Guru Amar Das Block, Guru Nanak College (Autonomous), Chennai

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From the Editor's Desk

"Research is the fuel that ignites innovation, the bridge that connects ideas to reality, and the beacon that guides us towards a brighter future."

As the Editor-in-Chief of the Guru Nanak Journal of Multidisciplinary Research (GNJMDR), I take immense pleasure in presenting the contents of Volume 13, Issue 1. GNJMDR is a distinguished scholarly platform, affiliated with Guru Nanak College (Autonomous), Chennai, renowned for its commitment to fostering multidisciplinary research and academic excellence. Our journal, with its ISSN: 2277-1409, stands as a testament to our dedication towards promoting rigorous academic inquiry across diverse disciplines. With a rigorous peer-review process, GNJMDR ensures the highest standards of quality and integrity in scholarly publication. Volume 13, Issue 1, showcases an eclectic array of scholarly contributions spanning various fields, including literature, environmental studies, psychology, finance, commerce, and technology. Each article offers unique insight and contributes to the advancement of knowledge in its respective domain.

From exploring the global perspectives of Bharathiyar's ideology to delving into the intricacies of financial performance analysis in regional rural banks, our contributors present thought-provoking research that addresses contemporary issues and challenges. Highlights of this volume include discussions on literary symbolism, environmental humanities, organizational effectiveness, digital innovation in higher education, and the application of machine learning in diverse domains. Moreover, our journal takes pride in featuring research that is both academically rigorous and socially relevant, such as studies on social issues depicted in literary works and strategies for stress reduction in the workplace. Furthermore, Volume 13, Issue 1, underscores our commitment to promoting interdisciplinary dialogue and collaboration. By featuring research from scholars across various disciplines, GNJMDR facilitates the exchange of ideas and fosters holistic approaches to addressing complex societal challenges.

In conclusion, GNJMDR continues to serve as a vibrant platform for scholarly exchange and intellectual discourse. We extend our gratitude to all the contributors, reviewers, and readers whose invaluable contributions have enriched this volume. We invite scholars from around the world to engage with our journal and contribute to advancing knowledge and fostering innovation in their respective fields.

Warm regards,
T. K. Avvai Kothai
Editor-in-Chief
Guru Nanak Journal of Multidisciplinary Research

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பாரதியின் உலகப் பார்வையும் ஒருமை நோக்கும்

மு. மூர்த்தி
இணைப்பேராசிரியர் (ம) தலைவர்
தமிழ்த்துறை
குரு நானக் கல்லூரி (தன்னாட்சி)

தமிழ் இலக்கியப்பரப்பில் பாடுபொருளில் புதுமையும் இலக்கிய வடிவில் எளிமையும் கையாண்டவர் பாரதியார். யார் பாரதி? பெயரே அவர் யார் என்பதை உலகுக்குக் காட்டியது எனலாம். செயல்தான் ஒருவரை அடையாளப்படுத்த வேண்டும். அவ்வகையில் செயலாளுமையால் மகாகவியாய் உலகுக்கு அறியப்பட்டவர்; ஆயினும் காலம் கடந்து அறியப்பட்டு, காலத்தால் என்றென்றும் நிலைத்திருப்பவர்.

'தக்கார் தகவிலர் என்பது அவரவர்
எச்சத்தால் காணப் படும்'.(குறள் 114)

ஈண்டு எச்சம் என்பது செயலைக் குறித்ததாகும்.

அவ்வகையில் இவ்வுலகு உயர்வடைய திறம்படச் செயலாற்றியவர்கள் பலரைக் குறிப்பிடலாம். அவர்களுள் குறிப்பிடத்தக்கவர் பாரதியார் ஆவார்.

'விருந்தேதானும் புதுவது கிளந்த யாப்பின் மேற்றே' என்று தொல்காப்பியம் (செய்யுளியல்- நூற்பா-237) குறிப்பிடும். பாவகைகளைப் பட்டியலிட்டுக் காட்டி எதிர்காலத்தில் எவ்வகைப் புதிய வடிவம் வந்தாலும் ஏற்றுக் கொள்ளவேண்டும் என்பதை மேலேயுள்ள நூற்பா தெளிவுபடுத்துகிறது. அவ்வகையில் இலக்கிய வடிவத்தில் அனைவருக்கும் புரியும் வகையில் புதுமையில் எளிய வடிவத்தைக் கையாண்டவர் பாரதி எனலாம்.

'செயற்கரிய செய்வார் பெரியர்' (குறள்-26) என்று வள்ளுவர் குறிப்பிடுவது பாரதியார் போன்று செயலாற்றியவர்களைச் சமூகத்தில் நிலைப்படுத்துவதாகும். 'பாரதி யார்' என்று குறிப்பிடுவதே அவரின் பன்முக நற்செயலாற்றலை நன்கு உணர்த்துவதாகும்.

படைப்புகள் வழி செயலாக்கம்

இந்தப் பாருக்குத் தேவையானவற்றைப் படைப்புகளின் மூலம் கவிதை, கட்டுரை, கதை முதலிய இலக்கிய வடிவங்களில் வெளிப்படுத்தினார். அத்துடன் நடைமுறை வாழ்வியலில் நடந்து காட்டியும் மக்களை விழிப்படையச் செய்தவர். தற்கால இலக்கியத்திற்கு, குறிப்பாக நவீன கவிதைக்கு முன்னோடியாகத் திகழ்ந்தார். கவிதை, உரைநடை என்னும் இரு வடிவங்களிலும் முழுப்புலமையைத் திறம்பட வெளிப்படுத்தி, மானுடம் மாண்புற தன் வாழ்வியலை முழுமையாக அமைத்துக் கொண்டமையை இவ்வுலகு நன்கு அறியும். அந்நனவுலகுக் கவிஞன் வாழும் காலத்தில் அங்கீகரிக்கப்பட்டாரா என்பது நம்மிடையே இன்றுவரை எழும் கேள்விக்குறியாகும். ஆயினும் தன் செயல் எத்தகையது என்பதை வருகையின்போதே கட்டியம் கூறினான். அவ்வாறே வாழ்ந்தும் காட்டினான். அனைத்து திறமைகளும் அனைவருக்கும் அமையும் என்பது அரிது. இருப்பினும் தன்னுடைய வெளிப்பாட்டில் உறுதியான நிலைமை

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என்பது அனைவருக்கும் தேவையாகும். அவ்வகையில் பாரதி தன்னுடைய நிலைமையை முன்னிறுத்தி, படைப்பின் நோக்கத்தினை மிகத் தெளிவாக வெளிப்படுத்தியமையை யாவரும் அறிந்து போற்றுவர். அத்துடன் இந்நிலவுலகில் தன்னுடைய செயலாக்கம் எத்தகையது என்பதை நேருக்கு நேராய் யாவரும் புரியும் வகையில் எடுத்துரைத்தான்.

'நமக்குத் தொழில் கவிதை, நாட்டிற்கு உழைத்தல், இமைப்பொழுதும் சோராதிருத்தல்' என்னும் நிலைப்பாட்டில் தன்னை அடையாளப்படுத்தி, இம் மானுட சமுதாயத்திற்கு முன் மாதிரியாகத் திகழ்ந்தான்.

தான் யார் என்பதையும் தன் படைப்பு எத்தகையது என்பதையும் உலகு நோக்கி பொதுமையாகவுள்ள சக்தியிடமே தன் எண்ணத்தைப் பதிவு செய்தான்.பாரதியின் வருகையை வைரமுத்து 'கவிராஜன் கதை' என்னும் கவிதை நூலில் 'நிலத்தை ஜெயித்த விதை' என்னும் தலைப்பில் வீரியமிக்க விதை பாரதி என்று அடையாளப் படுத்தியுள்ளமை நினைவு கூறத்தக்கது.

பொதுநிலையில் கலை மற்றும் அறிவியலென்று எந்தப் படைப்பாக இருந்தாலும் உலகை நோக்கியதாக இருக்க வேண்டும். தமிழ் இலக்கியங்களும் அவ்வாறுதான் அடையாளப் படுத்தப்பட்டுள்ளன. தான் எத்தகைய செயலைச் செய்ய வேண்டும் என்பதைக் கட்டியம் கூறும் முகமாய், 'என் பாட்டுத் திறத்தாலே இவ்வையத்தைப் பாலித்திட வேண்டும்' என்று கூறுகின்றார்.இவரின் வாக்கு உலகைப் பொதுமையில் மகிழ்ச்சியுறச் செய்வதாகும், அத்துடன் தான் யார் என்பதையும் எப்படி விளங்க வேண்டும் என்பதையும் கவியாலே கருத்து வடிவமாகக் கூறும் போக்கினையும் அறியலாம்.

'புலம்பே தனிமை' என்று தொல்காப்பியம் (உரியியல் நூற்பா- 33) குறிப்பிடும். ஆயினும் பாரதியின் புலம்பல் உலகை நோக்கியதாகவே உள்ளது. நான் யார்? நாட்டுக்கு எப்படி துணை நிற்க வேண்டும் என்பதையும் சமூகத்திற்கு நலம் பயக்கும் வகையில் எவ்வாறு நிற்க வேண்டும் என்பதையும் மனதில் கொண்டு நற்கவிதையில் கருத்தோவியமாக அவன் உணர்வுகளை வடித்தவன்.

"நல்லதோர் வீணைசெய்தே - அதை நலங்கெடப் புழுதியில் எறிவதுண்டோ? சொல்லடி, சிவசக்தி-எனைச் சுடர்மிகும் அறிவுடன் படைத்துவிட்டாய் வல்லமை தாராயோ, இந்த மாநிலம் பயனுற வாழ்வதற்கே? சொல்லடி சிவசக்தி ! நிலச் சுமையென வாழ்ந்திடப் புரிகுவையோ? தசையினைத் தீசுடினும் -சிவ சக்தியைப் பாடும் நல் அகங்கேட்டேன் அசைவறு மதி கேட்டேன் இதை அருள்வதில் உனக்கெதும் தடையுளதோ"

என்று நேருக்கு நேராய் கேட்டவன். இப் பாடலடிகள் மூலம் தன்னுடைய பயணம் எத்தகையது என்பதையும் அத்துடன் இச் சமுதாயத்தில் ஒரு மனிதனின் அடையாளம் இப்படித்தான் இருக்கவேண்டும் என்பதையும் முறையே தெளிவாக உணரமுடிந்தது. அறிவது, பிறரை அறியவைப்பது,அறிந்து கொண்டே இருப்பது என்னும் வகையில் அறிவின் படிநிலைகள் முறையே அமையும். அத்தகு அறிவே மெய்யறிவு என்பது பாரதியின் வாக்காக அமைந்துள்ளதை அறியலாம். எவ்வுயிராயினும் இம்மண்ணுலகில் பிறர்க்கு, ஏதோ ஒரு வகையில் துணை நிற்பதை அறியலாம். ஆறாவது அறிவாகிய மனதினைக் கொண்ட நாம் அனைத்துயிரையும் அரவணைப்பது நம்

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கடமையென்பதைப் பாரதி திடமாக எண்ணியும் வாழ்ந்தும் பிறர் இப்படித்தான் வாழ வேண்டும் என்றும் முறையாகக் கற்பிதம் செய்துள்ளான்.

தொல்காப்பியர் உயிர்களை அறிவின் அடிப்படையில் வகைப்படுத்தியுள்ளார் 'ஒன்றறிவதுவே உற்றறிவதுவே' தொடங்கி 'ஆறறிவதுவே அவற்றொடு மனனே' (மரபியல் நூற்பா-27) என்று வகைப்படுத்தியுள்ளமை நோக்கத்தக்கது.இங்கு மனிதனுக்குரிய இலக்கணம் வகுத்துள்ளதைச் சுட்டிக் காட்டலாம். இம் மனிதன் தனக்குத் துணையாயும் அறிவினடிப்படையில் முன்புள்ள பல்லறிவுயிர்களை அரவணைத்து நிற்றல் அவன் கடமையாகும்.அதுவே ஆறாவது அறிவு பெற்றதன் நல் பயனுமாகும். இம் மனிதன் எவ்வுயிர்க்கும் தீங்கு செய்தல் நல் அறமாகாது என்பதை ஒருசேர கவிதையில் பாரதி பின்வருமாறு பதிவு செய்துள்ளான்.

'பிறர் வாடப் பலசெயல்கள் செய்து - நரை
கூடிக் கிழப்பருவ மெய்தி - கொடுங் கூற்றுக் கிரையெனப்பின் மாயும் - பல வேடிக்கை மனிதரைப் போலே - நான் வீழ்வே னென்று நினைத் தாயோ' (தோத்திரப் பாடல்கள்- யோகசக்தி-32 வது பகுதி) என்று மனிதன் என்பவன் இப்படித்தான் இருக்க வேண்டும் என்பதைச் செயலாக்கம் செய்தவன். இங்ஙனம் பாரதி தன்னைப் பற்றிய முழுமையான அடையாளத்தையும் சமூகத்திற்கு ஆற்ற வேண்டிய பணிகளையும் அவ்வாறு ஆற்றாதார் செயல்பாட்டையும் முறையே கூறியுள்ளமையை அறியமுடிகிறது.

பொருண்மைக் களம்

சமகாலப் பொருண்மையை எளிய வடிவத்தில் கவிதைகளின் உயிர்ப்பாக தொடர்ச்சியாக அமைத்துக் கொண்டவர். குழந்தைப் பாடல்கள், மொழி, நாட்டு விடுதலை,பொருளாதார விடுதலை, பொதுவுடைமை, மூடப் பழக்க வழக்கக் கண்டிப்பு, பெண்விடுதலை முதலியவற்றை அவர்தம் கவிதைகள் வழி வெளிப்படுத்தியுள்ளார்.பிறரை விழிப்படையவும் செய்தார்.

'பாரதியின் தேசியப் பார்வையில், தாய் நாட்டுப் பற்றும்,தாய்மொழிப் பற்றும்,விடுதலை வேட்கையும், தேசியத் தலைவர்களிடம் கொண்ட ஈடுபாடும் முதன்மை இடம் பெற்றுள்ளன என்று கூறுவது நோக்கத் தக்கது' (தமிழ்க் கவிதையில் பாரதியின் தாக்கம் ப.22)

பெண்விடுதலையைப் பெரிதாகப் பேசியதுடன், புதுமைப் பெண்ணாகப் பெண்கள் ஆக்கம் பெற வேண்டும் என்று நிலைப்படுத்தியவர் .

'நிமிர்ந்த நன்னடை நேர்கொண்ட பார்வை
நிலத்தில் யார்க்கும் அஞ்சாத நெறிகள்
திமிர்ந்த ஞானச் செருக்கு
செம்மை மாதர் திறம்புவது இல்லையாம்'- என்று மாதரைப் புதுமையாகவும் நல் பண்பின் அடையாளமாகவும் ஒப்பிட்டுக் காட்டியுள்ளமை(பல்வகைப் பாடல்கள்- புதுமைப்பெண் நான்காம் தலைப்பு) இன்றைய வாழ்வியலுக்குத் தேவையாகவுள்ளது.

பொதுமைச் சித்தாந்தம்

தமிழ் இலக்கியங்கள் உலகைப் பொருண்மையாகக் கொண்டே படைப்புகளையும் அப்பொருண்மையை உணர்த்த 'உலகு' என்னும் பெயரில் பல சொற்களையும் பல்வேறு இடங்களில் கையாண்டுள்ளன. சங்க இலக்கியம் தொடங்கி தற்கால இலக்கியம்வரை இப் போக்கினைப் பார்க்க முடியும். அவ்வகையில் பாரதியின் படைப்பு உலக ஒருமையை நோக்கியதாகவே உள்ளது.

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'ஒன்று பட்டால் உண்டு வாழ்வே- நம்மில் ஒற்றுமை நீங்கிடில் அனைவர்க்கும் தாழ்வே' என்று ஒற்றுமையால் உயர்வடையலாம் என்னும் பொதுமை சித்தாந்தத்தை உரக்கக் கூறியவன்.

'முப்பதுகோடி ஜனங்களின் சங்கம்
முழுமைக்கும் பொதுவுடைமை
ஒப்பிலாத சமுதாயம் உலகத்துக்கொரு புதுமை-வாழ்க
மனித ருணவை மனிதர் பறிக்கும் வழக்கம் இனியுண்டோ
மனிதர் நோக மனிதர் பார்க்கும் வாழ்க்கைஇனியுண்டோ?
இனியொரு விதி செய்வோம் -அதை
எந்த நாளும் காப்போம்
தனியொருவனுக் குணவிலை யெனில்
ஜகத்தினை அழித்திடுவோம் '-(-தேசிய கீதங்கள் 17 வது தலைப்பு)
என்று நம் நாட்டின் ஒருமையையும் அடுத்தவர் மீது அக்கறைகொள்ளும் நல்ல பண்பினையும் அறியலாம். எல்லார்க்கும் எல்லாம் என்னும் அடிப்படையே மனித வாழ்வின் எச்சமாய் அமைய வேண்டுமென்று எங்கும் கூறியவன்.
பொதுமையே வலிமையாகும் . அப் பொதுமை நிலைபெற வேண்டுமெனில் அனைவரும் ஒரு குலம் என்னும் ஆழ்ந்த உணர்வினைப் பெற வேண்டும்.
'எல்லாரும் இந்நாட்டு மன்னர்' என்னும் கூற்றின் வழி அனைவரும் அனைத்து நிலைகளிலும் பொதுமையில் உயர்வு பெறவேண்டும் என்பதே பாரதியின் நோக்கமாகும். நாட்டுமக்கள் நலமுடன் வாழ ஒற்றுமை தேவை என்று வலியுறுத்தினார்.
'பிறப்பொக்கும் எல்லா வுயிர்க்கும்
சிறப்பொவ்வாசெய்தொழில்
வேற்றுமை யான்'
என்று வள்ளுவம் (குறள்-972) கூறியுள்ள கருத்தையும் எண்ணிப்பார்க்க வேண்டும்.

பாரதி- நனவுலகக் கவிஞன்.
எதிர்காலத்தைச் சமகாலமாகக் கண்டவன். கனவில் பாடாது நனவில் பாடும் கபிலரைப் போன்றவன்.அத்தகைய சிந்தனைகளை நாம் வாழும் காலத்தில் வாழ்ந்த மேனாள் குடியரசுத் தலைவர் அப்துல் கலாம் அவர்களிடமும் பார்க்கிறோம். தாய் நாட்டின் எதிர்காலம் எப்படி இருக்க வேண்டும் என்று முன்னமே கண்டவன். விடுதலை கிடைப்பதற்கு முன்பே விடுதலை பெற்றோம் என்று வீர முழக்கமிட்டதோடு அவ்விடுதலை முழக்கத்தில் பலரும் கலந்துகொள்ளுமாறு செய்தவன்.
'ஆடுவோமே பள்ளு ஆடுவோமே
ஆனந்த சுதந்திரம் அடைந்து விட்டோம்' - என்று பின்னதை முன்னதாகக் கண்டவன். விடுதலைப் பேற்றுக்கான ஒருமைப் பதிவினைக் கவிதைகளில் ஆழமாகப் பதிவு செய்தவன்.

பொதுமை

வந்தே மாதரம் என்போம்
எங்கள் மாநிலத்தாயை வணங்குதும் என்போம்
நதிநீர் இணைப்புத்திட்டத்துக்கு விடுதலைக்கு முன்பே வித்திட்டவன்
'வங்கத்தில் ஓடிவரும் நீரின் மிகையால்
மையத்து நாடுகளில் பயிர்செய்வோம்
காசிநகர்ப் புலவர் பேசும் உரைதான்
காஞ்சியில் கேட்பதற்கோர் கருவி செய்வோம்'என்னும் பாடலடிகள்
(தேசிய கீதங்கள்-ஐந்தாம் தலைப்பு) மூலம் நதி நீர் திட்ட இணைப்பையும் அறிவியல் ஆக்கத்தினை ஒரு சேர இணைத்துக் கூறியுள்ளமையை அறியலாம்.
பிற்காலத்தில் வாழ்ந்த ஔவையார் 'இட்டார் பெரியோர் இடாதார் இழிகுலத்தோர் ' என்று நல்வழி நூலில்(பாடல்- 3) செயலடிப்படையில் கூறியதைப் போன்று சாதியப் பாகுபாட்டினைத் தகர்த்தெரிந்தவன். இவரின் கருத்தினை முன்மொழியும்

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முகமாய் சாதியிரண்டொழிய வேறில்லை யென்றே
தமிழ்மகள் சொல்லிய சொல் அமிழ்தமென்போம்' என்று கூறுவதன் வழி உயிர்ப்புடைய கொள்கையை நிலைப்படுத்தியுள்ளார்.

"காக்கை குருவி எங்கள் சாதி நீள்
கடலும் மலையும் எங்கள் கூட்டம்
நோக்கும் திசையெல்லாம் நாமன்றி வேறில்லை நோக்க நோக்கக்களி யாட்டம்" ஞானப்பாடல்கள் பகுதி-இரண்டாம் தலைப்பு) என்று எல்லா உயிர்களையும் இயற்கையையும் ஒரு சேர நேசித்தவன். நோக்கும் திசையெல்லாம் நாமன்றி வேறில்லை என்னும் உண்மையை எந்த மனிதன் உணர்கிறானோ அவனே கவி . அவனுக்குப் மகிமை கிடையாது;எனவே பலவீனம் கிடையாது,அவனுக்கு நோக்கக் களியாட்டம் என்று பாரதியின் விசாலமான பார்வையை எழுத்தாளர் வ.ரா . மகாகவி பாரதியார் (பக்.74) என்னும் நூலில் பதிவு செய்துள்ளது. இங்கு அனைவரும் உளங்கொளத்தக்கது.

விடுதலைவுணர்வை ஊட்டியமை

'ஏழையென்றும் அடிமையென்றும் எவனும் இல்லை ஜாதியில் இழிவு கொண்ட மனிதரென்பது இந்தியாவில் இல்லையே வாழி கல்வி செல்வம் எய்தி மனமகிழ்ந்து கூடியே மனிதர் யாரும் ஒரு நிகர் சமானமாக வாழ்வமே'. என்னும் பாடலடிகள் நம்முள் விடுதலை உணர்வையும் அனைவரும் பொதுமை என்னும் நற்பண்பினையும் உலகுக்கு உணர்த்துவதாகும். இன்று பாலின சமத்துவம் பற்றிப் பேசுகிறோம். அன்றே அத்தகைய சமநிலையைப் படைப்புகளிலும் நடைமுறை வாழ்வியலிலும் நிலைப்படுத்தியுள்ளான்.

ஆணும் பெண்ணும் சமம்-

கற்புநிலையென்று சொல்ல வந்தார்,இரு கட்சிக்கும் அதனைப் பொதுவில் வைப்போம்- என்று பெண்கள் விடுதலைக் கும்மியில் பாடியது (பல்வகைப் பாடல்கள்-ஆறாவது தலைப்பு) என்றென்றும் மனித குலத்துக்குப் பொருந்துவதாகும்.
'மனதில் உறுதி வேண்டும்
வாக்கினிலே இனிமை வேண்டும்-
கனவு மெய்ப்பட வேண்டும்
பெண்விடுதலை வேண்டும்
பெரிய கடவுள் காக்க வேண்டும்'-ஞானப்பாடல்கள் பகுதியில் ஐந்தாம் தலைப்பு) என்று மானுடத்திற்கு தன்னம்பிக்கயை நிலை நிறுத்தியவன் .

பெண்மையைப் போற்றுதல்

மாதர்தம்மை இழிவு செய்யும் மடமையைக் கொளுத்துவோம்- என்று தேசிய கீதங்கள் பகுதியில் முப்பதாவது தலைப்பில் குறிப்பிடுவது சமகாலத் தேவையாகும்.
நாம் விடுதலை பெறவேண்டுமென்றால் பெண்கள் புதுமைப்பெண்களாக உருவெடுக்க வேண்டும்.தாழ்ந்து கிடக்கும் பெண்கள் கல்வி கற்று ஆண்களுக்குச் சரிநிகர் சமானமாக உருவாக வேண்டும்

தாய்மொழிச் சிறப்பு-தாய் நாட்டுச் சிறப்பு

அறிவைப் பெறுவதற்குக் காரணமாகவும் செலுத்தும் கருவியாகவும் இருப்பது மொழி- இயற்கையான மொழியின் மூலம் முழுமையான அறிவைப் பெறுவது எளிதாகும்.பல மொழிகளை அறிந்திருந்தாலும் தாய்மொழியின் சிறப்பை நன்கு உணர்ந்தவன். பிற மொழிகளைத் தாழ்த்திப்பேசாமால் தமிழ் மொழியை உயர்த்திப் பிடித்தவன்
'யாமறிந்த மொழிகளிலே தமிழ்மொழி போல்இனிதாவது எங்கும் காணோம்
வள்ளுவன் தன்னை உலகினுக்கே தந்து வான்புகழ் கொண்ட தமிழ்நாடு

-நெஞ்சைஅள்ளும்சிலப்பதிகார மென்றோர் மணியாரம் படைத்த தமிழ் நாடு. (தேசிய கீதங்கள் 20 வது தலைப்பு)என்று தமிழ்நாட்டின் சிறப்பினையும் மொழியின் சிறப்பையும் அம் மொழி பேசும் மக்களின் பண்பாட்டுச் சிறப்பையும் முறையே நிலை நிறுத்தியவன்.

தொடர் வாசிப்பாளன்

வாசிப்பை நேசிக்கக் கூறியவன். நேசித்ததைத் தொடர்ச்சியாக வாசித்தவன். அவ் வாசிப்பு பொருளுடையதாய் தன்னுடைய வாழ்வியலில் நிலைப்படுத்தி பிறர்க்கு முன் மாதிரியாகத் திகழ்ந்தான்.

அழியாத கல்விச் செல்வத்தை மிகவும் நேசித்தவன் .தன் மனைவி செல்லம்மாளிடம் அக்கருத்தினைப் பதிவு செய்தவன்.கொண்டு வந்திருக்கிறேன். ஆங்கிலக் கவிதைகளில் தன்னை மிகுதியும் ஈடுபடுத்தி,.ஷெல்லியின் கவிதைகளை மிகுதியும் நேசித்தவன்.அத்துடன் ‘ஷெல்லிதாசன்’ என்று தன்னை அடையாளப் படுத்திக் கொண்டவன்.

செயலையொட்டிய படைப்புகள்

பாரதியாரின் கவிதைகள் உயிருள்ள உணர்ச்சிகரமான காவியங்களாகும். பாப்பா பாட்டை சகுந்தலாவுக்காகப் பாடினார் (ஓடி விளையாடு பாப்பா) தன் மகளை முன்னிறுத்தி சொல்ல வேண்டிய செல்லங்களிம் கூறி, கொள்கையைப் பொதுமைப் படுத்தியவன்.

‘வாய்மையெனப் படுவது யாதெனின் யாதொன்றும் / தீமை யிலாத சொலல்.’

மறதியின் காரணமாக தந்தை ஒப்படைத்த வேலையினைச் செய்யாததால் வேறுவழியின்றி பொய் சொல்ல நினைத்தனர். தந்தையின் முகம் கண்ட பிறகு உண்மையைக் கூறினர். பொய் சொல்பவர்களைக் கண்டால் பிடிக்காது. தவறு செய்பவர்கள் திருந்தி மன்னிப்பு கேட்டால் மனதார மன்னிப்பவர்.

பன்மொழிப் பாவலர்

-யாமறிந்த மொழிகளிலே தமிழ்மொழி போல் இனிதாவது எங்கும் காணோம்’ என்று பன்மொழி கற்று தாய்மொழியின் பெருமையினைச் சிறப்பாகக் கூறியவன். சம்ஸ்கிருதம், இந்தி, பிரெஞ்சு, வங்காளம் முதலிய பல் மொழிகளைக் கற்றார். ஆங்கிலத்தில் நல்ல தேர்ச்சி பெற்றவர். ஷெல்லியின் கவிதைகளைக் கற்றுணர்ந்து லயித்தவர். வால்ட்விட்மனின் புல்லின் இதழ்கள் கவிதையை ரசித்தவர்.- வசன கவிதை பாடியவர்- ஆங்கிலத்தில் கட்டுரைகள் பல எழுதியவர். காமன் வீல், ஆர்யா, நியூ இந்தியா, ஹிந்து,மெட்ராஸ் ஸ்டாண்டார்டு முதலிய ஏடுகளில் இவரின் கட்டுரைகள் வெளி வந்தன. மொழிபெயர்ப்புத் திறன் மிகுதியும் பெற்றிருந்தார். பிறநாட்டு நலல்றிஞர் சாத்திரங்கள் மொழியிற் பெயர்த்தல் வேண்டும் இறவாத புகழுடைய புது நூல்கள் தமிழ் மொழியில் இயற்றல் வேண்டும். அவ்வாறே பல படைப்புகளை மொழிபெயர்த்தும் உலகு அறியச் செய்துள்ளார்.

வரையாது வழங்கும் வள்ளல்

பாரதி தான் வாழ்ந்த காலத்தின் முக்கியமான போராட்டங்கள், நிகழ்ச்சிகள்,அன்றாடப் பிரச்சினைகள் ஆகியவற்றில் ஆழ்ந்த ஈடுபாடு கொண்டிருந்தார்.அதே சமயத்தில் அவற்றையெல்லாம் கடந்து,பொதுவான மானிட வாழ்வின் ஒழுங்கையும் ஓட்டத்தையும் எண்ணினார் என்று வா.செ.குழந்தைசாமி (பாரதியின் அறிவியல் பார்வை பக்.65) குறிப்பிடும் கருத்து நோக்கத் தக்கது. எல்லோரும் ஓர் இனம் என்னும் அடிப்படையில் அனைவரையும் ஒன்றாகவே நேசித்தவன். உலகவுயிர்களை ஒருமையுடன் பார்த்தவன். சான்றாக

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குடுகுடுப்பைக்காரனுக்குச் செல்லம்மாள் அரிசி அளித்தாள் பாரதியோ தான் அணிந்திருந்த ஆடையை அளித்தார். தனக்கு வேண்டும் என்று எண்ணாது பிறர்க்கு அளிக்கும் பண்பினர் என்பதை அவரின் தொடர் செயல் ஆக்கங்கள் வழி அறிந்து கொள்ளலாம்.

தொகுப்புரை

மானுடம் பேணிய மகாகவி பாரதி உலகை ஒருமையுடன் நோக்கியதைப் புதுமைப் படைப்புகள் வழியும் அவனுடைய தொடர் வாழ்வியல் வழியும் நன்கு அறிய முடிந்தது.

எல்லோரும் ஓர் குலம் என்னும் உயர்ந்த கொள்கையை முன்னிறுத்தி பொதுமைநலம் அமைத்தமையை உணர்ந்து போற்றலாம். நனவை ஒட்டிய கனவே பாரதியின் செயலாக்கமாய் அமைந்துள்ளமையை அனைவரும் அறிந்து கொள்ளலாம்.

ஒருமித்த உணர்வும் உலகுக்கான பொதுமையும் சமூகச்சிந்தனையும் பாரதியின் படப்புகளிலும் வாழ்வியலிலும் உணரமுடிந்தது.

உலகுக்கான கருத்தினைத் தொடர் எச்சமாய் பாரதிதாசன், சுரதா போன்றோரிடம் விதைத்துள்ளமையும் முறையே அறியலாம்.

பயன்படுத்தப்பெற்ற நூல்கள்

1. குழந்தைசாமி.வா.செ.பாரதியின் அறிவியல் பார்வை, பாரதிபதிப்பகம், சென்னை : 1990
2. சரவணன் .சா., நல்வழி,சைவ சித்தாந்தப் பெருமன்றம், சென்னை-2017
3. சுந்தரமூர்த்தி.இ(உ.ஆ.) திருக்குறள், கலாஷேத்ரா பப்ளிகேஷன்ஸ், சென்னை:2015
4. சுப்பிரமணிய பாரதி.சி, பாரதியார் கவிதைகள், வானதி பதிப்பகம்,சென்னை: 1990
5. சுப்பிரமணியன்., ச.வே தொல்காப்பியம் தெளிவுரை, மணிவாசகர் பதிப்பகம், சென்னை:1993
6. திருநாவுக்கரசு.க.த., தமிழ்க் கவிதையில் பாரதியின் தாக்கம், சென்னை: 1984.
7. ராமசாமி.வ., மகாகவி பாரதியார், பாரதி புத்தகாலயம்,சென்னை: மார்ச் 2015
8. வைரமுத்து. இரா., கவிராஜன் கதை., சூர்யா பதிப்பகம்,என்னை: 2007.

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தமிழிலக்கண போக்கும் பன்முகப்பாடும்

(பதினெட்டாம் நூற்றாண்டு வரை)

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உதவிப் பேராசிரியர்,
தமிழ்த்துறை,
பச்சையப்பன் ஆடவர் கல்லூரி,
காஞ்சிபுரம்-631 501.

தமிழ் மொழியில் இலக்கணத் துறை தொன்மை வழக்கையும், தொடர்ந்த வளர்ச்சி நிலையையும், பன்முகப்பட்ட வகைமை வளத்தையும் கொண்டு செழுமையான வரலாற்றை உடையதாக விளங்குகின்றது. தொல்காப்பியம் தொடங்கி பத்தொன்பதாம் நூற்றாண்டுக்கு முன்பு வரை, தமிழிலக்கணம் அடைந்துள்ள வளர்ச்சி, மாற்றத்தினைச் சுருக்கமாகத் தொகுத்து நோக்கல், தமிழிலக்கணத்தின் தனித் தன்மையை நன்குணரப் பின்புலமாக அமையும்.

மொழியும் இலக்கணமும்

உலக அளவில் செம்மொழித் தகுதி பெற்ற தொன்மையான மொழிகளில் தமிழ் மொழியும் ஒன்றாகும். ஒரு மொழியில் இலக்கியம் பல்கிப் பெருகிச் செழுமையாக வளர்ச்சியடைந்த பிறகே அம்மொழியில் இலக்கணம் தோன்றுவது இயல்பு. எல்லா மொழிகளிலும் இலக்கியங்களே முதலில் கிடைத்துள்ளன. தமிழில் மட்டும் முதல்நூலாக இலக்கண நூல் கிடைத்துள்ளது. இதற்குமுன் தமிழில் வளமையான இலக்கிய மரபு இருந்தமையையே இது காட்டுகின்றது. தொல்காப்பியமே தமிழில் முதலில் கிடைத்த நூலாக, அதுவும் இலக்கண நூலாக உள்ளது.

தமிழிலக்கணங்கள் பின்வரும் காலக்கட்டங்களாகப் பகுத்து அதனடிப் படையில் இங்கு ஆராயப்படுகின்றன.

1. தொல்காப்பியம் வரையிலான காலம்
2. தொல்காப்பியத்திற்குப் பின்பு இறையனார் அகப்பொருள் வரை
3. இலக்கண நூலெழுச்சிக் காலம்
4. உரையாசிரியர் காலமும் பிற இலக்கணப் போக்கும்

தொல்காப்பியம் வரையிலான காலமும் தொல்காப்பியத்தை முதலாக வைத்து வரலாறு கொள்ளுதலும் :

தமிழில் கிடைக்கும் முதல் நூல் தொல்காப்பியம் எனும் இலக்கண நூலாகும். இந்நூலிற்கு முன்பு பல இலக்கண நூல்கள் இருந்திருக்கக் கூடும் என்பது தமிழறிஞர்களின் கருத்து. தொல்காப்பியர் என்ப, என்மனார், என்மனார் புலவர், மொழிப, மொழிமன்னார், எண்ணினர், கூறுப, வகுத்தனர் என மிகப்பல நூற்பாக்களில் முந்தையோரைக் குறித்துள்ளார். எனவே தொல்காப்பியத்திற்கு முன்பு இலக்கண நூல்கள் இருந்திருக்க வேண்டும் என்பது தெளிவாகிறது. முச்சங்கங்களின் அடிப்படையிலும், அகத்தியத்தை முதலாக வைத்தும் இக்கருத்தை வலியுறுத்தும் போக்கு தமிழுலகில் நிலவியது. இதனை மறுத்து வ.சுப.மாணிக்கம் கூறும் பின்வரும்

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கருத்துரை நோக்கத்தக்கதாக அமைகிறது. தமிழ் இலக்கண வரலாறு எழுதுவோர் அகத்தியம் தொடங்கி எழுதுவது ஒரு மரபாக வந்திருக்கின்றது. இது எனக்கு உடன்பாடன்று. தொல்காப்பியத்துக்கு முன்பு இலக்கண நூல்கள் பலவிருந்தன. இதில் ஐயமில்லை. ஆனால் அகத்தியம் என ஒரு நூல் இருந்தது. அதுவே முந்து நூல் எனப் பனம்பாரனாரால் சுட்டப்பட்டது என்ற வழிவழிக் கருத்துக்கு என்னானும் சரியில்லை[1]. தமிழ் இலக்கண மரபை எவ்விதப் உணர்வுகளுக்கும் உட்படுத்தாமல் கிடைத்துள்ள தொல்காப்பியத்தை முதலாகக் கொண்டு இலக்கண வரலாறு தொடங்கப்பட வேண்டுமென்பதை இயல்பான முறையில் விளக்கியுள்ளார்.

தொல்காப்பியத்திற்குப் பின் இறையனார் அகப்பொருள் வரை

தொல்காப்பியத்திற்குப் பின் கிடைக்கும் முழு முதல் நூல் இறையனார் அகப்பொருள் நூலேயாகும். இறையனார் எனும் புலவராய் விளங்கிய மதுரைச் சொக்கலிங்கக் கடவுள் செய்த அகப்பொருள் என்பதால் இறையனார் அகப்பொருள் எனப்பெயர் பெற்றதாகக் கூறப்படும் இந்நூலானது, முதல் தனியிலக்கண நூலாகும். பொருளிலக்கணத்தின் முக்கியத்துவத்தை இந்நூலின் உரை பின்வருமாறு கூறுகின்றது.

“எழுத்தும் சொல்லும் யாப்பும் ஆராய்வது பொருளதிகாரத்தின் பொருட்டன்றே, பொருளதிகாரம் பெறேமே யெனின் இவை பெற்றும் பெற்றிலேம்.” (இறையனார் களவியல் உரை, நூ. 1)

பொருள் இலக்கணம் அனைத்திற்கும் ஆதாரமாய் இருப்பதை இதனால் அறியமுடிகின்றது.

அகப்பொருள் இலக்கணச் செய்திகள் களவு இலக்கணத்தையே இந்நூல் மிகுத்துக் கூறுகின்றது. ஆதலால் இறையனார் களவியல் என்றும் கூறப்படுகிறது. இந்நூலின் உரை, வரலாற்றடிப்படையில் கல்வி ஓதும் மரபினைப் புலப்படுத்துகிறது. இம்மரபு சங்க காலத்திலிருந்து தொடர்ச்சியாக நிகழ்ந்து வருவதை அறியமுடிகிறது.

பிற்காலத்தில் அறியப்பெற்ற முற்கால நூல்கள்

அவிநயம், அபிநயப் புறனடை, காக்கைபாடினியம், சிறுகாக்கைபாடினியம், கையனார் யாப்பியல், சங்கயாப்பு, செய்யுளியல், நக்கீரர்அடிநூல், நத்தத்தம், பரிமாணனார் யாப்பிலக்கணம், பல்காயம், மயேசுரர் யாப்பு, வாய்ப்பியம், அணியியல் முதலிய நூல்கள் இக்குறிப்பிட்ட காலப் பகுதியில் எழுந்த நூல்களாகும். இந்நூல்கள் பற்றிய குறிப்புகளைப் பிற்கால இலக்கண நூல்களில் உரைகள் வழி அறியமுடிகின்றது. இந்நூல்களைப் பற்றி மயிலை சீனி.வேங்கடசாமி மறைந்து போன தமிழ்நூல்கள்' எனும் நூலிலும். இரா.இளங்குமரன் 'இலக்கண வரலாறு' நூலிலும், சோ.ந.கந்தசாமி ' தமிழ் யாப்பியலின் தோற்றமும் வளர்ச்சியும்' (முதற்பாகம் - முதற்பகுதி) எனும் நூலிலும்,ய.மணிகண்டன் ' தமிழில் யாப்பிலக்கண வளர்ச்சி' எனும் நூலிலும் விரிவாக எடுத்துரைத்துள்ளனர்.

இலக்கண நூலெழுச்சிக் காலம்

(9ஆம் நூற்றாண்டு முதல் 14ஆம் நூற்றாண்டு முடிய) தமிழிலக்கிய வரலாற்றில் இக்காலகட்டம் இலக்கிய இலக்கணங்கள் வளம்பெற்று வளர்ந்த காலமாகக் காட்சி தருகிறது. எழுத்து, சொல், பொருள், யாப்பு, அணி என ஒவ்வொரு இலக்கண வகைமைக்கும் தனித்தனி நூல்கள் தோன்றிய இக்காலப் பகுதியை இலக்கண நூலெழுச்சி காலம் எனக் கூறுவது சாலப் பொருத்தம்.

தொல்காப்பியத்திற்குப் பிறகு இடைப்பட்ட கால மொழிச் சூழலை பதிவுசெய்யும் நூலாக நன்னூல் விளங்குகிறது. இதனை,

“தொல்காப்பியத்திற்குப் பிறகு நன்னுலே தலைசிறந்த இலக்கணமென அறிஞரால் மதிக்கப்பட்டு வந்தது. பண்டைக்காலத் தமிழுக்குத் தொல்காப்பியம் எப்படி இலக்கணமோ, இடைக்காலத் தமிழுக்கு நன்னூல் அப்படியே இலக்கணமெனப்படுகிறது. தொல்காப்பியர் விரித்துக் கூறியதனை இவர் தொகுத்து வகைப்படுத்திக்கூறியுள்ளார்.[2]

என ஆ. வேலுப்பிள்ளை விளக்கியுள்ளார்.

நன்னூலானது தொல்காப்பியத்தை அடியொற்றியும்/ விலகியும், சில புதுமைகளைப் புகுத்தியும் உள்ளது. நன்னுலாரின் பதவியல் கோட்பாடு இலக்கண உலகில் புதுமையானதாகும். இங்கு மொழியின் தன்மை, பிறமொழிகள் தமிழில் வந்து வழங்கும் முறை பட்டியலிட்டுக் காட்டப்படுகிறது. இப்பகுதியை சோம.இளவரசு பின்வருமாறு கூறுகிறார்.

நன்னூலார் தாம் புதிதாக படைத்துக் கொண்ட பதவியல் ஏனைப் பகுதிகள் போல அமையாமல் நெகிழ்ச்சி கண்டுள்ளது என்பர். இதற்கு காரணம் தொல்காப்பியர் முன்னோடியாக நின்று பதவியல் பாதையைத் தெளிவாக வகுத்துக் காட்டாமையே யாகும்.[3]

இதில் நன்னூலார் முன்னோடிகளற்ற சூழலில் படைத்த பதவியல் கோட்பாடுப் பகுதி பிற பகுதிபோலன்றி நெகிழ்ச்சி கொண்டுள்ளது என்பதை எடுத்துரைத்துள்ளார். பிற்கால இலக்கணிகள் தொல்காப்பிய மரபைப் பின்பற்றுவதுபோல, நன்னுலாரின் பதவியல் மரபையும் பின்பற்றுகின்றனர். பதவியலில் இன்றியமையாமையைப் பிற்கால இலக்கணிகள் உணர்ந்தமையையே இப்பின்பற்றும் போக்கு காட்டுகின்றது. இக்கால வரையறைக்குட்பட்ட பகுதியில் தோன்றிய அகப்பொருள் விளக்கம், புறப்பொருள் வெண்பாமாலை, யாப்பருங்கலம், யாப்பருங்கலக்காரிகை, தண்டியலங்காரம், வீரசோழியம் ஆகிய நூல்களுள் யாப்பருங்கலம், வீரசோழியம், நேமிநாதம் தவிர்த்து மற்றைய நூல்களனைத்தும் தற்காலக் கட்டம் வரை தன் செல்வாக்கோடு திகழ்ந்து வருகின்றன. அதற்கான காரணங்களாகச் சிலவற்றையும் கூறமுடியும்.

