE has also benefited other northern universities, such as the University of Delhi and JNU, which have scaled further upwards in the country's ranking list (Kapur and Mehta, 2017).

However, South Indian institutions, despite enjoying huge state funding, sometimes lack national funding and accreditation (Chattopadhyay 2019). For instance, despite rapid development, the state of Tamil Nadu has some issues with higher education, such as the problem of inadequate research grants, and the faculty-student ratio has also become a cause of concern in the competing world. This lack of support widens the gap between quality education and institutional rankings between the North and the South (Gupta, 2020). Hence, the present research emphasizes the differences between the North and South regions in terms of performance in higher education. In particular, the North, led by institutions in Delhi, outperforms the South, which has better funding, a longer history of status, and a greater focus on research. Using scientometric measures, including the H-index, i10-index, and Gini coefficient of regional disparities, this study identifies the factors contributing to these regional differences. These gaps are going to take policy changes, centers of excellence, and imperative efforts to make education systems inclusive and competitive across all zones of India.

3. Methodology

This study employs scientometric analysis as a methodology, since it is a standard quantitative technique applicable to establishing the performance of HEIs using different factors. The major aim of this study is to measure the differences in the performance indicators of higher education institutions in the northern and southern regions of India. Based on the NIRF 2024 rankings data these ranking analysis employ scientometric techniques to provide a broader view of institutional performance. The subsequent sections discuss the methods used for this analysis, which incorporates data gathering, scientometric indices, statistical measures, and cross-regional analysis.

3.1. Data Collection

This study employed the NIRF 2024 rankings, which categorize known colleges in India based on their performance indicators on teaching learning resources, research and development, professional practice, graduation outcomes, regional exposure, diversity, and perceived reputation from peers (Kumar & Dash, 2019). Furthermore, a subset of this data was also constructed for Tamil Nadu, which is one of the most developed states in the southern zone.

The Top 100 sheets in the dataset include the following key columns.

- Name of the College: Identifying an institution.
- City: Genes that cover the geographical position of the institution.
- State: State in which the institution is situated.
- Score: The rank that the institution has acquired in general NIRF ratings
- Rank: National rank set according to the requirements of NIRF.

The second sheet concerned other institutions of Tamil Nadu and contained similar fields of data. This restriction was beneficial for a specific regional study of South Indian educational institutions, as demonstrated with reference to Northern Institutions.

3. 2. Scientometric Metrics

A scientometric approach was employed to evaluate institutional performance using the following key metrics:

- **H-Index:** The H-index was borrowed from its original application in measuring scholarly production citation impact and ranking of accomplishments. Here, the H-index shows the highest number of organizations that can be ranked among hhhth positions, and at the same time, the index score is not less than hhh. This adaptation provides an indication of which regions contribute the most institutions that are ranked high.
- **i10-Index:** In a similar form, the i10-index was adopted to reflect the number of institutions in each zone that fall within the top 10 institutions in the country overall. This metric shows that selective

institutions are clustered in one geographical area (Hirsch, 2005).

• **Gini Coefficient:** One which quantified the scatter of the scores obtained by different institutions was such a measure modified from the Gini coefficient which is used to measure income inequality. The coefficient of Gini has a greater value for a higher disparity concerning institutional performance because most institutions perform poorly compared to only a few institutions occupying high-performing ranks.

• **Descriptive Statistics:** The range, frequency distribution, and measures of central tendencies, such as mean, median, mode, and measures of dispersion, such as standard deviation, minimum, and maximum scores, were adopted as validity indicators of the patterns of performance differences among regions. These centile measures provide a general picture of the scores and ranks of the dataset **(Altbach 2015)**[3].

3.3. A statistical tool and a comparison between two regions

a. Descriptive statistics and correlation analyses were used for each piece of writing.

The first analysis carried out in this research involved the creation of summary statistics for the entire dataset. The results for the top 100 colleges and Tamil Nadu subsets were calculated in the format of mean scores, median scores, and standard deviations. This offers an initial perspective on the general performance standards of institutions within each geographical area.

Subsequently, a correlation analysis was conducted to establish a correlation between the rank and score. A negative correlation was expected, given that a higher rank corresponds to lower scores. To substantiate this relationship, the Pearson correlation coefficient was calculated for both the national and regional datasets, as proposed by Singh and Sharma in 2021.

b. Regression Analysis

Using linear regression analysis, we tested whether the score could be used to predict rank among colleges in both the North and South regions. The purpose of this study was to estimate the impact of changes in institutional scores on national rankings using regression analysis. Among the observations made from the regression equation, the slope and intercept point values indicate the compounded value of small-score upgrades on rank generation.