- ஒவ்வொரு இலக்கண நூலும் தன் பொருள் சார்ந்த செய்திகளை எளிமையாகவும் விரிவாகவும் கூறியுள்ளமை
- முன்னோர் (முந்துநூல்கள்) மரபைப் போற்றியுள்ளமை

தமிழிலக்கண போக்கும் பன்முகப்பாடும்

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- இந்நூல்கள் தோன்றிய காலத்திலிருந்து தொடர்ச்சியாகப் பயிற்சியில் இருந்துள்ளமை
- இந்நூல்கள் போன்று பிற்காலங்களில் நூல்கள் தோன்றாமை

முதலிய காரணங்களால் இக்கால நூல்கள் தலைசிறந்து விளங்குகின்றன எனலாம்.

தமிழ்மரபின் மாற்றமும் வடமொழி மரபின் தாக்கமும்

யாப்பியல் குறித்து விரிவாகப் பேசும் முதல்நூல் யாப்பருங்கலம் ஆகும். இந்நூலில் பா, பாவினம் குறித்து பா உறுப்புகள் குறித்தும் பேசப்படுகின்றன. இந்நூலைவிட இந்நூலுக்கு இயற்றப்பட்ட உரையே நூலுக்குச் சிறப்பு சேர்ப்பதாகும். இரா. இளங்குமரன்,

யாப்பிலக்கணத்திற்கென ஒரு கலைக்களஞ்சியம் உண்டென்றால் அது யாப்பருங்கல விருத்தியுரையே என்பதில் இரு கருத்துக்கு இடமில்லை.[4]

என இந்நூலின் தனித்தன்மையை விளக்கியுள்ளார். இவ்வுரையாசிரியர் வடமொழி யாப்பியற் செய்திகளையும் விளக்கியுள்ளார்.

தமிழ் யாப்பியல் நூல், உரையிடை வடமொழி யாப்பிலக்கணச் செய்திகள் இடம்பெறல் யாப்பருங்கல விருத்தியுரையில் முதற்பதிவு பெறுகிறது. இதன் தொடர்ச்சியாக வீரசோழியம் நூலைக் குறிப்பிடல் வேண்டும். தமிழில் எழுந்த ஐந்திலக்கண நூல்களுள் வீரசோழியம் முதல் நூலாகும். தழிலக்கண மரபில் திருப்புமுனையாக அமையும் இந்நூலானது, வடமொழித் தாக்கம் கொண்டதாக இருப்பினும், வடமொழி இலக்கணச் செய்திகளை இணைத்தளிக்கிறது,

'வடநூல் மரபும் புகன்று கொண்டே' என்று வெளிப்படச் சொன்னபடி, வீரசோழியம் சொல்லாலும் பொருளமைதியாலும் வடமொழி தாக்கம் உடையதாக இருந்தாலும், அதனை இருமொழி ஒப்பியநூல் என மதிக்க வேண்டும். இந்நோக்கில் அதன் வெற்றியயைக் காண்பது நன்றாகும். பிரயோகவிவேக நூலார் வன்மையாகச் செய்தது போல், தமிழின் அடிப்படைகளைப் புத்தமித்திரனார் வடமொழிக்கு அடிமைப் படுத்தவில்லை. சார்த்த வழக்கொடு தப்பா வடவெழுத்தைத் தவிர்ந்து தேர்ந்துணர்வாக்கும் இனிமையைத் தந்து' என்ற காரிகையால் வீரசோழியத்தின் தமிழ் காப்பு தெளிவாகும்.[5] என்ற வ.சுப. மாணிக்கம் கருத்தே வீரசோழியம் குறித்த நிலைப்பாடுகளுள் கவனத்திற் கொள்ளத்தக்கதாகும்.

வீரசோழியம் ஒரு புடைமாற்று ஒப்புமை இலக்கணமாகும். இருமொழி இலக்கணச் சூழல் காட்சியளிக்கும் வீரசோழியம் குறித்த சு. இராமசாமியின் கருத்துரையே வீரசோழியம் குறித்த சீரிய ஆய்வுநிலை மதிப்பீடாக அமைகிறது.

தமிழ் மொழி அல்லாத பிறமொழி (வடமொழி)யினருக்குத் தமிழை விளக்கும் பொருட்டு, இடையிடையே வடமொழிக் கருத்தைச் சேர்த்து விளக்குவதாக வீரசோழியம் அமைந்துள்ளது.

வீரசோழியம் பொருளிலக்கணப் பகுதியை அகம், புறம், அகப்புறம் எனும்

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அடிப்படையில் விளக்குகிறது. களவு கற்பு குறித்து இந்நூல் கூறவில்லை.
தமிழிலக்கண மரபில் வீரசோழியம் வடமொழி இலக்கண மரபை இணைத்துப் பேசுவதாலும், புரிதலில் சற்றுக் கடினத்தன்மை உள்ளமை யாலும் நன்னூலின் எளிமையால் ஆன செல்வாக்கின் முன் தொடர்ந்து செல்வாக்கு பெறவில்லை எனலாம்; செல்வாக்கு குன்றியது எனலாம்.

உரையாசிரியர் மரபும் பிற இலக்கண போக்கும்

இலக்கண நூலெழுச்சிக் காலகட்டத்திலேயே உரையாசிரியரின் காலமும் தொடங்குகிறது. இருப்பினும் தமிழிலக்கண வகைமையில் அறிவு/ தத்துவார்த்தம் சார்ந்து புலமையுடையவர்கள் உரையாசிரியர்கள் ஆவர். ஒரு பனுவலின் பல்வேறு தன்மைகளை எடுத்துக்கூறும் உரையாசிரியர்களைத் தனித்து ஆராய்வது சிறப்புடையதாகும். தொல்காப்பியம் எனும் தனிநூலுக்குப் பல உரைகள் எழுந்துள்ளன. இவ்வுரைகள் தமிழ்க்கல்விப் பாரம்பரியத்தின் தொடர்ச்சியாகும் இவ்வுரை அமைப்பானது, ஆசிரியர் - மாணவர்களுக்கு இடையே நடைபெறும் தருக்க உரையாடல் போன்று அமைந்துள்ளது. உரையாசிரியர் ஒவ்வொருவரும் ஒவ்வொரு மரபு சார்ந்து தொல்காப்பியத்தை அணுகியுள்ளனர். அதற்கு சமயச்சார்பும் காரணமாக அமைதல் கூடும். உரையாசிரியர் ஒவ்வொருவரின் விளக்க முறையும் வெவ்வேறு தன்மையில் அமைந்துள்ளது.

பதினைந்தாம் நூற்றாண்டுக்குப் பிறகு எண்ணற்ற சிறுசிறு இலக்கிய வகைகள் தோன்றின. இதனை அடிப்படையாகக் கொண்டு இலக்கண நூல்கள் தோன்றலாயின. இச்சிறு இலக்கிய வகைகளை வரையறுக்கும் போக்கு தமிழ் இலக்கண மரபில் உண்டென்றாலும் அவற்றை விளக்கிக் கூறும் தன்மை இல்லை. அதன்பொருட்டு இவ்விலக்கியங்களின் வடிவம், பொருண்மைகளை விளக்கிக் கூறும் தனி இலக்கண வகைமையில் பாட்டியல் நூல்கள் தோற்றம் கொள்கின்றன. இக்காலகட்டத்தில் அதிகமான பாட்டியல் நூல்கள் எழுந்துள்ளன. பாட்டியல் இலக்கணம் குறித்தும் பரிதிமாற்கலைஞர் பின்வருமாறு கூறுகிறார்.

> பாட்டியல் என்னுமோரிலக்கணப் பகுதியுளது அதனியல்பு சற்றே விரித்துரைக்கற்பாலது. அது தமிழிற் கூறப்படும் தொண்ணுற்றாறு வகைப் பிரபந்தங்களிலக் கணங்களும், பாடுவோனுக்கும் பாடப்படுவோனுக்கு முள்ள எழுத்துப் பொருத்தம் மங்கலப் பொருத்தம் முதலியனவும், நச்செழுத்து அமுதவெழுத் தென்ற பாகுபாடும், ஆனந்தம் முதலிய குற்றங்களும் இவை போல்வன பிறவும் விரித்து கூறுவதாகும்.[6]

இவ்விலக்கணம் குறித்து ந.வீ செயராமன். மருதூர் அரங்கராசன், அரங்க நலங்கிள்ளி ஆகியோர் விரிவாக ஆய்வு நிகழ்த்தியுள்ளனர்.
பதினாறாம் நூற்றாண்டில் மாறனலங்காரம், மாறனகப்பொருள், மாறன் பாப்பாவினம் முதலிய நூல்கள் தோன்றியுள்ளன. இந்நூல்கள் முந்து நூல்களின் அடிப்படையிலும் சில புதுக் கூறுகளோடும் உள்ளன. இந்நூலானது

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மரபு அடிப்படையிலும், புதுமைநோக்கிலும் எழுந்துள்ளது என விளக்குகின்றார். மாறனகப்பொருளும் இத்தன்மையதே ஆகும்.

தமிழ் இலக்கண வரலாற்றில் மீண்டுமொரு மாற்றம் ஏற்படுவதற்கான நிலை பதினேழாம் நூற்றாண்டிலிருந்து தொடங்குகிறது எனலாம். வடமொழி அடிப்படையில் தமிழ்மொழியை அணுகும் தன்மை இக்காலத்தில் ஓங்கி நிற்கின்றது. சுப்பிரமணிய தீட்சிதரின் பிரயோக விவேகம் முழுக்க முழுக்க இத்தன்மையில் உருப்பெற்றது எனலாம். இதனை,

கி.பி. பதினேழாம் நூற்றாண்டின் இறுதியில் வாழ்ந்த சுப்பிரமணிய தீட்சிதர் என்ற சைவ அந்தணரும் பிரயோக விவேகம் என்னும் நூலை, சங்கத இலக்கணத்தை எடுத்தாள்வதில் வீரசோழியம் காட்டிய வழியில் சென்று இயற்றியுள்ளார். வடமொழிக்கும் தென் மொழிக்கும் உரிய இலக்கண ஒற்றுமையை எடுத்துக்காட்ட முயன்ற நூல் பிரயோக விவேகம். மேலும் வடமொழி வியாகரணத்திற்கு ஏற்பத் தமிழிலக்கணம் இல்லாமையைக் கண்டு வடமொழி வியாகரணத்தை தமிழில் நுழைக்க நினைத்த நூலும் இதுவே ஆகும்.[7]

என ஆ. வேலுப்பிள்ளை எடுத்துரைத்துச் சுப்பிரமணிய தீட்சிதரின் இலக்கணக் கோட்பாட்டை மிக நுண்ணிய முறையில் விளக்கியுள்ளார்.

இக்காலத்தில் எழுந்த இலக்கணக்கொத்து முதலிய நூல்களும், இத்தன்மையவேயாகும். இதே காலப்பகுதியில் இலக்கண விளக்கச் சூறாவளி முதலிய மறுப்பிலக்கண நூல்களும் தோன்றியுள்ளன. மொழியின் வளர்ச்சியினைப் பதிவு செய்வதே இலக்கணம் என்ற நிலை மாறி மொழிகளுக்கிடையேயுள்ள முரண்பாடுகளைப் பதிவு செய்யும் நூல்களாகவும் இக்கால இலக்கண நூல்களும் அமைந்துள்ளன.

அயலவர் இலக்கண நெறி

பத்தொன்பதாம் நூற்றாண்டிற்கு முன் பதினெட்டாம் நூற்றாண்டில் வீரமாமுனிவர் செய்த இலக்கணத் தொண்டு குறிப்பிடத்தகுந்ததாகும். வீரமாமுனிவர் கொடுந்தமிழ் இலக்கணம், செந்தமிழ் இலக்கணம், தொன்னுல் விளக்கம் ஆகிய நூல்களை இயற்றியுள்ளார். தமிழ்மொழி பேசும் மக்களிடையே பல கிளைமொழிகள் உண்டு என்பதை உணர்ந்த வீரமாமுனிவர் பேச்சு மொழிகளில் உள்ள சில வழுஉச் சொற்களின் பொதுத் தன்மையைக் கொடுந்தமிழ் இலக்கண நூலில் விளக்கி கூறுகிறார்.

மேலும் தமிழ்மொழி வரிவடிவங்களை அமைப்பியல் நோக்கில் வீரமாமுனிவர் ஆராய்ந்துள்ளதைச் செ.வை.சண்முகம் எடுத்துக்காட்டியுள்ளார்.

செந்தமிழ் இலக்கணம், கொடுந்தமிழ் இலக்கணத்தின் தொடர்ச்சியாகும். இதனை, தமிழின் உயர் வழக்கைக் கற்றுக் கொள்வதற்கு உதவியாகவும் கொடுந்தமிழ் இலக்கணத்தைப் படித்துப் பொது வழக்கை தெரிந்து கொண்டபிறகு படிக்க வேண்டிய நூலாகவும் செந்தமிழ் இலக்கணம் எழுதப்பட்டிருக்கிறது.[8]

என வீரமாமுனிவர் குறிப்பிட்டுள்ளமையைச்

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செ.வை.சண்முகம் எடுத்துக்காட்டுகிறார்.

வீரமாமுனிவர் தொன்னூல் விளக்கத்தை தமிழ் இலக்கண மரபு அடிப்படையில் படைத்துள்ளார். சூ. இன்னாசி, வீரமாமுனிவரின் தொன்னுல் விளக்க இலக்கணச் செய்திகளை மிக நுண்ணிய முறையில் ஆய்ந்து கூறியிருப்பதும் மனங்கொள்ளத்தக்கது.

தமிழிலக்கணமரபு தொல்காப்பியத்தை அடிநாதமாகக் கொண்டு பதினெட்டாம் ஆம் நூற்றாண்டு வரை பல்வேறு நிலைகளில் பல மாறுதல்களுடன் வளர்ச்சியடைந்துள்ளது.

சான்றெண் விளக்கம்

1. வ.சுப. மாணிக்கம் எழுதிய அணிந்துரை இரா. இளங்குமரன் இலக்கண வரலாறு.
2. ஆ. வேலுப்பிள்ளை, தமிழ் வரலாற்றிலக்கணம்.
3. சோம் இளவரசு, மு.கு.நூ.
4. இரா. இளங்குமரன், இலக்கண வரலாறு.
5. வ. சுப. மாணிக்கம் எழுதிய' அணிந்துரை', மு.கு.நூ.
6. பரிதிமார் கலைஞர், தமிழ் மொழி வரலாறு.
7. ஆ.வேலுப்பிள்ளை, மு.கு.நூ.
8. செ. வை. சண்முகம், கிறித்துவ அறிஞர்களின் இலக்கணப் பணி.

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பதினெண் கீழ்க்கணக்கு நூல்களில் பௌத்தச் சிந்தனைகள்

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வேளச்சேரி, சென்னை

முன்னுரை

பௌத்தமதம் கி.மு.மூன்றாம் நூற்றாண்டிலிருந்து தமிழகத்தில் பரவத் தொடங்கியுள்ளது. அக்காலத்தில் வழக்கில் இருந்த சங்க இலக்கியத்தில் பௌத்தச் சிந்தனைகள் அங்கொன்றும் இங்கொன்றுமாய் இடம்பெற்றுள்ளது. அற இலக்கிய மரபின் உச்சமாக திகழும் பதினெண் கீழ்க்கணக்கு நூல்களில் பௌத்தக் கருத்துகள் அப்பட்டமாக வெளியிடப்பட்டுள்ளது. இந்நூல்களில் 11 நூல்கள் அறநூல்களாக இருக்கின்றன. பௌத்த தம்ம பதத்தில் உள்ள அறக் கருத்துகள் இந்நூல்களில் காணப்படும் கருத்துகளுடன் இணைந்து காணப்படுகிறது. மேலும் பௌத்தத் துறவிகள் மக்களுக்கு கலைகள், மருத்துவம், கல்வி, போன்ற பல துறைகளில் சிறந்து விளங்கியமைக்கு சான்றுகள் கிடைக்கின்றன. பதினெண் கீழ்க்கணக்கினுள் இடம்பெற்றுள்ள பதினெட்டு நூல்களின் பெயர்களைப் பின்வரும் நூற்பா எடுத்துரைக்கிறது.

நாலடி நான்மணி நானாற்ப தைந்திணைமுப் பால்கடுகம் கோவை பழமொழி மாமுலம் இன்னிலைய காஞ்சியோ டேலாதி என்பவே கைந்நிலையுமாம் கீழ்க் கணக்கு. (பதினெண்கீழ்க்கணக்கு; 1981:3) இத்தகைய தொன்மை வாய்ந்த நூல்களில் உள்ள பௌத்தச் சிந்தனைகளை ஆராய்வதே இக்கட்டுரையின் நோக்கமாகும்.

பகுப்புமுறையும் பெயர்வைப்புகளும்

திருக்குறளும் நாலடியாரும் அறம், பொருள், இன்பம் என்ற மூன்று பகுப்புகளைக் கொண்டது. திரிகடுகம் என்னும் மருந்து சுக்கு, மிளகு, திப்பிலி ஆகிய மூன்று பொருள்களைக் கொண்டு உடல்நோயை அகற்றுவது போல திரிகடுகம் என்ற நூலில் உள்ள ஒவ்வொரு பாடல்களிலும் மும்மூன்று கருத்துகள் உளநோயை தீர்க்கின்றன என்பர். திரி என்றால் மூன்று என்று பொருள்படும். “பௌத்த வேதத்திற்குத் திரிபிடகம் என்பது பெயர். பாலி மொழியிலே இது திபிடகம் என்று கூறப்படும். திரிபிடகம் என்பதற்கு மூன்று கூடை என்பது பொருள். அஃதாவது மூன்று வகுப்பு என்பது பொருள்”. (2007:60) என்று மயிலை சீனி. வேங்கடசாமி கூறுவதிலிருந்து இந்நூல் பௌத்த நூல் என்பதை அறியலாம். நான்மணிக்கடிகை என்னும் நூல் நான்கு வகையான நீதி மணிகளால் கேர்க்கப் பெற்ற ஒரு வகை அணிகலன் என்று பெயர் விளக்கம் தரப்பட்டுள்ளது. சிறுபஞ்சமூலம் என்பது கண்டங்கத்தரி, சிறுவழுதுணை, சிறுமல்லி, பெருமல்லி, நெருஞ்சி என்ற வேர்களில் இருந்து உருவாக்கப்பட்ட மருந்தாகும். இது போல சிறுபஞ்ச மூலம் என்ற நூலில் கூறப்பட்டுள்ள ஐந்து, ஐந்து நெறிமுறைகள் மக்கள் மனநோயை போக்குவன. ஏலத்தை முதலாகக் கொண்டு தயாரிக்கப்பட்ட மருந்து ஏலாதி (ஏலம், இலவங்கம், நாகசேரம், மிளகு, திப்பிலி, சுக்கு, சிறுநாவற்பூ) எனப்படுகிறது. இம்மருந்துகள் போன்று ஏலாதி என்னும் நூலில் உள்ள பாடற்கருத்துக்கள் மக்களை நல்வழிப்படுத்துகின்றன.

பௌத்தர்கள் மருத்துவத்தில் சிறந்து விளங்கியுள்ளனர் என்பதற்குப் பல்வேறு சான்றுகள் கிடைக்கின்றன. இதனடிப்படையில் நோக்கும் போது

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மருத்துவப் பெயர் கொண்ட நூல்கள் பௌத்தம் சார்ந்த நூல்கள் என்பதை அறிய முடிகிறது. ஆசாரக் கோவை நூலில் ஆசாரம் என்ற வடசொல் ஒழுக்கம் என்று பொருள்படுகிறது. தம்ம பதத்தில் உள்ள ஒழுக்கநெறிகள் ஆசாரக்கோவை நூலுடன் ஒருசேர வந்துள்ளது. இவ்வாறாக பௌத்த அடிப்படையில் பெயர் வைப்புகளும் பகுப்பு முறைகளும் அமைந்துள்ளதை அறியமுடிகிறது.

பதினெண் கீழ்க்கணக்கு நூல்களில் பௌத்தப் பொருண்மைகள்

பதினெண் கீழ்க்கணக்கு நூல்களில் பொருண்மை அடிப்படையில் பௌத்தச் சிந்தனைகள் பரவிக்கிடக்கின்றன. பொதுவாக ஐவகை நெறிகள் (பஞ்ச சீலம்) பௌத்தத்தில் கடைப்பிடிக்கப்பட்டுள்ளன. இதன் மூலமாக வீடுபேற்றின் முக்கியத்துவமும் அடிப்படையான அறிவுரைகளும் வழங்கப்பட்டுள்ளன.

கொல்லாமை

“பௌத்த பிக்குகள் பானாதி பாதா வேரமணீ சிக்காபாதம் சமாதியாமி என்ற மரபைக் கடைபிடித்தல் அவசியமானது. அதாவது கொல்லாமை என்ற சீலத்தைக் கடைப்பிடிக்கிறேன் என்பதாகும். இதை சுத்த பிடகத்தின் பகுதிகளாகிய தீக நிகாயமும், சம்யுத்த நிகாயகமும், வலியுறுத்தியுள்ளன.” (கந்தசாமி.,சோ.ந.1977:129) இத்தகைய கொல்லாமை பற்றியும் அதன் மூலமாக புலால் உண்ணாமை பற்றியும் கீழ்க்கணக்கு நூல்களில் பதிவு செய்யப்பட்டுள்ளது. வேள்விகளில் உயிர்களைப் பலியிடுதல் என்னும் கொடுவழக்கங்களை எதிர்க்கும் வகையில் இலக்கியங்கள் வாயிலாக பௌத்தம் முனைப்புடன் செயல்பட்டுள்ளதை பின்வரும் பாடல்கள் உணர்த்துகின்றன.

இனியது உண்பான் என்பான் உயிர்க்கொல்லாது உண்பான் (நான்மணி.58)
எல்லா இடத்தும் கொலை தீது(நான்மணி.92)
கொலை களவு காமத்தீ வாழ்கை
அலைஅளவி மைஎன நீள் கண்ணாய் மறுதலைய
இம்மூன்றும் மெய் அளவு ஆக விதி”(ஏலா.2)
கொன்று உண்பான் நாச் சாம்(சிறு.8)
உயிர் நோவக் கொல்லாமை நன்று (சிறு. 37)

இப்பாடல்கள் மூலமாக உயிர்க்கொலை புரிதல் தீயது என்று குறிப்பிடப்பட்டுள்ளது. மேலும் புலால் உண்ணுதலும் மறுக்கப்பட்டுள்ளது.

காமமின்மை

பௌத்த பஞ்சசீல ஐவகை நெறிகளில் முதன்மையாக விளங்குவது காமமின்மை. இவ்வறமானது இல்லறம், துறவறம் ஆகிய இரண்டு நிலைகளிலும் முக்கியமானதாக கூறப்பட்டுள்ளது. குறிப்பாக துறவறத்தின் போது காமவயப்படாமல் இருப்பவர்களே வீடுபேறு பெறமுடியும் என்று விளக்குகிறது.

மெய்வாய் கண்மூக்கு செவிஎனப் பேர்பெற்ற
ஐவாய வேட்டை அவாவினை கைவாய்
கலங்காது காத்து உய்க்கும் ஆற்றல் உடையான்
விளங்காது வீடு பெறும் (நாலடி.3)

இப்பாடல் மெய், வாய், கண், மூக்கு, செவி என்று பேர் கொண்ட ஐந்தின் வழியாய் வருகின்ற மிகுந்த ஆசையை தம்மிடம் சேராமல் பாதுகாத்து நல்லொழுக்கத்தின் வழி வாழும் வல்லமையுடையவன் மட்டுமே வீடுபேறு அடைய முடியும் என்பதை காட்டுகிறது. காமத்தின் தன்மை பற்றியும் அதில் இருந்து மீளும் முறைமையும் காணப்படுகிறது.

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”காதலிமாட்டு உள்ளம் வைப்பாருக்கும் துயில் இல்லை” (நான்மணி.39), ஆற்ற மறைக்க முடியாதாம் காமம்(நான்மணி.39) இப்பாடல் வரிகள் மூலமாக காமம் எத்தமையது என்பதை அறிந்து கொள்ளலாம். காதல் என்றாலே காமத்தின் அறிகுறி என்பதால் காதல் புரிபவர்களுக்கு துயில் இல்லை என்ற கருத்தும் மறைத்தாலும் மறைக்க முடியாதது காமம் என்ற கருத்தும் மக்களுக்கு உணர்த்தப்பட்டுள்ளது. தம்மபதத்தில் காமமுற்றவனை பலமற்ற மரம் என்று குறிப்பிடுகிறது. காமுற்றவன் செய்யும் செயல் என்பது கற்பனையிலான மலையைச் சூறாவளி காற்று அசைப்பதைப் போன்றது என்கிறது.

பிறன்மனை நயவாமை

காமமின்மை என்ற கொள்கை துறவறத்தில் ஈடுபட்டவர்களுக்கு அடிப்படையானது. இல்லறத்தில் உள்ளவர்கள் மிகுகாமம் கொள்ளுதல் கூடாது என்று வற்புறுத்தப்படுகிறது. மேலும் இல்லறத்தில் வழி பௌத்தத்தை தழுவியவர்கள் கடைபிடிக்க வேண்டிய கட்டுப்பாடுகளாக பிறன்மனை நயவாமை உருவாக்கப்பட்டுள்ளது. பிறன்மனை நயப்பார் பெறும் கேடுகள் குறித்து தம்மபதமும் குறிப்பிடுகிறது. “பிறன் மனைவியிடத்து சோரம் போகிறவனுக்கு இந்நான்கு தீமைகள் விளைகின்றன. பாவம், அமைதியான தூக்கம் இன்மை, பழிச்சொல், நரகம்” (தம்மபதம்.309). தம்மபதத்தில் உள்ள இக்கருத்தை நாலடியார் பாடலும் விளக்குகிறது.

பிறன்தாரம் நச்சுவார்ச் சேரும்பகை பழி பாவம் என்று
அச்சத்தோடு இந்நாற்பொருள் (நாலடி.9)

மானுடப்பொது வாழ்வியல் அறங்களில் பௌத்தம் ஒவ்வொரு பரிமாணத்தின் இயல்பையும் அழகுற உணர்த்துகிறது. வேண்டேல் பிறன்மனை (சிறு.4), புல் அறத்தின் நன்று மனைவாழ்கை (சிறு.98) என்ற பாடல் வரிகள் மூலமாக இல்லற வாழ்வியலின் சிறப்பு பிறன்மனை நயவாமை என்றும் பொருளில்லாத துறவறத்தை விட மனைவாழ்வு மேன்மையானது என்றும் எடுத்துரைக்கிறது. மேலும் இல்லறத்தின் காமத்தை நுகர்தல் உடல் நலத்திற்கு பயன்தருவன என்கிறது.

கள்ளாமை

அதின்னா தான வேரமணீ சிக்காபாதம் சமாதியாமி என்று கள்ளாமை அறம் சுட்டப்படுகிறது. அதாவது தனக்கு வழங்கப்படாததைக் கவர்தல் குற்றமாகும் என்பது இதன் பொருள். இதைச் சுத்தபிடகம் சம்யுக்த நிகாயம் அங்குலி மால சுத்தம் ஆகிய பகுதிகள் வலியுறுத்திக் கூறுகின்றன. இவ்வறத்தை கள்ளார் கள் உண்ணார் கடிவ கடிந்து ஓரீஇ (நாலடி.16) என்று நாலடியார் பாடல் வெளிப்படுத்துகிறது. கள்ளாமை என்னும் அறம் வணிக சமூகப் பாதுகாப்பை அடிப்படையாகக் கொண்டது. சமூகத்தின் பொருள்கவர் நடவடிக்கைக்கு முட்டுக்கட்டை போட இவ்வறம் பெரிதும் பயன்பட்டது. கள்ளாமை வேண்டும் கடிய வருதலான் (நான்மணி.85) என்ற பாடல் அஞ்சக்கூடிய வகையில் துன்பங்கள் பின்பு வராமல் இருக்க வேண்டுமானால் திருடாமை வேண்டும் என்று குறிப்பிடுகிறது.

பொய்யாமை

மனித வாழ்க்கையில் மேன்மையான அறக் கூறுகளுள் பொய்யாமை முக்கிய இடம் வகிக்கிறது. “முசாவாதா வேரமணீ சிக்காபாதம் சமாதியாமி” என்று பொய்கூறுதலை தவிர்க்க வேண்டுவன பற்றி தம்மபதத்தில் சுட்டப்பெறுகிறது.

பொய்யாமை பொய்யாமை ஆற்றின் அறம்பிற
செய்யாமை செய்யாமை நன்று (குறள்.297)

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என்ற குறளின் வழி பொய் பேசாதிருத்தல் என்ற அறச் செயலை உண்மையாகவே ஒருவன் கடைபிடித்தால் அவன் வேறு அறங்களை செய்ய வேண்டும் என்ற கட்டாயம் இல்லை என்பதை அறிவுத்துகிறது.

பொய்யாமை நன்று பொருள் நன்று (சிறு.37)

என்ற பாடல் பொய் சொல்லாதிருத்தல் நன்மையாகும் என்கிறது.

பொய் சிதைக்கும் பொன்போலும் மேனியை (நான்மணி.21)

பொய்மையான வாழ்வு, ஒழுக்கம் என்பது பொன் நிறத்தைப் போன்ற அழகிய உடலை வாடச்செய்யும் என்றுரைக்கிறது.

சார்பு நீக்கம்

பௌத்தத்தில் மெய்யியலில் காணப்படும் பன்னிரு சார்புகளின் விளைவாக மனிதனின் வாழ்வில் துன்பம், மறுபிறப்பு தோன்றுகிறது. இந்தச் சார்புகளை ஊழின் வட்டம் அல்லது ஊழ் மண்டலம் என்பர். இவ்வூழ்வட்டம் சந்தி, கண்டம், காலம், குற்றம், வினை, பயன், நோய் காரணம் என்னும் உறுப்புகளை கொண்டது. இதனை விளக்கும் வகையில்

சார்புஉணர்ந்து சார்பு கெடஒழுகின் மற்றழித்துச்
சார்தரா சார்தரும் நோய் (குறள்.358)

என்ற குறளின் மூலம் எந்த ஒரு பொருளின் மீதும் பற்று இல்லாமல் வாழும் வாழ்வை விளக்குகிறது. மேலும் இச்சார்புகளை அறுத்து வீடு பேறு அடைவதே பௌத்தர்களின் நிர்வாண மோட்சமாகும். இந்த வீடு பெறு அடைதலில் நான்கு உயர்ந்த உண்மைகளை அறிய வேண்டும். அவை நோய், நோய்காரணம், நோய் நீக்கும் வாய், நோய் நீக்கும் வழி என்பன. இதனை

நோய்நாடி நோய்முதல் நாடிஅது தணிக்கும்
வாய்நாடி வாய்ப்பச் செயல் (குறள்.948)

என்ற குறள் எடுத்துரைக்கிறது. மேலும் பிறப்பறுத்தலுக்கு இப்பன்னிரு சார்புகளினின்றும் நீங்கி இருக்கக்கூடிய சார்பு நீக்கத்தை கடைபிடிக்க வேண்டும் என்று கூறப்படுகிறது. இதனை விளக்கும் வகையில் பழமொழி பாடல் அமைந்துள்ளது.

திரியும் இடிஞ்சிலும் நெய்யும் சார்வு ஆக
எரியும் சுடர் ஓர் அனைத்தால் தெரியுங்கால்
சார்வு அற ஓடிப் பிறப்பு அறுக்கும் அஃதேபோல்
நீர் அற நீர்ச்சார்வு அறும் (பழ.219)

பிக்கு இலக்கணம்

"உடல் அடக்கம், வாக்கு அடக்கம், மன அடக்கம் உடையவராய் இவற்றில் நன்கு பயின்று பாவங்களை நீக்கினவர் யாரோ அவர் உபசந்தர் என்று கூறப்படுகிறார்"(தம்மபதம்.378) என்று பௌத்தப் பிக்கு எவ்வாறு இருக்க வேண்டும் என்பதை விளக்கும் வகையில் தம்மப்பதம் வரையறுத்துள்ளது. அனைத்தினும் ஆன்றுஅவிந்தார் ஆகி நினைந்திருந்தது(பழ.359) இதே கருத்தை பழமொழிப் பாடலும் விளக்குகிறது.

மனத்தினும் வாயினும் மெய்யினும் செய்கை

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இறுதியாக

- பதினெண்கீழ்க்கணக்கு நூல்களின் காலத்தில் பௌத்தம் தமிழகத்தில் பரவிக்காணப்பட்ட சூழலை விளக்கப்பட்டுள்ளது.
- பதினெண்கீழ்க்கணக்கு நூல்கள் பகுப்பு முறைகளைக் கொண்டெ பௌத்த அறநெறிகளை அறிந்து கொள்ளல்.
- கீழ்க்கணக்கு நூல்களில் பெயர்வைப்புகள் பௌத்த தம்மபதத்தில் உள்ள எண் முறைகளின் மூலம் அமைக்கப் பட்டுள்ளமை கண்டறியப்பட்டுள்ளன.
- மூன்று வணக்கம், நான்கு வாய்மைகள், ஐவகை நெறிகள், எண்வகை நெறிகள், பத்துக் கடைப்பிடிப்புகள், பன்னிருசார்புகள் எடுத்துக் காட்டப்பட்டுள்ளன.
- பௌத்தர்கள் மருத்துவத்தில் சிறந்து விளங்கினர் என்பதற்கு பதினெண்கீழ்க்கணக் கு நூல்களின் சான்றுகள் கொடுக்கப்பட்டுள்ளன.
- பௌத்தக் கொள்கைகள் பதினெண்கீழ்க்கணக்கு நூல்களில் உள்ளன என்பதற்கு பொருண்மை சார்ந்து கொல்லாமை, காமமின்மை, பிறன்மனை நயவாமை, கல்லாமை, பொய்யாமை என்ற தலைப்பின் கீழ் விளக்கம் தரப்பட்டுள்ளது.
- ஐவகை நெறிகளில் காணப்படும் செய்திகளை பௌத்த தம்மபதத்துடன் ஒப்பிட்டு கூறப்பட்டுள்ளது. வரலாற்றினை அறியும் நோக்கில் ஆராயப்பட்டுள்ளது.
- சார்பு நீக்கம் பற்றியான செய்திகளையும் பிக்குவிற்கான அடிப்படை கொள்கையும் விளக்கப்பட்டுள்ளது.

துணைநூல்கள்

1. அப்பாதுரை., எம். ஆர். தம்மபதம் (அ) அறவழி, சென்னை, 1952.
2. அறவாணன்.க.ப., அற இலக்கிய களஞ்சியம், தமிழ்க் கோட்டம், சென்னை, 2008.
3. கந்தசாமி., சோ. ந. பௌத்தம், சென்னைப் பல்கலைக்கழகம், சென்னை, 1977.
4. சிதம்பரனார். சாமி., பதினெண்கீழ்க்கணக்கும் தமிழர் வாழ்வும், இலக்கிய நிலையம், சென்னை. 1974.
5. பதினெண்கீழ்க்கணக்கு நூல்கள், சாரதா பதிப்பகம், சென்னை, 2009.
6. பதினெண்கீழ்க்கணக்கு நூல்கள், நியூ செஞ்சுரி புக் ஹவுஸ் பிரைவேட் லிமிடெட், சென்னை, 1981.
7. பாலசுப்பிரமணியம். சி., தமிழ் இலக்கிய வரலாறு, நறுமலர் பதிப்பகம், சென்னை, 1985.
8. மாதவன். சு., தமிழ் அற இலக்கியங்களும் பௌத்த சமண அறங்களும், செம்மொழி பதிப்பு, தஞ்சாவூர், 2008.

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திருமூலரின் முப்பொருள் கோட்பாடு

க. அன்புக்கோகிலா
உதவிப்பேராசிரியர், தமிழ்த்துறை,
குரு நானக் கல்லூரி,
வேளச்சேரி,சென்னை

முன்னுரை:

தமிழகத்தில் சித்தர்கள் பலர் வாழ்ந்து வந்தனர். இவர்கள், உலக நிலையாமை, மூடநம்பிக்கை ஒழிப்பு, சடங்கு ஆசாரங்களை வெறுத்தல், சமயச் சார்பின்மை முதலிய சீர்திருத்தக் கோட்பாடுகளைத் தத்தம் நூல்களில் வலியுறுத்திக் கூறியுள்ளனர். இச்சித்தர்களுள் ஒருவர் திருமூலர் ஆவார். இவர் தாம் இயற்றிய திருமந்திரம் என்னும் நூலில் தம் அனுபவ உணர்வுகளை எளிய இனிய மொழிநடையில் சிறுசிறு பாடல்களாகப் பாடியுள்ளார். இதனால், இந்நூல் அனுபவ நூல் என்று சிறப்பிக்கப் பெறுகிறது. இந்நூலில் அறம், மந்திரம், சோதிடம் மருத்துவம், உலகம், உயிர், கடவுள், நிலையாமை முதலிய பல்வேறு கருத்துகளைப் பதிவு செய்துள்ளார் திருமூலர். இக்கருத்துகளுள், "திருமூலரின் முப்பொருள் கோட்பாடு" குறித்த சிந்தனைகளை வெளிப்படுத்துவதாக இக்கட்டுரை அமைகிறது.

சித்தர்:

சித்தி-அறிவு; சித்தி பெற்றோர் சித்தர்; பிறர் உணர்த்த உணரும் அறிவுடையோர்-அசித் (அறிவற்றது), ஓரறிவுயிர் முதல் ஆறறிவு உயிர் உடைய மானுடர் வரை இத்தன்மையர் யாரும் உணர்த்தாமல் தாமே அறிகின்ற பேரறிவு வாய்க்கப் பெற்றோர்-'சித்' ஆவர்.ஆறறிவிற்கும் மேலாக ஏழாம் அறிவு வாய்க்கப்பெற்றோர் சித்தர்கள் என்று அரங்க.இராமலிங்கம் கூறுகிறார். பரம்பொருளாகிய இறைவனும் இறையருள் பெற்ற அருளாளர்களாகிய சித்தர்களும் இத்தகையோர். 'ஓடும்செம்பொன்னும் ஒக்கவே நோக்கிக் கூடும் அன்பினிற் கும்பிடலே யன்றி வீடும் வேண்டா விறலின் விளங்கினார்' (பெரியபுராணம்), என்று இறையடியார்கள் குறித்துப் பாடியுள்ளார் சேக்கிழார். இன்னோர் இன்பம்-துன்பம், பசி-நோய், தூக்கம்-துக்கம் புகழ்-பழி, விருப்பு-வெறுப்பு, பகை – நட்பு முதலியவற்றையெல்லாம் ஒன்றாகக் காண்பர். சித்தர்களும் ஒப்ப எண்ணும் இத்தன்மையுடையோர் ஆவர். சித்தர்கள் குறித்துத் 'திண்திறற் சித்தர்களே கடைக்கூழை செல்மின்கள்' (திருவாசகம்) என்று கூறுகிறார் மாணிக்கவாசகர். காண்பதற்கு எளிமையாகவும் உலக உயிர்களைத் தம்முயிர்போல் கருதும் மனப்பான்மை உடையோராகவும் விளங்கும் இன்னோர் அட்டமாசித்துகளையும் செய்ய வல்லோர் ஆவர்.

முப்பொருள்:

முப்பொருள் ஆவன: இறைவன், ஆன்மா, உலகு. இம்முப்பொருள் குறித்து திருமூலர் குறிப்பிடும் செய்திகள்,

1.இறை இயல்பு (ஒன்றே கடவுள்)
2.உலக இயல்பு
3.உயிர் இயல்பு

என்னும் தலைப்புகளில் புலப்படுத்தப்படுகின்றன.

இறை இயல்பு (ஒன்றே கடவுள்):

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எல்லா மக்களும் தம் உறவினர்; எல்லா ஊரும் தம் ஊரே; எல்லோருக்கும் தேவன்-இறைவன் ஒருவனே என்பதை,
'ஒன்றவன் தானே' (திருமந்திரம்-1)எனக் கடவுள் வாழ்த்து பாடலில் தொடங்கியவர்,

'ஒன்றே குலமும் ஒருவனே தேவனும்
நன்றே நினைமின் நமனில்லை நாணாமே
சென்றே புகும் கதியில்லை நும்சித்தத்து
நின்றே நிலைபெறநீர் நினைந்து உய்மினே' (2104)

என்ற பாடலில் மேலும் வலியுறுத்திக் கூறியுள்ளார் திருமூலர்.

இதனால் ஒன்றாக இருக்கும் கடவுளை நினைந்து நினைந்து உருகுவதே எமனிடமிருந்து உய்வடைவதற்கு ஏற்ற வழி எனும் நுட்பம் புலனாகும். முழுமையாய் இருக்கும் மெய்ப்பொருள் ஒன்று என்பதை மேற்பகுதி காட்டுகிறது.
'ஒன்றே குலமும், ஒருவனே தேவனும்' என்னும் திருமந்திரப் பாடல் அடி, சாதி மதச் சண்டைகள் நீங்கிச் சமத்துவம் நிறைந்த சமூகம் நிலைத்திருக்க வழிகாட்டுகிறது எனலாம்.

உலக இயல்பு:

நிலையாமையை நிலையாக உடையது இவ்வுலகு. இதன் இயல்பை உணர்ந்து தெளிதல் அவசியம். ஆதலால்,

'ஆசையறுமின்கள் ஆசையறுமின்கள்
ஈசனோடாயினும் ஆசையறுமின்கள்'

என்று பாடும் திருமூலர்)2,615(
பல இடங்களில் நிலையாமை கருத்துகளைக் கூறி உயிர்கள் ஆசை என்னும் பற்றிலிருந்து விடுதலை பெற வேண்டுமென வலியுறுத்துகிறார்.

உயிர் இயல்பு:

உயிர் பிறவிப்பயனை அறியாது 'சார்ந்ததன் வண்ணம் ஆகின்ற பொருள்கள்' (திருவருட்பயன்) என்ற அடிப்படையில் உயிர் தான் சார்ந்திருக்கும் உடலுக்கு ஏற்ற வகையில் தன்னைத் தகவமைத்துக் கொள்கிறது. இதனை,

'புல்லாகிப் பூடாய் புழுழுவாய் மரமாகி
பல்விருகம்ஆகி பறவையாய்ப் பாம்பாகி
கல்லாய் மனிதராய்ப் பேயாய்க் கணங்களாய்
வல்லசுரர் ஆகி முனிவராய்த் தேவராய்
செல்லாஅ நின்றஇத் தாவர சங்கமத்துள்
எல்லாப் பிறப்பும் பிறந்து இளைத்தேன்; எம்பெருமான்!' (திருவாசகம், சிவபுராணம் 26-31 அ-ள்)

என்கிறார் மாணிக்கவாசகர்.

உயிர் பல பிறப்பெடுக்கிறது. இதிலிருந்து விடைபெற உயிர் தன் இயல்பை உணர்ந்து செய்ய வேண்டிய கடமைகளைத் தொண்டினால் வழிபாடு என்னும் தலைப்பின்கீழ்க் காணலாம்.

தொண்டினால் வழிபாடு (தொண்டினால் தொழுகை):

உலக நிலையாமையை உணர்ந்து மக்கள் தொண்டு செய்து உய்தி பெறுவதற்கு ஈடுபடுத்துவதை இப்பகுதி உணர்த்துகிறது.

1. உயிர்ப்பிணிநீக்குதல்
2. உடற்பிணி நீக்குதல்
3. பிறவிப்பிணி நீக்குதல்

என்னும் தலைப்புகளில் காணலாம்.

உயிர்ப்பிணி நீக்குதல்:-

உயிரைப்பீடித்திருக்கும் பசிப்பிணியை நீக்குதல் நடமாடும் மக்களுக்குச் செய்யும் தொண்டே கோயிலில் படமாய் இருக்கும் இறைவனுக்குச் செய்யும் தொண்டுஆகும். இதனை,

'படமாடக் கோயில் பகவற்கு ஒன்று ஈயில்
நடமாடக் கோயில் நம்பர்க்கு அங்கு ஆகா
நடமாடக் கோயில் நம்பர்க்கு ஒன்று ஈயில்
படமாடக் கோயில் பகவற்கு அது ஆமே' (1857)

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எனும் பாடலில் புலப்படுத்தியுள்ளார். யாவரும் அறியும் வகையில் எளிமையாகக் கூறி உலக உயிர்களைத் தொண்டு செய்வதற்குத் தூண்டுகிறார் எனலாம்.

'ஆர்க்கும் இடுமின் அவரிவர் என்னென்மின்
பார்த்திருந் துண்மின் பழம்பொருள் போற்றன்மின்
வேட்கை யுடையீர் விரைந்தொல்லை உண்ணன்மின்
காக்கை கரைந்துண்ணும் காலம் அறிமினே' (250)

எனும் பாடலில் இன்னார் இனியார் எனப்பாகுபாடு பார்க்காது பகுத்துண்டு பல்லுயிர் ஓம்புமாறு கூறுகிறார்.
தொண்டு செய்வதற்கான எளிய வழியை,

'யாவர்க்கும் ஆம் இறைவற்கு ஒரு பச்சிலை
யாவர்க்கும் ஆம் பசுவுக்கு ஒரு வாயுறை
யாவர்க்கும் ஆம் உண்ணும்போது ஒரு கைப்பிடி
யாவர்க்கும் ஆம் பிறர்க்கு இன்னுரை தானே' (252)

எனும் பாடலின் வாயிலாக விளம்பும் திருமூலர் இப்பாடலின் வழித்தொண்டே தொழுகையாகும் நுட்பத்தைப் பதிவு செய்துள்ளார்.

உடற்பிணி நீக்குதல்:-

உடலைத் துன்புறுத்தும் நோய்களை நீக்கும் மருத்துவம்... உடலை இழிவெனக் கருதும் நிலையை நீக்கி உடலை ஓம்புமாறு வலியுறுத்துதல்...

உடலுக்கு முதற்காரணம் மாயை என்னும் சடப்பொருள். இம்மாயையின் பல்வேறு விளைவுகளாகிய தாகம், பசி, பிணி இச்சை, எளிமை, பயம், கொலை முதலியன உயிரோடு கூடிய உடலுக்குப் பல்வேறு இடையூறுகளை விளைவிப்பன.உடல் நலமாக இருந்தால்தான் உயிர் மெய்யறிவைப் பெறவியலும். அப்பொழுதே உடலில் உயிர் நிலைபெறும். எனவே உடலைப் பாதுகாப்பது அவசியம் என்பது விளங்கும்.

'உடம்பார் அழியின் உயிரார் அழிவார்
திடம்பட மெய்ஞ்ஞானம் சேரவும் மாட்டார்
உடம்பை வளர்க்கும் உபாயம் அறிந்தே
உடம்பை வளர்த்தேன் உயிர் வளர்த்தேனே!' (724),

எனும் பாடல் உடலை அழிவிலிருந்து காப்பதற்கு வழிகாட்டுகிறது. உடம்பினை இழுக்கென்று கருதாமல் உடம்பிற்குள் உறுபொருளாகிய இறைவன் உள்ளிருக்கிறான் என்பதை உணர்ந்து அதைப் பாதுகாக்குமாறு,

'உடம்பினை முன்னம் இழுக்கென்றேன்
உடம்பினுக்குள்ளே உறுபொருள் கண்டேன்
உடம்புள்ளே உத்தமன் கோயில் கொண்டானென்று
உடம்பினை யானிருந்து ஓம்புகின்றேனே' (725)

எனும் பாடலில் வலியுறுத்துகிறார்.
எல்லையற்ற பரம்பொருளை வெளியில் சென்று காண வேண்டியதில்லை. அது உடம்பிற்குள்ளேயே இருக்கிறது. இதனை,

'உள்ளம் பெருங்கோயில் ஊனுடம்பு ஆலயம்
வள்ளற் பிரானார்க்கு வாய்கோபுர வாசல்
தெள்ளந் தெளிந்தார்க்கு சீவன் சிவலிங்கம்
கள்ளப் புலனைந்தும் காளாமணி விளக்கே!' (1823)

எனனும் பாடல் புலப்படுத்துகிறது.
எனவே, உடலின் முக்கியத்துவத்தை உணர்ந்து உடலைப் பாதுகாத்தல் அவசியம் என்பதை அறியலாம்.

பிறவிப்பிணியை நீக்குதல் (ஞானநெறி):-

உயிர் தன்னைத் தானே அறியும் தவத்தைப் போதித்தல்... பிறவிப்பிணிக்கு வித்தாகும் ஐம்புலன்களை அடக்குவது

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அவசியமாகும். இதை அடக்கக் கூடியவன் உள்ளத்தில் உறைந்திருக்கும் பரம்பொருள் ஆவான்.

'பார்ப்பான் அகத்திலே பாற்பசு ஐந்துண்டு
மேய்ப்பாரும் இன்றி வெறித்துத் திரிவன
மேய்ப்பாரும் உண்டாய் வெறியும் அடங்கினால்
பார்ப்பான் பசுஐந்தும் பாலாய்ச் சொரியுமே' (2883)

எனும் திருமந்திரத்தில் உட்பொருள் ஒன்றும் வெளிப்பொருள் ஒன்றும் பொதிந்துள்ளது. இதிலமைந்துள்ள உட்பொருளே ஞான நெறியை உணர்த்தும் செம்பொருளாகும்.

தனக்குள் இருக்கும் பரம்பொருளாம் இறைவனை அறியாதாரின் ஐம்புலன்களும் வெறிப்பிடித்து அலையக் கூடியன. கண்ணார் அமுதத்தைக் கண்டவர்களின் ஐம்புலன்களும் ‘ஒருமையுள் ஆமைபோல் உள்ஐந்து அடக்கி’)திருக்குறள்(அமைதியடையக் கூடியன. அதன்பிறகு ஐம்புலன்களின் செயல்பாடு இருப்பினும் அது ஞானநெறியாகவே இருக்கும்.

ஐம்புலன்களின் ஆட்சியிலிருந்தும் பிடியிலிருந்தும் விடுபட்டு உயர்ந்த நிலையை அடைவதற்கு வழிகாட்டும் திருமூலர் பிறவிப்பிணியை நீக்கி மறுபிறப்பு எய்தா நிலைக்கு வழிகாட்டுகிறார்.தன்னையறியா உயிர்கள் தன்னை அறிந்து ஆன்ம நிலையை அடையும் நிலை கூர்ந்து கவனிக்க வேண்டியது.

உயிர் தன்னைத் தான் அறியாமல் இருப்பதற்குக் காரணம் மயக்கமாகும். உண்மையறிவை உய்த்துணராது ஆணவமலம் எனும் இருளில் மூழ்கிக் கிடந்து துன்புறுகின்றன.

தம்மையறியாமல் உழலும் உயிர்களின் நிலையை,

'பொன்னை மறைத்தது பொன்னணி பூடணம்
பொன்னின் மறைந்தது பொன்னணி பூடணம்
தன்னை மறைத்தது தன் கரணங்களாம்
தன்னின் மறைந்தது தன் கரணங்களே’ (2289) என்றும்,

’மரத்தை மறைத்தது மாமத யானை
மரத்தில் மறைந்தது மாமத யானை
பரத்தை மறைத்தது பார்முதம் பூதம்
பரத்தில் மறைந்தது பார்முதற் பூதமே’ (2290)

என்றும் பாடுகிறார் திருமூலர்.

குருவருளும் அறிவுக்கண்ணும்:-

அறிவாகிய குறியைஅறிவதற்குக் குருவருளாகிய மெய்யறிவின் துணை வேண்டும். பதியின் துணையால் ஆன்மாவைப் பாசம் அணுகாது. மலங்கள் விட்டு நீங்கும். உயிர்கள் அறிவு வடிவம் என்பதை மறந்து மயங்கிக் கிடக்கின்றன. அதனால்,

'அறிவு அறிவு என்று அங்கு அரற்றும் உலகம்
அறிவு அறியாமை யாரும் அறியார்
அறிவு அறியாமை கடந்த அறிவு ஆனால்
அறிவு அறியாமை அழகிய வாறே’)2362)

என்று உண்மையறிவை உணர்த்தி மாயத்திரைகளில் இருந்து
விடுபடச் செய்கிறார்.

‘குருவருளின்றி திருவருள் இல்லை’
என்பதை வலியுறுத்தும் திருமூலர்,

'குருவே சிவம் எனக் கூறினன் நந்தி
குருவே சிவம் என்பது குறித்து ஓரார்
குருவே சிவனுமாய்க் கோனுமாய் நிற்கும்
குருவே உரையுணர்வு அற்றதோர் கோவே' (1581)

எனும் இப்பாடலில், குருவும் சிவனும் வேறுவேறு அல்லர் ஒருவரே என்பதைப் பெறவைக்கிறார்.

குருவருளால் சீடனைச் சூழ்ந்திருந்த இருள் விலகி அறிவுக்கண் தோன்றும் என்பதை அறியலாம். ஈண்டு மனமே அறிவாக மாறும் தன்மையை உணர இயலும். ‘அறிவே தெய்வம்’ என்பது தமிழ்ச் சித்தர்கள் உணர்த்திய நெறிகளில் முதன்மையானது.

திருமூலரின் முப்பொருள் கோட்பாடு

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தன்னையறியும் ஆன்மா:

ஆன்மா குருவருளால் தன்னைத் தான் அறியும் அறிவே தன்னை அறிதலாகும். இது தமிழ்ச்சித்தர்தம் தலையாய நெறியாகும். தன்னை அறிந்த உயிர் காலத்தை வென்று காலத்திற்கு அப்பாற்பட்டதாக இருக்கும் நிலையைக் குறிப்பதாகும்.

'தன்னை அறியத் தனக்கு ஒரு கேடு இல்லை
தன்னை அறியாமல் தானே கெடுகின்றான்
தன்னை அறியும் அறிவை அறிந்தபின்
தன்னையே அர்ச்சிக்கத்தான் இருந்தானே' (2355)

திருமூலர் குறிப்பிடும் தன்னைத்தான் அறிதலென்னும்
இந்நிலையே திருமந்திரப் பயனாகும்.
தன்னைத் தானறியும் ஞானிகளின் நிலையை,

'தன்னை அறிந்திடும் தத்துவ ஞானிகள்
முன்னை வினையின் முடிச்சைஅவிழ்ப்பர்கள் பின்னை
வினையைப் பிடித்துப் பிசைவர்கள்
சென்னியில் வைத்த சிவன் அருளாலே' (2611)

என்கிறார் திருமூலர்.

இது தன்னை உருவாக்கிய உயிரே 'தான்' என்றும்,
அதுவே 'தெய்வம்' என்றும் அறிதலாகிய நிலையாகும்.

சிவானுபூதி:

உலக இயக்கத்தின் உண்மைகளை உணர்ந்தோர் அனைத்திற்கும் காரணம் இறைவனே என்றெண்ணி யோக நிலையில் இருப்பர்.

'சிவசிவ என்கிலர் தீவினையாளர்
சிவசிவ என்றிடத் தீவினைமாளும்
சிவசிவ என்றிடத் தேவருமாவர்
சிவசிவ என்றிடச் சிவகதிதானே' (2716)

என்று கூறும் திருமூலர்,

'சித்தர் சிவலிங்கம் இங்கே தரிசித்தோர்' (125)

என்கிறார்.

இதனால், 'சிவசிவ' என்று கூறிச் சிவகதி அடைந்தோர் தத்தம் உடலிலேயே சிவலோகத்தைக் காண்பர் என்பதை அறியலாம். இச்சிவ அனுபவத்தைப் பெற்றவர்கள் உலகம் முழுவதும் ஒளிவடிவான இறைவனிடம் ஒடுங்கும் என்பதை முழுதுணர்ந்த சிவசித்தராவர்.

இரண்டறக்கலத்தல்:

இரண்டறக்கலத்தலை 'இறைநிலை' 'அன்புநெறி' திருவடிஞானம் என்ற பெயர்களிலும் குறிப்பிடலாம்.ஒன்றை மற்றொன்றாகக் காணும் தோற்ற மயக்கத்திலிருந்து விடுபட்டு எழுகின்ற அசைக்க முடியாத ஒளி இஃதாகும். ஆன்மா பரம்பொருள் எனும் இருநிலை நீங்கி, ஆன்மா பரம்பொருளோடு ஒன்றாய் இணையும் தன்மை இரண்டறக் கலத்தல் ஆகும்.

அன்பு நெறியின் மூலமாகத் தெய்வீகத்தை உணர்ந்து அனுபவிப்பது தமிழர்களுக்கே உரிய ஓர் ஒப்பற்ற முறை என்பது நினைவில் கொள்ளவேண்டியது.

'அன்பும் சிவமும் இரண்டென்பர் அறிவிலார்
அன்பே சிவமாவது ஆரும் அறிகிலார்
அன்பே சிவமாவது ஆரும் அறிந்தபின்
அன்பே சிவமாய் அமர்ந்திருந் தாரே'

என்பதால்,அன்பும் சிவமும் இரண்டல்ல')270(

அன்பே சிவம் என்பதுதான் இறைநிலை என்பதைத் தெளியலாம்.

வள்ளலாரின்,

அன்பெனும் பிடியுள் அகப்படும் மலையே
அன்பெனும் குடில்புகும் அரசே
அனுபெனும் வலைக்குட்படுபரம் பொருளே' (திருவருட்பா)

என்னும் பாடலடிகள் உள் உறையும் அன்புதான் பரம்பொருளின் தன்மை என்பதை வலியுறுத்துகின்றன.

அன்பு மயமாய் விளங்கும் பரம்பொருளை அன்பின் வழியாகத்தான் அடைய இயலும். அன்பு நெறியின் தத்துவம், அதன் சமய

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விளக்கம், சீவன் அன்பு நெறியின் வாயிலாகச் சிவமாக மாறிய தன்மை முதலியவற்றை மேற்கூறியவற்றால் விளங்கலாம்.

ஆன்மா சிவமாக உருமாறும் நிலை:

'சீவன் எனச்சிவன் என்னவேறு இல்லை
சீவனார் சிவனாரை அறிகிலர்
சீவனார் சிவனாரை அறிந்தபின்
சீவனார் சிவன் ஆயிட்டு இருப்பரே' (2017)

இது இறைவனோடு இணையும் இன்புறு நிலை ஆகும்.
இஃது ஒப்பற்ற இறைநெறியாகும்.

சிவத்தின் திருவடியில் சீவன் சேர்தலே திருவடி ஞானம் இறைவனோடு கலந்து நிற்பதே நிலையான வாழ்வாகும். உல கிலுள்ள அனைத்திற்கும் ஆதாரமாக உள்ளது இறைவனின் திருவடி. இது, ஒவ்வொரு ஆன்மாவும் அடையத்தக்கப் பேறு ஆகும்.

முடிபுரை:

“திருமூலரின் முப்பொருள் கோட்பாடு” எனும் ஆய்வினால் அறியலாகும் உண்மைகள்:

1. 'ஒருவனே கடவுள்' எனும் கடவுள் குறித்த திருமூலரின் கொள்கை சாதி, சமயம், நாடு, மொழி, இனம் முதலிய வேறுபாடுகளைக் கடந்தது.
2. உலகியல்பை உணர்ந்து ஆசையிலிருந்து விடுபட்டால்தான் ஆன்மா பற்றற்ற நிலையை எய்த முடியும்.
3. உயிர்களுக்குத் தொண்டு செய்வதன் வாயிலாக இறைவனை வழிபட முடியும்.
4. உயிர்ப்பிணி, உடற்பிணி, பிறவிப்பிணிகளை நீக்குவதன் மூலமே இறைவனை அடைய முடியும்.
5. பரம்பொருள் வெளியே இல்லை; உடம்பிற்குள்ளே இருக்கிறான் என்பதை உணர்ந்து உடலோம்புதல் அவசியம்.
6. உடலைக் காப்பதன் மூலமே உயிரைக் காக்க முடியும்.
7. உயிர்கள் அறிவே தெய்வம் எனும் நிலையை அடைய குருவாகிய பரம்பொருளின் துணைவேண்டும்.
8. உயிர்கள் அடைய வேண்டிய ஆன்மீகப் பேறு சீவன் சிவன் எனும் இரு நிலை நீங்கி ஒன்றாதலாகிய இரண்டறக் கலத்தல் ஆகும்.
9. இறைநிலையை அடைவதற்குச் சிறந்த நெறியாக விளங்குவது அன்புநெறி.

ஆய்வின் பயன்:

சித்தர்கள் அறிவுறுத்திய வாழ்க்கை நெறிகள் நாடு, மொழி, இனம், கடந்து எக்காலத்திற்கும் பொருந்தி வரக்கூடியநிலைபேற்றுத்தன்மையுடை யன. ஆகவே, இச்சமூகம் சித்தர்கள் கூறியுள்ள பாடல்களின் நுட்பங்களை உணர்ந்து உயர்வுற இவ்வாய்வு வழிகாட்டுகிறது எனலாம்.

பார்வை நூல்கள்:-

முதன்மை நூல்:

1. திருமூலர், திருமந்திரம், பன்னிரு திருமுறைகள் (தொ.14,) வர்த்தமானன் பதிப்பகம்.

துணை நூல்கள்:

1. சம்பந்தம் (உ.ஆ.) திருவாசக விருந்து மாணிக்கவாசகர், கங்கை புத்தக நிலையம்,டிச.2016.
2. அரங்க. இராமலிங்கம், திருமந்திரம், கங்காராணி பதிப்பகம், நவ.2015.
3. அரங்க. இராமலிங்கம், சித்தர் இரகசியம், கங்காராணி பதிப்பகம், செப்.2015
4. சித்த வித்தை, சித்த சமாஜ வெளியீடு, ஆக.2015
5. திருவள்ளுவர், திருக்குறள், ஜூலை, 2015.
6. ஆனந்தராசன் ஆ. (உ.ஆ.), திருவருட்பயன் நர்மதா பதிப்பகம்,

7. துரைசாமிப்பிள்ளை சு. (உ.ஆ.) திருவருட்பா, இராமலிங்க அடிகள், (தொ.8) வர்த்தமானன் பதிப்பகம், அக்.2010
8. திருமந்திர சாரம், ஆச்சார்யா பி.எஸ். (உ.ஆ.), நர்மதா பதிப்பகம்.
9. அறிவொளி அ. (உ.ஆ.), மெய்கண்ட சாத்திரம், வர்த்தமானன் பதிப்பகம்
10. சிதம்பரனார் சாமி, வள்ளலார் காட்டும் வழி,திருவள்ளுவர் புத்தகாலயம், பதி.1955.
11. சேக்கிழார், பெரியபுராணம், சிவனடியார் திருக்கூட்டம் அறக்கட்டளை, இ.ப.2019.

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காப்பியங்களில் தூது

ம. சியாமளா
உதவிப்பேராசிரியர்
தமிழ்த்துறை (சுழற்சி -2)
குரு நானக் கல்லூரி (தன்னாட்சி)

முன்னுரை

தமிழ்க் காப்பியங்களில் தூது என்னும் துறை ஓர் உறுப்பாகச் சிறப்பிடம் பெற்றுள்ளது. பெருங்காப்பியத்தின் இலக்கணத்தைக் கூறும் தண்டியலங்காரச் சூத்திரத்தில் தூது என்னும் உறுப்பும் பெருங்காப்பியத்திற்குரியதாகப் பேசப்பட்டுள்ளது. தூது என்ற உறுப்பு அமையாத காப்பியங்கள் பெரும்பாலும் இல்லை எனலாம். அத்தகைய தூது காப்பியங்களில் எவ்வாறு இடம்பெறுகின்றது என்பதனைப் பற்றி இக்கட்டுரையில் காணலாம்.

தூது இலக்கணம்

ஒருவர் தம்முடைய கருத்தை மற்றொருவருக்கு ஓர் ஆள் வாயிலாகச் சொல்லி விடுப்பது **தூது** எனப்படும். அச்செய்தியை ஓலையில் எழுதிக் கொடுத்து அனுப்புவதும் உண்டு. தூதாகச் செல்பவன் **தூதன்** எனப்படுவான். பண்டைய நாளில் தூது என்பது பெரும்பாலும் அரசியல் தூதாகவே இருந்தது. தலைவன் ஒருவன் களவுகற்புக் காலங்களில் தலைவியைப் பிரிந்து செல்லும் பிரிவுகள் பற்றி பேசுமிடத்து தொல்காப்பியர்,

"ஓதல் பகையே தூது இவை பிரிவே" (தொல்.பொருள். அகத் 25)

என்கிறார். இந்நூற்பாவிற்கு நச்சினார்கினியர் "ஓதற்குப் பிரிதலும் பகைமேற்பிரிதலும் பகைவரைச் சந்து செய்தல் முதலிய தூது பற்றி பிரிதலும் என மூவகைப்படும்" என விளக்கம் தருகிறார். இதனால் பகை நிகழ்ந்த வழி தூது நிகழ்தல் நேரும் என்பது பெறப்படும்.

தூதானது புறத்தூது, அகத்தூது என இருவகைப்படுகிறது. புறவாழ்க்கையில் சிறப்பாக ஆடவரே தூதுவராக அமைகின்றனர். அகவாழ்க்கையில் தலைவன் தலைவியர்க்கிடையில் ஊடல் தீர்க்கும் பொருட்டு தூது செல்வோரை **வாயில்** என்று தொல்காப்பியர் சுட்டுகிறார்.

"தோழி தாயே பார்ப்பான் பாங்கன்
பாணன் பாடினி இளையர் விருந்தினர்
கூத்தர் விறலியர் அறிவர் கண்டோர்
யாத்த சிறப்பின் வாயில்கள் என்ப"
(தொல்.பொருள் கற்பியல் 52)

அகவாழ்க்கையிலே வாயிலாக அமைபவர்களை இந்நூற்பாவில் தொகுத்துத் தந்துள்ளார். ஆனால் காப்பியங்களில் நடைபெறும் தூது நிகழ்வுகளில் அஃறினைப் பொருளையும் உயர்திணையினரையும் தூதாகப் பயன்படுத்தியுள்ளனர்.

சிலப்பதிகாரம்

முதல் கரப்பியமான இளங்கோவடிகளின் சிலப்பதிகாரத்தில் தூது என்னும் உறுப்பு அமைந்துள்ளது. புகார்க்காண்டத்தில் மாதவி, வசந்தமாலையிடம் கோவலனுக்கு திருமுகம் எழுதித் தூது விடுக்கின்றாள். செண்பக மாதவி ***தமாலங் கருமுகை*** எனத் தொடங்கும் செய்யுளில்,

"விளையா மழலையின் விரித்துரை யெழுதிப் பசந்த மேனியள் படருறு மாலையின் வசந்த மாலையை வருகெனக் கூஉய்த் தூமலர் மாலையிற் றுணிபொரு வெள்ளாம்

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கோவலற் களித்துக் கொணர்க் வீங்கென்"
எனத் தூது செல்வோரிடத்து மடல் தந்து அனுப்பும் முறையும் புலனாகிறது. இத்தூதானது தலைவிக்கும். தலைவனுக்குமிடையே உள்ளதால் அகத்தூதாகும்.

சீவக சிந்தாமணி

குணமாலை என்பவள் தன் காதலனாகிய சீவகன்பால் கிளியொன்றைத் தூது விடுவதாக திருத்தக்கதேவர் பாடுகின்றார்.

"ஊய்யு மாயுரை யுன்னைய லால் இலேன் செய்ய வாய்க்கிளி யேசிறக் தாயென
நைய னங்கையிந் னாட்டகத் துண்டெனிற்றைய லாய்சம ழாதுரை யென்றதே"
(சீவகசிந்தாமணி குணமாலை இலம்பகம் 1000)

புண்பட்டது போல் என்னுள்ளத்தை மிகவும் வருந்தும் அளவற்ற காமத்தீ பெண்ணினத்திலும் மிகக்கொடியது பெண்ணினம் அல்லாது வேறெதும் இல்லை என்று வருந்திய குணமாலை, கரை உடைய கடலைக் காட்டிலும் அதிக அளவிலே உண்டான காதல் விருப்பம் மீதுற ஆடவர்க்குரிய பனை ஓலையால் செய்த குதிரை மேலேறி மடல் ஊர்வதாகிய செயலைப் பெண்ணாயிருந்தும் தான் மேற்கொள்ள நினைத்து தன் வளர்ப்புக் கிளியிடம் நான் பிழைத்து உயிர் வாழும் வழியைச் சொல் உன்னையன்றி வேறோர் துணையின்றி வாழ்கிறேன். சிவந்த வாயுடைய கிளியே சிறந்த பச்சைப் பசுங்கிளியே என்று புலம்புகிறாள். அக்கிளியும் அன்புடைய நங்கையே அருமைத் தாய் போன்றவளே வருத்தாதே. நீ விரும்பி நினைத்தது இந்நாட்டின்கண் இருக்கக்கூடிய ஒன்றுதான் என்றால் அதனை வருத்தாமல் கூறுக என்று கேட்கின்றது. உடனே மையலூட்டும் காமத்தால் செயலற்று வருந்தித் தானுற்ற வருத்தத்தை வெளிப்படையாகக் கூறி தன் கிளியைத் தூது போக விடுக்கின்றாள் குணமாலை. இங்குத் தூதுப் பொருளான கிளி மறுமொழி பேசுவதும் பொருள் உணர்ந்து செல்வதும் குறிக்கத்தக்கன.

கம்பராமாயணம்

கம்பராமாயணத்தில் அனுமன் தூதானாகச் செயலாற்றுகிறான். சீதையிடம் அகத்தூதாகச் சென்ற அனுமான் புறத்தூதாக, அரசியல் தூதாகவும் செயல்படும் மாற்றம் அவன் உரையால் புலனாகின்றது. தூதரை எரித்தல் என்பது புல்லியது பழியொடு புணரும் என அறநெறி புகலும் தூதனாகவும் அமைகின்றான். இலங்கை மீது போர் செய்யுமுன் வாலியின் மகனான அங்கதனைத் தூது அனுப்புகின்றான். அங்கதனின் தூதுரையில் குறள் இலக்கணமாய் அஞ்சாமை புலப்படுகிறது.

"பூதநா யகன் நீ சூழ்ந்த புவிக்கு நா யகன் அப்பூமேல் சீதை நாயகன்வே றுள்ள தெய்வநா யகன் நீ செப்பும் வேத்நா யகன்மே னின்ற தூதிக்குநா யகன்தான்விட்ட தூதன் யான் பணித்த மாற்றம் சொல்லிய வந்தேன்"
(கம்ப. அங்க தூதுப்படலம் 82)

என அவன் கூறுகிறான். பின்னர் வீடணன் கும்பகர்ணனிடம் தூது செல்லுகின்றான். இத்தூதுகள் அனைத்தும் அறநெறி போற்றும் தூது மரபாக அமைகின்றன. விலங்கு, மனிதர் நிலைகளிலும் தூது அறம் போற்றும் தூதாக இலக்கிய மரபில் ஏற்றம் பெறுகின்றன.

வில்லிபாரதம்

உலூகன் தூதுச் சருக்கம். சஞ்சயன் தூதுச்சருக்கம், கிருட்டிணன் தூதுச் சருக்கம் என மூன்று நிலைகளில் இங்குத் தூது மரபு இடம் பெறுகின்றது. தெய்வநிலையிலான கிருட்டிணனும் தூது போகின்றான். அரக்க நிலையினான கடோத்கசனும் தூது

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போகின்றான். இங்கு அரசியல் தூது சிறப்பிடம் கொள்கிறது.

பெரியபுராணம்

சேக்கிழார் தனது பெரிய புராணத்தில் சுந்தரருக்காகப் பரவை நாச்சியார்பால் இறைவன் தூது சென்றதைப்

"வண்டு வாழும் மலர்க்கூந்தல் பரவையார் மாளிகை நோக்கித் தொண்டனா ர்தம் துயர் நீக்கத் காதராய் எழுந்தருள"

(பெரியபுராணம் 34900)

எனப்பாடுகிறார். கிருட்டிணன் புறத்தாதும் (அரசியல்) கந்தருக்காகச் சிவன் அகத்தூதும் செல்கின்ற மரபு தெய்வத்தூது அகத்திற்கும், புறத்திற்கும் துணைநிற்கும் பொதுமைக் கொள்கையைத் தெளிவாக்குகின்றது.

நளவெண்பா

நளனிடத்து அன்னத்தைத் தூது அனுப்புகின்றாள் தமயந்தி. ஆயின் தேவர்கள் நளனையே தமயந்தியிடத்துத் தூது அனுப்புகின்றனர். அன்னமும் நளனும் ஒரே குறிக்கோளுக்குத் தூதாகும் பான்மை இக்காப்பியத்துள் தெளிவாகின்றது.

சூளாமணி

திருமணப் பொருட்டாகத் தலைவன் வீட்டாரிடம் தலைவி வீட்டார் தூது விடுத்த செய்தியைத் தோலாமொழித்தேவர் கூறுகின்றார்.

முடிவுரை

காப்பியங்களில் மக்கள் தம் வாழ்க்கையின் ஒவ்வொரு காலக்கட்டத்திலும் ஏதேனும் ஒரு தேவையைக் கருதி ஏதேனும் ஒரு தூதுப்பொருள் கொண்டு தன் எண்ணத்தை நிறைவேற்றிக் கொள்வது என்பது தெளிவு. இவ்வாறு காப்பியங்களில் தூது பெருவழுக்குப் பெற்றதின் காரணமாகவே இலக்கணியாரும் பெருங்காப்பிய உறுப்பாகத் தூதையும் சேர்த்தார் என்பதில் ஐயமில்லை.

துணை நின்ற நூல்கள்

1. இளம்பூரணர் (உரை), ***தொல்காப்பியம்***, சைவ சித்தாந்த நூற்பதிப்புக் கழகம், சென்னை,1986.
2. இளங்கோவடிகள், ***சிலப்பதிகாரம்***, சைவ சித்தாந்த நூற்பதிப்புக் கழகம், சென்னை,1971.
3. துரைசாமிப்பிள்ளை (உரை), ***சீவக்சிந்தாமணி***, சைவ சித்தாந்த நூற்பதிப்புக் கழகம், சென்னை,1941.
4. கம்பன், ***கம்பராமாயணம்***, நியூ செஞ்சுரி புக் ஹவுஸ், சென்னை, 2012.
5. வேங்கடகிருஷ்னய்யங்கார் (உரை), ***வில்லிபாரதம்***, வானதி பதிப்பகம், சென்னை.2020.
6. சுப்பிரமணிய முதலியார் (உரை), ***பெரியபுராணம்***, கோவைத்தமிழ்ச் சங்கம், கோவை, 1954.
7. இராமலிங்க பிள்ளை (உரை), ***நளவெண்பா***, சைவ சித்தாந்த நூற்பதிப்புக் கழகம், சென்னை,1986.
8. தோலாமொழித்தேவர், ***சூளாமணி***, உ.வே.சாமிநாதைய்யர் நூல் நிலையம், சென்னை,1962.

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சோ. தர்மனின் சூல் நாவல் வெளிப்படுத்தும் இயற்கை வாழ்வியல் கூறுகள்

ம. செல்வ ரோசரி புஷ்பா
உதவிப் பேராசிரியர்
தமிழ்த்துறை (சுழற்சி-2)
குரு நானக் கல்லூரி (தன்னாட்சி), சென்னை.

முன்னுரை

வாழ்வியல் என்பது உயிர் வாழ்க்கையின் பரவல் பற்றியும் உயிரினங்களுக்கு அவற்றின் இயற்கைச் சூழலுக்கு இடையில் ஏற்படும் இடைவினைகள் குறித்தும் பேசப்படுவதாகும். நாம் வாழும் இச்சூழலில் இயற்கை சார்ந்தே நம் வாழ்வியல் அமைகிறது. இதனையேதான் 'சூல்' நாவலும் கொண்டுள்ளது. "புளிய மரத்து நிழல்.." என்பதே நாவல் தொடக்கம் "கண்மாய்" என்பதே அவ்வூர்மக்களின் தெய்வமாக பார்க்கப்படுகிறது. 'விசாயம்' சார்ந்தே மக்களின் வாழ்வியல் அமைவதால் நீர் ஆதாரம் முக்கியத்துவம் வாய்ந்ததாக ஆசிரியர் உணர்த்தியுள்ளார். இவ்வாழ்வியல் சார்ந்து அவர்களின் அன்றாட நகர்வுகளையே நாவல் எடுத்ததுக்காட்டுகிறது.

சுற்றுச்சூழல் என்பதை சூழலியல் ஆசிரியர்

i) இயற்கை, ii) சமூகம் iii) உளவியல் எனப்பகுத்துப் பார்க்கின்றார்

(சம்பத்குமார், சுற்றுச்சூழல் ப.4) இதனையே நாமும் இவ்வாய்வில் பகுத்துணரலாம்.

வாழ்விடம்

மனிதன் வாழ்வதற்கு அடிப்படையாக அமைவது என அவனைச் சுற்றியுள்ள இயற்கை கூறுகளைக் கூறலாம். காற்று, நீர், நிலம், மலை, காடுகள், வானம், மழை, சூரியன், சந்திரன், ஒலி, ஒளி நிலப்பரப்பு என்பவைற்றைக் காணலாம். இதில் உயிரினங்களின் வாழ்வியல் கூறுகள் உள்ளடக்கம் என்பதையும் நாம் அறிய முடிகின்றது.

நாவல் ஆசிரியரும் மக்களின் வாழ்விடங்களை இயற்கை சார்ந்தே அமைத்துள்ளார். கண்மாய் காடு, செடி, கொடிகள், பறவைகள், கல், மரம், என்பனவே உருளைகுடி மக்களின் வாழ்விடமாக அமைந்துள்ளன.

அய்யனார் கோவில் புளியமரம், மாடமாமி கோவிலை மறைத்துக்கொண்டு நிக்கும் ஆலமரம் எந்நேரமும் பறவைகளின் கெச்சட்டம் (சூல்- ப-1)

தண்ணீர்-ஆதாரம்

பிங்கல நிகண்டு ஆசிரியர் நீர் என்பதற்கு தமிழை உவமைப்படுத்தி இருப்பார்.

"இனிமையும் நீர்மையும் தமிழ் எனலரும்"

நீர் வானிலிருந்து வருவதால் மழையை வள்ளுவர் அமிழ்தம் எனக் குறிப்பிடுகிறார். உருளைகுடி கிராம மக்களின் வாழ்வியல் ஆதாரத்தில் முக்கியத்துவம் வாய்ந்ததாக நீரே உள்ளது. மழைக்காலத்திற்கு முன்பே கண்மாயில் மணல் அள்ளி, பராமரிக்கப்படுகின்றது. கரையை ஒழுங்குபடுத்துகின்றனர்.

கண்மால் - கண்ணாறுகளை உடையது
தெலாக்கிணறு - குடிப்பதற்கு பயன்படுவது

என்பது பாண்டி நாடுகளில் நீர்த்தேக்கங்களுக்கு வழங்கப்பெறும் பெயர்கள்.

நீர் மேலாண்மை

சங்க காலம் தொட்டே தமிழர்கள் நீர் மேலாண்மையை கொண்டுள்ளனர். “நீரின்றி அமையாது உலகு" என்பது வள்ளுவர் வாக்கு, நாம் வாழும் இவ்வுலகில் மூன்றில் இரண்டு பங்கு நீரால் சூழப்பட்டுள்ளது. மக்களின் தினசிரி வாழ்வியல் தேவைகளில் மழை, ஆறு, ஊற்று என்பவை முக்கியப் பங்கு வகிக்கின்றன. பண்டைத்தமிழர்கள் குளம், கண்மாய் அமைத்து தண்ணீரை சேமித்துள்ளனர்.

“பெருங்குளம் காவலன் போல
அருங்கடி அன்னையும் துயில் மறந்தன்ன" (அகநானூறு 252 (13-14)

என்பதில் நீர்ப்பெருக்கால் குளம் உடையும் அபாயம் ஏற்படும் தருணம் அடர்ந்த இருள் சூழ்ந்த நள்ளிரவிலும் ஏரியைக் காக்கும் காவலன் போல தாய் குழந்தையை பாதுகாத்து தூக்கத்தை மறந்தாள் எனக் கூறுகின்றது. குழந்தை பாதுகாப்பும், நீர்ப்பாதுகாப்பும் ஒன்றாகவே நம் ஆதித்தமிழன் பார்த்துள்ளான். இவை நம் முன்னோர்களின் நீர் மேலாண்மை அறிவையே நமக்கு காட்டுகின்றது.
"சூல்" நாவலில் ‘நீர்ப்பாய்ச்சி’ கண்மாயை காக்கக் கூடியவனாகவும் மக்களின் வாழ்வியலைத் தனதாக்கிக் கொண்டவனாகவும் திகழ்கிறான். கண்மாய் அடைப்பை நீக்க தன் உயிரையே தருகிறான். குடும்பன், கருப்பன் அய்யனாரப்பனின் அருகிலேயே சிலையாகிப் போகிறான். நீருக்காகவும், மக்களுக்காகவும் தன் உயிரையே நீத்தவனாக குடும்பன் உயர்கிறான்.

இயற்கை

மக்கள் வாழ்வியலில் இயற்கை, தாவரம், செடி, மரம் போன்றவை முக்கியத்துவம் வாய்ந்தவை. இதனையே சூல் நாவலும் எடுத்துரைக்கின்றது.

”கரம்பைமண் அடித்து குப்பைக்குழி இதறி கண்மாய்க் கரை வழி மூடி விட்டால் விதைப்புக்கு தயார் படுத்துகிற வேலை ஆரம்பமாகிவிடும். நாலு பேர் கூடிவிட்டால் வேறு பேச்சு கிடையாது. நெல் நாற்று நடுவது, கரும்பு நடுவது, வாழைக்கு வரப்புக் கட்டுவது, வெற்றிலைக் கொடிக்காலை அழித்து, அகத்தி வரிச்சுகளை தூர் தோண்டி எடுப்பது போன்ற வேலையைப் பற்றிய பேச்சு இருக்கும்" (சூல்ப.5.)
இதனையே மலைபடுகடாம் நூலிலும்,
”தீம்கழை கரும்பு (19) கழை வளர் நெல் (180) "
சோலைவாழை(132) என்ற பெயரில் குறிப்பிடுகின்றது. மக்கள் செல்லும் வழியில் உள்ள தாவரங்களின் பெயர்கள் இடம் பெறுகின்றன.

உயிரினங்கள்

சங்க இலக்கியம் கூறுகின்ற பறவை விலங்கினங்களை சூல் நாவலிலும் நாம் காண முடிகின்றது.
"சங்கன் சாயங்காலம் வேலை முடிந்த போது கூடை மம்பட்டியுடன், காக்கையும் கொண்டு போனான் இதனைக்கண்டு அவன் மனைவி கோபம் கொள்கிறாள். முத்துவீரன் தாத்தா பனைகளில் தொங்கிக் கொண்டிருந்த தூக்கணாங் குருவி கூட்டை எண்ணிக்கொண்டு இருத்தான்.

மாடப் புறாவிற்கு கூடு கட்டத் தெரியாது (சூல் ப.6,21)
”ஜோடி ஜோடியாய்த் திரியும் மைனாக்களும் கூட்டங்கூட்டமாய்த் திடியும் காக்காய்களும் ஏர்க்கால்களின் முன்னும் பின்னும் நிறைந்திருந்தன. தூரத்தின் ஆட்டு மந்தைகள் மேய்வது புகை மூட்டமாய்த் தெரிந்தது (சூல்.ப.31)

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சூழலியல் கூறுகள்

"கருங்கோடையிலும் ஆதாளைச் செடியும் கொக்கிரவாளிச் செடியும் ஒற்றை வேரில் உயிர் வாழும். கண்மாய்கரை தெரியா அளவிற்கு புதராய் மண்டிய சங்கஞ்செடி கூட்டம். கரையில் வெளி வாகரையில் வரிசையாய் அணிவகுத்து நிற்கும் ஊர்ப் பொதுப் பனைமரங்கள், பனைமரத்தூர்களில் பின்னிகிக்கிடக்கும் பால்கொடிகள், கரை சரிவெங்கும் சப்பாத்திக் கள்ளிகாடும் காணப்படுகின்றன.(சூல்.ப.37)
இந்த அமைப்பு முறையே சூழ்நிலை வாழ்வியலை நிர்ணயிக்கின்றன என்பதை காண முடிகின்றது.

சமூக சூழல்

மனிதன் தான் வாழ்கின்ற சூழலுக்கு ஏற்பத் தன்னை தகவமைத்துக் கொள்கிறான். இயற்கை வாழ்வியலில் சமுகமும் முக்கிய பங்கு வகிக்கின்றது. சமூக சட்டதிட்டங்கள், மரபுகள் பழக்க வழக்கங்களும் வாழ்வியலை தீர்மானிக்கின்றன.

"குப்பாண்டிக் குடும்பன் காணிக்காரனைக் கூப்பிட்டு ஒனக்கு வேண்டியதை அள்ளிக்கொள் என்று சொல்லிவிட்டு காணிக்காரன் அள்ளுவதை சந்தோஷமாகச் சிரித்தபடியே பார்த்துக் கொண்டு நிற்பான்." (சூல்.ப.135)

களத்தோரம் கூட்டமாய் நிற்கும் அத்தனை பேருக்கும் காணிக்காரனே பிச்சை போடுவான். சீனி தானியம் நிறைந்த தன் பேரனின் பெட்டியை வாங்கிக்கொண்டு நீங்க நல்லா இருக்கணும் சாமி என்பாள்."(சூல்.ப.136)
இவற்றின் மூலம் தன்னிடம் உள்ள பொருட்களை வறுமையில் வாடும் மனிதர்களுக்குப் பகிர்ந்தளிக்கப் பழகிய நம் பண்பாட்டை அறிய முடிகிறது.

மழையின் கணிப்பு

"ஆடுகள் மேய்ச்சத் தரையில் இப்படி கூறநின்னா என்ன அர்த்தம், மழைக்கு அதிகாரம்னு அர்த்தம் (சூல். ப.20) என முத்து வீரன் சொன்னதை அனைவரும் கேட்டுக்கொண்டிருந்தார்கள்.
மழைக்கு கோப்பாயிருச்சுனா தூண்டில் போட்டா ஒரு மீனு படாது. தைலான் குருவி தரையோட தாழப் பறந்து திரியும். ராத்திரியில நிலா கோட்ட கட்டும், எறும்பு முட்டைகளைத் தூக்கிட்டு சாரை சாரையா மேடு தேடிப் போகும். இரவில் கூகை கூப்பாடு போடும் (சூல்.ப.7).
இவ்வாறு மழையின் அறிகுறி குறித்து மக்களின் கணிப்பை நாம் காண முடிகின்றது.

அறிவுத்திறன்

"மாடப்புறாவுக்கு உச்சியில் கூடுகட்டத் தெரியாது. அது அதோட பிறவிக்குணம். இப்படி கொடி கொப்புல தான் கூடுகட்டி முட்டையிடும் முட்டை தெரியாதபடி நல்லா கூடு கட்டுனா ஆபத்து என்று நினைத்தது. நுனி கொப்புல கூடு இருந்தா சின்னப்பயக ஏறி முட்டையை எடுத்திருவான்." (சூல்.ப.22)
இவ்வாறாக முத்துவீரன் கூடுகட்டும் முறையினை கூறுவது மாடப்புறாவின் அறிவுத்திறனை உணரமுடிகின்றது. ஒவ்வொரு பறவையும், விலங்கும், நடக்கும், நிற்கும் கத்தும் என அதன் அசைவுகளை அறிவியல் கூறுகளாக மக்கள் கண்டிருந்தனர்.