The regression equation is as follows:

$$\textbf{Rank=Slope} \times \textbf{ Score+ Intercept}$$

A steeper negative slope means that a small boost in the score drastically changes the rank. This makes it possible to determine the level of competition within relevant regions **(Kapur & Mehta, 2017)**[5].

c. Gini Coefficient of performance distribution

The Gini coefficient test was applied to institutions' scores to measure score distribution inequality in both regions. This metric assists in identifying where the scores are focused on many institutions or are dispersed to various institutions. The scores of self-service technologies range from 0.2 to 0.90, and a higher Gini coefficient means that most institutions rank lower, whereas the few institutions that rank higher have a more significant score.

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The Gini coefficient was calculated as follows:

$$G = \frac{2}{n^2 \bar{x}} \sum_{i=1}^{n} i(x_i - \bar{x})$$

$$G = \frac{\sum_{i=1}^{n}(2i - n - 1)x_i}{n\sum_{i=1}^{n} x_i}$$

where x_i x_i are the scores of the institutions, n is the number of institutions, and x is the mean score (Choudhury et al. 2020). This metric was applied to the Top 100 dataset and Tamil Nadu subset to compare the inequality in performance within each region.

d. Regional Performance Analysis

The colleges were grouped into North, South, East, West, and Other regions. To evaluate the performance level of different regions, the mean score and rank were computed. Particular attention was paid to the comparison of the North and South regions since they occupied the leading positions and made a huge contribution to the development of higher education in India (Bhattacharya, 2018).

Histograms for the northern and southern regions are drawn to illustrate the distribution of the scores. This made it possible to identify the competitiveness level of scores across institutions in these regions and see how the scores are spread. If the scores were more concentrated, then it would mean that that region had a better educational setup (Gupta, 2020).

4. Limitations of the Study

Although this study offers a strong scientometric analysis of existing institutional rankings, it has some limitations. First, the NIRF rankings place more emphasis on Indian institutions; hence, they are more restrained by global comparison. Furthermore, the type of analysis carried out in the dataset might be affected by the NIRF's scoring criterion, which is based on the weight assigned to some measures, as found (Rao 2019). Finally, it is only possible to rely on the available data pertaining to research productivity, and other citation data would have provided a more refined picture of institutional ranking.

5. Results and Discussion

Information obtained through scientometric tools as well as through the diverse statistical analyses employed. These data will be analyzed to obtain various findings from the Top 100 colleges dataset and the Tamil Nadu subset based on the following parameters: H-index, i10-index, Gini coefficient, and regression analysis. The findings of each methodology are presented with the specification of the consequences of these results, accompanied by graphical illustrations and textual analyses.

5.1 Descriptive Statistics and Pearson's Correlation Coefficient

The key descriptive statistics for the top 100 colleges and Tamil Nadu subset are presented below.

Table 1: Pearson's Correlation Coefficient for the top 100 colleges vs Tamil Nadu

Statistic	Top 100 Colleges	Tamil Nadu Colleges
Mean Score	58.51	57.57
Median Score	56.01	55.64
Standard Deviation (Score)	6.25	5.77
Maximum Score	74.47	72.09
Minimum Score	51.84	51.84

Correlation Coefficients

- **Top 100 Colleges**: **-0.92**
- **Tamil Nadu Colleges**: **-0.92**

The mean score for the top 100 colleges is slightly higher than that of the Tamil Nadu colleges, meaning that averaged over, national-level colleges perform better. However, for the top 100 colleges, we have a high standard deviation, which indicates that there is more fluctuation in colleges' performance. It seems to mimic the current list of rankings at the national level that shows how some institutions perform way ahead of others. However, the lower value of the standard deviation of coefficients in Tamil Nadu implies that the performance of the institutions is relatively concentrated or more consistent. There is a strong negative correlation, with a correlation coefficient of − 0.92 for both datasets, indicating that as the score decreases, the rank increases. This means that a higher mark indicates a better (lower) rank, which is a typical feature of ranking models. This also shows the competitive nature of these rankings, where first-digit differences in scores correspond to tens of rank differences. A high negative correlation coefficient indicates that rankings are highly sensitive to changes in scores. It might take only a few points to leap over hundreds of competitors in terms of overall performance. The above trend is in harmony with other universal educational ranking systems that rank institutions in terms of performance with a closer incline among the foremost ranked institutions (Altbach, 2015)[3]. Second, the standard deviation for Tamil Nadu is relatively low, suggesting a lack of variation in institutional quality in the state, as argued by (Kapur and Mehta, 2017)[5].