முடிவுரை

சோ.தர்மனின் சூல் நாவலில் இயற்கைச் சூழலின் அமைப்பு முறைகள், மக்கள் வாழ்வியல். விலங்குகள், பறவைகள், தாவரங்கள், சூழலியல் மண்டலங்கள், அறிவுத்திறன்கள், மழையின் கணிப்பு,

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வேளாண்மை குறித்த செய்திகள், இயற்கைச சார்ந்த நிகழ்வுகள், மக்களின் மதிநுட்பம், நீர்மேலாண்மை என்பனவற்றை அறியமுடிகின்றது. இதன் மூலம் உருளைகுடி மக்களின் வாழ்வியல் இயற்கை சார்ந்தே அமைகிறது என்பதை நாம் கண்டுகொள்ளலாம்.

துணை நின்ற நூல்கள்

1. தர்மன்.சோ. சூல், அடையாளம் பதிப்பகம், திருச்சி, மூன்றாம் பதிப்பு,2019.
2. சந்திரா.சு. இலக்கியமும் சூழலியலும், மீனாட்சி புத்தம் நிலையம் மதுரை, முதற்பதிப்பு 2015.
3. சம்பத்குமார் த. சுற்றுச்சூழல் கல்வி, பாவை பப்ளிகேஷன்ஸ், மதுரை, முதற்பதிப்பு, 2009.
4. அகநானூறு – (தொகுதி-1), நியு செஞ்சுரி புக் ஹவுஸ் (பி) லிட், சென்னை, நான்காம் பதிப்பு, 2011.

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विषय : भारतीय सौंदर्य बोध एवं काव्य:छायावादी संदर्भ

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शोध सार- सौंदर्य के प्रति अनुराग एवं उसके सान्निध्य की कामना मानव मन की एक सहज व सनातन प्रवृत्ति है, अतः इस पर चिंतन भी चिर-पुरातन काल से होता रहा है। पाश्चात्य में सौंदर्य एवं कला से संबंधित शास्त्र "सौंदर्यशास्त्र"का प्रदुर्भाव हुआ, किंतु भारत वर्ष में 'सौंदर्यशास्त्र' नाम से किसी पृथक शास्त्र का उद्भावन नहीं हुआ अपितु यहां सौंदर्य तत्व – मीमांसा/दर्शन से सम्बद्ध रहा और उस पर चिंतन हुआ। इसी चिंतन की सौंदर्यानुभूति काव्य एवं कलाओं में परिलक्षित होती है।

सौंदर्यवादी दृष्टि से हिंदी साहित्य में छायावादी काव्य का सर्वोपरि स्थान है। कवियों की प्रेरणा का मूल स्रोत सौंदर्य रहा है। उसे ही उन्होंने जीवन का सत्य और शिव माना है और उसे शाश्वत आध्यात्मिक सत्य घोषित किया। प्रकृति, दर्शन, आध्यात्म के क्षेत्र में अनुभूति की तरलता और तन्मयता के कारण उनका रहस्योद्घाटन भी हुआ। कोमलकांत भाषा शैली , नये छंद नये प्रतीक व बिम्ब भी गढ़े गए। प्रसाद जी सौंदर्य भावना माधुर्य से ओतप्रोत है। पंतजी शुद्ध सौन्दर्यवादी कवि हैं। निराला जी की सौंदर्य भावना ओजस्वी और चेतना सापेक्ष है, तथा महादेवी सौंदर्य को अपनी रहस्यवादी वस्तु के अनुरूप उसे एक विशिष्ट अलौकिक स्वरूप प्रदान करती हैं।

छायावादी सौंदर्य भावना अत्यंत सूक्ष्म है। द्विवेदी युग की नैतिक दृष्टि की प्रतिक्रिया में छायावादी कवियों ने ऐन्द्रिय सौंदर्य को भी अधिक प्रश्रय दिया। मानसिक कल्पना लोक की इस सौंदर्य दृष्टि में यथार्थोन्मुख सामाजिक पहलू अवश्य छूटा पर उसमें अपूर्व माधुर्य एवं सुकोमलता भर उठी। अन्तर्मुखी सूक्ष्मता में छायावादी सौंदर्य भावना रहस्यमय और आध्यात्मिक है जिसकी महत्ता व प्रसंगिता आज भी कायम है।

बीज शब्द- भारतीय सौंदर्यशास्त्र, चिंतन, काव्य, सौंदर्य, छायावाद, सौंदर्य बोध, बिम्ब, कल्पना, प्रतीक, मुक्तक गीत,छंद विधान, संतुलित,आध्यात्मिकता, रहस्यवाद इत्यादि।

सृष्टि के संरचनाकार द्वारा निर्मित यह संसार सौंदर्य का अतुलनीय व अनुपम कोष है। पंचतत्वों से निर्मित चलायमान सृष्टि में उस परम सत्य स्वरूप परमेश्वर की मंगलकारी सौंदर्यानुभूति कण-कण में व्याप्त है। सौंदर्य की यह भावानुभूति जब मानव हृदय व आत्मा में विस्तार पाती है तो विविध कलाओं एवं चिंतनशील विचारों का उद्गम होता है। जिसकी प्रतीति हमें इस जगत में प्रत्यक्ष व परोक्ष रूप से होती है।

सौंदर्य के प्रति अनुराग एवं उसके सान्निध्य की कामना मानव मन की एक सहज एवं सनातन प्रवृत्ति रही है। अतः इस पर चिंतन भी चिर-पुरातन काल से होता रहा है। पाश्चात्य में सौंदर्य एवं कला से संबंधित शास्त्र "सौंदर्यशास्त्र" का प्रादुर्भाव हुआ किंतु भारत वर्ष में "सौंदर्यशास्त्र" नाम से किसी पृथक शास्त्र का उद्भावन नहीं हुआ अपितु यहाँ ' सौंदर्य तत्व-मीमांस / दर्शन से सम्बद्ध रहा है और उसी पर चिंतन भी हुआ।

डॉ. नगेंद्र के अनुसार – *" भारतीय सौंदर्य – दर्शन अद्वंद्व और सामरस्य का दर्शन है। अभिव्यक्ति के स्तर पर यह सौंदर्य और अनुभूति के स्तर पर आनंद।"*[1]

सौंदर्य शब्द की सर्वाधिक उपयुक्त एवं समीचीन व्युत्पत्ति वाचस्पति कोष की प्रतीत होती है। *"'सु' उपसर्ग 'उंद' धातु 'अरन' प्रत्यय। 'उन्द'का अर्थ है 'आद्र करना' कर्तृवाच्य ' प्रत्यय है। 'सु' का अर्थ है 'सुष्ठ' या भली भांति। इस प्रकार सुंदर शब्द का अर्थ है भलीभांति आद्र करने वाला।"*[2]

एक अन्य मत के अनुसार *"सुष्ठतया नंदयति इति सुंदरं। तस्य भावः सौंदर्य।"* सु उपसर्ग नंदयति प्रसन्न करता है या सुंदर

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करता है या सुसमृद्ध करता है जिससे मानव को आनंद की अनुभूति होती है। आर्द्रता प्रदान करने वाला गुण ही सुंदर कहलाता है। अतः सुंदर शब्द आनंद की भाव वाचक संज्ञा है।[3]

परिभाषा एवं स्वरूप

सौंदर्य की अनुभूति जितनी जटिल, सहज, सरल, एवं आनंददायिनी है उसे परिभाषित करने की समस्या उतनी ही जटिल है। सौंदर्य की परिभाषा अनुभूति पक्ष को ही उजागर करती है। डॉ.हरद्वारी लाल शर्मा के अनुसार- *" हमारे मत में सुंदर परिभाषा की सीमा से इसलिए बाहर है कि वह हमारी सरलतम और निकटतम अनुभूति है।"*[4] डॉ. नगेंद्र का मत है- *"सौंदर्य वह आदिम विषय है जो स्वयं कभी प्रकट नहीं होता वस्तु जिसका प्रतिबिंब सृजनशील मन की सहस्रों विविध उक्तियों से उद्भाषित होता रहा है, और वह उतना ही वैविध्यपूर्ण है जितनी स्वयं प्रकृति।"*[5]

डॉ.सुरेन्द्र वारलिंगे के अनुसार- *"कुछ भी हो सौंदर्य का ध्येय कलाकार के सम्मुख होता है सौंदर्य कला का महत्वपूर्ण अंग होता है और कला से सहृदय को जो प्रतीति होती है वह सौंदर्य की होती है।"*[6]

सौंदर्य के स्वरूप विषय में भी मत भिन्न है – जैसे विद्यपति ने सौंदर्य को मनोरम, नित नूतन तथा अनिर्वचनीय बताया है। जायसी के सौंदर्य आनंद स्वरूप है जो अज्ञानान्धकार को दूर करता है। रवीन्द्र नाथ टैगोर ने सौंदर्य में शिवतत्व की प्रतिष्ठा करते हुए कहते हैं- *"जैसे सौंदर्य की मूर्ति ही मंगल की मूर्ति है और मंगल की मूर्ति ही सौंदर्य का पूर्ण स्वरूप है।"*[7] इस प्रकार चेतनावादी सौंदर्य का सम्बन्ध चिन्मय परम सत्ता से है, किंतु कुछ आचार्य ने उसे वस्तुनिष्ठ माना तथा कुछ ने आत्मनिष्ठ। सौंदर्यानुभूति के लिए विषय और विषयी की सत्ता को अस्वीकार नहीं किया जा सकता। सौंदर्य की समन्वयवादी धारणा ही सौंदर्य के सम्पूर्ण स्वरूप का आंकलन करने में सक्षम है। वैदिक काल में सौंदर्य से अभिभूत ऋषियों ने सृष्टि का अनेक रूपों में गुणगान किया। इस तात्विक अन्वेषण में सौंदर्य की भावना आध्यात्मिक हुई। ऋग्वेद में सुंदर के पर्याय मिलते हैं जैसे- रूप, चारू, रूचिर, वल्गु, प्रिय, पेशस, भद्र आदि। तदंतर लौकिक संस्कृत साहित्य के अध्ययन से ज्ञात होता है कि इस समय सौंदर्य भावना आध्यात्मिकता से लौकिकता की ओर उन्मुख हुई।

भारतीय चिंतन में सौंदर्य काव्य शास्त्र के अन्तर्गत सौंदर्य का विशद विवेचन हुआ। सौंदर्य के मूल तत्वों , विविध पक्षों , अंगों , स्वरूप आदि का गहन विवेचन व विश्लेषण प्राचीन काव्यशास्त्र से ही प्राप्त होता है। इस दृष्टि से भारतीय काव्यशास्त्र को सौन्दर्यशास्त्र का अग्रदूत कहा जा सकता है, क्योंकि इसके प्रत्येक सम्प्रदाय जैसे रस , ध्वनि , अलंकार , औचित्य , वक्रोक्ति , रीति के माध्यम से प्रिया रूपी सौंदर्य की स्थापना की गई है। भारतीय सौंदर्य दृष्टि सौंदर्य के भावनिष्ठ व वस्तुनिष्ठ पक्ष को समन्वित रूप से महत्व प्रदान करती है।

काव्य एवं सौंदर्य

सौंदर्य और काव्य में निगूढ़ संबंध है। काव्य में सांकेतिक अर्थों की व्यंजना निहित है । वह शब्द, स्थान एवं वस्तु के मूर्ति रूप से ऊपर उठकर सूक्ष्मातिसूक्ष्म विचार को मूर्त देने का सामर्थ्य रखता है। काव्य का उद्देश्य सौंदर्य की सृष्टि करना है तथा रचनाकार वह कला पिपासु है जो काव्य में निहित सौंदर्य को अपनी लेखनी के माध्यम से व्यक्त करता हैं काव्य का सौंदर्य कवि की अभिव्यजना कौशल से जुड़ा है। उसका चरम लक्ष्य सौंदर्याभिव्यक्ति है। सौंदर्य ही काव्य की जननी है चूंकि मानवीय चेतना का संस्कार परिष्कार सौंदर्य बोध से होता है। अतः रचनाकार / कवि सौंदर्य की साधना आराधना एवं उसकी भावाभिव्यक्ति की प्रकारों से करते चले आ रहे हैं।काव्य कला के द्वारा सौंदर्य की सृष्टि होती है। काव्य एवं सौंदर्य के अंतःसंबंध के विषय में रामकुमार वर्मा के विचार इस प्रकार है- "आत्मा की गूढ़ और छिपी हुई सौंदर्य – राशि का भावना के प्रकाश से आलोकित हो उठना ही कविता है। जिस समय आत्मा का व्यापक सौंदर्य निखर उठता है उस समय कवि अपने में सीमित रहते हुए भी असीम हो जाता है।"[8]

छायावादी सौंदर्य बोध- छायावादी काव्य का सौंदर्यवादी दृष्टि से हिंदी साहित्य के इतिहास में सर्वोपरि स्थान है। सौंदर्य ही इस युग के कवियों की प्रेरणा का मूल स्रोत था । जैसा कि हम जानते ही हैं कि द्विवेदी युगीन इतिवृत्तात्मक एवं उपदेशात्मक प्रवृत्ति के कारण इस युग की काव्य भाषा विश्लेषणात्मक एवं शुष्क रही। साहित्य को नवीन वस्तु, भाव विचार और भाषा शैली तो मिली किंतु उससे साहित्य के लिए नवीन रुप सौंदर्य की सृष्टि नहीं हुई, इसी रिक्तता की पूर्ति हेतु हिंदी साहित्य में छायावादी प्रवृत्ति का आविर्भाव हुआ।

वास्तव में छायावाद अन्तर्मुखी मानव मन की भावावेगमयी अभिव्यक्ति है जिसमें असंतोष,पीड़ा,विद्रोह,स्वातंत्र्य लालसा,अतीत गौरव,भविष्य की निष्ठा और रहस्यानुभूति आदि प्रवृत्तियों की प्रधानता रहती है। सौंदर्य तत्व के प्रति छायावादी कवियों में पर्याप्त संचेतना दिखाई देती है।उनकी

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कृतियों में सौंदर्य के प्रति सहज व सचेष्ट अवधान स्पष्ट झलकता है । छायावाद के चार स्तंभ कहे जाने वाले सूर्यकांत त्रिपाठी निराला , महादेवी वर्मा, जयशंकर प्रसाद, व सुमित्रानंदन पंत की सौंदर्यानुभूति व दृष्टि अपने आप में अनूठी है जिससे छायावादी काव्य सौंदर्य से भर उठा है।

निराला की सौंदर्य भावना तटस्थता और पार्थक्य का संकेत है। अर्थात इन्होंने अपने काव्य में भावना सिद्ध पर्यवेक्षण को महत्व दिया है । निराला सौंदर्य शास्त्र की इस मान्यता का समर्थन करते हैं कि कविता का सौंदर्य उसकी पूर्णता में निहित है उसके खंडों में नहीं , निराला स्वयं कहते हैं कि *"कला केवल वर्ण , शब्द , छंद , अनुप्रास ,रस , अलंकार या ध्वनि की सुंदरता नहीं किंतु इन सभी से सम्बद्ध सौंदर्य की पूर्ण सीमा है।"*[9]

प्रसाद की काव्य सौंदर्य- चेतना भारतीय सौंदर्य चिंतन से पूर्ण साम्य रखती है। इन्होने सौंदर्यानुभूति को एक ईश्वरीय विभूति के रूप में स्वीकार किया है। सौंदर्य के प्रति इस आध्यात्मिक दृष्टि से इनके सौंदर्य चित्रण में ऐन्द्रिय सुखों से ऊपर उठने की चेष्टा मिलती है। उन्होंने पाठक वर्ग को शाश्वत सौंदर्य की ओर प्रेरित किया है-

"क्षण भंगुर सौंदर्य देखकर रीझो मत देखो देखो,
उस सुंदरतम् की सुंदरता विश्वमात्र में छाई है!"[10]

इसके अतिरिक्त प्रसाद जी की यह मान्यता थी कि संस्कृति – सौंदर्य बोध के विकसित होने की मौलिक चेष्टा है।

कविवर पंत ने काव्य व कला के मनोनीत तत्वों में सौंदर्य – चेतना को प्राथमिक महत्व दिया । उन्होंने सौंदर्य चेतना का संबंध कवि की अनुभूति व समृद्ध अन्तर्जगत से माना है। जिसका एक छोर शिवतत्व से जुड़ा है तो दूसरा कल्पना से रसान्वित है-

"क्या है यह सौंदर्य चेतना? जग जीवन की
अंतर्मन स्वर संगति जो अब अन्तर्नभ के"[11]

पंत जी ने आधुनिक सौंदर्य बोध को दो रूपों में देखा है- 1) यंत्र युग का मध्यवर्गीय सौंदर्य बोध . 2) जनवादी सौंदर्य बोध। पंतजी के अनुसार छायावादी सौंदर्य बोध पूँजीवादी युग की वास्तविकता पर आधारित है। नवीन सौंदर्य बोध जो रूप बोध व भाव बोध पर आधारित है, छायावादी युग की सर्वोत्तम देन है।

महादेवी ने सौंदर्य बोध की सांस्कृतिक व दार्शनिक व्याख्या की है। सौंदर्य के प्रति इनका दृष्टिकोण आध्यात्मिक है तथा सौंदर्यानुभूति के प्रति वे सदैव रहस्यात्मक रही हैं। इन्होंने भाव जगत को महत्ता प्रदान की जिसके फलस्वरूप इनकी सौंदर्य चेतना पूर्णतः आत्मनिष्ठ बनी। महादेवी ने छायावादी सौंदर्य चेतना की सूक्ष्मता पर विचार चिंतन करते हुए कहा था कि – *" हिंदी साहित्य में छायावाद युग – सूक्ष्म सौंदर्यानुभूति के जय – घोष का काल है।"*[12] इनका मन्तवय था कि छायावादी कविता की सूक्ष्म सौंदर्यानुभूति उस सर्वात्मवाद से उत्थित हुई है जिसमें जड़ तत्व से चेतन की अभिन्नता रहती है। इसी सर्वात्मवादी दृष्टि के कारण ही स्थूल और खंड सौंदर्य में सूक्ष्म और अखंड सौंदर्य को देखना संभव हो सका महादेवी का आध्यात्मिक दृष्टिकोण इन पंक्तियों में स्पष्ट रूप से परिलक्षित होता है-

"जब असीम से हो जाएगा मेरी लघु सीमा का मेल;
देखोगे तुम देव! अमरता खेलेगी मिटने का खेल।"[13]

छायावादी सौंदर्य – चेतना का प्रमुख आधार बिंदू प्रकृति और नारी है। छायावादी कवियों का प्रिय विषय प्रकृति सौंदर्य अथवा नारी सौंदर्य का चित्रण रहा है । प्रकृति छायावादी कवियों ने तीन रूपों में व्यक्त किया है – 1) चित्रधर्मी निसर्ग वर्णना द्वारा अंकित सौंदर्य, 2) भाव धर्मी निसर्ग – वर्णना द्वारा अंकित प्रकृति सौंदर्य 3) संगीत धर्मी निसर्ग वर्णना द्वारा अंकित प्रकृति सौंदर्य। प्रकृति पर मानवीकरण के द्वारा नारी के रूप व्यापार का आरोप छायावादी सौंदर्य विधान की एक विशिष्ट प्रवृत्ति है। उदा.

"फिर -वासंती – अखिल लोक में,
ज्योत्सना का होता अभिसार ।
विकल पपीहा वधू डाल पर,
पिया कहाँ , कह ,रही पुकार।"[14]

निराला ,पंत तथा प्रसाद की सौंदर्य परक अधिकांश कविताओं में नारी के रूप सौंदर्य से अरूप सौंदर्य का दर्शन प्राप्त होता है। मनोमय सौंदर्य नारी के सौंदर्य को भी स्वर्गीय बना देता है। इसकी अभिव्यक्ति निराला की "रेखा" शीर्षक कविता में मिलती है —

"मेरी ध्रुव तारा तुम, प्रसारित दिगंत से ।
अंत में लाई मुझे , सीमा में दीखी असीनता ।"[15]

प्रसाद ने नारी के बाह्य रूप यानी शारीरिक सौंदर्य में आन्तरिक सौंदर्य भर दिया, ओर इसी के परिणामस्वरूप

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इनकी रचनाओं में हम मांसल का अमांसल चित्रण पाते हैं।उदा.

"हे लय भरे सौंदर्य!
बांका दो , मौन बने रहते हो क्यों
अंधेरों के मधुर कगारों में,
कलकल ध्वनि की गुँजारों में "[16]

छायावादी – बिम्ब विधान

छायावादी कवियों ने बिम्ब विधान के प्रति सौंदर्य शास्त्रीय जागरूकता का निर्वहन किया है। सौंदर्य चेतना से संबद्ध सभी उत्कृष्टताएँ और विकृतियाँ बिम्ब विधान के माध्यम से दृष्टिगोचर होती है। मौलिक बिम्ब – विधान की दृष्टि से छायावादी कवियों ने शब्द- बिम्ब, वर्ण – बिम्ब, व्यंजना–बिम्ब, प्रवण, सामायिक असंवेष्टित या प्रसृत बिम्ब का महत्वपूर्ण स्थान है। सामानुपातिक बिम्ब का सुंदर चित्र निराला की 'राम की शक्ति पूजा' में दृष्टिगोचर होता है-

1) **"है अमा निशा, उगलता गगन घन अंधकार,**
खो रहा दिशा का ज्ञान, स्तब्ध है पवन चार,
अप्रतिहत, गरज रहा पीछे – अम्बुधि विशाल,
भू धर ज्यों ध्यान मग्न ,केवल जलती मशाल ।"[17]

2) **"कनक से दिन, मोती सी रात ,**
सुनहरी सांस, गुलाबी प्रात।"[18] (महादेवी)

इस प्रकार से छायावादी काव्य में प्रकृति के चित्रण के प्रति अपार आकर्षक व अनुराग भरा था। प्रकृति के क्षेत्र में अनुभूति की तरलता और तन्मयता के कारण छायावादी कवि उसके सौंदर्य के उद्घाटन करने में सफल हुए। प्रकृति को चैतन्य मानकर उसका मानवीकरण, रहस्यात्मक स्वरूप , उसके बाह्य रूप के साथ-साथ उसकी आंतरिक सजीवता का भी मार्मिक चित्रण प्रस्तुत किया।

कल्पना - तत्व

कल्पना - तत्व छायावादी काव्य का मेरूदंड है । छायावादी काव्य इस दृष्टि से समृद्ध एवं कवि की सौंदर्यशास्त्री दृष्टि से अत्याधिक सजग दीख पडंते है । छायावादी कवियों में प्रसाद जी ने काव्य में कल्पना को शीर्ष स्थान दिया है। प्रसाद जी की कल्पना – प्रियता का ज्ञान ' कामायनी' की इन पंक्तियों से होता है-

" आह ! कल्पना का सुन्दर यह
जगत मधुर कितना होता,
सुख – स्वप्नों का दल छाया में
पुलकित हो जगत सोता।"[19]

निराला ने कल्पना को सत्य की सहचरी के रूप में स्वीकार किया वे कहते हैं –*"मैं कल्पना के सत्य को सबसे बड़ा सत्य मानता हूँ और उसे ईश्वरीय प्रतिभा का अंश भी मानता हूँ।"*[20] इन्होंने स्वयं को कल्पना पुत्र कहा है। महादेवी ने कल्पना को अनुभूति-ग्रहण में सहायक व काव्य स्वस्थ विकास के लिए अनिवार्य माना है।

छायावादी कल्पना – आत्मनिष्ठ अधिक है फलतः वह अन्तर्जगत के सत्यों का नवान्वेषण करने में अधिक प्रवृत रही है । इसी तत्व के फलस्वरूप छायावादी कविता की प्रेषणीयता एक नवीन भूमि पर प्रतिष्ठित हो गई जो अपने सभी पूर्ववर्ती रूपों से भिन्न रही।

प्रतीक विधान

छायावादी काव्य में ईश्वरीय सौंदर्य की अनुभूति या सूक्ष्म भावों को अभिव्यक्त करने के लिए प्रतीक विधान की यथेष्ठ चेष्टा की है। छायावादी रचनाओं में लाक्षणिक प्रतीकों का अनेक स्थलों पर प्रयोग हुआ है। इनमें काव्येत्तर ललित कलाओं से लिए गये प्रतीकों की संख्या पर्याप्त रूप से दिख पड़ती है। ज्यादातर प्रतीक प्रकृति से लिए गए हैं प्रतीकों में आध्यात्मिक अर्थवेत्ता कम तथा ऐन्द्रिय प्रत्यक्षात्मकता अधिक है। इन पर कहीं कहीं उपनिषदों का प्रभाव परिलक्षित होता है। प्रसाद जी की 'कामायनी' एवं निराला जी की ' बादल राग' रचनाएं एक प्रतीकात्मक काव्य है।

"शक्ति तरंग प्रलय पावक का,
उस त्रिकोण में निखर उठा – सा ।
श्रृंग और डमरू निनाद बस,
सकल विश्व में बिखर उठा – सा।" [21]

छायावादी काव्य की कुछ ऐसी शैलीगत प्रवृत्तियाँ दिखाई पड़ती है जो उसके सौंदर्य में अभिवृद्धि करती हैं।

1) मुक्तक छंद – छायावादी कवियों की भावाभिव्यंजना की विशेषता – मुक्त छंद रहा है। इन्होंने परंपरागत छंद के बंधनों से अपनी रचनाओं को मुक्त कर दिया। हिंदी साहित्य जगत में मुक्त छंद का आरंभ निराला जी की कविता 'जूही की कली' से होता है। मुक्त छंद पर 'परिमल ' संग्रह की भूमिका में कवि निराला ने स्वयं लिखा है कि,

"मनुष्यों की मुक्ति कर्मों के बंधन से छुटकारा पाना है और कविता मुक्ति छंदों के शासन से अलग हो जाना है ।"[22]

"मुक्तक छंद , सहज प्रकाशन वह मन का;

निज भावों का प्रकट अकृत्रिम चित्र ।"[23]

2) **मुक्तक गीत शैली** – इस शैली का प्रयोग छायावाद के लगभग सभी कवियों ने किया है। रीति शैली के सभी प्रमुख तत्व संगीतात्मकता, वैयक्तिकता , भावात्मकता, कोमलता ,संक्षिप्तता आदि इनके काव्य में उपलब्ध है।

3) **कोमलकांत शब्दावली** – संस्कृतमय कोमलकांत शब्दावली का प्रयोग छायावादी काव्य में बहुलता से परिलक्षित होता है। इससे कविता की भावात्मकता, कोमलता एवं संगीतात्मकता में वृद्धि हुई तथा कविता कर्ण मधुर बनी।

4) **छंद विधान** – छंद विधान में छायावादी कवियों ने परम्परागत संस्कृत के वर्ण वृत्तों को ही आधार नहीं बनाया वरन् लोक प्रचलित छंदों को आधार बनाते हुए उन्हें बहुत परिष्कृत ढंग से प्रस्तुत किया है। छायावादी कवियों ने लावनी, आल्हा , रोला जैसे लोक कंठ में प्रचलित छंदों के स्रोत की ओर मुड़कर लावनी – आल्हा जैसे छंदों को सफलता पूर्वक प्रयोग करके दिखाया। पंत , प्रसाद , निराला और महादेवी वर्मा की अधिकांश कविताओं में लावनी,आल्हा आदि के समीप आने वाले छंदों का प्रयोग हुआ है।

छायावादी काव्य में नये छंद बंधनों, प्रतीकों, कल्पना, बिंबों आदि के माध्यम से सूक्ष्म सौंदर्यानुभूति को आध्यात्मिक परिवेश में प्रस्तुत किया है। मानव मानवेत्तर और कलात्मक सौंदर्य की अभिव्यक्ति हुई है। छायावादी सौंदर्य विधान में अन्तर्मुखी वृत्तियों की प्रधानता के कारण – कल्पित सौंदर्य का भी प्रकटीकरण हुआ है । पंत की 'अप्सरा' व प्रसाद की 'लज्जा' को कल्पित सौंदर्य का उल्लेखनीय उदाहरण माना जा सकता है।

इस प्रकार से भारतीय सौंदर्य की दृष्टि का विशेष रूप से प्रसार छायावादी युग व काव्य में परिलक्षित होता है। इस युग के प्रत्येक कवि की सौंदर्यानुभूति व अभिव्यक्ति सौंदर्य को एक विशिष्ट स्थान पर स्थापित करती है। प्रसाद ने सौंदर्य को चेतना के उज्जवल वरदान के रूप में स्वीकार किया है। निराला की सौंदर्य चेतना की दृष्टि से भाव – जगत और वस्तु – जगत के बीच संतुलन स्थापित करती है। पंत की सौंदर्य – चेतना सूक्ष्मता , आध्यात्मिकता और 'अधिदर्शन' की संगम भूमि पर पूर्णतः अधिष्ठित हुई । महादेवी के काव्य में स्थूल सौंदर्य के प्रति विकर्षण का भाव परिलक्षित होता है। उनकी सौंदर्यानुभूति सर्वाधिक सूक्ष्म है।

अतः छायावादी काव्य में कवियों की वैयक्तिक प्रतिभा की विशिष्टता के कारण उनकी सौंदर्य भावना में कुछ सूक्ष्म अन्तर भी दिखाई देता है।पंत की सौंदर्य भावना कोमल और सात्विक है तथा वे शुद्ध सौंदर्यवादी कवि हैं । दृश्य जगत में जो कुछ दिख पड़ा उसे सूक्ष्म कल्पना के द्वारा साकार बनाया। प्रसाद की सौंदर्य भावना माधुर्य से ओतप्रोत है उन्होंने ने भावपक्ष को अनुभूति मूलक रूप प्रदान किया है। निराला की सौंदर्य भावना ओजस्वी और चेतना सापेक्ष है। उन्होंने सौंदर्य की रूपगत चेतना को सजीव शक्तिमता से जोड़ा है। महादेवी ने सौंदर्य की अपनी रहस्यवादी वस्तु के अनुरूप अलौकिक छटा प्रदान की। छायावादी सौंदर्य भावना अत्यंत सूक्ष्म है।

किंतु प्रगतिशील विचारकों का मत है कि – छायावादी सौंदर्य चेतना जीवंत नहीं थी, क्योंकि वे न तो रीतिकालीन कवियों की भांति मांसल/ सूक्ष्म सौंदर्य का दृढतापूर्वक अंकन कर सके और न रहस्यवादियों की भांति 'परम सत्य व सुंदर' को उच्चत्तर धरातल पर स्थापित कर सके । छायावादी काव्य में सौंदर्य के कोमल पक्ष को स्वीकृत ज्यादा किया जिसके फलस्वरूप उसमें जीवन्तता का अभाव हो गया जो संघर्षशील कर्म – सौंदर्य और लोक – मंगल की स्थापना करता है। इनकी सौंदर्य चेतना कुछ स्थलों पर सूक्ष्म और कुछ स्थानों पर मांसल हो गई है। इनका काव्य उस संतुलित यथार्थोन्मुख दृष्टि से दूर है जो स्वस्थ सौंदर्य चेतना के लिए आवश्यक है। छायावादी कवियों ने ऐन्द्रिय सौंदर्य को अधिक प्रश्रय दिया। मानसिक कल्पना लोक की इस इस सौंदर्य – दृष्टि में यथार्थोन्मुख सामाजिक पहलू अवश्य छूट गया , किंतु उसमें अपूर्व माधुर्य एवं कोमलता भर उठी। आध्यात्मिक व विधायक पक्ष की दृष्टि से छायावादी काव्य नवीन चेतना का है। छायावादी काव्य में कृत्रिम नागरिक संस्कार और नैतिक मर्यादावादिता के स्थान पर मन की संस्कारित चेतना से अनुप्राणित रूप- सौंदर्य के गौरव को व्यक्त किया है। छायावादी सौंदर्य भावना महिमामय और शालीन है उसमें ऐन्द्रिय आकर्षण होने पर भी रूप – सौंदर्य वासना को उत्तेजित न करके निष्काम एवं सात्विक है। उसमें भावना एवं यथार्थ का सुंदर समन्वय है । सृष्टि के कण कण में व्याप्त सौंदर्य को उजागर करने के साथ साथ सौंदर्य को ही उन्होंने जीवन का सत्य और शिव माना है तथा उसे शाश्वत आध्यात्मिक सत्य भी माना है। सत्य के शिवतत्व रूपकारी सौंदर्य की महत्ता आज भी हमारे जीवन में प्रासंगिक है। अतः इस दृष्टि से

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छायावादी काव्य एवं उसमें निहित सौंदर्य की महत्ता एवं प्रासंगिकता आज भी कायम है।

संदर्भ – सूची

1) डॉ. नरेन्द्र – भारतीय सौंदर्यशास्त्र की भूमिका ,नेशनल पब्लिकेशन हाउस, दिल्ली, पृ. सं. 206

2) वाचस्पति पृ. सं. 5314

3) डॉ धर्मपाल देशवाल – सौंदर्य चेतना के संदर्भ में – कालिदास व जयशंकर प्रसाद के काव्यों का तुलनात्मक अध्ययन पृ. 16

4) डॉ तिलक राज शर्मा– नयी कविता का सौंदर्य, संजय प्रकाशन दिल्ली, पृ.6

5) डॉ. नगेंद्र -वही -पृ.सं. 128

6) डॉ सुरेन्द्र बारलिंगे – सौंदर्य तत्व और काव्य सिद्धांत -पृ.सं. 34

7) डॉ तिलक राज -वही पृ.सं. 9

8) सुरेंद्रनाथ सिंह – राम कुमार वर्मा की दृष्टि और उसकी सर्जनात्मक परिणति, गौरव ग्रंथ – पृ.सं .358

9) डॉ. राम निवास गुप्त – हिंदी साहित्य का इतिहास, जीवन ज्योति प्रकाशन, दिल्ली पृ. सं. 285

10) निराला – प्रबंध प्रतिभा, भारती भण्डार, इलाहाबाद पृ. 284

11) प्रसाद -प्रेम पथिक पृ. 24

12) पंत – शिल्पी पृ. 107

13) महादेवी काविवेचनात्मक गद्य, इण्डिया प्रेस, इलाहाबाद पृ. 65

14) डॉ राम निवास गुप्त -वही पृ. 300

15) सं. अशोक वाजपेई – स्वच्छ मौन निमंत्रण, राजकमल प्रकाशन पृ. 60

16) सूर्यकांत त्रिपाठी निराला – परिमल, राजकमल प्रकाशन पृ. 69

17) निराला – अनामिका, भारती भंडार पृ. 72

18) प्रसाद -चंद्रगुप्त मौर्य, भारती भंडार पृ. 206

19) निराला – राम की शक्ति पूजा, भारती भंडार पृ. 50

20) महादेवी – दीपशिखा, भारती भंडार, इलाहाबाद

21) प्रसाद – कामायनी, भारती भंडार प्रयाग, पृ. 36

22) पंत – साठ वर्ष: एक रेखांकन, राजकमल प्रकाशन पृ. 68

23) प्रसाद – कामायनी, भारती भंडार प्रयाग पृ. 263

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IMPORTANCE AND THE GREATNESS OF EFFORTS
प्रयत्नस्य महत्त्वं महिमा च।

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ABSTRACT:
Efforts play a crucial role in human life as they are essential for achieving goals, overcoming challenges, and making progress. Putting in effort demonstrates dedication, perseverance, and a willingness to work towards success. Whether in personal growth, career advancement, relationships, or any other aspect of life, consistent and focused efforts are often key to realizing one's aspirations and fulfilling one's potential. By investing time and energy into endeavors, individuals can enhance their skills, achieve milestones, and ultimately lead a more fulfilling and rewarding life.
This article discusses contribution of literature to the concept of “efforts”

Key words: प्रयत्नम्, विधिः (दैवम्), कर्तव्यम्, दूरीकरणीयम्, साधनीयम्

INTRODUCTION
Chanakya Neeti is a collection of teachings and principles attributed to Chanakya, an ancient Indian philosopher, economist, and political strategist. It offers insights on various aspects of life, governance, ethics, and success. The teachings cover topics such as leadership, politics, economics, ethics, and human behavior. Chanakya Neeti emphasizes the importance of wisdom, strategy, and integrity in achieving success and leading a fulfilling life. It is a timeless guide that continues to inspire individuals seeking personal and professional growth.
Man’s effort is most important for any kind of works. Without effort nothing is there in the world. There are several Slokas in Sanskrit says about the importance and the greatness of efforts. Will see few Slokas among them.

With determination, hard work, and perseverance, individuals can achieve their goals and fulfill their aspirations. Whether it's pursuing a career, learning a new skill, or overcoming challenges, human efforts drive progress and success. Through continuous dedication and commitment, people can overcome obstacles, adapt to change, and strive for personal growth. Ultimately, it is the collective impact of human efforts that leads to innovation, progress, and a better future for all.

उद्यमेन हि सिध्यन्ति कार्याणि न मनोरथैः।

न हि सुप्तस्य सिंहस्य प्रविशन्ति मुखे मृगाः।। [1]

Udyamena hi sidhyanti kāryāṇi na manorathaiḥi
Na hi suptasya siṃhasya praviśanti mukhe mṛgāḥa|| (Ref-2)

अस्माकं सर्वाणि कार्याणि, वयं अस्माकं प्रयत्नेन एव साधितव्यं। विना प्रयत्नं गृहे शयन समये स्वप्ने अहं इदं करिष्यामि, एवं करिष्यामि अनन्तरम् इदं प्राप्नोमि इत्यादि चिन्तन मात्रेण केवलं न किमपि लब्धुं शक्यते। यथा सिंहः तस्य बुभुक्षा समये गुहे शयनं कृत्वा मम आहारं मम मुखे आगन्तव्यं इति चिन्तयति चेत् मृगाः स्वयं न आगच्छन्ति। सिंहः तस्य भोजनार्थं प्रथमतः गुहायाः बहिः आगन्तव्यम्, तदनन्तरं आहार वस्तुनः अन्वेषणम् कर्तव्यम्, पश्चात् मृगं दृष्ट्वा यदि बली चेत् तेन मृगेन सह युद्धं

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करनीयं, अन्ततः भुक्त्वा तस्य बुभुक्षां दूरीकरणीयम्।

एवमेव अस्माकं विद्यां वा उद्योगं वा सर्वमपि केवलं प्रयत्नेन एव साधयितुं शक्यते। यदि एकः नरः तस्य जीवने एकं विषयं लब्धुं साधयितुं वा इच्छति प्रथमतः सः तस्य परिमितिं उल्लङ्.य बहिरागत्य अन्यैः सह स्पर्धां कृत्वा जेतव्यम्।

All our works will get success only through hard works not just by dreams. The prey will not enter into the mouth of sleeping lion automatically.

The same stands explained as, if a lion is hungry first it should come out from its cave, and should search for food, after seeing the food if the animal is stronger, it should fight with that and should kill and should eat then only it's hungry will go. Without that simply if it's sleeps in the cave the animals will not enter in his mouth.

Similarly, if a person wants to get an education or a job first step he should come out from his boundary, he should search where the opportunities are there and should apply and then should go to the place in a right time, if more competitions are there he should fight and should express his talent well, then finally he would get that. Without doing all these things simply by sleeping in the home and dream that, i will get this/that etc. not able to get anything in his life

उद्योगिनं पुरुष सिंहमुपैति लक्ष्मीः

दैवेन देयमिति का पुरुषा वदन्ति।

दैवं निहत्य कुरु पौरुषमात्म शक्त्या

यत्ने कृते यदि न सिद्ध्यति कोऽत्र दोषः।। [2]

Udyoginaṃ puruṣa siṃhamupaiti lakṣmīḥi
Daivena deyamiti kā puruṣā vadanti|
Daivaṃ nihatya kuru pauruṣamātma śaktyā,
Yatne kṛte yadi na siddhayati kotra doṣaḥa|| (Ref-3)

यः पुरुषः उद्यमं कृत्वा यत्किमपि कार्यं करोति तस्य निकटे श्रीः स्वयमेव आगच्छति। केवलं कुत्सितः पुरुषः एव वदन्ति यत्, आगन्तव्यमिति विधिरस्ति चेत् तत् निश्चयेन आगच्छति अथवा नागच्छतीति। परन्तु त्वं विधिं दूरीकृत्य स्वस्य आत्म बलेन कार्यं कुरु। सर्वप्रयत्नेन कार्यं कृत्वापि तस्य फलं न आगच्छति चेत् तदा एव अस्माभिः वक्तव्यं, एतस्य कारणं विधिरिति।

The Goddess of wealth (Lakshmi) reaches to those people who works hard. Only the mean-minded people will say if the fate is there to get, you will get it automatically. You need not take any effort for that. But after leaving (Giving up) the fate takes (Do) the man's effort with your will power, after doing the hard work if it is not success then you can blame its fate. Then there is no mistake on your part.

आलस्यं हि मनुष्यानां शरीरस्थो महान् रिपुः।

नास्त्युद्यम समो बन्धुः कृत्वा यं नावसीदति।। [3]

Alasyaṃ hi manuṣyānāṃ śarīrastho mahān ripuḥu|
Nāstyudyama samo bandhuḥu kṛtvā yaṃ nāvasīdati|| (Ref-4)

नरस्य गात्रेषु वर्तमानेषु अनेकेषु वैरिषु महान् वैरी आलस्यमेव। यदि एकस्य मनुष्यस्य शरीरे आलस्यं अस्ति चेत् सः कार्यं एकमपि न करिष्यति। आलस्यं नरस्य सर्वान् कार्यान् नाशयति। अस्माकं बन्धुजनानां मध्ये प्रयत्नः एव श्रेष्टः बन्धुजनः यतः यः मनुष्यः कठिन कार्यं कृत्वा जीवने उन्नत स्थानं विन्दति तस्य कारणं उद्यमः एव। अस्मिन् लोके उद्यम समः बन्धुः नास्त्येव।

Laziness is the greatest enemy which stays in the body of the human. There is no relative equal to hard work after doing which the person will not suffer. Sometime even our relatives can't help us in some situations but whatever the hard efforts taken by us will gives the fruit of that. Therefore, the hard works are greater than the relatives.

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गच्छन् पिपीलको यान्ति योजनानां शतैरपि।
अगच्छन् वैनतेयोऽपि पदमेकं न गच्छति।।[4]

Gacchan pipīlako yānti yojanānāṃ śatairapi|
Agacchan vainateyospi padamekaṃ na gacchati|| (Ref-5)

अस्मिन् लोके उद्यमेन सर्वं साधयितुं शक्यते। असाध्यमिति यत्किमपि नास्ति। यद्यपि पिपीलकः सुसूक्ष्मः जन्तुः तस्य उद्यमेन शनैः शनैः चलन् शतानि योजनानि अपि उल्लङ्.य गन्तुं शक्यते। गरुडः अतिसुलभेन अतिदूरं गन्तुं समर्थः अपि विना प्रयत्नं एकं पदं अपि चलितुं न शक्यते।

Even a small ant can cover a distance of a hundred yojanas (a unit of measurement in ancient India) by taking effort little by little. But the powerful eagle can’t take a single step if it does not make the effort. This proverb emphasizes the importance of consistent effort and determination in achieving success, regardless of one's size or strength.

प्रारभ्यते न खलु विघ्न भयेन नीचैः
प्रारभ्य विघ्न विहता विरमन्ति मध्याः।
विघ्नैः मुहुर्मुहुरपि प्रतिहन्यमानाः
प्रारभ्धमुत्तम गुणाः न परित्यजन्ति।। [5]

Prārabhyate na khalu vighna bhayena nīcaiḥi
prārabhya vighna vihatā viramanti madhyāḥa|
Vighnaiḥi muhurmuhurapi pratihanyamānāḥa
prārabhdhamuttama guṇāḥa na parityajanti|| (Ref-6)

प्रायः अधमाः जनाः विघ्नानां भयेन किमपि कार्यस्य आरम्भः अपि न कुर्वन्ति। मध्यमः जनाः कार्यस्य आरम्भं कृत्वा मध्ये यदि विघ्नानि आगच्छन्ति चेत् तत्रैव तत् कार्यं त्यक्त्वाअन्यं कार्यं कर्तुं गच्छन्ति। किन्तु उत्मः जनाः उत्साहेन कार्यस्य आरम्भं कृत्वा, कार्यस्य गमन समये यदि विघ्नानि आगच्छन्ति चेत् , तत् निवारणार्थं दूरीकरणार्थं च प्रयत्नं कृत्वा, कार्यस्य सिद्धि प्राप्ति पर्यन्तं तत् कार्यं न परित्यजन्ति। उद्यमस्य पूर्णं फलमपि अनुभवन्ति।

Generally, people who are of low caliber do not start any work due to fear of obstacles. Those of average caliber start a task but abandon it if obstacles arise midway, moving on to another task. However, those who are of superior caliber, after starting a task with enthusiasm, if obstacles arise at the time of completion, make efforts to overcome them or remove them, and do not abandon the task until it is successfully completed. They also experience the full fruit of their efforts.