5.2 H-index and i10-index

- H-index:
  - Top 100 Colleges: 100
  - Tamil Nadu Colleges: 0
- i10-index:
  - Top 100 Colleges: 10
  - Tamil Nadu Colleges: 2

The Top 100 dataset of the H-index is 100, which shows that all colleges must perform well in all ranks. On the other hand, Tamil Nadu has an H-index of 0, which means that there is no institution of learning in the state that offers programs that achieve an average rank high enough to be among the top in every index on a consistent basis. The i10-index of 10 for the Top 100 dataset demonstrates that 10 institutions were able to place in the top 10, whereas only two institutions were in Tamil Nadu. As depicted in the H-index and i10-index data, northern institutions dominate the rankings and perform well in all ranking indicators. This aligns with (Kapur and Mehta, 2017) past findings, where the authors noted that Delhi's arbitrary institutions have advantaged them by counting on the historical popularity, improved funding, and attraction of leading academics. On the other hand, the lower i10-index of Tamil Nadu shows a lower presence of its most popular and good articles in the national top 10. (Mishra et al., 2020) have explained that due to infrastructural facilities as well as funding issues, it becomes cumbersome for the Southern institution to compete in the premier league. The fact that authors publishing in Tamil Nadu contributed a relatively small number of publications to the global and local Elsevier databases also explains why many institutions in this region had a low H-index, indicating that they may require more reliable support to enter the list of top-ranking institutions.

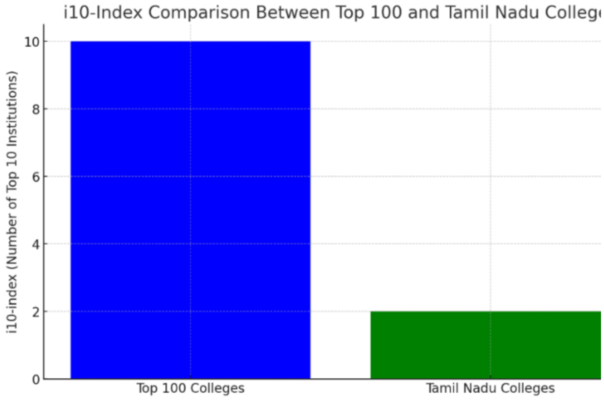


Fig. 1: Top 10 Colleges in Each Region by i10-index

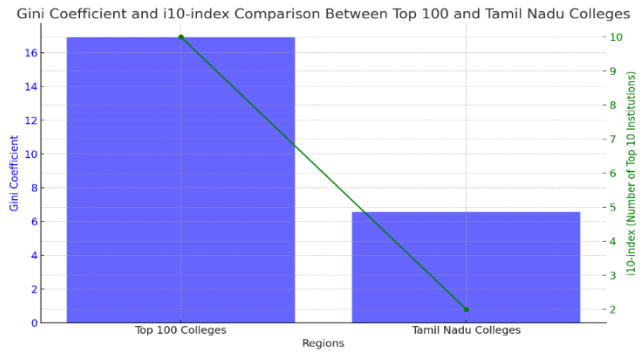
5.3 Gini Coefficient for Performance Inequality

Results:

- Gini Coefficient:
  - Top 100 Colleges: 16.89
  - Tamil Nadu Colleges: 6.57

The Gini coefficient measures the inequality in the distribution of scores among institutions.

With an HDI of 0.313, separate HDI values of 0.65 and 0.58 for Male & Female respectively and a Gini coefficient of 16.89 for the Top 100 colleges, performance disparity is relatively high. About one-third of the institutions have very high scores that are much higher than the scores of other institutions in the ranking. However, the Gini score of Tamil Nadu (6.57) indicates that institutions are much closer in terms of their scores, implying a more equal distribution. The research findings on the Gini coefficient concur with findings from research studies on educational inequality, including Choudhury et al. (2020), who averred that northern institutions have better access to(boost) resources and funds, thus leading to higher inequality in performance. The concentration and adoption of appropriate technology by the few top-performing colleges skew the Gini coefficient upward, as shown in the Top 100 college ranking, which means that few institutions have benefited from appropriate investment in research and the provision of educational infrastructure. On the other hand, Tamil Nadu has a lower Gini coefficient value, suggesting better dispersion of institutional performance. This may be because of the state's educational policies, which envisioned increased access to higher education, as pointed out by **(Mishra et al., 2020)**[7]. However, this balance may also point to the fact that as much as most institutions are doing well, very few market pioneers that would be able to compete in the national market.



5.4 Regression Analysis (Score vs Rank)

Results:

The results of the linear regression model are as follows.

Regression Slope

- Top 100 Colleges: -4.28
- Tamil Nadu Colleges: -4.57

Regression Intercept

- Top 100 Colleges: 300.62
- Tamil Nadu Colleges: 318.20

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For the Top 100 colleges, a negative slope -4.28 means that for every one-unit increase in score, a college rises by four points. where the fitted line intersects the rank axis at 300.62, and denotes the expected rank for an organization/college with a score of zero, although theoretically, The negative value steeper -4.57 suggests that Tamil Nadu colleges have improved even in marginal benefit terms; every marginal increase in score delivers a better rank. This indicates that the colleges in Tamil Nadu start from a lower starting point than the top 100 colleges that is 318.20. The regression analysis indicates that the Top 100 Index and Tamil Nadu Index have high correlation coefficients with score and rank, indicating that high scores will always give better ranks. However, this also indicates that Tamil Nadu institutions are more sensitive to changes in scores than those in other states. This is in line with (Gupta, 2020)[10], who established that small changes in the score can have an impact on relatively nearby institutions.

The higher intercept for Tamil Nadu conveys the picture that Tamil Nadu institutions lag behind in competing with national-level institutions that have better facilities and government funding. National funding and infrastructure investments are said to be in northern institutions to the disadvantage of institutions from the south, especially in Tamil Nadu (Rao 2019)[12]. This implies that even though institutions from Tamil Nadu can move up through the ranking through added scores, they exhibit comparatively less capability than their counterparts, because the resources available to them are similar.

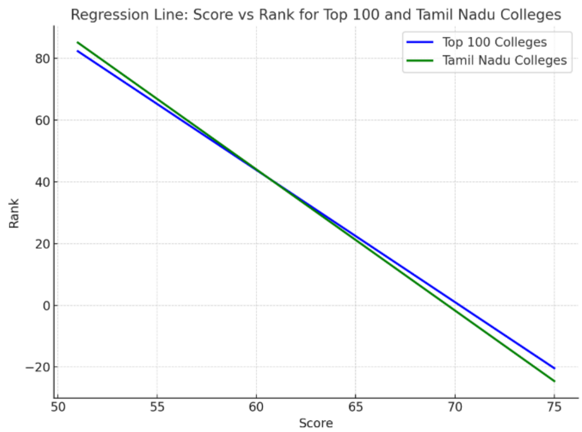

Fig. 3: Regression Analysis of Scores and Ranks

6. Top 100 Colleges vs. Tamil Nadu Colleges: A Comparative Overview

The relative performance analysis of the colleges included the top 100 colleges in Tamil Nadu. Based on descriptive analysis, we determined the extent to which performance differed. The mean score for the Top 100 Colleges is 58.51, which is slightly higher than that of Tamil Nadu Colleges (57.5), indicating that national colleges are better in general. More than 50% of the institutions were central to the two middle performances of 56.01 and 55.64 in the two datasets, respectively. However, the standard deviation of 6.25 observed for the Top 100 Colleges vis-à-vis 5.77 for Tamil Nadu, shows that national institutions exhibit more variation, owing to the Parent-Child index disparity between well-ranked and relatively poor ranking colleges. The 25th percentile values are extremely close, with 53.92 on the top 100 list and 53.77 in Tamil Nadu for the lower quartile performances. However, the range for the 75th percentile shows that the top 100 list includes a considerably higher percentage of higher scores, with 62.54, as opposed to 58.61 for Tamil Nadu. While the maximum and mean score of Top 100 Colleges are 74.47 and 72.47 respectively, for Tamil Nadu it is 72.09 and 71.09 respectively; meaning the higher-ranking institutions in the national dataset fare better than those in Tamil Nadu. These findings suggest that although Tamil Nadu institutions show more consistent performance, national institutions score a wider range, with few elite institutions in the fray. These fluctuations can easily be explained by the fact that these universities hold more resources, infrastructure, and funding as compared to other national institutions, particularly the region in North by Altbach (2015) and (Kapur and Mehta, 2017). To overcome this performance gap, especially concerning first-tier competitiveness, research and infrastructure investment is required for southern institutions to compete in a higher rank (Gupta, 2020).