CONCLUSION:

Chanakya Neeti emphasizes the importance of making consistent efforts to achieve success. It highlights the value of hard work, perseverance, and determination in reaching one's goals. According to Chanakya, success is not solely dependent on luck or destiny but on the diligent efforts and dedication one puts into their endeavors. He advocates for a strong work ethic, strategic planning, and relentless pursuit of goals as key factors in achieving success in life.

When we put in effort towards a goal or a task, we are demonstrating our commitment and dedication to achieving it. Effort reflects our determination and willingness to work hard, even when things get tough. It is through consistent effort that we are able to make meaningful progress and see results.

Efforts also help us build resilience and develop important skills such as perseverance, discipline, and problem-solving abilities. By putting in the necessary effort, we are able to push ourselves beyond our comfort zones and challenge ourselves to reach new heights.

In essence, efforts are essential for personal growth, success, and fulfillment. They are the driving force behind our achievements and the key to unlocking our full potential. So, remember that every effort you put in brings you one step closer to your goals and dreams. Keep pushing forward and never underestimate the power of your efforts.

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Reference:

1.Subhasita- Ratna-Bhandagara by Narayan Ram Acharya Published by Choukamba Sanskrit Pratishthan.

2. सुभाषितरत्नभाण्डागारम्- उद्यमप्रशंसा- **Page no. 82 . Sloka no. 3.**

3. सुभाषितरत्नभाण्डागारम्- उद्यमप्रशंसा- **Page no. 83 . Sloka no. 20.**

4. सुभाषितरत्नभाण्डागारम्- उद्यमप्रशंसा- **Page no. 83 . Sloka no. 15.**

5. सुभाषितरत्नभाण्डागारम्- उद्यमप्रशंसा- **Page no. 82 . Sloka no. 11.**

6. सुभाषितरत्नभाण्डागारम्- संकीर्णप्रकरणम्- **Page no. 390 . Sloka no. 548.**

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DIDACTICISM IN PAÑCHATANTRA AND THE FABLES OF JEAN DE LA FONTAINE

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ABSTRACT

Fables are integral parts of any country's folk culture and tradition. They are a very popular literary genre, simple and lucid. In India people grew up with a good dose of short stories of **Pañchatantra** disseminated by Amar Chitra Katha. Pañchatantra is legendary and iconic. Through animal characters and images so alive presented in the form of comics, these apologues have transmitted the Indian cultural heritage from generation to generation. Panchatantra or the five principles or five doctrines transmit knowledge of moral wisdom, diplomacy, a pragmatic approach to the problems of life, social relations, politics and administration. In the modern context, these stories are legendary as they teach us the life skills and human values we need to survive. Other collections of well-known fables include the fables of Aesop of Greece, the fables of **Phèdre of Rome** and the relatively recent fable collections of those of **La Fontaine de France** of the seventeenth century. **The Fables of Jean de La Fontaine** are very popular and are still used in classrooms across France to impart moral lessons through fables. In the course of this study, the element of didacticism and pertinence of these literary texts will be studied. They will be explored through the study of two works - **The intelligent jackal or the Talking Cave (Jāgarūkaḥ Jambukaḥ**) from Pañchatantra and **The Raven and the Fox (Le Corbeau Et Le Renard**) from Fables of Jean De La Fontaine.

KEYWORDS: Anthropomorphism, Didacticism, Fables, Moral

INTRODUCTION

THE STORIES OF THE PAÑCHATANTRA

"**Sanskrit literature is very rich in fables and stories. No other literature can compete with it. It is extremely likely that fables, especially animal fables, had their main source in India**."
- Max Muller

Panchatantra was composed more than 2000 years ago. The preamble of the Pañchatantra gives information that the tales were composed (or perhaps compiled) by 80-year-old sage Visnu Sarma as part of his efforts to entertain and educate the three sons of King Amara-sakti.

Panchatantra consists of two words, Pañcha and tantra, Pañcha means five and tantra means system or treatise. Panchatantra is a Nitishashtra. Nitisastra means a guide to good life conduct. Pañchatantra consists of five books dealing with five different themes and each one describes human behavior in different situations and also transmits pearls of wisdom. The five parts are "Mitra-bheda", "Mitra-labha", "Mitra-samprapti", "Labdhapranasam" and "Apariksitakarakam".

These five principles (or five books) are a collection of parables on animals. In the order mentioned above, each fable is woven into another following fable.

THE FABLES OF JEAN DE LA FONTAINE

Many fables of La Fontaine are inspired by the collection "Kalila and Dimna" composed in Sanskrit probably from the 3rd century BC, Kalila wa-Dimna (Kalila and Dimna), a widely distributed collection of oriental fables of Indian origin. Jean De la Fontaine published his fables in two segments: the first, his initial volume of 1668, and the second, an accumulation of books of fables appearing over the next 25 years. The fables of 1668 follows the model of Aesopian,

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but the most recent ones branch out to satirize the court, the bureaucrats who attend, the church, the rising bourgeoisie - in fact the entire human scene. The great theme of La Fontaine was the folly of human vanity. He was a sceptic, but full of the sense of human fragility and ambition. His satirical themes allowed him an expansion of the poetic diction; he could be eloquent in mocking eloquence or in contrast use a severely simple style.

DIDACTISM

Didacticism simply means instructing or teaching in an interesting way. In ancient civilizations, knowledge has been disseminated in all cultures through oral storytelling traditions in the form of fables for the purpose of informing and entertaining. Panchatantra is well known for its didactic tales.

DIDACTISM IN PANCHATANTRA

"One Vishnusharman shrewdly gleaning
All worldly wisdom's inner meaning
in these 5 books the charm compresses
Of all such books the world possesses"

Pañchatantra is a Niti sâstra, a manual of Niti or wise conduct of life. He intends to teach the art of government through animal folk tales dotted with gnomic verses, bringing the reader to the imaginary world where animals speak and animal kingdoms are structured on the model of human societies. Anthropomorphism is a very important characteristic present in the stories of Pañchatantra. In these stories, animals talk, think and act like humans. Pañchatantra makes animals live in a way that allows them to express emotions similar to those experienced by humans. In doing so, it offers insight into the different aspects of human nature through the actions and interactions of these animal characters. Almost every fable ends with a lesson in morality.

जागरुकः जम्बुकः (Jāgarūkaḥ Jambukaḥ)
The Intelligent Jackal or the Talking Cave

कस्मिश्चित् वनप्रदेशे खरनखरः नाम सिंहः निवसति स्म। सः कदाचित बुभुक्षया इतस्ततः भ्रमन आसीत। परन्तु कमपि मृगं न प्राप्तवान्। ततः सूर्यास्तमनसमये पर्वते महतीं गुहां दृष्टवान्। तत्र गत्वा चिन्तितवान्। " अत्र कोऽपि मृगः रात्रौ निश्चयेन आगमिष्यति। अतः अहम् अत्रैव गुप्तः तिष्ठामि।

In a forest there was a lion named Kharanakhara. Once he wandered here and there with hunger. But he found no animal. At sunset he saw a large cave in a mountain. He went and thought. An animal will certainly come here at night. Therefore, I'll stay here and hide.

ततः तस्याः गुहायाः निवासी दधिपुच्छः नाम श्रृगालः आगतवान्। सः गुहां प्रविष्टस्य सिंहस्य पदपद्धतिं दृष्टवान्, न तु बहिः आगतस्य।

Then a jackal named Dadhipucchha, who lived in this cave, came in. He saw the lion's footsteps, entering the cave, but not leaving.

ततः चिन्तितवान्। "अहो! किमिदं? गुहायाः अन्तः सिंहः स्यात्। किं करोमि कथं जानामि ?" एवं विचिन्त्य गुहायाः द्वारे स्थित्वा उच्चैः आहूतवान्। "अहो बिल! अहो बिल!" कश्चित् कालं तूष्णीं भूत्वा पुनः तथैव उक्तवान्। "भोः! किमर्थं न वदसि? प्रतिदिनं यदा अहम् आगच्छामि तदा मया तव आह्वानं क्रियते। त्वया च मम उत्तरं दीयते। यदि मम उत्तरं न प्रयच्छसि, तर्हि अहम् अन्यबिलं गमिष्यामि।"

Then he thought. Oh, what is it? There could be a lion inside the cave. What should I do? How will I know? Thinking thus, standing at the door of the cave, he called out loud. "O Cave! O Cave!" For a while, he remained silent, and said again "O! Why do you not speak? Every day, when I come, I call you. And you answer me. If you don't answer me, I'll go to another cave."

श्रृगालस्य वचनं श्रुत्वा सिंहः चिन्तितवान्। " नूनं यदा सः आगच्छति तदा एषा गुहा प्रतिदिनम् उत्तरं ददाति।" अद्य तु मद्भयात् न वदति। अतः अहमेव तम आह्वयामि। तत् श्रुत्वा प्रविष्टं श्रृगालम् अहम् भक्षयामि।" तथैव सिन्हेन् आह्वानं कृतम्। सिंहनादस्य प्रतिध्वनिना गुहा पूर्णा। वने दूरे स्थिताः अन्ये मृगाः अपि भीताः अभवन्। श्रृगालः झटिति पलायनं कृतवान्।

Hearing the words of the jackal, the lion thought. Perhaps, when he comes, then this cave answers every day. But today he's not speaking because of the fear of me. Therefore, I will invite him myself. I will eat the jackal when he comes in. So, the lion cried out. The cave resounded with

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the roar of the lion. Even the other animals that were far away in the forest were afraid. The jackal fled at once.

अत एव उच्यते,

"अनागतं यः कुरुते स शोभते स शोच्यते यो न करोत्यनागतम्।

वनेऽत्र संस्थस्य समागता जरा बिलस्य वाणी न कदापि मे श्रुता।।"

That's why it is said, "He who foresees (acts according to) the future will succeed. He who does not foresee it, will regret. I grew old living in the forest, and I have never heard the voice of a cave before."

MORAL OF THE STORY

सम्यक विमृश्य एव किमपि कार्यं करणीयम्।

Think carefully before taking action

Pañchatantra is full of such fables that deliver the message of pragmatism, acting according to the situation with presence of mind. Most of Pañchatantra's stories have a moral at the end. There are tips on how to assess the situation and how to act on the situation. There are many didactic proverbs in the stories of Pañchatantra with life lessons. Fables reflect their coherence with Niti sastra (good conduct of life).

DIDACTISM IN THE FABLES OF JEAN DE LA FONTAINE

The fable, the literary form reached its apogee in the seventeenth century in France, at the court of Louis XIV, notably in the work of Jean de La Fontaine. His first segment of fables published in 1668 follows the Aesopian model. His later publications were more like a satire, a mockery of the courts, of the bureaucrats, of the Church, of the rising bourgeoisie, of almost all the society of the time. Its only purpose was to please and educate. In the short prefix of his second collection of Fables, Fontaine mentioned that he owes most of it to Bidpai, an Indian sage.

It was he who restored his titles of nobility in the seventeenth century. The first collection of La Fontaine is intended for the son of King Louis XIV, the Grand Dauphin. It has a pedagogical function: these little stories are intended to educate the king's sons (**à éduquer le fils du roi**).

In addition, the fables of La Fontaine are particularly close to poetry. Indeed, before him, it was prose that was used and it gave an unattractive appearance to the fable. La Fontaine gives a new poetic style to the fable. Jean de La Fontaine said Children need to be educated, and for that nothing is more useful than fable!"

"**les enfants doivent s'instruire, et pour cela rien n'est plus utile que la fable!"**

children need to be educated, and for that, nothing is more useful than fable!

According to him,

"Wisdom and virtue cannot be accustomed to too early"

On ne saurait s'accoutumer de trop bonne heure à la sagesse et à la vertu

Les fables de La Fontaine sont connues pour l'utilisation sage de l'anthropomorphisme.

"I use animals to educate men"

Je me sers d'animaux pour instruire les hommes - Jean De La Fontaine

This is evident in the poem **"The Raven and the Fox"** (***Le corbeau et Le Renard***). The jackal represents cunning. Allegorically, it depicts the flatterers present at the court who thrived on cajolery and flattery. The raven depicts madness and is used as a metaphor to describe the foolish and selfish kings of that time. It's a critique of society presented in a funny and satirical way.

LE CORBEAU ET LE RENARD

Maître Corbeau, sur un arbre perché
Tenait en son bec un fromage.
Maître Renard, par l'odeur alléché,
Lui tint à peu près ce langage :
Et bonjour, Monsieur du Corbeau,
Que vous êtes joli !
que vous me semblez beau !
Sans mentir, si votre ramage
Se rapporte à votre plumage,
Vous êtes le Phénix des hôtes de ces bois.
À ces mots le Corbeau ne se sent pas de joie,
Et pour montrer sa belle voix,
Il ouvre un large bec, laisse tomber sa proie.
Le Renard s'en saisit, et dit : Mon bon Monsieur,
Apprenez que tout flatteur
Vit aux dépens de celui qui l'écoute.
Cette leçon vaut bien un fromage sans doute.
Le Corbeau honteux et confus
Jura, mais un peu tard, qu'on ne l'y prendrait plus.

THE RAVEN AND THE FOX

Master Crow perched on a tree,
Was holding a cheese in his beak.
Master Fox attracted by the smell
Said something like this: "Well, Hello Mister Crow!
How pretty you are! How beautiful you seem to me! I'm not lying, if your voice
Is like your plumage,
You are the phoenix of all the inhabitants of these woods." At these words, the Crow is overjoyed.
And in order to show off his beautiful voice,
He opens his beak wide, lets his prey fall
The Fox grabs it, and says: "My good man,
Learn that every flatterer
Lives at the expense of the one who listens to him.
This lesson, without doubt, is well worth a cheese."
The Crow, ashamed and embarrassed,
Swore, but a little late, that he would not be taken again.

The last four lines of the last stanza convey a greater message: The Fox seized it, and said,

"***Le Renard s'en saisit, et dit : Mon bon Monsieur,***
Apprenez que tout flatteur
Vit aux dépens de celui qui l'écoute"

"My good Sir,
Learn that any flatterer
Lives at the expense of the listener"

MORAL OF THE FABLE

BEWARE OF FLATTERY

INTERESTING STYLE OF NARRATION FOR LEARNERS

Fables are very useful for young learners. They have a simple narrative style. Pañchatantra is in Sanskrit prose. If told with expressions reflected in prose, it can leave a lasting imprint on the minds of young learners. It can give learners a good understanding of vocabulary. Storytelling with expressions can introduce them to the world of theatre.

Fables are in the form of poetry, which makes them more attractive to readers and a faster understanding of vocabulary, constitutive elements of language and communication.

The use of animal characters in Pañchatantra adds depth to its narrative approach by making it more engaging and meaningful. It shows us how similar we are to other creatures on this planet while emphasizing our uniqueness.

Characters have an interesting nomenclature. Names represent their innate nature and behavior In Pañchatantra in the fable **(Jāgarūkaḥ Jambukaḥ)** or **The Intelligent Jackal** or **The Cave That Speaks**.

"कस्मिश्चित् वनप्रदेशे खरनखरः नाम सिंहः निवसति स्म।" Once there lived a lion in a forest.

Kharanakhara (खरनखर): खरनखर means *'having sharp claws'*, the name of a lion, according to the Sanskrit English dictionary of Monier Williams.

ततः तस्याः गुहायाः निवासी दधिपुच्छः नाम शृगालः आगतवान्। Then a jackal named Dadhipucchha, who lived in this cave, came back.

Dadhipucchha, ***दधिपुच्छः*** the word connotes someone who has a tail as white as milk.

In the same way in the fable **"The Raven and the Fox"** (***Le corbeau et Le Renard***), the satire and coquette hypocrite bourgeoisie of the time is explicit when the fox and the crow are addressed as Mr. Jackal and Mr. Crow "***Maître Renard et Maître Corbeau*****".**

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THE RAVEN AND THE FOX

Master Raven, on a tree perched
Held in his beak a cheese.
Master Renard, by the sweet smell,
He said something like this:
And good morning, Monsieur du Corbeau,
How pretty you are! how beautiful you seem to me

LE CORBEAU ET LE RENARD

Maître Corbeau, sur un arbre perché
Tenait en son bec un fromage.
Maître Renard, par l'odeur alléché,
Lui tint à peu près ce langage :
Et bonjour, Monsieur du Corbeau,
Que vous êtes joli ! que vous me semblez beau !

CONCLUSION

Panchatantra was originally composed in Sanskrit. It is a fantastic tool for understanding the moral ideals of human existence. Through these stories, one can learn more about psychology and moral values. Thus, the Panchatantra occupies an important place in Sanskrit literature. The Panchatantra and the fables of La Fontaine, both are like children's literature, for primary school students. It is easy to shape a young mind. Because of the didactic values present in the thesis works these can be widely used in the course curriculum, even now because fables are about human nature and human psychology and no matter how advanced our science and technology is, human nature has not changed much, not much difference between people of yesteryear and people of today.

Still today in French schools, fables are taught and recited as poems. They help to memorize easily, may be easier than learning normal prose and can keep the content memorized for longer, perhaps for life. The fables of La Fontaine are part of the French literary and cultural heritage. Their learning from primary school makes it possible to perpetuate this heritage, to transmit it, and to make it known to the younger generations.

BIBLIOGRAPHY

1. **Arthur W Ryder**, *Panchatantra translated from the Sanskrit*, Phoenix books, University of Chicago press, 1964, page 3.
2. **Edgerton**, **Franklin,** *Panchatantra reconstructed vol.*1, American Oriental Society,1924, page 5-7.
3. **Michel Serres**, Sollers et La Poésie – La Fontaine : Une rencontre par-delà le temps, publication posthume, en librairie, le 2 juin 2021.
4. **Harel, Naama**. "The Animal Voice behind the Animal Fable." Journal for Critical Animal Studies, Vol. 7, no. 2, Sept. 2009, page 9-21.
5. **Patrick Olivelle**, *The Book Of India's Folk Wisdom*,Oxford University Press,1997, Prelude page -3.
6. **Fazliddin Ganiyev**, Analysis Of La Fontaine's Fables as a Literary Genre in European Literature, European Scholar Journal (ESJ), Vol. 4 No.04, April 2023,256-257

WEBSITES

1. **Sanskrit story with moral The Alert Jackal, 2022.** https://www.sanskritbhuvan.com/2022/04/sanskrit-story-with-moral-alert-jackal.html

2. **Influence of Jean de La Fontaine, 2024.** https://www.britannica.com/art/fable-parable-and-allegory/Influence-of-Jean-de-La-Fontaine

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DREAMFUL SPIRITUAL JOURNEY IN PAULO COELHO'S *The Alchemist*

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ABSTRACT

Reality is the truth, which really happens and everyone can feel and see. It has to be faced by all. It exists in life. It is totally different from a dream. All have their own dreams in life. Mostly dreams occur when one is in an unconscious stage of sleep and sometimes it is not easy to decode. Another kind of dream happens when the body and mind is in a conscious state. It is about what the person wants or something the mind desires. Both the dreams are the projections of the deepest desires and mostly these are directly connected with repressed childhood memories. Dreams are the reflections of real life. This has a deep impact and is related with reality. When one chases the dream and makes it happen in reality that they can fulfil their life's destiny. Paulo Coelho is one of the best writers in the contemporary time. He is known for his simple and well-explained natural writings. He is a non-conformist, always seeks new things in life and reflects in his writings. All experiences have a connection with his works. His unique writing style uses various things like images, feelings, symbols, spirituality et cetera for the perfect conceptual writing. He gives the philosophical message to the readers through his works. In the novel, *The Alchemist*, he says to find one's soul and destiny is the real obligation. Everyone should embark on a journey to find their own treasure. The journey will lead to closeness with Oneness with all the things we see and learn in each situation. The Spiritual journey of the protagonist which is closer to reality. *The Alchemist* is a story of an Andalusian boy, Santiago. He gets a repeated dream, which is to be prophetic and starts his journey. He begins to travel with his sheep. He undergoes many risks and dangerous situations in his journey towards Egypt. Along with these experiences, he meets a lot of people, they think about life, signs, the world and God. In the end of the novel, he got his dream treasure. More importantly than the Treasure, he has gained knowledge. His full journey is a kind of spiritual one because before he found his treasure, he had found the real Treasure in him. His heroic Adventurous Path is succeeded.

Keywords: spiritualism, quest, journey, dream, self-realisation, inner quest

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INTRODUCTION

Paulo Coelho is the seeker of good and new things. He implements these things in his writings. He has a lot of experiences with crises in his way of thinking and started to search for new spiritual experiences. He is one of the best writers in the contemporary time. His bestseller *The Alchemist* is one of the most widely read and translated novels. He is widely known for his impressive explanation of natural support. He uses imagery metaphoric expression in an effective way.

Postmodern Text

Critic, Lyotard defines Postmodernism as "Enlightment or as the culmination of enlightment thought" (Geyh, 3) and some other critics clearly depict that postmodernism has affected every domain in life and it can be controversial and contradictory too. Postmodern time is considered as depthless world because meaning is only superficial and artificial. Postmodern era concentrates on information, signs governed by models, codes and cybernetics. Lyotard emphasises on plurality, difference, multiplicity and otherness. These all come as a Revolt against the totalizing and universalizing, which attempt to suppress and exclude the marginal oppositional voices. In this respect, Paulo Coelho’s, *The Alchemist* can be considered as a postmodern text.

A Young Shepherd Santiago has a recurrent dream. The dream is to seek forTreasure in the Egyptian Pyramids. During his journey towards the Treasure he undergoes many expected and surprising things. In addition, he meets many people. He works under the Crystal merchant to earn money to visit Egypt. Through an Englishman he learns about the Philosopher's Stone, which turns Lead to Gold and the elixir of life liquid which can cure all illnesses. At Al-Fayoum Oasis he meets Fatima and falls in love. In the desert, he meets an old Alchemist. He teaches Santiago about the importance of listening to his heart and to follow his dream till he achieves it. When he reached Egypt, he started to dig. He was beaten by two men and they decided to take money from him but when one of the men talks about his dream about that Treasure in the abandoned Church under the Sycamore tree in Spain, he realized the real dream plan. He finds the Treasure in Spain, a chest of gold. He plans to meet Fatima and to be with her.

In Postmodernism, magical realism is considered an integral part. Santiago understands his repeated dream when he is reconfirmed by a Gypsy woman who interprets his dream. The dreams are not the real ones but when people interpret it through the omens, signs and guidelines, it instructs them in their lives. Throughout the novel, dreams and visions lead to the truth and the reality in many cases. From the beginning of the novel, Santiago decides to travel to reach the unheard places to achieve his dream. When the men attack him in the desert, he understands that the truth of his dream is lying in another person's dream. The characters excel the belief that the dreams are a part of the normal reality and to consider these a part of the spiritual reality.

Coelho shifts the readers from The Real World to the magical realistic world. Santiago's journey and stay with the Alchemist is pure magic and when the narration makes the readers feel all the incidents are real. Some of the incidents are: The Alchemist is 200 years old, he knows answers for all the questions in the world, he can transform lead into gold, he has liquid to cure all diseases and do wind conversation with Santiago in the desert to rescue them from tribal soldiers. Coelho uses magic dominantly to reinforce the theme of the novel.

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Cultural hybridity is one of the important characteristics of Postmodernism. In this mixture of two or more cultures, each one cherishes and collaborates with one another. In this all the characters in the novel are true believers in their dreams and collaborate to enrich the novel and its theme. It gives different voices and opinions and helps to know the least considered things in the magnificent world.

Inner quest

Santiago courageously wants to go after his destiny. Born in a lower class family, his father wants to make him a priest. He has a passion for travelling throughout the world to know it better. His father objected that travelling is meaningless and insisted on practicing preaching which is the prestigious profession. But he opposed his father's ideology on travelling. He says " I want to know the world and this is much more important to me than knowing God and learning about man's sins" (8). He leaves his home and family chooses the life of Shepherd in order to travel and to know the world. For him the Shepherd life is the best one than the high position in the church. He realized that he has to know the ultimate reality of the world. Throughout the journey he discovers his own nature and also the nature of the world. He realized the bigger truth that one has to realize destiny because it paves the way to attain one's quest. When he faces many difficult situations and when he is left without any money after cheating and beating, he is left with nothing but only his dream. Now he regrets believing his dream as a common man. He doubts his dream into reality. But soon he gets some clarity and help from the people. He gathers the strength to go forward once again. His psychological evolution slowly takes place within him. He started to move from immaturity to the courage of self-responsibility. Like a determined hero, he is ready for the challenges and trials ahead. When he can pass without the help of a mentor, he finds his answers for his inner quest. He expects to get freedom in life, like wind.

Santiago is always persistent in his dream. He does not leave any of his tasks unnoticed. Eventually, after all life lessons and experiences, he comes back to the abundant church in Spain and finds the Treasure. Once he completes his promises, he realizes that he has got his enlightenment through spiritualism.

Spiritual Journey

Spiritual Philosophy believes that every man consists of two components, physical and spiritual. The physical element is the body and fades away at death. The spiritual element is the soul or spirit, which continues its form even after the death from the body which it owns. Every living creature has a soul. Every human has a soul within oneself. A spiritual person tries to know the real life's root of truth through one's own activities of dedicated service and meditation. Everyone has two kinds of life: internal and external. In internal life, one must constantly embrace, guide and inspire the outer life which is eventually liberated in the fullest measure. For Coelho, dream is the holistic language of God to people. His protagonist, Santiago started to consider his dreams sincerely when they occurred frequently. So, he decides to interpret the dream willingly. Coelho believes that when people are young, they know what their personal legend is and their point of living is clear and possibly moves towards it. When they move towards that willingly some powerful force makes one achieve the goal. The same concept is shared by Melchizedek to Santiago, “when you want something, the universe conspires in source of helping you to achieve it"(21).

Santiago never entertained or desired material possession. She has no temptation towards the Treasure which is buried. His recurrent dream

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made and inspired him to find out the treasure of his life that this the ultimate reality. Spiritual perfection is possible only after coming to the point of super consciousness. So, he decided to follow his dream.

Santiago's thirst to find treasure becomes stronger when he meets Melchizedek. He appeared like a grace of God to Santiago. He knows everything about the Shepherd boy. He firmly says that dreams are not a silly thing to ignore. They serve the magical purpose which connects everything in the universe with the person. This made Santiago realize his calling to visit pyramids. He learns more about the personal legend and its importance to live a complete life. He also learns to follow omens and God’s gifts, two stones Urim and Thummim to read the omens when difficulty appears on the way. The stones become his guidance to move towards the dream.

Throughout the novel Santiago is governed by his spiritual Quest not by material possessions. During his journey to Egypt he is robbed, beaten to death, bankrupt and met many sufferings. She also met different kinds of people during his journey. In this Melchizedek becomes his spiritual Guru and claims one tenth of his sheep. When he is motivated by spiritual perfection his journey of inner consciousness is successful. He gains and gathers courage and self-confidence when he faces fear and difficult situations. She left his father and mother in his hometown for his passion to know the Treasure and knows well that he can and he will go further when he leaves his sheep as well. He travels passionately but sometimes becomes impatient and restless towards the dream come true moment. He learns and believes that finding and receiving the Treasure in life is not only by earning a simple livelihood but also the awakening of oneself as well.

Santiago learns some good lessons from many people, especially from Fatima. When he moves towards the African desert, he meets a girl named Fatima and falls in love. Her love paves the way to reach his goal and the love has become a divine love. When he moves to continue his Quest to find his treasure, she said that she will wait proudly for him. This shows her belief in love.

After leaving Fatima, Santiago meets the Alchemist. He presents a challenge to him that is to find life in the desert. He also says that the person who can find life in the emptiness can find treasure in life. The Alchemist tells Santiago to listen to his heart to understand the world. He also explains that the heart comes from the soul of the world which speaks the truth. Santiago's inner soul firmly compels him to follow his dream and to get the treasure for life. He is aware of many difficult situations that the treasure of life lies in spiritual awakening. When he loses all his wealth in various situations by different kinds of people, she never loses hope. When he learns about the real place of the treasure, he finds a chest full of gold and he completes his promise. He finds the treasure of life turning out to be his discovery of ‘self’; this is a perfect realization of spiritualism.

Conclusion

The Alchemist is a profound spiritual work with metaphors and parables for one who searches for the heart's true desire. That chest full of gold lies within our own soul. Santiago finds his treasure by listening to his heart and follows it. Though many tests come, he learns to listen to his heart. This helped them to face his fears as well. His characterization proves that when we love something we always try to get the best out of it. This story is an enlightening spiritual journey. The journey made him discard material possession, social status, and self-centred

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behaviour. The boy realises that his journey ends from where he starts. It gives the importance to realise the roots and the foundation of our lives. Like Coelho's character Santiago, everyone should not give up his goal to attend to the hidden treasure in spite of several hurdles and hardships. Like his dedication, everyone should stay strong to achieve one's own dream.

References

1. Abrams, M.H. *A Glossary of Literary Terms.*7th ed. Singapore: Thomson, 2004.
2. Best, S., & Kellner, D. (1991). *Postmodern Theory: Critical Interrogations*. London: Macmillan.
3. Coelho, P. (1993). *The Alchemist*. (A. R. Clarke, Trans.). London: Harper Collins Publishers.
4. Dash, RK (April 2013). *Language in India.* Retrieved from www.languageinindia.com
5. Eisinger, Chester E. I i Illinois: St. James,1999.
6. Geyh, P. E. (2003). *Assembling Postımodernism: Experience, meaning and the space in-between.* College Literature, 30(2), 1-29.
7. Hutcheon, L. (1987*). A Poetics of Post modernism.* New York: Routledge.
8. Selden.R.. Widdowson, P.. & Brooker, P. (1997). *A Reader's Guide to Contemporary Literature Theory*. London*: Prentice.*
9. Frye, Northrop. *Anatomy of Criticismn.* New Jersey: Princeton UP, 1957.
10. Guerin. Wilfred L. et. al. *A Handbook of Critical Approaches to Literature*. 4th ed.New York: Oxford UP, 1999.
11. Hart, Stephen M. *"Cultural Hybridity, Magical Realism and the Language of Magic in Paulo Coelho's The Alchemist*." Romance Quarterly S1.4, (2004). 304-11.
12. *Holy Bible.* King James Version, Peabody: Hendrickson, 2007.
13. *"Q & A: Paulo Coelho."* Interview. Kirkus Reviews 73.1 1, June 1, 2005.
14. Kremenik, Michael J. *"The Search for the Hero's Soul in The Alchemist."* 2.2 (1996): 123 - 131.

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ECOCRITICISM: UNVEILING THE INTERCONNECTED TAPESTRY OF ENVIRONMENTAL CHALLENGES AND HUMAN NARRATIVES

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ABSTRACT:

This paper takes a deep dive into ecocriticism, an area of study that looks at the way environmental challenges and human stories interact. By looking at literature and culture through a multidisciplinary lens, the goal is to better understand some of the contemporary ecological issues we face. Taking a qualitative approach, this study uses literary texts, cultural artefacts, and environmental discourse to find common threads in patterns and themes. This will hopefully give us an insight into how our actions impact the natural world and vice versa. As with any research project, data is needed. From indigenous folklore to modern-day novels, this paper aims to discover how our values shape the environment around us and how that environment shapes us in turn. Results so far are anything but a simple answer. Rather, they reveal a deeply interconnected system where environmental degradation feeds into socio-cultural constructs which feed back into individual identities. It is not looking good for anyone involved. But if there is one bright spot, it might be literature and culture themselves. As mirrors of our society, they have incredible power for change giving individuals more awareness and empathy while pushing communities toward activism.

Finally, this research emphasizes the importance of using ecologically informed viewpoints to navigate modern difficulties. Recognizing the inherent link between human narratives and environmental realities, it encourages collaborative efforts to foster resilient and harmonious connections with the natural world.

KEYWORDS: Ecocriticism, Environmental Challenges, Human Narratives, Interconnectedness, Literature, Sustainability

INTRODUCTION:

In this era of rapid environmental destruction and ecological instability, it is more important than ever to reevaluate our connection to the natural world. "The more clearly we can focus our attention on the wonders and realities of the universe about us, the less taste we shall have for destruction," said Rachel Carson (Carson, 1965). This quote perfectly captures the essence of ecocriticism: a growing discipline that investigates how literature, culture, and environment intersect to form an intricate web of connections. As climate change runs rampant, biodiversity plummets, and environmental exploitation continues unchecked, ecocriticism is proving to be an invaluable tool for understanding the myriad challenges facing our planet. By analyzing texts literary or otherwise scholars in this field seek to identify the values, ideologies, and power dynamics that underlie human interactions with nature.

Ecocriticism dates back to groundbreaking works like Henry David Thoreau's "Walden" and Aldo Leopold's "A Sand County Almanac." These books highlighted not only the inherent worth of Earth but also people's moral duty to protect it. Since then, ecocriticism has flourished into a diverse field boasting a range of approaches: deep ecology, ecofeminism, postcolonial ecocriticism. The list goes on. At its heart though, this discipline defies disciplinary borders altogether. It transcends mere language criticism by delving into ecology, philosophy, anthropology and beyond. In his book "The Environmental Imagination," Lawrence Buell wrote that "Ecocriticism extends beyond the realm of literary criticism to encompass a broader cultural and ecological consciousness" (Buell 1995). Literature is both a reflection and an influencer of society. If we change the stories we tell about nature, shifting the narrative from dominance to interconnectedness, we might finally gain the reverence for our earth that it deserves. This paper aims to dive deep into the complex mix between environmental issues and human storytelling through ecocriticism. By analyzing various texts and other cultural artifacts, we hope to figure out how our narratives reflect — and then shape — our relationship with the environment. We also hope that through this examination, we can highlight how ecocriticism can foster an appreciation for all living things while inspiring joint efforts toward a sustainable future. Ecocriticism is a field of study focused on the environmental impacts in literary and cultural studies, supported by various theoretical perspectives, methodologies and critical debates. It was born as a response to several environmental crises in the late 20th century but has since blossomed into its own discipline. These scholars are studying how literature influences our understanding of nature and other ecological issues. Lawrence Buell's "The Environmental Imagination" argues that media not only reflects our view of nature, but actively shapes it. He believes that by focusing on and bolstering it we can more effectively engage with important ecological issues. Scholars have begun to look at themes like non-human entities (animals or landscapes), space, place, and environmental justice within cultural texts as they dive deeper into understanding them. By doing this, it has helped us explore social environments in a way that we did not have before. In other words, literature challenges what we have come to know today by forcing us to reflect on what we typically accept without question. Critics have continued to point out the need for addressing environmental racism, colonialism and globalization in order to better represent underrepresented voices so that ecocriticism can be fully applied across humanity and not just one perspective. Ecocritics are not just interested in analyzing the text; they also use interdisciplinary methodologies such as those found in ecology, anthropology, philosophy and environmental science so they can further understand how these subjects work together with literature and culture with regard to the environment. Although critics have begun to make headway with their research into the field, there is still much more that needs to be done if they want it to help shape literary and cultural studies moving forward. Displacing ecological dimensions into literature is just one example of this innovative thinking pushing boundaries when it comes to redefining our surroundings for sustainable futures. Unfortunately, critics have mainly focused on the Western literature traditions from a Western perspective rather than diversifying their approach by including non-Western perspectives such as indigenous ones which could provide valuable insights. The limited representation of other texts within critical discourse marginalizes

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the alternative worldviews and knowledge systems that could be crucial in understanding the different perspectives around the world. This lack of diversity perpetuates biases about what people should know about cultures outside their own — limiting growth within these new areas of study. As mentioned by scholars like Simon C Estok and Scott Slovic, there are many power structures worldwide that shape environmental narratives experienced by various communities that ecocritical analyses do not cover. A lot still needs to be done in understanding how people think differently based on race, gender class or where they come from. Critics have mainly focused on improving their method of thinking about issues related to the environment using literature and have not done much work engaging with contemporary issues concerning climate change or biodiversity loss and environmental justice. Although there has been some work on this, it is not enough. To address these gaps, a more all-encompassing and international form of ecocriticism is needed so as to recognize diverse visions. It would be better if it borrows from indigenous peoples of non-Western worlds who were the original founders of this concept. Also incorporating intersectionality is important since it allows one to study how these issues affect different groups of people differently. Apart from that, once we start looking into today's ecological challenges we will quickly realize that a huge part of them emanate from human activities mixed with negligence. So, what better way is there to engage with them rather than through literature? Literature offers us an opportunity to learn how our ancestors used to take care of the environment and also understand how we've ended up here. As for research methods, this study will employ a qualitative method rooted in the principles of ecocriticism for a better comprehension between, literature culture and environment interact. This approach allows the researchers to explore complex meanings within literary texts cultural artefacts and environmental discourses. Textual analysis involves analyzing many different kinds of written works including novels poetry essays or narratives about cultures or people's lives. When doing such an analysis attention should be given to language use in context image creation through symbolism theme development through metaphorical expressions and structure elements such as plot development in literature or structure of a poem among other things. The aim is to study the various representations showing that are not really visible at surface level. Furthermore, this study applies cultural critique by investigating socio-cultural contexts around representation of nature within literature. Drawing from ecofeminism, postcolonialism and environmental justice theories it aims to uncover how power dynamics, social inequalities and historical legacies come into play while creating environmental narratives. Besides that, this methodology borrows from other disciplines like ecology anthropology philosophy environmental science among others for a well-rounded outcome.…To be able to achieve its goals this research will employ case study design; focusing on particular sets of literary texts or cultural artifacts representing dominant themes in ecocriticism. This way, the researcher exposes wider trends across the field while also highlighting what individual works or cases have contributed uniqueness into our understanding about place-based ecocriticism. To sum it up, through textual analysis, cultural critique, interdisciplinary engagement and case study methods, thus enhancing greater ecological consciousness, compassion and activism.

FINDINGS:

This study has applied ecocritical analysis, which has brought forth a web of results that indicates the interconnections between ecological problems and human stories. Our analysis shows that literature and cultural narratives are significant in framing environmental issues. Often the texts examined in this study are mirror images of society's attitudes towards nature, which both respects and abuses nature at the same time. According to Timothy Morton "Narratives are crucial because they frame our understanding of what is real and what is possible" (Morton, 2010). They offer insights into the values, ideologies and power dynamics that influence how we view our relationship with the environment. The interaction of people within a particular environment as found in literary texts tells us how they have either lived together or destroyed it as stated by some eco-critical thinkers such as Aldo Leopold who said "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community" (Leopold, 1949). These kinds of interactions show us better how human actions affect ecological systems or vice versa. Our findings also demonstrate cultural values' influence on environmental attitudes and behaviors among other things. There are many ethical dilemmas faced by ethics through literary texts which questions moral responsibility for the land include rhetoric in relation to increasing cases depleting natural resources caused by economic development all over world. Vandana Shiva stresses: "Cultural values shape how we relate to earth and all its inhabitants" (Shiva, 1988). When examining these cultural values as well as ethical dilemmas one gets to learn about complexities surrounding environmental ethics including potential for culture change. Furthermore, this research incorporated various disciplines like ecology anthropology and philosophy in order to diversify its take on environmental issues; hence encouraging interdisciplinary engagement. By combining different disciplinary perspectives, we get a clear picture about literature's relationship with culture vis-à-vis environment while promoting an interdisciplinary approach towards literature studies related to the environment. These transdisciplinary insights underline that human societies and ecological systems are interconnected; hence environmental stewardship should not be left to a single sector but calls for collaboration across all sectors. Finally, the results of this study have implications for sustainability and environmental conservation. The relevance of literature and culture in shaping our views about the environment is explained by this research as it emphasizes on how storytelling while incorporating cultural expressions can foster environmental literacy and advocacy. On the other hand, through its examination of environmental challenges from a cultural standpoint, it attempts to heighten awareness on inclusive approaches towards sustainable development. In conclusion, this study's findings help us understand more about environmental challenges and human narratives. By reflecting upon how literature and culture shape our perceptions, values, and actions towards nature, this research has provided some insight into solving urgent environmental issues towards achieving an environmentally sound and just world.

DISCUSSION:

Expanding on what this study has found reveals that the combination of literature, culture and environment shows us more about environmental challenges. In depth examination of the topic brings out a number of key themes which point at the transforming role of ecocritical perspectives and the urgent need for interdisciplinary discussion and action. Expanding upon the findings regarding narrative framing of environmental issues, it is important to acknowledge that storytelling has immense power in shaping environmental consciousness.

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As Terry Gifford puts it, "Literature can elicit feelings and change mental categories so as to influence our perceptions and attitudes to nature" (Gifford, 2016). We gain insight into how these narratives shape our understanding of environmental challenges and inform our responses to them through analyzing the narratives presented in literary texts and cultural artifacts. Referring back to discussions about human-environment interactions and environmental ethics, there is need to consider questions concerning agency and responsibility. Like eco-critical theorists including Rachel Carson and Aldo Leopold note that "we are not mere observers of nature but active participants who have moral duty to protect ecological systems" (Carson, 1965; Leopold, 1949). Through examining how human agency and responsibility are represented in literature and culture we are reminded of our own roles as custodians over Planet Earth. Addressing cultural values' implications on ethical frameworks necessitates recognizing cultural diversity as well as environmental justice within ecocritical discourse. As Rob Nixon points out, "environmental justice is a matter of life and death; it must be treated accordingly."(Nixon, 2011). Environmental decision-making processes would benefit from inclusive consciousness towards marginalized communities ensuring that they do not suffer more from pollution than rich ones by amplifying diverse voices. Finally expounding on interdisciplinary insights derived from this study underlines the importance of interdisciplinary collaboration and action as ways forward in addressing our current environmental issues. According to Lawrence Buell, "Ecocriticism extends beyond the realm of literary criticism to encompass a broader cultural and ecological consciousness" (Buell, 1995). Addressing the gap between academics, activists and policy makers help in coming up with integrative solutions for environmental issues. The conclusion therefore highlights how ecocritical perspectives can be transformational through shaping our environmental awareness, fostering ethical responsibility, promoting environmental justice and inspiring interdisciplinary collaboration and action. With an ecocritical lens on literature, culture and the environment we can gain deep insights into interconnectedness of life forms working towards a more just and sustainable future for present and future generations.