The following is a comparative summary of the key findings.

Table 2: Comparative Summary of Key Findings - Top 100 Colleges vs Tamil Nadu Colleges

Metric	Top 100 Colleges	Tamil Nadu Colleges	Discussion Summary
Mean Score	58.51	57.57	National institutions outperform Tamil Nadu on average.
Standard Deviation (Score)	6.25	5.77	Higher variability in Top 100 scores indicates more competition at the national level.
H-index	100	0	Northern institutions dominate national rankings consistently.
i10-index	10	2	Limited top-tier representation from Tamil Nadu in the top 10.
Gini Coefficient	16.89	6.57	Higher inequality in performance among Top 100 institutions compared to Tamil Nadu.
Regression Slope	-4.28	-4.57	Tamil Nadu institutions can achieve greater rank improvements with small score gains.
Regression Intercept	300.62	318.20	Tamil Nadu institutions start from a lower baseline, reflecting challenges in national competition.

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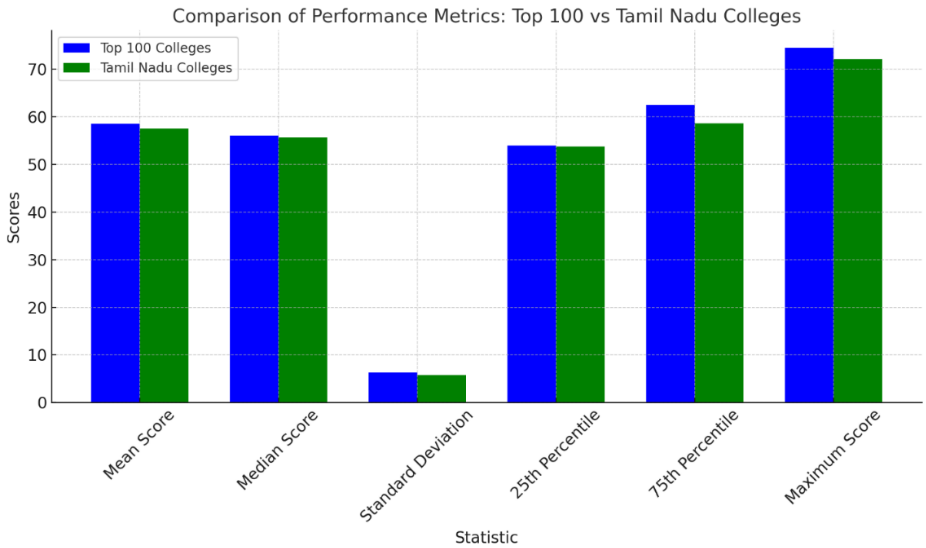

Fig. 4: Comparison of Performance Metrics Top 100 Colleges vs. Tamil Nadu Colleges

7. Insights from Variability in the Performance of Institutions

Depending on the institutional performance analysis, we tried to use the major variations in the quartiles and standard deviation to understand the performance of the Top 100 Colleges against Tamil Nadu Colleges. Rank ordered by institutional quality, the Top 100 Colleges have a higher standard deviation of, 6.25 while Tamil Nadu Colleges have a standard deviation of 5.77. This wider spread indicates that within the top 100, some institutions are much more productive than others – certainly in terms of funding, facilities, and research output. Several premier national institutions with their roots, especially in Northern India, control these upper tiers because of their glorious history and state/central government backing (Altbach, 2015) and (Kapur & Mehta, 2017). Tamil Nadu Colleges has less dispersion of performance meaning institutions are more closely related in terms of the scores they have attained. However, this may be the result of different state policies aimed at equitisation of education rather than creating elite institutions that should be capable of attaining the highest national scores, which is missing in Tamil Nadu College, as pointed out by the fact that no extreme high performers are observed in the college level dataset at the national level (2020).

This view is also supported by quartile analysis, which takes the above disparities a notch higher. For lower-end performance, the Top 100 Colleges and Tamil Nadu Colleges are very close to the 25th percentile, and the 75th percentile is much lower at 58.61 to 62.54 for the Top 100 Colleges. This disparity defines the advantage of elite national institutions, which surge far ahead and have efficient resource management with governmental backing, especially in northern areas, such as Delhi (Gupta, 2020). Variability in Top 100 Colleges is also higher, and the positive and strong correlation estimated between scores and ranks also indicates that small increments in scores can gain handsome ranks, particularly in very select groups of colleges. In contrast, the Colleges in Tamil Nadu, having higher and more stable general ranks, can drastically change their

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rank only in case of significant breakthroughs in research, recruitment of highly qualified academic staff, and improvements in infrastructure in Colleges and Universities (Altbach, 2015). This analysis provides a clear need for priority funding to improve the higher education system in Tamil Nadu, thus narrowing the regional gap to bring parity to institutions in Tamil Nadu with other states in India (Kapur & Mehta, 2017)

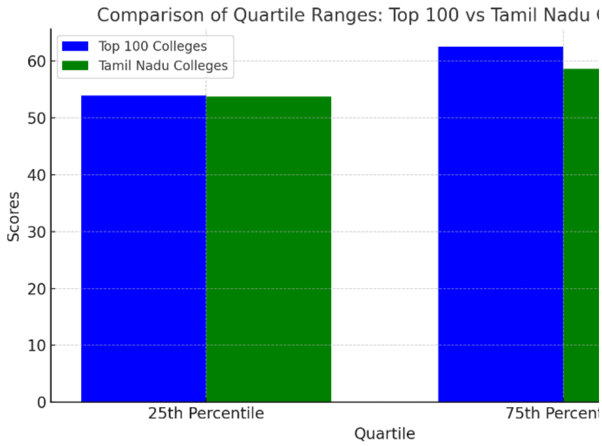

Fig. 5: Comparison of Quartile Ranges - Top 100 Colleges vs. Tamil Nadu Colleges

The bar chart illustrating the percentage difference of the 25th percentile score (Quartile 1) and 75th percentile score (Quartile 3) in the case of Tamil Nadu Colleges and the Top 100 Colleges both revealed similar linear relationships. This visualization shows the lower tenths (25th percentile) and upper tenths (75th percentile), which reveals that the top 100 colleges have a higher concentration at the top rung than Tamil Nadu Colleges.

8. Exploring Regional Policies: A Deeper Look into the Impact on Institutional Performance

This study examines regional policies as an antecedent factor influencing the environment of higher learning institutions in various regions of India. Organizations across the globe perceive the positive or negative impact of state-specific policies, funding patterns, and priorities, which in turn determine output, infrastructure, and faculty recruitment in the course of research. It is now time to explain how these policies have affected the regional distributions that have been captured earlier in this analysis in the comparison between the top 100 northern colleges and Tamil Nadu colleges.

8.1. Federal Grants and Research Grants Northern Region:

With the help of funding programs of the central government, northern institutions, especially those in Delhi, have been improving significantly. Certain organizations, such as the University Grants Commission (UGC) and the Department of Science and Technology (DST) in the central government, fund research and infrastructure in the metropolitan areas of institutions. Initiatives such as the Institute of Eminence (IoE) want to support the development of selected universities by raising research budgets and decision-making authority, so such universities can concentrate on purity in research (Rao, 2019).

Examples: Universities such as Jawaharlal Nehru University (JNU) and the University of Delhi are prime beneficiaries of such policies. These Universities always secure their various ranks across the nation because of well-developed research environments with UGC and DST research funding support (Chattopadhyay 2019).

Tamil Nadu:

Although the state government of Tamil Nadu has paid special attention to the development of educational facilities, the funding of research in Tamil Nadu

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University research institutions is comparatively lower than in Northern University research institutions. Far from flaunting levels of autonomy and resource control, as their Delhi counterparts do, state-funded universities in Tamil Nadu typically achieve. In addition, (Mishra et al. 2020) Tamil Nadu institutions rank low in terms of excellence in secular newspapers in achieving competitive national-level research grants to develop better research facilities.

Example: Both Anna University and Madras University have shown an increase in research publications, but they still rank poorly in research grants and international rankings when compared to northern universities. In the past, there was relatively more focus on increasing access to education in the state than on research productivity (Gupta, 2020).