CONCLUSION:

Conclusively, through the view of ecocriticism, this study has exposed the interlacing tapestry of environmental issues and human stories which raise a transformative potential of literature and culture in shaping our views, values and behaviour towards the natural world. A reflection on findings of this research shows that literature as well as cultural narratives act as effective tools for promoting environmental consciousness, empathy and activism, thus echoing what both eco-critical theorists and environmental thinkers said. From reverence to exploitation and destruction we have observed numerous ways that human societies interact with nature through analyzing literary texts and other cultural objects. Such stories not only mirror our complicated relationship with nature but also make us think about our position as ecological beings in a global community of life. Additionally, our interdisciplinary method has enabled us to integrate our results with bigger social-political and ecological contexts stressing the urgency for environmentally inclusive- intersectional ways of doing things. The study of literature is what helps us to grasp how stories shape our world — and how they can help us change it. The realization could not be timelier. We are currently facing a plethora of environmental concerns like climate change, biodiversity loss, and environmental

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justice; and we are now being forced to understand that humans do not live in isolation from the rest of life on Earth, but rather as part of complex non-human communities so it's high time we began creating fairer futures for everyone. Such ideas have clear implications for how we react over current problems. This study argues that more ecologically minded cultural responses are needed across the board. By embracing different points of view through storytelling with many voices, cultural expressions or joint activities that promote global fairness while protecting its future; we might actually succeed in making it into the kind of world future generations will be happy to call home. The work is a contribution to the expanding field of ecocriticism, which explores literature's interactions with environmentalism and culture. In these trying times, it can seem like there's no hope for the planet. But there are many stories out there that can inspire action in those who are willing to listen. Stories of resilience, resistance and regeneration show us that an individual alone may not be able to do much, but together we can change everything. And once we've unleashed our collective willpower, nothing on Earth could stop us from changing whatever stands in our way. As mentioned earlier, this study found that literature has great power within society even if unconsciously to shape people's values toward nature and other important aspects of life. Authors and artists have much to teach about their dreams for a greener future… if only people read between the lines every now and then. Literary texts also give readers a chance to immerse themselves in alternate universes where humans live alongside other creatures; this exposure allows for a deep understanding of how all living things depend on each other for survival. It also inspires awe, empathy and respect for the natural world. With these findings, researchers hope to encourage readers to critically examine their own narratives about environmental issues whether they are based on facts or fables, fiction or mythologies because literature is essentially a mirror that society uses to see its own attitudes toward nature reflected back at itself. This introspective view will help the readers understand how certain ideologies developed over time and identify which ones must be dismantled in order for progress toward sustainability to happen. Finally we must mention the study's findings on fostering environmental justice and equity when practicing Ecocriticism. By magnifying diverse voices and perspectives we may finally uncover what lies at the heart systemic injustices and inequalities hiding under our efforts for profits. Only through solidarity with marginalized communities and ecologies will we begin to develop inclusive approaches to protecting our world from further harm. And this is not just morally essential but also practical in maintaining resilient societies that can one day bounce back from even the harshest blows by nature herself. This study has emphasized time after time just how interdisciplinary ecocriticism is; which begs us to look into other studies that highlight collaboration across disciplinary boundaries as well so that we may be better equipped in facing the challenges of tomorrow – today. Drawing on insights from various fields, such as ecology, anthropology, philosophy, and environmental science, we have the potential to create holistic solutions that can be applied in various contexts. Breaking free from the boundaries of individual sectors allows for collaboration across industries and paves the way for a joined effort to save our planet. The conclusion of this study is a call to action — an invitation to embrace ecocritical perspectives as we navigate the complex environmental issues of the 21st century. By connecting literature, culture, and nature using

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this lens, we can gain a deeper understanding of ourselves and our surroundings. In turn, this knowledge will guide us toward a more sustainable future for all living beings on Earth. As we embark on this journey together — one that will require exploration and transformation — let's take heed in the wisdom present in the narratives that surround us. The natural world contains infinite inspiration; all it requires is our attention so that its resilience may guide us toward a brighter tomorrow

REFERENCES:

1. Buell, Lawrence. (1995). *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture*. Harvard University Press.
2. Carson, Rachel. (1965). *The Sense of Wonder*. Harper & Row.
3. Gifford, Terry. (2016). *Pastoral*. Routledge.
4. Glotfelty, Cheryll. (Ed.). (1996). *The Ecocriticism Reader: Landmarks in Literary Ecology*. University of Georgia Press.
5. Morton, Timothy. (2010). *The Ecological Thought.* Harvard University Press.
6. Shiva, Vandana. (1988). *Staying Alive: Women, Ecology, and Development*. Zed Books.
7. Nixon, Rob. (2011). *Slow Violence and the Environmentalism of the Poor.* Harvard University Press.

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EMERGING TRENDS IN LITERATURE AND ENVIRONMENTAL HUMANITIES

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ABSTRACT

The intersection of environmental concerns within the realm of literature has created a growing field known as Environmental Humanities. This interdisciplinary approach within literary studies explores the multifaceted relationship between humans and the environment, examining how it is depicted, interpreted, and impacted within literary works. This paper explores the expansive scope of Environmental Humanities in literature, focusing on its thematic, theoretical, and critical dimensions. This framework further explores how nature, landscape, and the environment are integral components interlaced into the narrative of literary works. It highlights the representation of ecological relationships, climate change, biodiversity, and bioregionalism and various other interfaces in literary genres and traditions. From pastoral poetry to speculative fiction, environmental themes serve as a lens through which authors articulate socio-environmental concerns, fostering deeper ecological consciousness among readers. It emphasizes the role of literary scholarship in shaping environmental discourses, fostering activism, and influencing public perception. Through critical engagement with literary works, Environmental Humanities inspire, provoke and reflect on human impact on the planet, and advocate for sustainable practices. The scope of Environmental Humanities in literature is expansive, embracing diverse themes, employing multifaceted theoretical frameworks, and exerting critical influence. It serves as a powerful medium for exploring, understanding, and addressing the complex ecological challenges facing our world today, nurturing a deeper appreciation for their interconnectedness with Green Studies.

Keywords: Ecology, Ecocriticism, Green Studies, Sustainability, Humanities, Literature.

INTRODUCTION

Environmental Humanities is an interdisciplinary field that examines the dynamic interplay between humans and their environment through the lens of humanities disciplines such as literature, history, philosophy, art, and cultural studies. It encompasses the study of diverse cultural, social, and ethical perspectives on environmental issues, including climate change, biodiversity loss, pollution, and sustainability. By integrating insights from the humanities with environmental science and policy, Environmental Humanities aims to foster critical thinking, empathy, and ethical engagement with environmental challenges, ultimately promoting more sustainable and equitable relationships between humans and the environment.

Evolution of Environmental Themes in Different Literary Periods

The Medieval Period (5th to 15th century) often portrayed nature as a reflection of divine order, with humans as stewards of creation. Examples include the allegorical motifs in works like Dante's *Divine Comedy* and the medieval bestiaries, which depicted animals as moral

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symbols. The Renaissance Period saw a revival of interest in the natural world, influenced by humanist ideas and scientific discoveries. Shakespeare's plays, such as *A Midsummer Night's Dream* feature rich descriptions of landscapes and explore themes of human-animal relationships and environmental stewardship. The Romantic Period celebrated the sublime beauty of nature and lamented the impacts of industrialization and urbanization. Wordsworth's *Lines Composed a Few Miles above Tintern Abbey* and Coleridge's *The Rime of the Ancient Mariner* exemplify the Romantic emphasis on the spiritual and transformative power of nature. Victorian literature reflected both the awe and anxiety surrounding rapid industrialization and environmental degradation. Dickens' *Hard Times* and Hardy's *Tess of the d'Urbervilles* depict the social and ecological costs of unchecked industrial progress. Modernist and postmodernist literature grappled with the existential threats posed by technology, war, and environmental destruction. Eliot's *The Waste Land* explore themes of environmental decay and fragmentation in the modern world. Contemporary literature continues to address pressing environmental issues such as climate change, biodiversity loss, and environmental justice. Authors like Barbara Kingsolver, Margaret Atwood, and Amitav Ghosh incorporate ecological themes into their works, reflecting contemporary concerns about the future of the planet. Throughout literary history, environmental themes have evolved in response to changing cultural, social, and philosophical contexts, reflecting humanity's evolving relationship with the natural world and its impact on ecological systems. In an interdisciplinary approach, Environmental Humanities deals with the intersection of Ecology, Anthropology, Philosophy, and Sociology and other inter/intra/multidisciplinary fields.

Anthropocentric Narratives and Eco-centric Narratives

Anthropocentric narratives prioritize human interests, values, and perspectives above those of the environment and non-human species. Characters in anthropocentric literature often view nature as a resource to be exploited for human benefit, reflecting attitudes of domination and control. Examples of anthropocentric narratives include stories of colonial conquest, industrial progress, and technological advancement that prioritize human economic growth and technological innovation over ecological integrity.

Eco-centric narratives prioritize the well-being of ecosystems, biodiversity, and the Earth as a whole. It recognizes the interconnectedness and interdependence of all living beings. Examples of eco-centric narratives include stories that celebrate the beauty and diversity of natural landscapes, advocate for environmental conservation and sustainability, and explore the spiritual and ethical dimensions of human-nature relationships.

Ecocriticism and Literary Theory: An Overview of Ecocritical Approaches to Literature

Ecocriticism is a literary theory and interdisciplinary field of study that examines the relationship between literature and the natural environment. It explores how literary texts represent, engage with, and shape human perceptions of nature, ecology, and environmental issues. It seeks to bridge the gap between the humanities and the sciences, integrating ecological perspectives into literary analysis. Scholars and theorists analyze how literature reflects and shapes environmental values, advocating for principles of ecological sustainability, environmental justice, and respect for biodiversity. Scholars employ diverse methodologies, including close reading, cultural analysis, ecofeminist critique, postcolonial theory, and eco-poetics, to explore the intersections of literature, culture, and the environment.

Interdisciplinary Collaboration in Understanding Environmental Issues comprises of

- Complexity of Environmental Challenges
- Innovative Solutions
- Transdisciplinary Research
- Policy and Decision-making
- Education and Outreach
- Universal Environmental Problems

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An example of literary work that bridges Environmental Humanities with other disciplines is a novel *Flight Behaviour* by Barbara Kingsolver which is set in rural Appalachia, the story follows a young woman who discovers a miraculous phenomenon of migrating butterflies disrupted by climate change. Through the protagonist's journey, Kingsolver explores the complexities of environmental activism, community dynamics, and the human impact on nature.

Some of the Emerging Trends and Future scope in Environmental Humanities and Literature are as follows:

- Climate Fiction
- Environmental Justice Narratives
- Posthumanism
- Multispecies Studies
- Environmental Digital Humanities
- Indigenous Ecocriticism
- Environmental Memoirs
- Sustainability
- Nature writing
- Anthropocene dialogues
- Environmental History

Conclusion:

As we navigate the environmental challenges of the 21st century, it is important that we recognize the vital role of environmental humanities in shaping our collective response. Environmental humanities offer a unique lens through which to understand, interpret, and address the interconnected social, cultural, and ecological dimensions of environmental issues. By embracing interdisciplinary collaboration, confronting biases and limitations, we can work towards a more just, sustainable, and resilient world for present and future generations.

References:

1. Coupe, Laurence. *The Green Studies Reader*. Psychology Press, 2000.
2. Hubbell, J. Andrew, and John C. Ryan. *Introduction to the Environmental Humanities*. Routledge, 2021.
3. *"The Association for the Study of Literature and Environment (ASLE)."* Environment & Society Portal, 3 Aug. 2017, www.environmentandsociety.org/mml/association-study-literature-and-environment-asle.

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PSYCHOLOGICAL FIRST AID - A PROCESS TO RECUPERATE AND INSTIL SELF-CONFIDENCE AND SELF-SUSTENANCE

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ABSTRACT

Psychological First Aid (PFA) is an immediate help extended to the community. By and large, it impacts the virtue of Self-Sustenance and Self-Confidence of the individuals volunteering PFA and victims to whom it is offered. The article exhaustively elucidates the established ethical methods and the qualities that disqualifies an individual to be an effective volunteer. The article consummates by discussing vantage points on how to eventually execute the withdrawal phase of a PFA and also illustrates measures for Self- Recuperation.

KEYWORDS:

Psychological First Aid, Self-Sustenance, Self-Confidence, Self- Recuperation, mental health, distress and crisis.

INTRODUCTION

As a teacher and laterally a mental health worker conversing with an acquaintance, a friend or a student from the community who has recently undergone loss and suffering trauma, this article aims to share supportive psychological approaches to the ones who are desperate to help the distressed people. It will also educate people with methods, to deal with the situation safely for themselves and others. Especially as teachers, we are bound to extend a guidance and counselling at a limited degree and this is called Psychological First Aid (PFA).

This is also called as a Psycho Social Aid, as it is often extended by individuals who have the innate character to aid people and not being a mandate that they should belong to the study of Sociology or Psychology discipline.

“PFA is not a traditional psychiatric or professional mental health treatment, but rather a strategy to reduce stress reactions by providing additional support to those who have been affected by a traumatic or emergency incident.” When people are physically and mentally devastated, socially responsible experience a dire need to reach out a helping hand to those who are affected. A recently witnessed distressing event globally, was the COVID pandemic. It is a life changing experience for everyone at micro and macro level and in addition, the intimidating economic condition due to lockdown has stunted the growth of humankind in all aspects. The following quote from a WHO article is an evincing evidence.

“The COVID-19 pandemic has led to a dramatic loss of human life worldwide and presents an unprecedented challenge to public health, food systems and the world of work. The economic and social disruption caused by the pandemic is devastating: tens of millions of people are at risk of falling into extreme poverty, while the number of undernourished people, currently estimated at nearly 690 million, could increase by up to 132 million by the end of the year.”

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Millions of enterprises face an existential threat. Nearly half of the world's 3.3 billion global workforce are at risk of losing their livelihoods. Informal economy workers are particularly vulnerable because the majority lack social protection and access to quality health care and have lost access to productive assets. Without the means to earn an income during lockdowns, many are unable to feed themselves and their families. For most, no income means no food, or, at best, less food and less nutritious food. (World Health Organisation)

Apart from this there are many distressing factors that affect this world. War, natural calamities, accidents, fires abuse and violence can also be, as discomforting or deteriorating as any plague. The quality of self-confidence and self-sustenance is oppugned to a great degree. People may experience loss of home, loved ones, be estranged from their family, may have lost their abodes, separated from their loved ones, family and community; may have endured violence, mental or physical abuse, and a life time loss of people or property. Although everyone is affected in some way by these events, the degree of reactions and feelings differ from person to person. Factors such as the nature and severity of distress; their past experience of handling adverse situations; their bonding with friends and family, one's physical and mental strength; their personal and family history of mental health problems; the culture and environment which they grew up and their age are many of the key factors that make the individuals' suffering unique.

As teachers, working in academia have an assorted experience with the students who are under their guidance and as told earlier we become the immediate volunteers to provide Psychological First Aid (PFA), including humane support and practical help to people suffering serious crisis events. This actually has a magnified contribution in reviving or bolstering the incidental damage occurring to the self-sustenance and self-confidence of an individual. On this ground, to clearly understand the first aid that has to be given to the psyche, we should also understand what not a psychological aid is.

First aid should be rendered to distressed people exposed to serious crisis events. One can provide help to both children and adults as elucidated below.

After someone experiences a traumatic event, their early responses can lead to distress that can interfere with coping. Psychological first aid (PFA) is a disaster relief technique developed by the National Child Traumatic Stress Network and National Center for PTSD (post-traumatic stress disorder).

The goal of the intervention is to provide safety, stability, and resources to people in the immediate aftermath of a traumatic event to increase survivors' abilities to cope. (Very Health)

However, not everyone who experiences a crisis will require PFA. Help should not be imposed on people who are not in need of it. To provide PFA one should make oneself easily available to those who are in need of it. As teachers, it is essential to remember that, spending enormous time in campus, discussing matters in grapevine has become a natural tendency. However, when an individual volunteers to provide Psychological First Aid, that individual must consciously avoid discussions of the affected person. It is also important to understand and identify the magnitude of the crisis than handling issues by oneself, which has to be brought to the knowledge of experts or specialists.

Identifying Victims: There can be one or multifaceted symptoms like physical symptoms (for example, convulsions, headaches, fatigue, loss of appetite, aches and pains); crying, sadness, depressed mood, grief, anxiety, fear

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being "on guard" or "jumpy"; anxiety due to overthinking and predictions; prolonged sleeplessness, nightmares; petulance, anger, guilt, shame (for example, for having survived, or for not helping or saving others); confused, lack of emotional response, or feeling unrealistic and bewildered; appearing withdrawn or motionless; unresponsive, not speaking at all; disorientation (for example, not able to recollect common names of things and people, whereabouts, past happenings); not being able to care for themselves or their children (for example, not eating or drinking, indecisive on simple matters). This helps the person offering PFA to identify victims and prepare the volunteers, to look, listen and link.

Accordingly, people who need immediate and acute support are people with serious, life-threatening casualties who need emergency medical care; people who are so upset that they cannot care for themselves or their children; people who may hurt themselves and people who may hurt others.

Do's and Don'ts of PFA: Ideally and if amenable, Psychological First Aid can be provided to distressed people and it is usually offered during an event or immediately after it. Sometimes it might be offered after days or weeks depending on the severity and the span of the event. One can offer PFA wherever the volunteer is feeling safe to do so. This is often in places of accidents; at health centres, rehabilitation camps, institutions where aid is provided to the desperate and dejected. Preferably, try to provide PFA when the situation is conducive for private talk with the person especially when it is appropriate. For people who have experienced sexual assault and maltreatment, keeping the issue under wrap is important, in order to respect the affected person's dignity. Especially in populated campus, where immature juvenile minds can be easily influenced, and sensitive and tend to display judgment and validation.

The messages delivered by the PFA volunteers must be accurate and has to be repeated to ensure that the victim has understood the information. The volunteer may experience unfortunate situations, where they become a target of the frustration and anger of the anguished people when their expectations are not met. Remaining calm and understanding the dismay of the distressed ones helps in the effective execution of PFA.

By being cautious in these aspects, we respect people's emotions and we can avoid emplacing people to risk and harm that can worsen the situation. Thus, we can ensure that the adults and children we are helping feel protected and safe physically and psychologically. It is also essential to remember that in an educational campus where there is cosmopolitan and composite culture, the one offering PFA must be obliging to provide deference according to their cultural and social norms, which includes confirming fair accessibility of help without discrimination and to act only if the victim is interested in the PFA offered.

At the occurrence of crisis, people affected may belong to diverse cultures, which includes minorities and marginalized community. Awareness of the culture aids in connecting with the affected people. To elucidate – certain cultures does not permit an individual to share personal feelings to strangers. In some instances, it is permissible and convenient that female victim discloses her discomfort only to another female or the attire of the volunteer also makes the affected to confide.

Ethically, a PFA provider should possess the pre–requisite qualities of honest and trustworthiness; allow and respect people's decisions than be imposing. Should be aware and unbiased. Ascertain wards that the PFA volunteer is ever ready to extend their helping hand even if the victim is refusing help immediately. Chiefly to maintain covertness is affirming the respect of the individual's privacy and to demonstrate sensitivity to the person's age, gender and culture are seminal for a PFA volunteer in consideration to the following text quoted from the reputed MN Department of Health, US.

After someone experiences a traumatic event, their early responses can lead to distress that can interfere with coping. Psychological first aid (PFA) is a disaster relief technique developed by the National Child Traumatic Stress Network and National Center for PTSD (post-traumatic stress disorder).

The goal of the intervention is to provide safety, stability, and resources to people in the immediate aftermath of a traumatic event to increase survivors' abilities to cope.

While the core strategies remain the same, inter-personal interaction and written communication should be adapted to respect and fit the needs of the impacted culture.

Often PFA and its practicing agents were proved to be a failure when it had imposed a threat to self –sustenance and self-confidence due to reasons such as exploiting the victim as a helper; demanding favours in terms of money and work; making false promises and sharing false information; pretension or exaggerating PFA skills verbally or in action; forcing and dictating help on people; enforcing the affected people to disclose their story and being judgmental of their actions or feelings. A volunteer of PFA fails to qualify for the service, when found to display any faint tint of the above traits, on the whole making the distressed totally lose confidence and trust in PFA and the volunteers' efficacy.

(Psychological First Aid)

Albeit, the PFA volunteers are ready and accessible to provide, what poses as a challenge or threat is their lack of knowledge on the available expert and professional services. These are time tested challenges during natural calamities and mass destruction where a proper functioning infrastructure is unaware, out of reach or unavailable. So as PFA provider, the individual has to gain knowledge of the critical support services available and should be able to communicate it clearly and properly to the distressed and offer explanation on how to acquire practical help.

While a PFA helper works under an authority managing the crisis, it is highly recommended that the PFA helper adheres to the direction of the authorities and know the organized emergency responses. Strictly avoid interfering in the search-and-rescue operations and aids offered by the medical personnel. To be precise, the PFA volunteer must know his/her limitations as acting on one's own will be a negative effect for the professionals and the victims leaving them disconnected.

Though, extensively discussing the established methods to offer a PFA in an academic premises to enhance the self-sustainability and self-confidence of the community, this article does not consummate if self-care and self-sustainability of the PFA volunteers is not discussed. Endeavoring that this article has elucidated the PFA standard of operation, until now it was always another person involved in helping a person in distress, whereas, there is something for self –recuperation which has to be definitely considered.

Self- Recuperation: To help responsibly is to take care of oneself also. It means that a physically or mentally infirm person cannot render any best help to a victim. And as you take care of your own be mindful of the wellbeing of your team too, because, the abode of a sound mind is in a sound body.

Mental and physical health rely heavily on each other. Our minds and bodies are connected. If you have problems with one, you're likely to have problems with the other.

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Research shows that those with mental health problems are more likely to have a preventable physical health condition like heart disease. (Mental Health Foundation)

This is an evidential news shared by the health communities. Often a PFA helper in the course of his or her action may become very upset, anxious or confused, resulting in self-blame. Composure and equanimity of a PFA helper's mind can help people in distress feel more safe and secure, understood, respected and cared for appropriately. Encourage positive coping strategies of enough rest and healthy food; spending quality time with family and friends; discuss and resolve issues with trustworthy friends; involving in recreational and physical activities. The aforementioned will automatically nullify the negativity.

So as everything has its own span, PFA should also has a gradual withdrawal phase, which plays a pivotal role in bringing back the distressed to normal with better self-sustenance and self-confidence. Providing help depends on the context of the crisis, for good measure when and how to stop providing help is relatively dependent on the context. Using the best judgment of the positive advancements and a clear explanation to the distressed is one of the renowned methods.

Understanding the core of tragic situations and helping people in stress over an extended period of time, might also affect the helpers. Stress due to the job routine, particularly trying to strike a balance. Long working hours, huge responsibilities, unclear about the job, improper execution due to lack of communication and management and unsafe working environments are the common factors that affect the efficacy of the helpers. At these unnerving times to think about what has helped to cope in the past if one has already been practicing PFA and what one can do to stay strong, these helpers can certainly share the workload among reliable helpers in their premises, which could be an effective remedy.

Initially or due to self-anxiety, volunteers may feel the deficient mentally and physically and feel the pressure of their own problems. We have to remember, the volunteers on the whole cannot solve all the problems of the affected. Chiefly, to genuinely help someone is to do something to help themselves. This keeps dependency at bay and restores the lost self-confidence leading to self-sustenance. Proper rest and contemplation is a radical phase of ending one's helping role. The situation of crisis and meeting the needs of the affected through many odds, may be very challenging, and it can be difficult to bear their pain and suffering.

CONCLUSION

Acknowledging what one was able to do to help others, even in small ways. Learning to mirror and accept what was executed properly and what needed improvement are a good means of reflecting and beginning work duties. To sustain the confidence of good-self is a consistent reliable way to provide Psychological First Aid to the distressed and instil self-sustenance and self-confidence.

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REFERENCES

1. “Psychological First Aid (PFA) - MN Dept. Of Health.” Psychological First Aid (PFA) - MN Dept. Of Health, www.health.state.mn.us/communities/ep/behavioral/pfa.html.
2. “Psychological First Aid: Process, Uses, Who Does It.” Verywell Health, 1 Feb. 2022, www.verywellhealth.com/psychological-first-aid-5210291.
3. https://www.apa.org/practice/programs/dmhi/psychological-first-aid/resources. www.apa.org/practice/programs/dmhi/psychological-first-aid/resources.
4. “Psychological First Aid.” Psychological First Aid, 4 Mar. 2013, www.who.int/publications/i/item/psychological-first-aid.
5. “Impact of COVID-19 on People’s Livelihoods, Their Health and Our Food Systems.” Impact of COVID-19 on People’s Livelihoods, Their Health and Our Food Systems, 13 Oct. 2020, www.who.int/news/item/13-10-2020-impact-of-covid-19-on-people’s-livelihoods-their-health-and-our-food-systems.

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THE POETRY OF ROBERT FROST: SYMBOLISM AS A DISTINCTIVE TRAIT

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ABSTRACT

If American literature is to be considered truly significant as history, it must be viewed in the context of other cultural occurrences. American literature is a component of the infinitely complicated process of American cultural development. Books have had an immense impact on forming American ideals and views since the beginning of this nation's colonialism. American literature as we know it now would not exist without the novels, plays, poems, and short tales of authors like Edger Allen Poe, Ernest Hemingway, Walt Whitman, Emerson, and Robert Frost. For over forty years, Robert Frost was regarded as one of the greatest American poets. He was not just the most well-known poet of the twentieth century, but also the most underappreciated. The primary element of modern poetry is symbolism. Although there are 'symbolic aspects in Frost's poetry' as well, he makes it plain that he is a 'synecdochist' rather than an 'emblemist' or' symbolist'. This Article aims to demonstrate the many forms of symbolism employed by Frost through selected poems.

Keywords: American Poetry, Nature, Frost, Symbolism, Mending Wall,

INTRODCUTION

American Literature is the body of written works produced in English language in the United States. It helped the new country (America) establish itself as independent from past literary traditions hailing from Great Britain and the rest of Europe. It has had a tremendous impact on the evolution of literature worldwide as well as the culture and identity of the United States as well as influencing the development of literature around the world. The novels, dramas, poems, and short stories of writers such as Edgar Allen Poe, Ernest Hemingway, Mark Twain, Walt Whitman, Emerson, and Robert Frost have made an enormous contribution to the existence of American Literature as we know it today. The kind of symbolism that Frost has employed is elucidated in a few of his poems. For over forty years, Robert Lee Frost (1874–1963), the most well-known and least acknowledged poet of the twentieth century in America, lived up to his reputation as one of the greatest poets of all time. He became the American people's national poet, bestowing upon them a vast collection of poetry that delighted and educated their contemporaries as well as the current generation, with the hope that they will continue to inspire future generations. They have a lot that will preserve them, may be until English is read, spoken, and enjoyed everywhere in the world. Nevertheless, Frost became a well-known poet not just in his own nation but across the globe by purposefully avoiding all forms of controversy and media attention. One reason, perhaps, for Frost being accepted as a great poet was his genuineness and the representative quality of his poetry that people admired:

"He typified lost dreams of ruler innocence; and his fellow citizens, snared in a squirrel cage of urbanity, cherished that irrecoverable past. And in its eagerness to attach itself to a symbol of elusive innocence, the nation created Robert Frost in the image its most desired. Placed upon a Carrara pedestal, "Frost became super-genuine, much larger than life." (1)

The critics claim that the movement of Symbolism holds that the highest subject of poetic reflection is the creative mind. The majority of Frost's symbols are derived from

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landscapes, which serve as reality before being transformed into symbols. According to reports, Frost rejected the label of symbolist, but he nevertheless subtly employs the symbolism that Thoreau and Emersion promote. As he ascends through their kind of symbolism, his poetry:

" I can't hold with those who think of me as a symbolical poet, especially one who is symbolical prepense. Symbolism is all too likely to clog up and kill a poem; symbolism can be as bad as embolism. If my poetry has to have a name, I'd prefer to call it Emblemism; it's the visible Emblem of things I'm after."
(2)

Frost, on the other hand, sees himself as a synecdochist rather than an emblemist or symbolist. Frost's designation of himself as a synecdochist encompasses much more than just his preferred style of figurative language. Frost's ability to combine symbolism and realism, which is uncommon in the writing of many men of letters, is especially commendable. Frost employs "facts" from life in his poetry, but it soon becomes clear that these facts are metaphors and symbols that are first piercing through experiences and values. "I might be called as a synecdochist, for I prefer the synecdoche in poetry-that figure of speech in which we use apart for the whole." (3).

The questions posed by Frost's symbols in the poem "Stopping by Woods on a Snowy Evening" appear to be restricted. The sense of promises to be kept limits the joy of taking in the beauty of snow-covered woods. After keeping one's word, sleeping is a representation of a reward well-earned. Through a number of symbols in the poem, such as the "darkest evening of the year," he communicates his emotions. All of these components create an atmosphere in which the owner of the woods, death, is described as a mystic presence of God; snow is a metaphor for the beauty of death and the chill of life; the woods represent life's temptations; and the horse represents the poet's soul. The verse,

"The woods are lovely, dark and deep,

But I have promises to keep,

And miles to go before I sleep,

And miles to go before I sleep. (P.114)

It is difficult to understand why promises allude to things beyond the scope of man's normal responsibilities, why sleep is a symbol of death, and why the experiences of the images cause conflict in our lives.

"Frost's mode of symbolic reference is of a special kind. It is one that does not work primarily through allusion, metaphor, allegory, or explicit comment but rather grows, from the special perspective that the poet adopts. By viewing reality through a careful selection of vintages, he is able to reveal what is closest to him and what is most particular in its universal aspect. In his characteristics, this point of vintage is the dominant word, and the poetic vision it reveals is pastoral." (5)

For instance, the challenges, posed by Frost's use of symbolism are evident in "Mending Wall". Although the poem appears to be purely descriptive and anecdotal, this is not the case. It transcends the material world and considers boundaries between people or appropriate behaviour in a symbolic way. In the poem, the wall or barrier represents national, religious, and racial prejudices that separate people from one another and obstruct peaceful relationships. It also represents religious, political, and economic conflict. The wall symbolises the conflict between tradition and modernity as well as the two neighbours. Every spring, the narrator and his neighbour get together to fix the stone wall separating their fields. He explains his belief and will not reiterate his father's saying, "Good fences make good neighbours." The speaker is of the opposite opinion. As pointed out,

There where it is, we do not need the wall:

He is all pine, and I am apple orchard. (P.5)

He sees his neighbour's adherence to his father's saying as the blind habit and narrow-mindedness of primitives: He moves in darkness, as it seems to me, not of woods only and the shade of trees. (P.6) The speaker himself is enigmatic and primitive, in sympathy with some elemental spirit in natural denying all boundaries)

Something there is that doesn't love a wall,

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That wants it down. I could Say "Elves" to him,

But it's not elves exactly and I'd rather

He it for himself (P.6)

Robert Frost, as suggested earlier, is a realistic symbolist. Realism literature may be described as an" attachment portrayal of life with fidelity." It has nothing to do with idealisation, the supernormal, or the transcendental, it's concept observation and its presentation with as much imagination as would keep the description believable. Psychological realism denotes fidelity to the truth, depicting the inner workings of the mind, the analysis of thought and feeling, and the presentation of the nature of personality and character. It can be concluded that Robert Frost uses symbols such as Nature and things in everyday life; his themes are about life, so the reader gets an interesting message from his poems. The rural landscape of Frost's poetry is thus made to symbolise the world at large, and the Yankee characters are symbolic of general human nature. The emotional reflexes of these characters are symbolic of basic human responses. His themes of isolation and alienation thus become significant in that they symbolise the essence of modern man's predicament.

References:-

1. Philiph, L.Gerber, Robert Frost 1969. Bombay : Popular Prakashan, p, i.

2. Louis, Untermeyer, ed., 1963. The Letters of Robert Frost to Louis Untermeyer, New York: Holt Rinehart and Winston, p.376.

3. Egbert, S. Oliver, ed., 1967, American Literature 1890-1965: An Anthology, New Delhi: Eurasia Publication House (Pvt.) Ltd.,p.380.

4. John ,L. Lynen, 1960,The Pastoral Art of Robert Frost,New Heaven :Yale University Press, p.7.

5. Edward, Connery Lathem,ed., 1977North of Boston by Robert Frost,New York : Dodd Mead &Company,1977,p.5.

6. Conard,Aiken, 1967,"Poetry and the Mind of Modern Man," Contemporary American Poetry, Madars: Higginbothams (P)Ltd., p.7.

7. James, D. Hard, 1965,The Oxford Companion to American Literature, New York: Oxford University Press,p.6.

8. Gerber, Robert Frost,p.117.

9. Lynen,1968, The Pastoral Art of Robert Frost,p.33. 10.William Shakespeare, Macbeth, ed., Kenneth Muir,London: Metheun and Company LTD., p,160.

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A STUDY ON ANALYSIS OF FINANCIAL PERFORMANCE OF REGIONAL RURAL BANKS IN INDIA

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Abstract

Indian banking system today is evolving as a powerful instrument of planning for economic growth. The overall development of the economy depends to a large extent on the banking sector as financial institutions act as suppliers of capital for production of goods and services, which in turn raises income and standard of living of the people. In India, the Regional Rural Banks (RRBs) have received from time to time definite orientations, and these banks occupy a predominant position of rural development. The RRBs concept was based upon the policy that they would lend only to the weaker sections of rural society, charging lower interest rates, opening branches in remote and rural areas and keep a low-cost profile. The RRBs mobilise deposits primarily from rural and semi-urban areas and provide loans and advances mostly to small and marginal farmers, agricultural labourers, rural artisans and other segments of priority sector. The area of operation of the RRBs is limited to few notified districts in a State and also the commercial motivation was absent. RRBs were finding themselves unable to sustain because of the mounting losses due to imprudent commercial policy. Thus, Khusrau Committee said that the RRBs have no justifiable cause for continuance and recommended their mergers with sponsor banks. But by that time, the branch network had expanded so large that it would be political unwise for the government to merge the RRBs with sponsor Banks. Therefore, the present study attempts to analysis on financial performance of Regional Rural Banks in India in terms of aggregate deposits, bank credits, total investment and cash in hand during periods between 2010-11 and 2022-23. The present study also suggests that the government should keen to have one large regional rural bank for each state and further consolidation and raising capital through the financial and capital markets.

Keywords: Aggregate Deposits, Bank Credits, Total Investment and Cash in Hand

Introduction

Regional Rural Banks came into existence on October 2, 1975 with the formation of a Prathama Grameen Bank. The rural banks had the legislative backing of the Regional Rural Banks Act 1976. This act allowed the government to set up banks from time to time wherever it considered necessary. The RRBs were owned by three entities with their respective shares as follows: Central Government 50 per cent, State government 15 per cent, Sponsor bank 35 per cent. Regional Rural Banks were conceived as low-cost institutions having a rural ethos, local feel and pro poor focus. Every bank was to be sponsored by a “Public Sector Bank”, however, they were planned as the self-sustaining credit institution which were able to refinance their internal resources in themselves and were accepted from the statutory pre-emptions. At present, there are **43 RRBs in India** with 21,856 branches across 26 States and 3 UTs. They are sponsored by 12 Scheduled Commercial Banks (SCBs). RRBs in India have 28.3 crore depositors and 2.6 crore borrowers.

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The aggregate CDR of RRBs, it was initially 165 per cent in 1976 and but gradually declined to 66 per cent in December 2015. The Credit Deposit Ratio continuously declined thereafter. Moreover, the questions started being raised about the viability of these banks. The objective of serving the weaker sections effectively could be achieved only by self-sustaining credit institutions. RRBs were finding themselves unable to sustain because of the mounting losses due to imprudent commercial policy. Therefore, the present study attempts to analysis on financial performance of Regional Rural Banks in India in terms of aggregate deposits, bank credits, total investment and cash in hand during periods between 2010-11 and 2022-23.

Priority Sector of RRBs

The categories under priority sector are as follows: i. agriculture, ii. education, iii. micro, small and medium enterprises (MSMEs), iv. housing, v. social infrastructure, vi. renewable energy, etc. The eligible activities under the above categories are specified in targets /sub-targets categories. RRBs will have a target of 75 per cent of their outstanding advances for priority sector lending to targeted/sub-targeted sectors. The overall priority sector should be achieved across all prescribed categories. However, lending to medium enterprises, social infrastructure and renewable energy shall be reckoned for priority sector achievement only up to 15 per cent of total outstanding. The computation of priority sector targets/sub-targets achievement will be based on the total outstanding as on the corresponding date of the preceding year.

Problems of the Study

The RRB concept was based upon the policy that they would lend only to the weaker sections of rural society, charging lower interest rates, opening branches in remote and rural areas and keep a low-cost profile. The area of operation of the RRBs is limited to few notified districts in a State and also the commercial motivation was absent. Initially the banks expanded and by the end of year 2023 RRBS had opened 21856 branches. During this period their Credit Deposit Ratio (CDR) expanded very fast. In 1976 it was 165 per cent and gradually declined to 66 per cent in December 2015. The CDR continuously declined thereafter. Later, the questions started being raised about the viability of these banks. The Khusrau Committee of 1989, noted that the weaknesses of RRBs are endemic to the system and non-viability is built into it, and the only option was to merge the RRBs with the sponsor banks. The objective of serving the weaker sections effectively could be achieved only by self-sustaining credit institutions. RRBs were finding themselves unable to sustain because of the mounting losses due to imprudent commercial policy. Thus, Khusrau Committee (Agricultural Credit Review Committee) said that the RRBs have no justifiable cause for continuance and recommended their mergers with sponsor banks. But by that time, the branch network had expanded so large that it would be political unwise for the government to merge the RRBs with sponsor Banks. The present study attempts to analysis on financial performance of Regional Rural Banks in India in terms of aggregate deposits, bank credits, total investment and cash in hand during periods between 2010-11 and 2022-23.

Objectives of the Study

1. To analyse the growth rate of aggregate deposits of RRBs in India.
2. To examine the growth of total credits of the RRBs.
3. To study the growth rate of Investment of RRBs.
3. To evaluate the financial performance of RRBs in India.

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Methodology

The present study completely relies on secondary sources of data available in the report of the Handbook of Statistics on Indian Economy, Reserve Bank of India (RBI). In order to study the growth trends of aggregate deposits, total credits, total investment and cash in hand of RRBs in India, statistical tools such as averages, ratios and growth rates were widely used.

Financial Indicators of RRBs in India

The present study analysis the financial performance of Regional Rural Banks in India in terms of aggregate deposits, bank credits, total investment and cash in hand during the periods between 2010-11 and 2022-23. The table-1 revealed that compositions of total deposits of RRBs across in the nation. Among the components of aggregate deposits, the deposit towards time deposits and demand deposit constituted 82.3 percent and 17.7 per cent respectively. The time deposits improved from 78.5 per cent in 2010-11 to 85.1 per cent in 2022-23. In absolute term, the time deposits under the aggregate deposits increased from Rs. 123039 crore in 2010-2011 to Rs. 516891 in 2022-23.

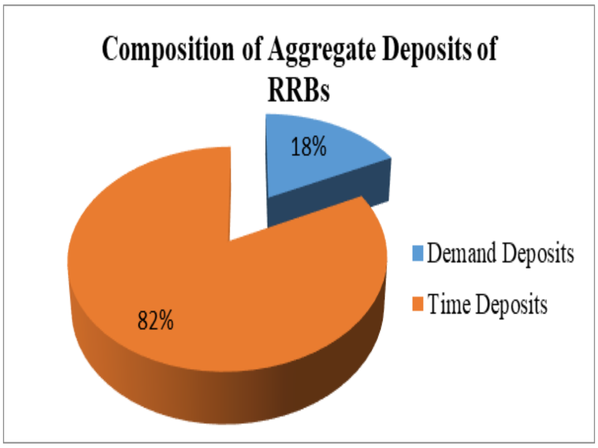
Table-1: Composition of Aggregate Deposits of RRBs in India (in Crore)

Year	Demand Deposits	Time Deposits	Aggregate Deposits
2010-11	33663 (21.5)	123039 (78.5)	156702 (100)
2011-12	34479 (19.9)	138914 (80.1)	173393 (100)
2012-13	37269 (19.0)	159154 (81.0)	196422 (100)
2013-14	39705 (18.0)	180919 (82.0)	220624 (100)
2014-15	47117 (18.5)	207109 (81.5)	254226 (100)
2015-16	50916 (17.3)	242839 (82.7)	293754 (100)
2016-17	65354 (18.9)	280219 (81.1)	345573 (100)
2017-18	66426 (17.0)	324124 (83.0)	390550 (100)
2018-19	70087 (16.5)	355712 (83.5)	425799 (100)
2019-20	77719 (16.6)	389485 (83.4)	467203 (100)
2020-21	85834 (16.8)	424601 (83.2)	510435 (100)
2021-22	82222 (15.0)	466090 (85.0)	548312 (100)
2022-23	90649 (14.9)	516891 (85.1)	607540 (100)
Annual Average	**(17.7)**	**(82.3)**	**(100)**

Sources: Handbook of Statistics on Indian Economy, Reserve Bank of India (RBI)

In contrast, the demand deposit under aggregate deposits of RRBs declined from 21.5 per cent in 2010-11 to 14.9 per cent in 2022-23 with much higher decline in the years in between. In absolute term, the demand deposits under the aggregate deposits increased from Rs. 33663 crore in 2010-2011 to Rs. 90649 in 2022-23. The study further revealed that RRBs received more percentages of time deposits than the demand deposits during the study period (Figure-1).

Figure-1



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The RRBs in India is made investment in various sources like government securities, other securities for dividend gain to increase the net profit. The table-2 revealed that compositions of total investment of RRBs across in the nation. Among the components of total investment, the investment towards government securities and other securities constituted 98.7 percent and 1.3 per cent respectively. The government securities improved from 97.3 per cent in 2010-11 to 99.6 per cent in 2022-23.

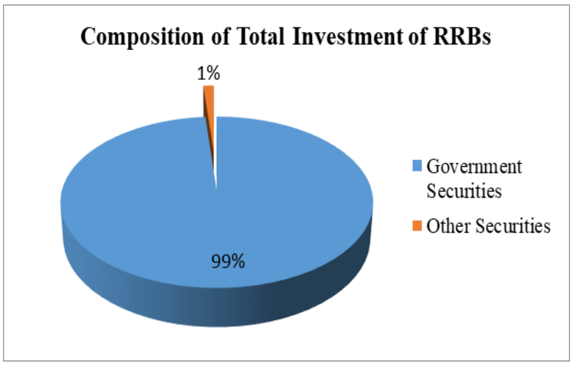
Table-2: Composition of Total Investment of RRBs in India (in Crore)

Year	Government Securities	Other Securities	Total Investment
2010-11	44262 (97.3)	1231 (2.7)	45493 (100)
2011-12	47179 (96.8)	1580 (3.2)	48759 (100)
2012-13	49178 (97.7)	1170 (2.3)	50348 (100)
2013-14	55220 (98.3)	934 (1.7)	56154 (100)
2014-15	59969 (97.6)	1464 (2.4)	61433 (100)
2015-16	78822 (98.5)	1196 (1.5)	80018 (100)
2016-171	112785 (99.4)	663 (0.6)	113448 (100)
2017-18	133630 (99.6)	584 (0.4)	134213 (100)
2018-19	134207 (99.6)	524 (0.4)	134730 (100)
2019-20	137942 (99.5)	752 (0.5)	138694 (100)
2020-21	186792 (99.5)	882 (0.5)	187675 (100)
2021-22	207810 (99.6)	753 (0.4)	208563 (100)
2022-23	205237 (99.6)	802 (0.4)	206039 (100)
Annual Average	**(98.7)**	**(1.3)**	**(100)**

Sources: Handbook of Statistics on Indian Economy, Reserve Bank of India (RBI)

In absolute term, the government securities under the total investment increased from Rs. 44262 crore in 2010-2011 to Rs. 205237 in 2022-23. In contrast, the other investment under total investment of RRBs declined from 2.7 per cent in 2010-11 to 0.4 per cent in 2022-23 with much higher decline in the years in between. In absolute term, the other securities under the total investment declined from Rs. 1231 crore in 2010-2011 to Rs. 802 in 2022-23. The study further revealed that RRBs investment more percentages of government securities than the other securities during the study period (Figure-2).

Figure-2



The table-3 showed an annual growth rate of major financial indicators of RRBs such as aggregate deposits, total credits, total investment and cash in hand the periods between 2010-11 and 2022-23. As can be seen from the table-3, while the aggregate deposits of RRBs registered an annual average of 11.1, such growth was at its maximum of

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17.6 per cent in 2015-16 and minimum growth of the 7.4 per cent in 2020-21. In absolute term, the aggregate deposits increased from Rs. 156702 crore in 2010-2011 to Rs. 607540 in 2022-23. Further analysis of trend in the total credit of RRBs as presented in the table revealed that though total credit registered an annual average of 12.1. In absolute term, the total credit increased from Rs. 94545 crore in 2010-2011 to Rs. 412925 in 2022-23. The table-3 further revealed that an annual average growth rate of investment of RRBs across in the nation, constituted on an average of 13.1 per cent. In absolute term, the total deposit, which stood at Rs. 45493 crore in 2010-11 increased to Rs.187675 crore in the year 2020-21 and further increased to Rs. 206039 crore in 2022-23.