Table 3: Comparison of Research Funding between Northern and Tamil Nadu Institutions

Region	Policy Support	Key Beneficiaries	Impact on Rankings
Northern	Central government funding (UGC, DST), Institutes of Eminence (IoE)	Jawaharlal Nehru University (JNU), Delhi University	High ranking due to superior research output
Tamil Nadu	State-focused funding, limited national grants	Anna University, Madras University	Struggles to compete due to limited resources

8.2 Autonomy and Governance

Northern Region:

The institutions in the North, especially in Delhi, have more independence and thus favorably operate with the flexibility of governance systems. The IoE program was introduced by the central government to provide universities with the independence to decide on faculty appointments, course offerings, and partnerships without referrals to department officials. This policy has enabled northern institutions to pioneer changes in course delivery and draw global partnerships (Kapur & Mehta, 2017).

Example: Taking advantage of such autonomy, the University of Delhi has established various research alliances and invited competent faculty members. Consequently, this flexibility plays a major role in ranking universities (Choudhury et al., 2020).

Tamil Nadu:

The state government has greater control over Tamil Nadu's higher education institutions, which means that those institutions have less autonomy when it comes to decision-making. Although the state has been very effective in opening up access to education, little emphasis has been placed on institutional independence to foster research output. According to

(Gupta, 2020), institutions in Tamil Nadu increasingly experience a bureaucratic problem that slows the pace of academic program advancement and research partnership.

Example: Although Loyola College is a model institution in Tamil Nadu, it does not possess the governance flexibility available to institutions in Delhi. This hinders its capacity to invest at the same rate in next-generation research partnerships (Bhattacharya, 2018).

Table 4: Comparison of Institutional Autonomy

Region	**Autonomy Level**	**Impact on Performance**	**Key Policy**
Northern	High (due to IoE and central support)	Enables innovation, higher research output	Institutes of Eminence (IoE) initiative
Tamil Nadu	Low (strict state regulation)	Slower pace of innovation, restricted collaborations	State-focused regulatory framework

8.3 Recruitment and retention of faculty

Northern Region:

Northern faculty are attracted and retained based on centralized recruitment processes and better pay structures offered to faculties as compared to other institutions. Government policies, such as the Faculty Recharge Program and possibilities under the IoE program, facilitate the recruitment of international faculty and famous scholars at the University of Delhi and JNU. These policies directly help enhance research, which consequently complements rankings (Rao 2019).

Example: JNU has always been listed among the best universities in India, which can be attributed to its capacity to employ and retain the best qualified staff as a result of government policies supporting educational institutions.

Tamil Nadu:

There are often state barriers to their recruitment, and the pay scales in Tamil Nadu are lower than those in the north. However, due to the scarcity of research grants, it becomes quite a problem for Tamil Nadu institutions to hold on talented people. The faculty in these institutions may be poorly funded with fewer research grants and international connections, which may lead to low research productivity and, subsequently, poor ranking (Mishra et al., 2020)

Example: As one of the most vibrant women colleges in Tamil Nadu, however, the quality of faculty recruitment is not as competitive as the Northern universities partly due to limited research grants available and state pay structures (Bhattacharya, 2018) Northern institutions were most likely to receive government support for competitive recruitment of faculties research throughput and thus better rankings.titutions create a strong pull for top academic talent. Government policies such as the Faculty Recharge Program (FRP) and initiatives under the IoE program make it easier for institutions such as the University of Delhi and JNU to attract international faculties and renowned scholars. These policies directly contribute to improved research output, which bolsters rankings (Rao 2019).

Example: JNU has consistently ranked among the top institutions in India, partly because of its ability to attract and retain highly qualified faculty supported by government policies that promote academic excellence (Chattopadhyay 2019).

Tamil Nadu:

Faculty recruitment in Tamil Nadu is often constrained by state regulations and lower pay scales compared with institutions in the north. Moreover, the limited availability of research grants makes it difficult for Tamil Nadu institutions to retain their top talents. Faculty in these institutions may lack the same level of research funding and opportunities for international collaboration, which contributes to lower research output and, thus, lower rankings (Mishra et al., 2020).

Example: PSGR Krishnammal College for Women, while a leading institution in Tamil Nadu, struggles to attract the same caliber of faculty as Northern universities, partly due to limited research funding and state salary scales (Bhattacharya, 2018).

Northern institutions benefit from government support for competitive faculty recruitment, resulting in higher research output and better rankings. This concurs with the research carried out by Rao (2019), who pointed out that performance on institutions is enhanced with top academic human capital acquisition.