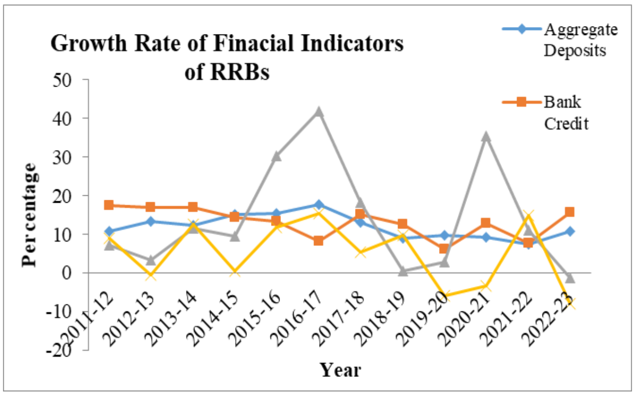
Table-3: Growth Rate of Financial Indicators of RRBs in India (in Crore)

Year	Aggregate Deposits	Annual Growth Rate	Bank Credit	Annual Growth Rate	Total Investment	Annual Growth Rate	Cash in Hand	Annual Growth Rate
2010-11	156702	-	94545	-	45493	-	1671	-
2011-12	173393	10.7	111082	17.5	48759	7.2	1820	8.9
2012-13	196422	13.3	129939	17.0	50348	3.3	1810	-0.5
2013-14	220624	12.3	152051	17.0	56154	11.5	2036	12.5
2014-15	254226	15.2	173972	14.4	61433	9.4	2045	0.4
2015-16	293754	15.5	197111	13.3	80018	30.3	2285	11.7
2016-17	345573	17.6	213247	8.2	113448	41.8	2640	15.5
2017-18	390550	13.0	245375	15.1	134213	18.3	2782	5.4
2018-19	425799	9.0	276345	12.6	134730	0.4	3051	9.7
2019-20	467203	9.7	293575	6.2	138694	2.9	2871	-5.9
2020-21	510435	9.3	331277	12.8	187675	35.3	2772	-3.4
2021-22	548312	7.4	357076	7.8	208563	11.1	3181	14.8
2022-23	607540	10.8	412925	15.6	206039	-1.2	2931	-7.9
Annual Average		**11.1**		**12.1**		**13.1**		**4.7**

Sources: Handbook of Statistics on Indian Economy, Reserve Bank of India (RBI)

The study further revealed that a positive growth rate of credits of RRBs, which constituted, on an average of 4.7 per cent during the study period. But there were some fluctuations in growth rates of cash in hand of RRBs during the period. In absolute term, the Government Securities, which stood at Rs. 1671 crore in 2010-11 increased to Rs. 3181crore in the year 2021-22 and declined to Rs. 2931 crore in 2022-23. Even though RRBs received a huge deposits, it's an annual average growth was a lowest than any other financial indicators of RRBs in India (Figure-3).

Figure-3



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Conclusion

The present study found that an annual growth rate of major financial indicators of RRBs such as aggregate deposits, total credits, total investment and cash in hand showed a positive annual growth rate during the study period. Among the components of aggregate deposits, the deposit towards time deposits and demand deposit constituted 82.3 percent and 17.7 per cent respectively. The time deposits improved from 78.5 per cent in 2010-11 to 85.1 per cent in 2022-23. In contrast, the demand deposit under aggregate deposits of RRBs declined from 21.5 per cent in 2010-11 to 14.9 per cent in 2022-23 with much higher decline in the years in between. Among the components of total investment, the investment towards government securities and other securities constituted 98.7 percent and 1.3 per cent respectively. The study further revealed that RRBs investment more percentages of government securities than the other securities during the study period. Among the all financial indicators of RRBs, the aggregate deposits registered an annual average of 11.1, such growth was at its maximum of 17.6 per cent in 2015-16 and minimum growth of the 7.4 per cent in 2020-21. Further analysis of trend in the total credit of RRBs revealed that though total credit registered an annual average of 12.1. The study further revealed that an annual average growth rate of total investment of RRBs across in the nation, constituted on an average of 13.1 per cent. The study further revealed that a positive growth rate of credits of RRBs, which constituted, on an average of 4.7 per cent during the study period. But there were some fluctuations in growth rates of cash in hand of RRBs during the period. Finally the study found that though RRBs received a huge deposits, it's an annual average growth was a lowest than any other financial indicators of RRBs in India. The present study suggests that the government should keen to have one large regional rural bank for each state and further consolidation and raising capital through the financial and capital markets.

Reference

1. Bapan, M.S. (1988), Regional Rural Banks, Their Working and Growth, Rural India, Vol-51, No-9, September.
2. Bindra, N. (2010), The Role Of RRBs in Rural Development, in Agrawal, M., (Ed) Regional Rural Banks and Upliftment of Rural Society, Deep and Deep Publications, Pvt, Ltd, New Delhi, 2010, Pp. 59-63.
3. Gangi Reddi, G (1988). "Role of RRBs in Credit Distribution", Kurushetra, Vol.XXXVI, No.8, May, p.4.
4. Guglani, P.L and Pandey, R.K (1983). "Financing the Neglected Sector Agriculture", Yojana, Vol.27, No.13, July, p.21.
5. Gupta, A. and Gupta, A. (2010), Working of Regional Rural Banks for Rural Society, Deep and Deep Publications, Pvt, Ltd, New Delhi, Pp. 119-124.
6. Gurunath, H.J (1994). Performance Evaluation of RRBs", Finance India, Vol.VIII, No.3, September, p.72 1.
7. Krishnamachari, K.S.V (1992). "RRBs: Sinned Against than Sinners", The Economic Times, Vol.32, No.263, November, p.12.
8. Krishnan (1976), "Rationale of Rural Banks", Eastern Economist, Vol.66, No.3, January, p. 104.
9. Nakkiran, S (1980). Agricultural Financing and Rural Banking: An Evaluation, Coimbatore: Rainbow Publications, p.24 1.
10. Vasant Desai (1987), Indian Banking: Nature and Problems, Bombay: Himalaya Publishing House, p.39.

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A COMPREHENSIVE ANALYSIS OF THE ENVIRONMENTAL IMPACTS OF THE CONFLICT BETWEEN RUSSIA AND UKRAINE

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Abstract

The conflict between Russia and Ukraine, which intensified in the latter part of February 2022, caused profound consequences on the environment. Ukraine experienced substantial environmental harm during the conflict. However, in order to determine the nature, scope, and importance of environmental impacts corresponding to conflicts, an in-depth evaluation is required. The environmental catastrophe that has been inflicted upon Ukraine is multifaceted, with new environmental problems being introduced or preexisting ones being made more challenging. The nation must deal with the potentially harmful impact that might last long after the war is over. The region's freshwater resources and water infrastructure have been severely damaged by military strikes resulted in Wide-ranging effects of the conflict on water management. In order to prevent further negative impacts on the environment and public health, the current differences must be settled urgently. Rehabilitation programmes and post-conflict evaluations are essential for tackling these environmental issues. Analyzing the effects and aftermath of a conflict or war can demonstrate that the environment is a silent victim, and the Russia-Ukraine situation proves fact. Contributions on the war between Russia and Ukraine and its grave environmental effects are included in this article.

Keywords: Environment Security, Armed Conflict, Pollution, Climate Change, Resource Scarcity

Introduction:

The deteriorating state of the ecosystem, intensified by the ongoing conflict between Russia and Ukraine, depicts a wide range of environmental issues and risk factors. These issues originate from several sources, including armed conflict, unsustainable development practices, weak environmental legislation, and climate change. The conflict between Russia and Ukraine has not only caused political and humanitarian difficulties, but it has also had a significant environmental impact on the region. This war has caused severe environmental degradation and poses challenges to ecosystems, biodiversity, and public health. (Gabija Leclerc, 2023)

The conflict's environmental consequences are multiple and complicated, ranging from severe damage to infrastructure and industrial facilities to long-term effects like as pollution, deforestation, and biodiversity loss. Moreover, the usage of heavy weaponry, like as artillery shelling and airstrikes, has caused considerable contamination of land, water bodies, and air, providing serious health risks for both civilians and military personnel. This detailed investigation seeks to shed light on the numerous facets of the environmental repercussions of the Russia-Ukraine conflict.

Understanding and managing war's impact on the environment is critical for supporting sustainable development and mitigating the long-term consequences on ecosystems and human well-being. War, whether conventional or unconventional, frequently causes direct and indirect environmental damage through a variety of processes. These may include infrastructure

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destruction, soil, water, and air contamination, population displacement, ecological disruption, and the employment of environmentally destructive weapons.

Armed Conflict and Environmental degradation:

During armed conflicts, infrastructure including industries, power plants, highways, and buildings are frequently targeted for strategic reasons. The destruction of infrastructure not only blocks economic progress and civilian livelihoods, but it also causes environmental damage. For example, bombing industrial buildings emits toxins into the atmosphere, soil, and water, contributing to environmental degradation and contamination. Bombing industrial facilities emits a multitude of pollutants and harmful gasses into the environment. (Kyiv School of Economics (KSE), 2023) Particulate matter, sulfur dioxide, nitrogen oxides, volatile organic compounds, and heavy metals are examples of such pollutants. Inhaling these chemicals can cause respiratory problems, cardiovascular illness, and other health issues in civilians living near bombed locations. Pollution release over time can also contribute to degradation of regional air quality and long-term environmental health risks.

Military activities, including the use of explosives, artillery shelling, and airstrikes, can result in the release of toxic chemicals, heavy metals, and other hazardous substances into the environment. Bombings on industrial buildings might cause the deposition of hazardous substances into the surrounding soil. This can contain heavy metals, petroleum products, chemicals, and other pollutants. Toxin accumulation in the soil not only reduces agricultural output, but also jeopardizes groundwater quality through leaching and discharge. Polluted soil can last for years, disrupting ecosystem functioning and posing health concerns to humans and wildlife who consume contaminated food and water. Bombings of industrial buildings can leak pollutants and chemicals into neighboring bodies of water, such as rivers, streams, and groundwater aquifers. The detonation of munitions can lead to soil contamination by explosives residues, while the bombing of oil refineries or storage facilities can cause oil spills, polluting water bodies and soil. Additionally, the burning of fossil fuels and destruction of vegetation during warfare contribute to air pollution, affecting human health and ecosystems. Chemical spills from damaged storage tanks or pipelines can contaminate surface water and seep into groundwater, threatening drinking water sources and aquatic habitats. Heavy metals, hydrocarbons, and industrial pollutants may accumulate in aquatic organisms, endangering human health and ecosystem integrity. (Hryhorczuk, 2024)

The environmental repercussions of bombs in industrial buildings go beyond the immediate pollution and poisoning. The demolition of industrial infrastructure has the potential to cause habitat degradation, biodiversity loss, and disruption to ecosystem services. One year on from the start of the war in Ukraine, experts have found the environment has been heavily impacted and ecosystems have been destroyed (The Hague, 24 February 2023).Wildlife habitats may be lost, and delicate ecosystems damaged, resulting in population decreases and ecological imbalances. Long-term regeneration of ecosystems following such disturbances can be slower and difficult, worsening environmental degradation in the afflicted areas (International Fund for Animal Welfare, 2023).

Armed conflicts frequently result in the displacement of civilian populations, increasing demand on natural resources in host towns and refugee camps. Overcrowding, over exploitation of land and water resources, and insufficient waste management in displacement contexts can all contribute to environmental degradation. Further leads to food shortages and unstable economies have resulted from the conflict's substantial disruption of agricultural activities. Food insecurity and decreasing agricultural production have been exacerbated by the loss of farmland, interruption of supply lines, and uprooting of rural people. Furthermore, the use of explosives such as landmines in agricultural regions puts farmers at risk and hinders efforts to restore the soil.

Some weapons used in conflict have particularly negative environmental impacts. For example,

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depleted uranium (DU) bullets used in armor-piercing projectiles emit radioactive particles upon impact, polluting land and water and providing long-term health dangers to civilians and military personnel. Similarly, cluster munitions, which distribute several submunitions over a large region, can produce unexploded ordnance, posing a risk to people and impeding post-conflict cleanup efforts. (Russia blasts 'inhumanity' of US sending depleted uranium shells to Ukraine, 2023)

Russia – Ukraine Conflict:

2014 saw the escalation of hostilities between Russia and Ukraine following Russia's annexation of Crimea, a traditionally Ukrainian territory. Following the annexation, pro-Russian separatists and Ukrainian government forces engaged in violent combat in eastern Ukraine, mostly in the Donetsk and Luhansk regions. Following the hostilities, there was extensive infrastructure devastation, population displacement, and fatalities. UN data indicates that as of 2019, over 750 essential infrastructure elements—such as communication networks, electrical substations, and water treatment plants—had been destroyed or severely damaged in eastern Ukraine.

Community Displacement and Natural Resource Stress:

According to the Internal Displacement Monitoring Centre (IDMC), the crisis brought on by the fighting resulted in over 1.5 million people being displaced within Ukraine and others being forced to seek safety in neighbouring countries. Displaced people frequently made their way to crowded cities or improvised settlements, which severely taxed natural resources and exacerbated environmental problems. In conflict-affected areas, there was an increase in demand for fuelwood, building supplies, and agricultural land, which resulted in deforestation, soil erosion, and habitat damage. (UNHCR: One year after the Russian invasion, insecurity clouds return intentions of displaced Ukrainians, 2023)

Contamination of water sources

Due to munitions and industrial site pollution, as well as damage to water treatment facilities, water supplies in eastern Ukraine became poisoned. Reports of hazardous chemical and heavy metal leaks into rivers and groundwater reserves have been made public by the Organisation for Security and Co-operation in Europe (OSCE). During the battle, over 10,000 tonnes of hazardous trash were illegally dumped in the Donetsk and Luhansk areas, according to estimates from the Ukrainian Ministry of Ecology and Natural Resources (Hryhorczuk, 2024).

Disruption in Food and Agricultural sector

In eastern Ukraine, the violence hampered agricultural production, resulting in food shortages and unstable economies. The Food and Agriculture Organisation (FAO) reports that since the conflict began, agricultural output in the Donetsk and Luhansk regions has decreased by more than 50%. Additional obstacles to agricultural growth were landmines and explosive ordnance, which put farmers at risk and hampered efforts to restore damaged land. Many rural populations consequently experienced food insecurity and were dependent on humanitarian aid to survive.

The conflict is still going on today. Fighting occasionally continues despite attempts to negotiate a ceasefire and carry out peace agreements, which exacerbates environmental damage and causes misery for civilians. The COVID-19 epidemic exacerbated health hazards and hampered the delivery of humanitarian relief in areas afflicted by conflict, adding even another level of complication to the situation.

Resilience-building and adaptation methods are among the measures used to manage community relocation and the strain the Russia-Ukraine conflict is placing on natural resources. Providing alternate sources of income, encouraging sustainable methods for managing land and water, and promoting neighborhood-based programmes for managing natural resources are a few examples of these. Through funding, technical assistance, and capacity-building initiatives, international organisations like the United Nations Development Programme (UNDP) and the United Nations High Commissioner for Refugees (UNHCR) are instrumental in improving these efforts. (Caprile, 2022)

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Russia - Ukraine Conflict - Global Impacts

Again on February 24, 2022, a war between Russia and Ukraine emerged with drastic global impacts. The response to this war was unprecedented and a large number of sanctions were applied by many countries to Russia with a tremendous impact on country's economy. The war affected other countries too in terms of trade, pollution, climate change etc., According to the ministry of the environmental protection and natural resources- around 30 percent of the country's protected areas were polluted, burned, bombarded, or hit by the military maneuvers which approximately covers 3 million acers. The most intensified fight took place in the forest along east of Donet river.

Due to this conflict Ukraine is directly affected, resulting in military aggression, territory occupation, infrastructure devastation, human displacement, and fatalities. The battle would put further demand on government resources, disrupt daily life, and deepen Ukraine's economic problems. Significant humanitarian repercussions could potentially follow, such as internal displacement, refugee movements, and the requirement for humanitarian aid. As the aggressor, Russia would be subject to diplomatic isolation, economic penalties, and worldwide condemnation. Domestic effects of the battle could include unrest among the populace, Russian military casualties, and economic hardship from sanctions and military spending.

Ukraine is a transit route for Russian natural gas, therefore Europe would face increased geopolitical tensions, security concerns, and possible disruptions to energy supplies. In reaction to Russian aggression, NATO nations may come under further pressure to strengthen their own defence or offer military support to Ukraine. It is probable that the US will condemn Russian aggression and offer Ukraine diplomatic help, financial support, and military support. Relations between the United States and Russia may be further strained by the conflict, which might raise rivalry and tension in other areas like the Middle East and the Arctic.

Global markets, especially those in the energy sector, may be affected by the conflict if supplies of natural gas from Russia to Europe are disrupted. A decline in investor confidence could have an impact on financial market volatility as well as changes in the price of commodities like oil and gas.

Civilians in conflict-affected areas would face risks to their safety, livelihoods, and well-being, including displacement, injury, trauma, and loss of access to basic services. Humanitarian organizations would mobilize to provide assistance and protection to affected populations, including emergency aid, shelter, healthcare, and psycho-social support. Russia-Ukraine conflict would have far-reaching implications, affecting not only the directly involved parties but also neighboring countries, regional stability, the global economy, and the international order.

Impacts of War

A. Direct physical damages: Ukraine suffered more from the war than any other country, with damages totaling over $135 billion, of which 37% were related to housing, 26% to transportation, 8% to energy, 8% to commerce and trade, and 6% to agriculture. Since the RDNA1 (Rapid Damage and Needs Assessment) report's predictions, the three sectors of housing, transportation, and energy have experienced the largest increases in direct damages. "Every day that goes by, Russia's war of aggression against Ukraine is taking a heavy toll on the people of Ukraine and the socio-economic fabric of the country," stated Olivér Várhelyi, Commissioner for Neighbourhood and Enlargement. According to the RDNA2 assessment, the nation will require US$411 billion (INR ₹30.825 trillion) for reconstruction and recovery, which is 2.6 times its projected GDP for 2022. The country's energy industry experienced the biggest relative rise in damage, with damages more than five times higher than in June 2022. Roughly half of Ukraine's power grid has been damaged by missile strikes, adding to the country's overall damage to its energy infrastructure. One of the disastrous damages to Ukraine's infrastructure, which included hospitals and schools, was a dam explosion in the Kherson region of southern Ukraine, which made the plight of the people worse. The predicted damages to the world economy as of March 24, 2022, range from $543 to $600 billion. $13.69 billion is the entire amount of direct losses brought about by the destruction and devastation of all public property, which includes social facilities, administrative buildings, healthcare facilities, educational institutions, and sports facilities, among other things. (Kyiv School of Economics (KSE), 2023)

B. Chemical contamination: The Russian invasion of Ukraine created the conditions for widespread chemical contamination of the air, water, and soil. The ongoing conflict has polluted 30% of Ukraine. (Hryhorczuk, 2024) According to Ukraine, Russian soldiers deployed chemical munitions 465 times between February 24, 2022, and December 20, 2023. Due to the hazardous chemicals' migration into plants growing in the contaminated soil, food is affected indirectly and becomes poisonous for humans who eat it. Devastating effects of this war also extend to biodiversity. Low frequency sonar has been disturbing the dolphins, and since February 2022, thousands of dolphins have washed up on black sea beaches. The supply of electricity in Ukraine was increasingly dependent on nuclear technology before 1991. By 2022, four nuclear power facilities accounted for half of Ukraine's electricity supply. Though previously their forces raided Zaporizhzhia plant near their frontline on the banks of the Dnieper River to fire at the Ukrainian positions, plants are now the strategic targets of the Russian forces. Ukraine asserts that the location has been mined by the occupants. Ukraine and Russia are blaming one another for shelling the area around the plant. The Ukrainian employees of the largest plant in Europe, Zaporizhzhia, have resumed operations in a portion of the plant. The plant has six pressurized-water reactors with armoured containment that is meant to withstand an aeroplane hitting it directly. These reactors are safer in design than the reactors at Chernobyl. The bigger worry is that, according to Ross Pell of CSSS, Kings College, London, "if the used reactor fuel sitting outside the containment in cooling ponds, either an attack or loss of power for cooling could cause a large release of radioactive water" that harms people. (Edwards, 2023)

Warfare can cause significant environmental damage even in cases where it is not planned. Trenches are frequently dug by soldiers, large areas of vegetation can be completely destroyed by tanks, bombs permanently alter the terrain, and explosives have the power to start devastating fires. In addition, using weapons of war causes the discharge of heavy metals into the land and water as well as harmful gases and particulates into the atmosphere. Sadly, the devastation caused by these conflicts is frequently ignored, leaving lasting environmental effects in the absence of adequate remediation.

C. Climate change: Since February 2022, a group of experts in carbon accounting have assessed the climate impact of the first year of the fight and determined that the first 12 months of the war are responsible for a total of 120 million metric tonnes of pollution that heats the globe. The measured pollution level will be equal to Belgium's yearly emissions, according to their report. "This is the first time that such a thorough mapping of war's emissions has been done." The primary author of the report, Lennard de Klerk, from "Climate damage caused by Russia's war of Ukraine." The fuel used for tanks, aircraft, and other equipment, the building of fortifications and the manufacture of weapons, and the pollution that results directly from conflict are the main sources of the planet-heating pollution.

Warfare is accountable for over 22 million metric tonnes of planet-heating pollution, or nearly 20% of all emissions linked to the conflict. Using data from satellites, remote monitoring programmes can calculate the pollution. Forest fire pollution during the conflict accounts for 15% of the 18 million metric tonnes of emissions produced overall. The researchers report that when winter approached, the fire rate decreased and that they anticipate an increase in fire rates over the summer. The number of flames burning across an area will be more than one hectare and climb to 36-fold within a year. Over 37,000 flames were observed by satellite monitors in the first four months of the invasion of Ukraine, as fires burned throughout the country. They claim that the post-war reconstruction will have the largest impact on the climate because it will account for nearly half of the pollution from the conflict and produce more carbon emissions than the destruction of buildings, institutions, and other vital infrastructure. Climate change is caused by the increased production of cement, concrete, and other materials required for reconstruction.

The research also addressed the effects on a global scale, those that occur outside of Ukraine. The estimated amount of methane emissions resulting from the September 2022 destruction of the Russian gas pipelines Nord 1 and 2 is 100 million metric tonnes. It will take generations to reduce greenhouse gas emissions from the atmosphere. In contrast, other types of pollutants like methane (CH_4) from agriculture, gas pipelines, and other sources will take longer to reduce greenhouse gas emissions. One of the strongest greenhouse gases, methane, is 30% of the reason for the rise in global temperatures. It is a potent greenhouse gas that, over a 20-year period, is 80 times more potent than carbon dioxide. It is also primarily responsible for the development of ground level ozone, a dangerous air pollutant that causes one million premature deaths annually. (Korthuis, 2023)

Conclusion

In a statement on the International Day for Preventing the Exploitation of the Environment in War and Armed Conflict, António Guterres stated, "If we are to achieve the Sustainable Development Goals (SDGs), we need to act boldly and urgently, to reduce the risks that environmental degradation and climate change present for conflict and commit to protecting our planet from the debilitating effects of war."Despite the fact that environmental security is becoming more and more important globally, numerous conflicts and wars continue to undermine it. Analysing the effects and aftermath of a battle or war can demonstrate that the environment is a silent victim, and the Russia-Ukraine situation confirms this. It is imperative to comprehend and tackle the ecological consequences of warfare in order to advance sustainable development.

It is vital to comprehend and tackle the ecological ramifications of warfare in order to advance sustainable growth and alleviate the eventual effects on ecosystems and human welfare. Wars pose a threat to the preservation of biodiversity and the ecological equilibrium. It ultimately makes it more difficult for the developing and less developed nations to accomplish the 2030 agenda's sustainable development targets.

References

1. Brisman, A., South, N., & White, R. (2013). Environmental Crime and Social Conflict: Contemporary and Emerging Issues. Ashgate Publishing.
2. Caprile, A. (2022). Russia's war on Ukraine: Impact on food security. European union: EPRS | European Parliamentary Research Service.
3. Edwards, C. (2023, July 5). Ukraine warns Russia might attack the Zaporizhzhia nuclear power plant. How worried should we be? Retrieved from Cable News Network (CNN): https://edition.cnn.com/2023/07/05/europe/zaporizhzhia-nuclear-disaster-threat-explainer-intl/index.html
4. Gabija Leclerc. (2023). Russia's war on Ukraine: High environmental toll. European Union: European union.
5. Ganguli, S. (2018). Understanding Russia-Ukraine Relations: Historical Legacies and Current Realities. Vij Books India Pvt Ltd.
6. Hart, J. (2014). Environmental Impacts of Modern Warfare. Praeger Security International.
7. Hryhorczuk, D. (2024, January 05). The environmental health impacts of Russia’s war on Ukraine. Retrieved from Journal of Occupational Medicine and Toxicology: https://occup-med.biomedcentral.com/articles/10.1186/s12995-023-00398-y
8. International Fund for Animal Welfare. (2023, February 24). war in Ukraine has devastating consequences for biodiversity. Retrieved from International Fund for Animal Welfare - IFAW: https://www.ifaw.org/international/press-releases/war-ukraine-biodiversity

ISSN: 2277-1409

9. Korthuis, A. (2023, JUNE). Climate damage caused by Russia’s war in Ukraine (First and second interim assessments). Retrieved from CLIMATE FOCUS: https://climatefocus.com/publications/climate-damage-caused-by-russias-war-in-ukraine/
10. Kyiv School of Economics (KSE). (2023). Report on Damages to Infrastructure caused by Russia's War against Ukraine one Year after the Start of the Full-Scale Invasion. Ukraine: Kyiv School of Economics.
11. Rayfuse, R. (2003). War and the Environment: New Approaches to Protecting the Environment in Relation to Armed Conflict. Cameron May.
12. Russia blasts ‘inhumanity’ of US sending depleted uranium shells to Ukraine. (2023, September 7). Retrieved from ALJAZEERA: https://www.aljazeera.com/news/2023/9/7/russia-blasts-inhumanity-of-us-sending-depleted-uranium-shells-to-ukraine
13. UNHCR: One year after the Russian invasion, insecurity clouds return intentions of displaced Ukrainians. (2023, February 23). Retrieved from UNHCR India: https://www.unhcr.org/in/news/press-releases/unhcr-one-year-after-russian-invasion-insecurity-clouds-return-intentions

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ENHANCING ORGANIZATIONAL EFFECTIVENESS WITH EFFECTIVE STRESS REDUCTION APPROACHES (A STUDY ON EMPLOYEES OF THE INSURANCE SECTOR IN CHENNAI)

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ABSTRACT

Effective plans and processes are only as important to an organization's performance as the resilience and general well-being of its workforce. This abstract looks at how effective stress-reduction strategies could increase the effectiveness of a business. It looks at a variety of tactics used by companies, such as encouraging a work-life balance, offering stress management training, and fostering a happy work environment. This abstract explains the revolutionary impact of these interventions on employee engagement, job happiness, and overall organizational success through a synthesis of empirical evidence and industry best practices. Organizations may foster a high-performance culture that propels sustainable growth and competitive advantage in the current fast-paced business climate by prioritizing the resilience and well-being of their workforce.

Keywords: Stress Reduction, Performance, Productivity Enhancement, Workload, Employee Wellness.

INTRODUCTION

Regardless of industry, achieving optimal organizational performance is a constant in today's fast-paced, cutthroat corporate environment. It becomes clear during the process how important employee well-being is to a business's overall productivity, success, and performance. This is seldom truer than in the insurance industry, where workers are required to manage a wide range of difficult issues due to the organization's intricacy. The insurance industry protects people and businesses from a range of risks, making it a pillar of economic stability. However, insurance professionals handle a complex array of duties behind the scenes, ranging from overseeing the claims procedure and upholding client relations to determining risk exposures and creating customized policies. Stress becomes a prevalent problem in the face of these demands, negatively impacting the mental and emotional well-being of employees.

Stress that is not controlled has detrimental repercussions for the insurance sector. Stressful situations not only jeopardize employee wellbeing but also damage the company's productivity. Unmanaged stress can manifest as a number of symptoms, such as increased absenteeism, lower job satisfaction, and greater turnover rates. All of these signs contribute to ineffective performance within the organization. Therefore, stress management in the insurance sector is not only critical for employees' health but also strategically important for businesses' long-term viability and resilience.

Organizations are realizing how critical it is to put in place efficient stress-reduction strategies in response to these obstacles. Prioritizing employee well-being and allocating supports for stress-reduction programs allow firms to establish work cultures that support productivity, resilience, and ultimately organizational effectiveness. The insurance firms are taking a comprehensive approach to stress management and labour optimization. This means encouraging a work-life balance, making mental health resources accessible, and cultivating a supportive and candid atmosphere.

BACKGROUND OF THE STUDY

Employee stress has become a common worry in today's fast-paced workplace and is bad for the company's performance. Elevated levels of stress lead to reduced output, elevated absenteeism, and diminished job contentment, so posing noteworthy obstacles for establishments. Employing techniques like mindfulness, time management education, and work-life balance promotion can help lower employee stress levels.

Proactive stress management techniques are crucial due to the significant relationship that exists between worker well-being and business performance. Putting effort into stress-reduction programs improves employee morale and increases productivity inside the company. The wellbeing of the workforce comes first. Therefore, this study aims to examine how employees in the insurance industry, particularly in Chennai, manage stress and how it affects their efficiency and effectiveness.

What is work related stress?

Job-related stress is the response people have to requirements and standards at work that are more than their knowledge, skills, or potential to handle. Stress at work is often inevitable, and for some people, a certain amount of stress can even be good. However, excessive pressure can result in burnout, which is detrimental to an employee's well-being and efficiency.

Causes of stress related work.

- Workplace stress and deadlines
- Insufficient work-life balance
- Toxic culture and work environment
- Unsatisfactory position at work
- Incompetent supervisors
- Politics at work
- Lack of job security
- Poor communication
- Lack of opportunities for development

Why do organisations need to manage work related stress?

It is the moral, financial, and legal responsibility of employers to protect their employees from workplace stress. The ethical viewpoint comes first. Employers should put their workers' mental health and equitable opportunities for success first, regardless of how they feel about themselves. There are also the legal ramifications to consider. It is considered a handicap if your employees' everyday activities are substantially influenced over an extended period of time by stress related to their jobs. If such is the case, employers are legally required to provide reasonable accommodations in order to help these employees.

Techniques for Overcoming Organizational Stress

Adaptable Work Schedules: Giving workers flexible work hours or the option to work from home can improve their ability to maintain work-life balance. Because employees can adjust their work schedules to accommodate personal

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obligations, this flexibility helps to reduce the stress associated with commuting and managing conflicting demands.

Prompting active lifestyles: Promoting physical activity among staff members can reduce stress and enhance general health. Encouraging staff workers to incorporate exercise into their daily routines can improve morale and lower stress levels. Some strategies to do this include offering walking meetings, group exercise classes, or on-site gym access.

Creating a joyful workplace: Establishing a collaborative, courteous, and reliable work environment is essential to helping people cope with stress. It is simple to establish a friendly work environment where employees feel valued and inspired by recognizing teamwork, rewarding achievement, and fostering a sense of belonging. This can improve organizational effectiveness and reduce stress levels.

Motivation-Driven Leadership: The key to effectively managing stress at work is to have a supportive leadership style. It is imperative for leaders to exhibit empathy, offer consistent feedback, and support staff members who are facing difficult circumstances. Stress levels are lowered and a feeling of psychological safety is fostered when management and staff members have mutual trust and communicate openly.

Conduct Stress Management Training: Offering stress-reduction classes or seminars on topics like mindfulness, deep breathing, and time management can assist employees in developing coping strategies and resilience for dealing with pressures at work.

Unambiguous Expectations and Communication: To lessen employee stress, open communication about job requirements, objectives, and performance metrics is essential. To avoid misunderstandings and reduce stress, managers should ensure that staff members are aware of their duties and responsibilities, give regular feedback, and provide help when needed.

Initiatives for Staff Recognition: Stress levels can be lowered and staff morale raised by recognizing and appreciating their achievements. Establishing employee recognition programs, such as peer-to-peer recognition campaigns or "Employee of the Month" awards, has the dual benefits of recognizing employee accomplishments and fostering a positive work environment.

Promoting the Harmonization of Life and Work: Encouraging a seamless integration of work and life, as opposed to a rigid division of the two, acknowledges that workers have personal obligations beyond the workplace. Work-life balance and stress levels are improved and people feel empowered to prioritize their health and family duties when this kind of environment is fostered.

Programs and Resources for Welfare: Providing wellness programs and services to staff members can help them manage stress and keep their general health in check. To fully cover various facets of employee wellness, these programs may include access to mental health resources, financial wellness lectures, and stress reduction workshops.

REVIEW OF LITERATURE

Christian Wiradendi Wolor et. al (2020) studied the impact of balance in the work-life of employee productivity and performance. They provided an overview of the importance of implementing work-life balance techniques for employees and the organization.

Noor Erdianza et. al (2020) proved that job satisfaction and worker happiness can act as a catalyst on the effect of balancing work-life on organizational citizenship behavior. They found to increase the organizational citizenship behavior of employees proper work-life policies should be adapted.

KashishPeswani and Dheeraj Kalani (2019) conducted a study on stress management among employees. The purpose of this study is to identify the effect of stress on individual life and to identify the different methods & techniques of reducing stress. They collected 80 samples through questionnaire. The researcher concluded that employees dread with the way that the lack of quality work puts weight on them, the professionals should exhibit self-control and good self- esteem, engage in continuous professional development on skills for better organization, integration of work within specified project constraints and delegation of assignments, authority and breaking work into manageable parts so as to be able to cope with stress.

DwiPutriLarasati et. al (2019) investigated how organizational performance increases if there exists a higher tendency level of balance in work-life in workers. They suggested workers should be provided time to time training to enhance their skills or abilities so that work stress can be minimized.

Kalpna et. al (2019) determined the balance of work-life at a higher level and occupational stress and female personnel of any organization. They tried framing appropriate policies and practices within the educational institutions for achieving higher work-life balance.

Alex et. al (2019) prioritized how the various work life and personal life activities can be regulated properly to gain a higher level of work-life balance. They concluded how the management can regulate the working environment of employees and motivate them to work effectively and efficiently.

RESEARCH GAP

The literature research shows that work-life balance has a wide range of effects on employees due to the integration of their personal and professional lives. Numerous factors can contribute to stress, such as an imbalanced work-life schedule, an employee's physical and mental well-being, their degree of personal and professional satisfaction, and their dedication to their careers and families. The impact of stress on an employee's capacity to perform both at work and in their families can also be detrimental. Further studies on work-life balance and employee wellness are needed to assist people manage their lives more efficiently. Aside from that, research has been conducted in the domains of education, banking, IT, and pharmaceuticals; nevertheless, the sectors of law, aviation, fleet services, and chartered accounting still require attention. Few studies have been conducted in this field, despite the fact that colleges provide employee help programs including stress management and flexible work hours. However, evidence suggests that the complicated nature of stress still negatively affects academics' health and work-life balance. Therefore, the researcher has made an effort to look into ways to increase organizational effectiveness using doable stress-reduction techniques with reference to Chennai.

NEED FOR THE STUDY

First and foremost, staff stress must be identified and managed if customer satisfaction and operational efficacy are to be sustained—especially considering the insurance sector's critical role in preserving economic stability. Second, because stress negatively affects workers' health, learning stress-reduction strategies can boost output, lower attrition, and improve job satisfaction. Thirdly, this study has the potential to provide customized therapies that address the particular needs of the insurance business by concentrating on the distinct stressors that these professionals encounter. The study's conclusions can also guide organizational procedures and guidelines meant to promote a positive work atmosphere, which would

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eventually improve the general performance and well-being of insurance. To sum up, this study is significant because it may enhance organizational effectiveness, promote employee satisfaction, and ignite positive change within the insurance sector.

STATEMENT OF THE PROBLEM

One of the biggest barriers to organizational success in today's quickly evolving workplace is the pervasive stress that employees face. Although it has been demonstrated that stress reduction increases productivity and improves worker health, many businesses find it challenging to put these ideas into practice. Numerous factors, including the dynamic nature of labor, inadequate prioritizing, and resource constraints, are to blame for this. Thus, it is imperative to do study on how businesses should apply tailored stress-reduction strategies to increase overall efficacy. By addressing these problems head-on, organizations may promote a culture that fosters employee resilience and wellbeing. This will boost productivity and improve the success of the company. The purpose of this study is to offer perceptive opinions and suggestions that can assist businesses in effectively managing stress and achieving long-term increases in productivity.

OBJECTIVES OF THE STUDY

- To Analyse the extent which current stress-reduction techniques are enhancing the efficacy of organizations.
- To identify which of the most prevalent organizational pressures exist so that solutions can be directed more precisely at them.
- To Create a resilient organizational culture by offering research-backed stress-reduction techniques.

RESEARCH METHODOLOGY

With a focus on analysis and information, the study draws from primary and secondary sources. To collect primary data, a standardized questionnaire was distributed to the sample personnel. A range of sources, including books, journals, papers, and other publications, were consulted in order to get secondary data. The three insurance companies that cover Tamil Nadu have their HR, PR, and planning divisions located in Chennai: ICICI Prudential Life Insurance, HDFC Standard Life Insurance, and Max Life Insurance. The target population of the study consists of these workers. The aim of the research was to evaluate the impact of stress management techniques on the efficiency and effectiveness of a group of 127 employees. The sample approach used for the investigation was simple random sampling. The questionnaire to assess the effectiveness of stress management strategies takes into account the following variables: worker efficiency, work-life balance, workload, workplace flexibility, and management support. The numerous items pertain to both the independent and dependent variables and are displayed on a 5-point Likert scale. For the purpose of computation, the five response categories have been assigned the following numerical values: strongly agree (5) to strongly disagree (1). The study's objective has been taken into account when categorizing and evaluating the collected data. For analysis, instruments such as correlation tests have been employed.

DATA ANALYSIS

Correlation Analysis (Efficacy of the work and Work receptiveness)

$H_{01:}$ There is no significant relationship between Efficacy of the work and Work receptiveness

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Table No – 1: Efficacy of the work and Work receptiveness

		Efficacy of the work	Work receptiveness
Efficacy of the work	Pearson Correlation	1	.440**
	Sig. (2-tailed)		0.000
	N	127	127
Work receptiveness	Pearson Correlation	.440**	1
	Sig. (2-tailed)	.000	
	N	127	127

Source: Computed by the researcher @1% level

According to the data in Table 1, there appears to be a 0.440 coefficient of relationship between work efficacy and work receptiveness. It implies that there is a strong correlation between the two variables. At a significance level of 1%, the resulting coefficient of correlation is determined to be statistically significant. Consequently, the null hypothesis can be ruled out. It makes reasonable to think that there is a connection between the level of openness displayed at work and the effectiveness of the tasks that need to be completed. It suggests that there is a strong correlation between these two sets of variables—work receptiveness and work efficacy.

Correlation Analysis (Management cooperation and Employee Efficiency)

$H_{02:}$ There is no significant relationship between management cooperation and staff effectiveness

Table No – 2: Management Cooperation and Staff Effectiveness

		Management Cooperation	Staff Effectiveness
Management Cooperation	Pearson Correlation	1	.501**
	Sig. (2-tailed)		0.000
	N	127	127
Staff Effectiveness	Pearson Correlation	.501**	1
	Sig. (2-tailed)	.000	
	N	127	127

Source: Computed by the researcher @ 1%

We can determine that there is a 0.501 coefficient of link between staff effectiveness and management cooperation based on the data in Table 2. It demonstrates how closely the two variables are related. At the one percent significance level, the resulting coefficient of correlation is statistically significant. As a result, the null hypothesis is excludable. The conclusion that there is a connection between employee effectiveness and managerial cooperation makes logical. It suggests that staff effectiveness and managerial cooperation are closely related to one other.

Correlation Analysis (Work receptiveness and Management cooperation)

$H_{03:}$ There is no significant relationship between Work receptiveness and management cooperation

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Table No. – 3: Work Place Receptiveness and Management Support

		Work Receptiveness	Management Cooperation
Work Receptiveness	Pearson Correlation	1	.560**
	Sig. (2-tailed)		.000
	N	127	127
Management Cooperation	Pearson Correlation	.560**	1
	Sig. (2-tailed)	.000	
	N	127	127

Source: Computed by the researcher @1% level

Based on the data shown in Table 3, one is likely to conclude that there is a 0.56 coefficient of relationship between work receptiveness and management cooperation. It illustrates how closely the two variables are related. The obtained coefficient of correlation is statistically significant at the one percent significance level. This makes it possible to reject the null hypothesis. It makes natural that there would be a correlation between work receptiveness and managerial cooperation. It implies that there is a strong relationship between managerial cooperation and work receptiveness.

Correlation Analysis (Efficacy of the work and Work-Life Harmony)

$H_{04:}$ There is no significant relationship between Efficacy of the work and work-life harmony

Table No – 4: Efficacy of the work and Work-Life Harmony

		Efficacy of the work	Work-Life harmony
Efficacy of the work	Pearson Correlation	1	.523**
	Sig. (2-tailed)		.000
	N	127	127
Work-Life Harmony	Pearson Correlation	.523**	1
	Sig. (2-tailed)	.000	
	N	127	127

Source: Computed by the researcher @1% level

Based on the information in Table 4, a 0.523 coefficient of association has been discovered between job effectiveness and work-life harmony. It suggests that the two variables have a significant association with one another. At the 1% significance level, the computed coefficient of correlation is regarded as statistically significant. It is therefore possible to refute the null hypothesis. It makes sense to assume that work-life balance and job effectiveness are related. It implies that job performance and work-life balance are strongly correlated.

FINDINGS

The findings of the correlation test between the variables show that there is a statistically significant relationship between the variables such as staff effectiveness, workplace receptiveness and management cooperation, efficacy of work and work-life harmony, management support, and staff efficacy.

SUGGESTIONS

Stress makes it difficult for employees to do their jobs well. They are engaging in undesirable behaviours including being late, making mistakes at work, misusing medications, and acting violently in the workplace because they lack motivation and job satisfaction. Additionally, they report higher rates of physical and mental health issues. The insurance company's reputation as a whole may suffer as a result, along with complaints from stakeholders and customers about the quality of services rendered to clients, poor performance, and generally lower worker efficiency.

In order to guarantee that the labor is utilized effectively, upper management should first focus on workplace stress reduction strategies. In order to reduce workplace stress, organizations can also change their policies to give employees more control over work-related activities, promote shared goals and objectives, accept innovative approaches to problem-solving, assign decision-making, promote teamwork, respect, and take into account the needs of each individual employee.

Each organization must have a system in place to determine and evaluate the level of stress that employees are under. Management should establish programs for stress reduction and health maintenance in order to lessen the negative effects of occupational stress on workers. Workplace stress can be reduced by providing employees with efficient coping mechanisms through stress management programs.

CONCLUSION

The research's main objective is to determine stress management strategies and how they impact insurance industry employees' effectiveness and efficiency. Strategies for managing stress at work have an impact on employee performance and business productivity. It's crucial to remember that stress can be interpreted as the result of external stressors as well as a typical occurrence. Since depression reduces motivation, output, and job skills, it is costly for both companies and employees. Using coping mechanisms like celebration, relaxation, yoga, meditation, self-care, and social support is one of the most crucial aspects of stress management tactics for professionals. Relationships, productivity, absenteeism, pay negotiations, and physical and mental health can all benefit from these activities. It is important to remember that the task is not insurmountable. To establish a stress-free environment, it is critical to look closely at the stressors, understand and assess the implications, weigh the benefits and drawbacks, and, most all, make a commitment to the programs by changing one's viewpoint.