On the other hand, institutions in Tamil Nadu suffer from state-salary scales and meager research grants that hamper their capacity to see worthwhile competent faculty, which, in return, minimizes standard performance (Mishra et al., 2020). The Faculty Recharge Program (FRP) and initiatives under the IoE program make it easier for institutions, such as the University of Delhi and JNU, to attract international faculty and renowned scholars. These policies directly contribute to improved research output, which bolsters rankings (Rao 2019) .

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- Northern institutions benefit from government support for competitive faculty recruitment, resulting in higher research output and better rankings. This aligns with the research by Rao (2019), who noted the importance of attracting top-tier academic talent in boosting institutional performance.
- In contrast, Tamil Nadu institutions face challenges due to state salary scales and limited research funding, which hampers their ability to attract and retain top faculty members, affecting their overall performance (Mishra et al., 2020).

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8.4 State Level Education Policies

Northern Region:

The North region, particularly Delhi, is smooth because state-level policies favor institutions in terms of research and development of academic facilities. Hitherto, the Delhi government has launched several programs seeking to improve the quality of education through technology, knowledge centers, and networking with industries. They are undertaken in conjunction with the central government's core strategies to foster an environment for successful academic performance (Choudhury et al., 2020).

• Example: The University of Delhi has set up several research centers and technology units that encourage R&D interfaces between universities and industries. These partnerships have helped make Delhi University always rank high in the national framework (Kapur & Mehta, 2017).

Tamil Nadu:

The state-formulated policies of Tamil Nadu have concentrated more on increasing the attainment of education, especially in rural regions. Although this has resulted in increased enrollment levels, the drive to increase access has sometimes been attained at the expense of increasing research capacity. In its view, (Mishra et al. 2020) opine that, whereas Tamil Nadu has rightly laid emphasis on mass education, the future course should also include strategies that would strengthen research facilities and research intermediaries between academic institutions and industries.

• Example: Student clauses for institutions such as Anna University have received state-level investment to improve educational infrastructure and still find themselves short of the research outcome to match northern institutes **(Gupta, 2020)**.

Table 5: State-Level Policy Focus

Region	**Policy Focus**	**Key Beneficiaries**	**Impact on Institutional Performance**
Northern	Research and infrastructure development	Delhi University, JNU	Improved research output and industry partnerships
Tamil Nadu	Expanding educational access	Anna University, Loyola College	Increased enrollment but limited research capacity

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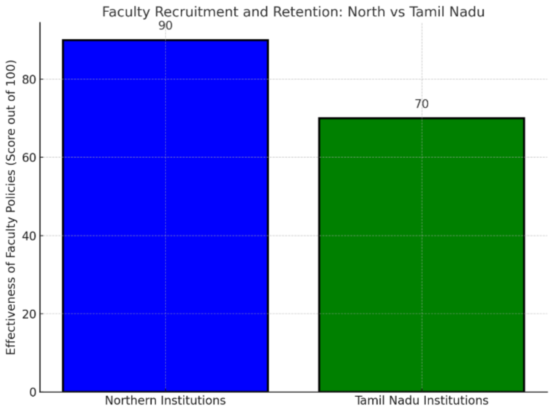

Fig. 6: Faculty Recruitment and Retention – North Vs Tamil Nadu

9. Suggestions and Conclusion

This scientometric and statistical analysis shows that there is a marked variation in the performance of Indian higher education institutions on a regional basis with respect to NIRF 2024. National ranking is determined by better infrastructure facilities, historical background, and centralized flow in Delhi, and many northern institutions are ahead in the list. They have enabled them to post better results than institutions from other areas, particularly those of the Southern region HEIs. Tamil Nadu institutions are also promising, but they have certain system constraints that hinder them from emerging into the top of all national rankings. These include higher levels of research funding constraints, inflexible state universities regulations, and laps in national and international linkages and collaborations, all of which act as barriers to development and capability at the national level. However, reducing these gaps will require specific policy measures. These should be aimed at enhancing the research endowment of Southern institutions, enhancing teaching resources and academic facilities, and extending institutional support to the new generation of educational stations in the South. When these glitches are solved, a balanced growth of higher education in India will be accomplished, which will be possible with the interventional help of policymakers to set strategies to equalize the opportunity of all HEIs in India and also to see few more Indian HEIs in global rankings.

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