REFERENCES

1. Anbarasan N.A, C. Jaganath, ―A Study on Stress Management among Employees in Information Technology Sector at Chennai City‖, International Journal of Advanced Research in Business Management and Administration, 1(1).
2. Biriowu1 & j. E. Chikwe (2019) Stress management strategies and organizational performance: insight from selected private and public hospitals in Port Harcourt, Nigeria International Journal of business management and Research (IJBMR), ISSN(P): 2249–6920; ISSN(E): 2249–8036, Vol. 9, Issue 6, Dec 2019, 27–36
3. Erkutlu, J., & Chafra, P. (2006). Industrial and Organizational Behavior.Wiley: Hoboken, NJ.
4. Hicks, T., & Caroline, M. (2007). A guide to managing workplace stress. California: Universal Publishers.
5. Holmlund-Rytkönen, & Strandvik, N. (2005). Organizational Behavior. Tsing Hua University Press.
6. Martha Sucharitha and Md. Shaik Amzad Basha (2020) A Study on the impact of

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stress on employee's productivity and job performance: implications for stress measurement and management, Ilkogretim Online - Elementary Education Online, 2020; 19 (4): pp. 823-831

7. Mohammed M. Al-nadesh, Mariam S. Al-othali, Khlood S. Al-othali (2022) Impact of Workplace Stress Management on Employee Performance, Journal of Engineering Sciences, 13(7).
8. Mukherjee, D. sundyota numandis. (2015). Relaxium (lactium): Anti Stress. https://doi.org/10.13140/RG.2.1.2441.9926
9. Paul. G., Elam, & Verhulst, (2007). A longitudinal study of employees' perceptions of using deep breathing meditation to reduce testing stresses. Teaching and Learning in Medicine, 19(3), 278-292.
10. Pflanz, S. E., & Ogle, A. D. (2006). Job Stress, Depression, Work Performance and Perceptions of Supervisors in Military Personnel. Military Medicine, 171(9), 861-865.

EXAMINING THE VOLATILITY OF SUSTAINABILITY INDICES OF INDIA: AN EMPIRICAL EVIDENCE FROM THE GARCH FAMILY MODELS

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ABSTRACT:
The concept of sustainability has emerged in all the fields, be it Marketing, Consumer Behaviour or Finance. One such important area is Sustainable Investment or Socially Responsible Investing, where investment is in Environment, Social and Governance (ESG) stocks has now become an attractive option than ever before due to the increased awareness among the investors. But in order to attract investment in ESG stocks or companies it is essential that a study on the performance of the sustainable indices in India is made. Hence in this paper we empirically test the volatility of sustainability indices of India with the help of econometric models such as SGARCH, EGARCH & GJR GARCH. The reason for applying three models to the data is to identify which model can be considered best fit in case of sustainable indices of India. BSE GREENX, BSE CARBONEX, and BSE 100 ESG were considered as the “sustainability indices” of India in this study. Before proceeding further analysis, this data was tested for stationarity using Augmented Dickey Fuller (ADF) test and Phillips-Perron Unit root test. Test for normality was also conducted to check if the data requires normal or t-distribution analysis. Kolmogorov-Smirnov, Shapiro-Wilk test and Jarque Bera tests were conducted on the data series, which revealed that the data is non-normal. Hence Student’s t-distribution is considered ideal for studying the GARCH family effects on the data. The findings indicate that EGARCH is considered best model for S&P BSE CARBONEX while GJR-GARCH is best for S&P BSE GREENX and S&P BSE 100 ESG.

Keywords: Sustainability Index, GARCH, EGARCH, GJR GARCH. Volatility, BSE GREENEX, BSE CARBONEX, S&P BSE 100 ESG.

1. INTRODUCTION

Green Finance is rapidly becoming popular for achieving climate change goals. The growing importance of Climate Change has led to an increase in Social Responsibility Investing (SRI), otherwise referred to as Sustainable Investing (SI), Impact Investing (a subset of SRI), and ESG Investing (Joanna et al., 2022). (Iqbal et al., 2022) Sustainable investment is the most promising aspect in the achievement of climate-related goals. With the emergence of Sustainable Development, Environmental, Social, and Governance (ESG) considerations have become among the main indicators used to determine a company's financial success. Some studies refer to ESG as ethical and CSR investments. In addition to being a key component of business development and governance, sustainable development has also drawn scholarly attention. Enterprise development, environmental responsibility, social responsibility, and corporate governance (ESG) are becoming increasingly popular. The terms "green economy," "corporate social responsibility," and "responsible investment" are extensions and enlargements of the idea of "ESG," ESG, which also refers to essential benchmarks for contemporary global society to gauge the extent of sustainable development.

There was not much history of sustainable indices until the introduction of the Domini 400 social index in May 1990, the world's first sustainability index. Other sustainability indices have been created as a result of the rising prevalence of socially responsible investments (SRIs). With the rapid emergence of the concept of sustainability investing, companies have started disclosing non-financial aspects in their reports, such as the Carbon Accounting and Greenhouse Gas Protocol initiative. (Frooman, 1997) investors nowadays look into ESG reports as a means to evaluate and compare a company's performance with its competitors. The stakeholders conclude that a business with strong ESG practices and reputation ought to be able to compete successfully in the market. (Kadam, 2019) indicated that investors in green stocks experience greater and less volatile returns.

Considering these benefits of SRI, it is important that quantitative analysis is performed to measure the performance of the sustainability indices of a nation. Volatility and spillovers in stock markets are common, and various researchers have studied these phenomena. Time series models play a crucial role in the financial market by explaining the underlying framework of an economic variable. Recent years have seen an upsurge in studies examining persistent shocks in the mean and variance of the returns of financial instruments in the market due to the availability of data for financial market analytics (Quaicoe et al., 2015). To understand and forecast time-varying volatility, it is essential to capture the asymmetric volatility of stock returns. Keeping the aforementioned view in mind, this study examines the volatility of sustainable indices using GARCH family model forecasting tools. This study uses GARCH, EGARCH, and GJR GARCH to identify the best model that fits the sustainability indices of India: BSE GREENX, BSE CARBONEX, and S&P BSE 100 ESG. This study contributes to the literature in several ways. First, this study conducted a long-term analysis of three major sustainability indices of India over a period of five years. Second, this study adopts three different forecasting models to precisely identify which model best analyzes and forecasts volatility. Finally, investors will be able to understand the performance of India's sustainability indices, which is a benchmark for increasing sustainable investment in our nation.

The rest of the article is organized as follows. Section 2 provides a brief overview of past related studies, and the research methodology adopted in this article is elaborated in Section 3. Section 4 presents the empirical analysis, and Section 5 discusses the conclusions drawn from the results and implications of this study.

2. LITERATURE REVIEW

A comprehensive literature review has been conducted, which includes an examination of the volatility linkages and spillovers of Indian and international sustainability indices through both quantitative and qualitative analyses. Various econometric models have been formulated to study volatility such as (Bollerslev, 1986) developed the Autoregressive Conditional Heteroskedasticity which he termed and refined further as Generalized Autoregressive Conditional Heteroskedasticity, (Nelson, 1991) from GARCH evolved EGARCH and (Glosten et al., 1993) GJR GARCH. The reviewed studies compare sustainability indices to traditional market indices and international market indices, as well as investigate the relationship between sustainability indices and a company's financial performance and macroeconomic variables. The study of volatility in stock markets is considered significant.

Sustainability Indices & Corporate Performance

Arias Fogliano de Souza Cunha & Samanez, 2013) analyzed the performance of 56 Brazilian companies listed in the Corporate Sustainability Index with their counterparts. The results showed that these companies exhibited an increase in liquidity and low risk but did not achieve satisfactory financial performance. (Van Stekelenburg et al., 2015) investigated the relationship between corporate financial performance and corporate sustainable performance of European stocks included and excluded from the Indices (Indices (DJSI Europe). The results based on the event study found strong evidence of the impact of announcements on the day of the event and the days following. The second analysis shows that industry group leaders with high corporate sustainable performance observed positive growth after the announcement.

Sustainability Indices & Conventional Indices

Weber & Ang, 2016 assessed the persistence and performance of the MSCI SRI Emerging market indices in comparison to traditional market indexes and discovered that the SRI indices were neutral in this regard. This study demonstrates that, as opposed to positive shocks, negative shocks have a greater impact on the conditional volatility of SRI Indices. The performance of India's sustainability indexes and its traditional indicators during significant black swan occurrences was compared by (Deshmukh et al., 2022). The findings demonstrated that throughout all black swan situations, sustainable indexes (BSE GREENX & CARBONEX) outperformed SENSEX comparatively. The traditional indices, however, outperformed the SRI Indices over the long term. (Hariharan & Babu, 2018) compared the Nifty 100 Enhanced ESG Index to its parent index Nifty 100 and discovered that the sustainable index had higher returns and lower volatility than the Nifty 100. (Iqbal et al., 2022) investigated asymmetric spillovers in sustainable investments by examining the Dow Jones Sustainability Indices for 14 countries from 2005 to 2021. This study's findings are consistent with past research demonstrating that bad news is more intense than positive news, and countries such as Germany, the Netherlands, the United Kingdom, and France were big shock transmitters. (Egurla & Kiran, 2022) investigated the volatility and leverage implications of sustainability indices on the stock exchanges of India, Russia, and Luxembourg from 2015 to 2021. According to the statistics, the Luxembourg exchange has higher volatility than Russia and India. When compared to other stock exchanges, the S&P BSE CARBONEX has a strong leverage effect. (Janik & Płuciennik, 2022) examined the risk of sustainable indices FTS-E4 family and their conventional counterparts during COVID 19 health crisis. The study found that the sustainable indices were less volatile than their counterpart indices.

The return volatility and spillovers between the traditional and sustainability indexes of Dow Jones and S&P are studied by (Almansour et al., 2023). The findings demonstrated that in both markets, the conventional indices served as the primary shock transmitters, while the sustainable indices served as the primary shock receivers. During the subprime crisis and COVID 19 time, (Bhatia & Gupta, 2020) investigated the symmetric and asymmetric model of the Indian Banking sectoral indexes. According to the analysis, there was a significant leverage effect during the subprime crisis, and all of the indices showed persistence.

Sustainability Indices & Macroeconomic variables

Using the GARCH model, (Sariannidis et al., 2010) investigated the effects of macroeconomic factors on the Dow Jones Sustainability and Dow Jones Wilshire 5000 indices from 2000 to 2008. The findings indicate that, in contrast to the returns of the 10-year bond value, which exhibited a positive influence, the price of crude oil and exchange rate volatility had a negative impact on the returns of the U.S. stock market. (Baranidharan & Dhivya, 2020) studied the causal effect of macroeconomic variables on BSE index. the results found that macroeconomic variables such as Wholesale Price Index and India Foreign Trade were less correlated with the returns of BSE index. The Granger Causal test exhibited that changes in macroeconomic variables did not cause changes in BSE Sensex. (Sharma et al., 2023) identified the link between S&P GREENX & CARBONEX and macro-economic variables such as Wholesale Price Index, Industrial Production Money Supply (M3), Real Effective Exchange Rate and Crude oil prices from 2012 to 2021. The research discovered that, with the exception of interest rates, both indices were statistically related to all economic factors.

GARCH family Model & its application

The Generalised Autoregressive Conditional Heteroscedasticity Model (GARCH) is utilised when working with time series data to benefit from excess kurtosis and volatility clustering. In risk management, asset allocation, option pricing, and portfolio management, this model is frequently employed. The use of this model and its sophisticated variants, including EGARCH, TGARCH, GJR-GARCH, and DCC GARCH, is prevalent in research that try to forecast the volatility of stock markets. The applicability of

ARCH/GARCH specifications' suitability for simulating changes in the dollar/cedi exchange rate was evaluated and considerably confirmed by (Techie Quaicoe et al., 2015). (Susruth, 2017) investigated volatility clustering, leverage impact, and risk premium and discovered the existence of these phenomena in Indian stock market. Using GARCH-type models, (Chen et al., 2019) discovered asymmetric volatility in wind power time series. This study's findings suggest that the impact of negative shocks on volatility is smaller than that of positive shocks, which differs from previous research. (Aliyev et al., 2020) estimated the volatility in NASADQ 100 using univariate GARCH models such as EGARCH and GJR-GARCH. The findings show that the volatility shocks in the index are persistent and depict leverage effect. (Sahiner, 2022) GARCH-type models are effective in coping with the volatility in Asian markets. (Arashi & Rounaghi, 2022) discovered that the ARMA-GARCH model can anticipate market efficiency in the NASDAQ with a 1% error level. (de Oliveira et al., 2022) investigated the influence of the COVID-19 pandemic on Asian, American, and European stock markets, with a focus on long memory persistence. The study discovered that the EGARCH and combined GARCH models are the best for studying stock markets. The examined literature in this study improves our understanding of forecasting stock market performance by investigating volatility, persistence, and the leverage impact. There is still a scarcity of study in the field of sustainability indices, particularly in India, and such studies have not made a significant effort to determine the optimum GARCH-type model suitable as researched in international markets. Furthermore, because we find time series data to be non-normal, we employ t-distribution models to represent volatility persistence rather than normal distribution, which is not used in many research publications evaluated.

3. OBJECTIVES OF THE STUDY

- To determine the unit root and test the normality of the daily returns of the data.
- To examine the volatility persistence and leverage effect of the indices using GARCH/EGARCH forecast.
- To analyse the News Impact Curve of sustainability indices i.e., if the indices are symmetric or asymmetric in nature.

4. RESEARCH METHODOLOGY

This paper comparatively analyses the daily closing prices of S&P BSE 100 ESG, S& P BSE GREENX and S&P BSE CARBONEX as the major sustainability indices of India. Daily closing prices of the indices from January 01, 2018 to December 31, 2022 were downloaded from BSE website. Daily log returns were computed using the following formula:

$$\mathbf{R_t = \ln (P_t / P_{t-1})}$$

Here, R_t stands for the daily returns; Ln is the log value; P_t is the closing price of period t; P_{t-1} is the previous day closing price.

The analysis first presents the results of descriptive statistics which includes mean, median, standard deviation, skewness, kurtosis and Jarque Bera test. Then the study proceeds with checking if the data is stationary or non-stationary. For this Augmented Dickey Fuller test and Phillip Perron Tests were applied. For the purpose of analysis, R Studio software is used. Test for normality was also conducted to check if the data requires normal or t-distribution analysis. Kolmogorov-Smirnov, Shapiro-Wilk test and Jarque Bera tests were conducted on the data series, which revealed that the data is non-normal. (Abdullah et al., 2017) found that t-distribution improved forecasting accuracy in comparison to normal distribution. Hence Student’s t-distribution is considered ideal for studying the GARCH family effects on the data.

Before estimating GARCH models it is important to satisfy three conditions: a) Date should be stationary b) There must be volatility clustering which means big changes are followed by big changes and c) Presence of ARCH effect. If all the three conditions are satisfied GARCH family model can be estimated on the indices. The best model that suits the sustainability indices is found based on AIC & BIC value criterion. Lower these values, better the model.

Econometric Infrastructure:

(Engle, 1982) developed the Autoregressive Conditional Heteroskedasticity model where volatility in financial time series data is a function of previous day's error term.

$$\sigma_t^2=\alpha_0+\alpha_1\varepsilon_{t-1}^2+\ldots+\alpha_q\varepsilon_{t-q}^2$$

(Bollerslev, 1986) Generalized Autoregressive Conditional Heteroskedasticity model (GARCH) is an extension over the ARCH model that includes both average component and autoregressive component. GARCH is better model than ARCH as it studies the persistence of volatility. The GARCH (*p*,*q*) specification is given as follows:

$$\sigma_t^2=\omega+\alpha_1\varepsilon_{t-1}^2+\ldots+\alpha_q\varepsilon_{t-q}^2+\beta_1\sigma_{t-1}^2+\ldots+\beta_p\sigma_{t-p}^2$$

p is the order of GARCH term and q is the order of ARCH term.

(Nelson, 1991) The exponential generalized autoregressive conditional heteroskedastic (EGARCH) was developed to capture the asymmetric volatility as GARCH model captured only symmetric volatility. Capturing asymmetric volatility yielded better results. An EGARCH (*p*,*q*) is:

$$\mathrm{Ln}\,\sigma_t^2=\omega+\beta\ln(\sigma_{t-1}^2)+\gamma\frac{u_{t-1}}{\sqrt{\sigma_{t-1}^2}}+\alpha\left[\frac{|u_{t-1}|}{\sqrt{\sigma_{t-1}^2}}-\frac{\sqrt{2}}{\pi}\right]$$

The Glosten-Jagannathan-Runkle GARCH (GJR-GARCH) model by Glosten, Jagannathan and Runkle accounts for fat-tail distribution than GARCH model. The GJR-GARCH model is:

$$\sigma_t^2=\alpha_0+\sum\beta_i\,\sigma_{t-i}+\sum\alpha_i\,\varepsilon^2_{t-1}+\gamma\,\varepsilon^2_{t-1}d_{t-1}$$

5. RESULTS & DISCUSSION

Descriptive Statistics:

The descriptive statistics of the closing prices of S&P BSE CARBONEX, ESG, and GREENX are shown in Table 1. Results of the Jarque Bera test, skewness, and kurtosis are included in the analysis above. Jarque Bera tests with significant p values demonstrate that the data is not normal. As the kurtosis values of all the three indices are more than 3, the variables are leptokurtic that is the distributions have heavier tails than normal distribution.

Table 2 displays the results of a normality test on the data. The Kolmogorov & Shapiro Wilk test's null hypothesis states that the data have a normal distribution. We can validate that the data are not normal because the significant values are less than 0.05.

GARCH Model Conditions:

The data must meet three requirements before moving on with GARCH model estimate, as was described in the section on research methodology. Data is first converted into natural log and the stationary tests are applied. The null hypothesis of Augmented Dickey Fuller (ADF)Test, Phillip Perron (PP) test and Kwiatkowski-Phillips-Schmidt-Shin (KPSS) tests are:

ADF & PP test: **H_0: Data is non stationary or has unit root**

KPSS test: **H_0: Data is stationary**

Table 3 shows p-values of the ADF test and Phillips Perron tests performed on all three indices are less than the significant value of 0.05, as can be seen from the above table. We therefore rule out the null hypothesis and come to the conclusion that the time series data is stationary.

We accept the null hypothesis of the KPSS test as the p values are greater than 0.05. So even the KPSS test demonstrates that the data is stationary. As a result, the first need for the GARCH model is satisfied.

We must determine whether the time series data exhibits volatility clustering in accordance with the second requirement. This implies that major shocks are followed by major changes, while minor changes are followed by minor ones. Volatility clustering is visible in **Charts 1, 2, and 3** for all three indices.

After both the conditions are satisfied, we perform the ARCH test using R Studio. The results of ARCH LM test are as presented in **Table 4.**

The null hypothesis of ARCH LM test indicates absence of ARCH effect. We reject the null hypothesis and establish that the data show the ARCH effect because all of the indices' p values are less than 0.05. As all three requirements for estimating GARCH models have been met, GARCH family model can be applied.

In **Table 5**, the GARCH (1,1) coefficients of BSE CARBONEX demonstrate that the α value is positive and significant denoting ARCH effect and volatility clustering. The positive α also signifies a positive relationship between past and the current volatility. The β coefficient indicates the GARCH effect which is positive and significant. A high positive beta signifies higher volatility caused by market shocks and indicates long-term persistent volatility. The sum of α+ β must be less than 1. Here the sum is 0.963164 which is less than 1 indicating the persistence in volatility for long period.

In the EGARCH (1,1) model, negative and significant α shows that past volatility shocks have lesser effect on the current volatility. Positive and significant value of γ is observed. γ indicates the leverage effect in EGARCH model. The negative market shocks such as market downturns or bad news increases the volatility more than the positive shocks. In other words, volatility tends to increase more after negative events.

In GJR GARCH (1,1) the λ captures the asymmetric volatility response. Positive and significant λ indicates that positive shocks on volatility is different from the impact of negative shocks. It signifies that positive news has greater impact than the negative news. The sum of α+ β+ λ /2 must be less than 1. Here the sum is 0.960967 which is less than 1 indicating the persistence in volatility for long period.

From **Table 6** we find α to be positive which means the presence of short-term volatility clustering in GREENX. There is high volatility as represented by β indicating long-term persistence in volatility. Here the sum of α+ β is 0.946711 which is less than 1 indicating the persistence in volatility for long period.

In EGARCH (1,1) model, negative and significant α shows that past volatility shocks have lesser effect on the current volatility. Positive and significant value of γ is observed. The negative market shocks increase the volatility more than the positive shocks. In GJR GARCH (1,1) γ signifies that positive news has greater impact than the negative news. The sum of α+ β+ λ /2 must be less than 1. Here the sum is 0.94806 which is less than 1 indicating the persistence in volatility for long period.

For BSE 100 ESG in **Table 7**, GARCH (1,1) shows positive and significant α. The β is also high and significant. Here the sum of α+ β is 0.964297 which is less than 1 indicating the persistence in volatility for long period. In the EGARCH (1,1), negative and significant α shows that past volatility shocks have lesser effect on the current volatility. γ coefficient is positive but insignificant for BSE 100 ESG. Whereas the γ for GJR GARCH (1,1) is significant which means positive news in BSE 100 ESG have greater impact than negative news. Here the sum of sum of α+ β+ λ /2 is 0.9613845 which is less than 1 indicating the persistence in volatility for long period.

From **Table 8** we try to identify the suitable model for each index. The criterion for selection is the lowest value of Akaike information criterion and Bayesian information criterion. As evident from the results obtained, it can be inferred that EGARCH model is best for S&P BSE CARBONEX whereas GJR GARCH model is suitable for S& P BSE GREENX and BSE 100 ESG. Thus, it can also be said that GARCH is not the best fit for any of the sustainable indices.

Based on the above selected model, News Impact curve is formed using R Studio for all the three indices.

The **Charts 4, 5 and 6** show the impact of any favourable or unfavourable news on the indices. The curve shows that the indices react differently to negative shocks and positive shocks depicting the asymmetric shape of the curve. All the indices show increase in volatility to negative news and decrease in volatility to positive news. As GARCH model is not considered best fit we do not find symmetric curve for the sustainability indices.

Table 1: Descriptive Statistics

	Observation	Mean	Max	Min	SD	Skewness	Kurtosis	Jarque Bera	Probability
S&P BSE CARBONEX	1239	0.0004182	.08	-.14	.01226	-1.585	20.473	21971	**0.000**
S&P BSE 100 ESG	1239	0.0004837	.08	-.14	.01241	-1.445	18.495	17938	**0.000**
S& P BSE GREENX	1239	0.0004086	.08	-.13	.01224	-1.293	14.534	11154	**0.000**

Author's computation using SPSS software

Table 2: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
BSE_CARBONEX	.231	1239	.000	.877	1239	.000
BSE_ESG	.225	1239	.000	.863	1239	.000
BSE_GREENX	.259	1239	.000	.848	1239	.000

Author's computation using SPSS software

Table 3: Stationary Test results

	ADF TEST		**PP TEST**		**KPSS TEST**	
	Test statistic	**P-value**	**Test statistic**	**P-value**	**Test statistic**	**P-value**
S&P BSE CARBONEX	-9.8784	0.01	-1376.9	0.01	0.10097	0.1
S& P BSE GREENX	-9.9408	0.01	-1357.2	0.01	0.16994	0.1
S&P BSE 100 ESG	-10.033	0.01	-1357.2	0.01	0.096214	0.1

Author's computation using SPSS software

Chart 1: S&P BSE GREENX

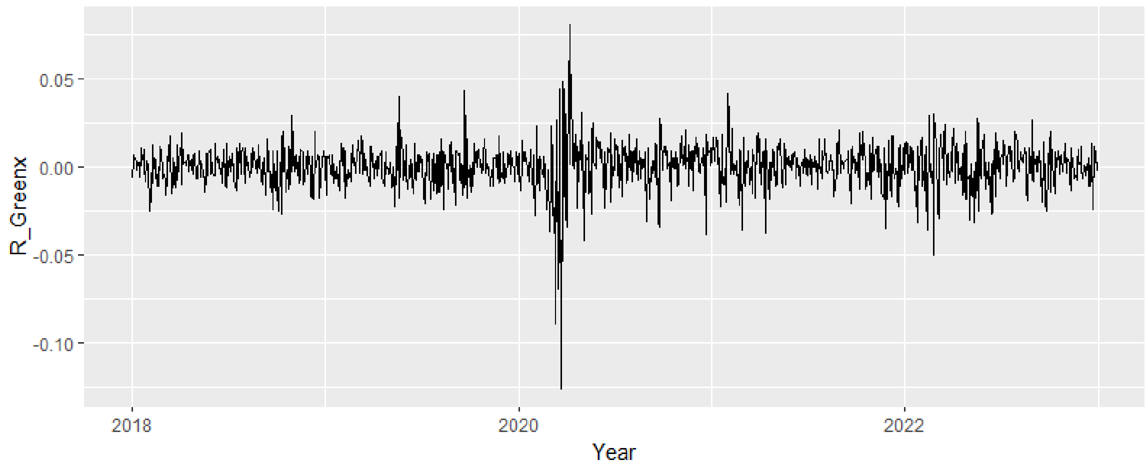


Chart 2: S&P BSE CARBONEX

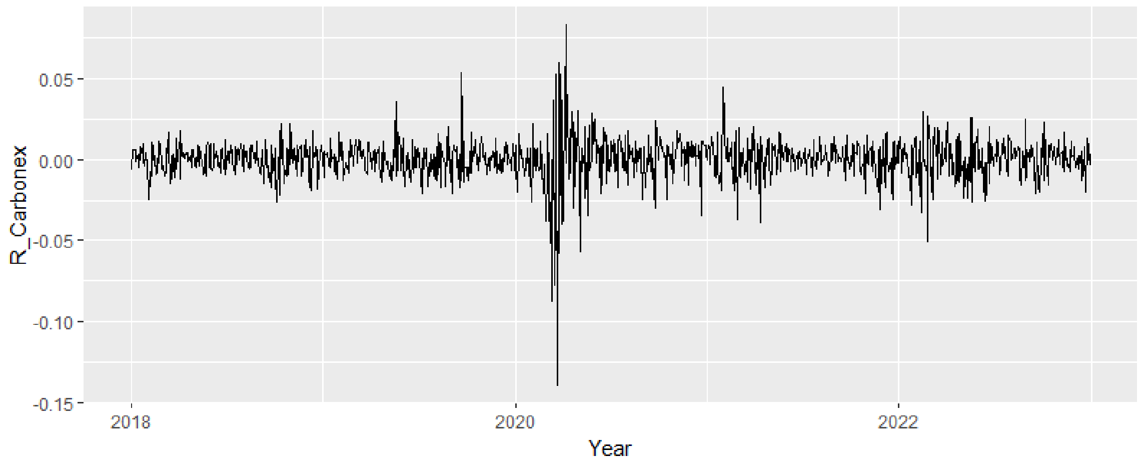


Chart 3: S&P BSE 100 ESG

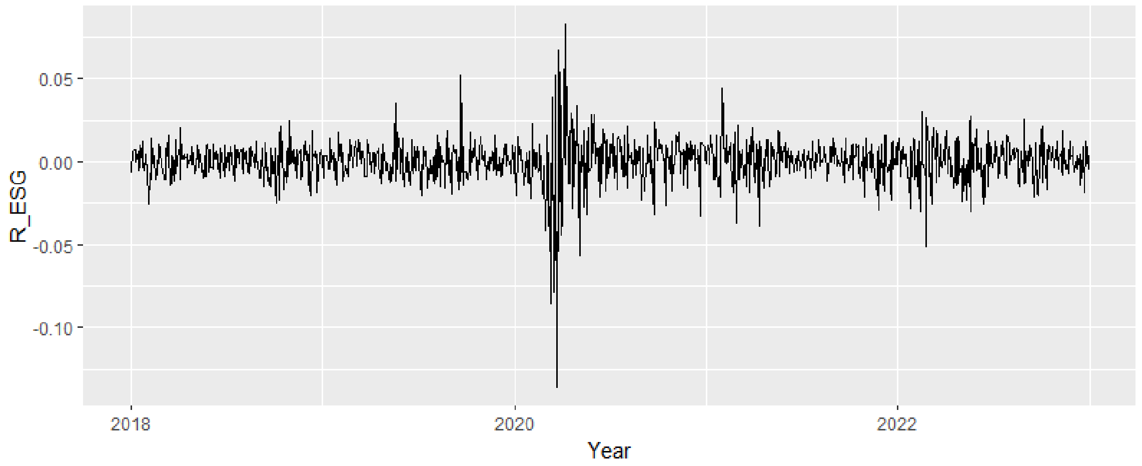


Table 4: ARCH LM Test Results

Index	Chi-squared value	df	Probability
S&P BSE CARBONEX	354.65	12	0.00000
S& P BSE GREENX	296.65	12	0.00000
BSE 100 ESG	394.56	12	0.00000

Author's computation using SPSS software

Table 5: S&P BSE CARBONEX

Parameters		GARCH (1,1)		EGARCH (1,1)		GJR GARCH (1,1)	
ω		0.000004		-0.358590		0.000004	
P value	T value	(0.139927)	1.47606	0.000000	-7.91586	0.000000	7.929265
α		0.117648		-0.150622		0.000000	
P value	T value	**0.000000**	5.07487	0.000000	-11.96984	0.999994	0.000007
β		0.845516		0.961300		0.860709	
P value	T value	**0.000000**	34.64334	0.000000	177.86435	0.000000	57.698924
γ		-		0.165765		0.200516	
P value	T value			0.005707	2.76414	0.000000	6.020495

Author's computation using R software

Table 6: S& P BSE GREENX

Parameters		GARCH (1,1)		EGARCH (1,1)		GJR GARCH (1,1)	
ω		0.000007		-0.428285		0.000006	
P value	T value	**0.000000**	5.11389	**0.000000**	-11.01913	**0.000000**	24.200177
α		0.129667		-0.123860		0.000001	
P value	T value	**0.000000**	8.52912	**0.000000**	-6.02556	0.999928	0.000091
β		0.817041		0.952780		0.857849	
P value	T value	**0.000000**	39.16295	**0.000000**	226.06162	**0.000000**	60.287743
γ		-		0.191564		0.180402	
P value	T value			**0.000000**	5.67592	**0.000000**	5.527578

Author's computation using R software

Table 7: S&P BSE 100 ESG

Parameters		GARCH (1,1)		EGARCH (1,1)		GJR GARCH (1,1)	
ω		0.000004		-0.352463		0.000004	
P value	T value	**0.000000**	1.50111	**0.015559**	-2.41910	**0.000000**	7.645035
α		0.106209		-0.153849		0.000000	
P value	T value	**0.000000**	5.04812	**0.000000**	-5.42203	0.999990	0.000012
β		0.858088		0.961751		0.866504	
P value	T value	**0.000000**	38.30119	**0.000000**	56.07825	**0.000000**	59.569981
γ		-		0.159412		0.189761	
P value	T value			0.447716	0.75923	**0.000000**	5.850679

Author's computation using R software

Table 8: AIC & BIC CRITERIA

	S&P BSE CARBONEX		S& P BSE GREENX		S&P BSE 100 ESG	
	AIC	**BIC**	**AIC**	**BIC**	**AIC**	**BIC**
GARCH	-6.4598	-6.4267	-6.3329	-6.2999	-6.4200	-6.3870
EGARCH	**-6.5005**	**-6.4633**	-6.3530	-6.3158	-6.4590	-6.4218
GJR GARCH	-6.4997	-6.4625	**-6.3589**	**-6.3217**	**-6.4598**	**-6.4226**

Author's computation using R software

Chart 4: News Impact Curve- S&P BSE CARBONEX (EGARCH MODEL)

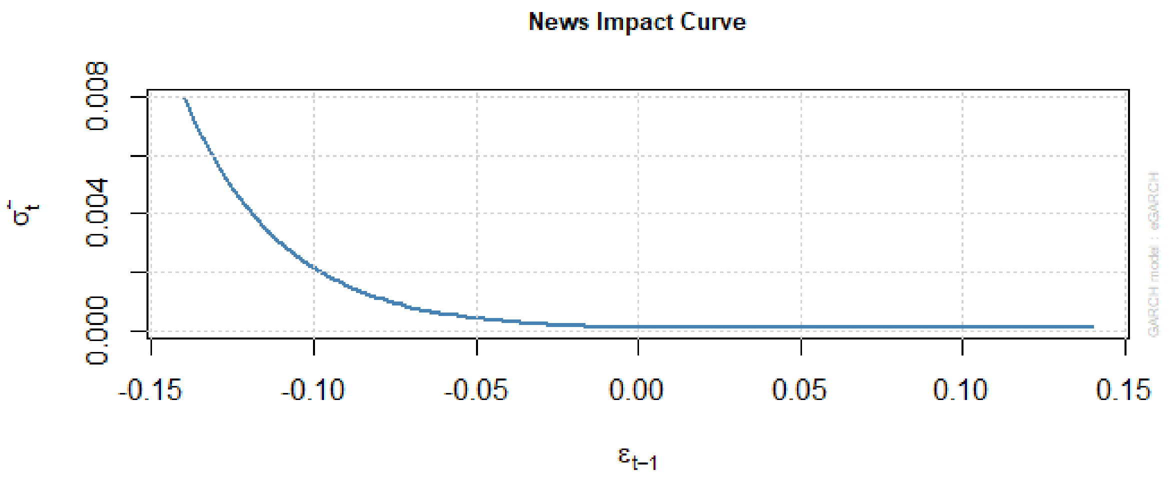


Chart 5: News Impact Curve- S&P BSE GREENX (GJR-GARCH MODEL)

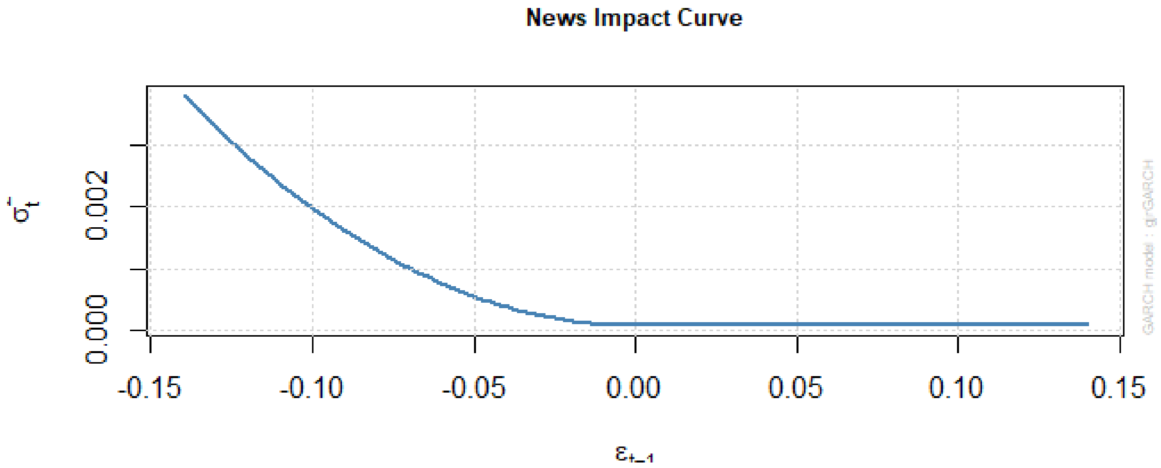
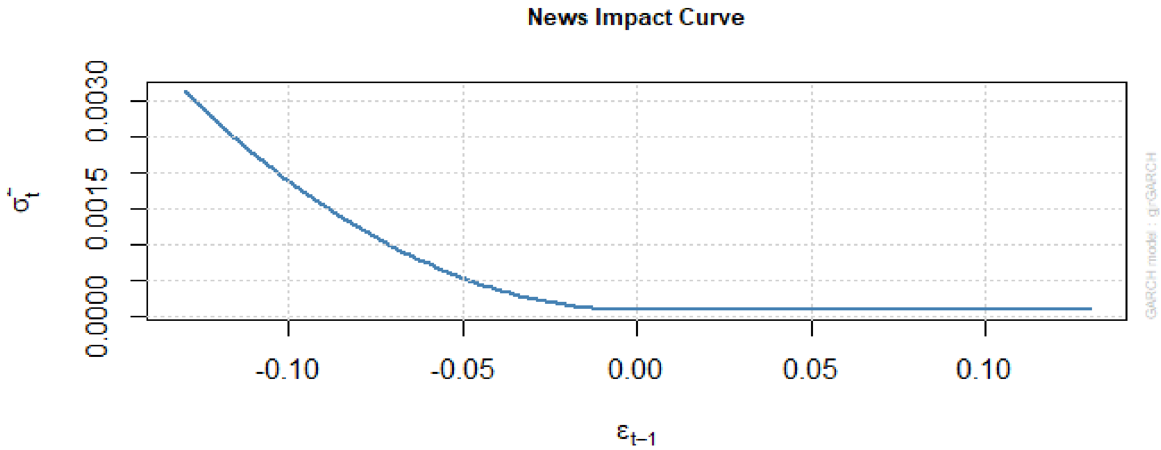


Chart 6: News Impact Curve- S&P BSE 100 ESG (GJR-GARCH MODEL)



6. CONCLUSION & RESEARCH IMPLICATIONS:

The focus of the study is to model the volatility of the Indian sustainability indices S&P BSE 100 ESG, S&P BSE GREENX, and CARBONEX over a five-year period from 2018 to 2022. The choice to estimate the GARCH family models using the student's t-distribution is justified by the leptokurtic fat tail of the returns. SGARCH, EGARCH, and GJR-GARCH models are used in the study to analyse the indices. We draw the conclusion that the SGARCH model is not suitable for all three indices based on the results. EGARCH (1,1) is found best for CARBONEX while GJR-GARCH (1,1) for GREENX and ESG indices of Bombay Stock Exchange. (Villar-Rubio et al., 2023) show that EGARCH has great advantage over GARCH model as it models positive and negative changes in the series impact the volatility. Additionally, we plot the News Impact Curve to determine how the indices respond to both positive and bad news. It is clear that, in contrast to positive shocks, volatility rises with negative shocks. Therefore, based on the empirical data, we can conclude that

In the S&P BSE CARBONEX, previous volatility has very little bearing on the present volatility and that volatility tends to rise more following adverse events. The past volatility have very less effect on the current volatility and volatility tends to increase more after negative events.

In S&P BSE GREENX and S&P BSE 100 ESG based on the values of α and β, it is observed that past volatility has impact on the current volatility for long-term.

Finally, it is concluded from the study about the presence of volatility clustering, asymmetry, and leverage impact in the Indian sustainability

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indices. This study contributes to the existing literature by providing new evidences as to the comparison between the GARCH family models. Since sustainability investing is still in its infancy in India, this study can provide various implication for the stakeholders. Firstly, based on the literature reviewed we find that sustainable indices are less volatile than its conventional peers, hence it will help all the existing and new SRI investors to gauge the performance of sustainability indices and understand the nature of volatility and informational efficiency. Secondly, the government, market regulators and corporations must understand the need of strong ESG practices in our country in order to develop strong stakeholder relationship and expand the ESG investment in line with the developed countries.

7. FUTURE RESEARCH DIRECTION:

No study is without limitations. This study also has few limitations that paves way for future research. Firstly, researchers can explore National Stock Exchange sustainable indices and compare with BSE sustainable indices. Secondly, this study considers only SGARCH, EGARCH and GJR-GARCH models, other GARCH models can be explored extensively. Finally, it will be more interesting to compare Indian sustainability indices with sustainability indices of other countries.

8. REFERENCES:

1. Abdullah, S. M., Siddiqua, S., Siddiquee, M. S. H., & Hossain, N. (2017). Modeling and forecasting exchange rate volatility in Bangladesh using GARCH models: a comparison based on normal and Student's t-error distribution. *Financial Innovation*, *3*(1). https://doi.org/10.1186/s40854-017-0071-z
2. Aliyev, F., Ajayi, R., & Gasim, N. (2020). Modelling asymmetric market volatility with univariate GARCH models: Evidence from Nasdaq-100. *The Journal of Economic Asymmetries*, *22*, e00167. https://doi.org/10.1016/J.JECA.2020.E00167
3. Almansour, B. Y., Alshater, M. M., Marashdeh, H., Dhiaf, M., & Atayah, O. F. (2023). The return volatility and shock transmission patterns of chosen S&P and Dow Jones sustainability indices and their conventional counterpart. *Competitiveness Review*, *33*(1), 107–119. https://doi.org/10.1108/CR-12-2021-0188
4. Arashi, M., & Rounaghi, M. M. (2022). Analysis of market efficiency and fractal feature of NASDAQ stock exchange: Time series modeling and forecasting of stock index using ARMA-GARCH model. *Future Business Journal*, *8*(1). https://doi.org/10.1186/s43093-022-00125-9
5. Arias Fogliano de Souza Cunha, F., & Samanez, C. P. (2013). Performance Analysis of Sustainable Investments in the Brazilian Stock Market: A Study About the Corporate Sustainability Index (ISE). *Journal of Business Ethics*, *117*(1), 19–36. https://doi.org/10.1007/s10551-012-1484-2
6. Baranidharan, S., & Dhivya, N. (2020). *Causal Influence of Macroeconomics Factors Shock on Indian Stock Market: Evidence from BSE Index* (Vol. 2, Issue 1). www.bseindia.com.
7. Bhatia, P., & Gupta, P. (2020). Sub-prime Crisis or COVID-19: A Comparative Analysis of Volatility in Indian Banking Sectoral Indices. *FIIB Business Review*, *9*(4), 286–299. https://doi.org/10.1177/2319714520972210
8. Bollerslev, T. (1986). Generalized Autoregressive Conditional Heteroskedasticity. *Journal of Econometrics*, *31*(3), 307–327. https://doi.org/doi:10.1016/0304-4076(86)90063-1
9. Chen, H., Zhang, J., Tao, Y., & Tan, F. (2019). Asymmetric GARCH type models for asymmetric volatility characteristics analysis and wind power forecasting. *Protection and Control of Modern Power Systems*, *4*(1). https://doi.org/10.1186/s41601-019-0146-0
10. de Oliveira, A. M. B., Mandal, A., & Power, G. J. (2022). Impact of COVID-19 on Stock Indices Volatility: Long-Memory Persistence, Structural Breaks, or Both? *Annals of Data Science*. https://doi.org/10.1007/s40745-022-00446-0
11. Deshmukh, P., Sharma, D., & Sharma, P. (2022). Do Socially Responsible Indices Outperform the Market During Black Swan Events: Evidence from Indian Markets During Global Financial and COVID-19 Crises. *Australasian Accounting, Business and Finance Journal*, *16*(5), 19–37. https://doi.org/10.14453/aabfj.v16i5.03
12. Egurla, K., & Kiran, V. U. (2022). Measuring Volatility and Leverage Effect of Global Sustainable and Conventional Stock Indices- Evidence From Sustainable Stock Exchanges in India, Russia, and Luxembourg. *Economics &*

ISSN: 2277-1409

Computer Science (JCECS), *08*(01), 34–44. https://sseinitiative.org/

13. Engle, R. F. (1982). Autoregressive Conditional Heteroscedasticity with Estimates of the Variance of United Kingdom Inflation. *Econometrica*, *50*(4), 987. https://doi.org/10.2307/1912773
14. Frooman, J. (1997). Socially Irresponsible and Illegal Behavior and Shareholder Wealth. *Http://Dx.Doi.Org/10.1177/000765039703600302*, *36*(3), 221–249. https://doi.org/10.1177/000765039703600302
15. Glosten, L. R., Jagannathan, R., Runkle, D. E., Breen, W., Hansen, L., Hess, P., Hsieh, D., Judson, R., Kocher-Lakota, N., Mcdonald, R., Nelson, D., & Siegel, D. (1993). On the Relation between the Expected Value and the Volatility of the Nominal Excess Return on Stocks. *The Journal of Finance*, *48*(5), 1779–1801. https://doi.org/10.1111/J.1540-6261.1993.TB05128.X
16. Hariharan, C., & Babu, M. (2018). *Price Behaviour of Indian Sustainable Investment – A Comparative Study ABSTRACT : 09*(04), 865–869. https://doi.org/10.5958/2321-5828.2018.00144.4
17. Iqbal, N., Naeem, M. A., & Suleman, M. T. (2022). Quantifying the asymmetric spillovers in sustainable investments. *Journal of International Financial Markets, Institutions and Money*, *77*(December 2021), 101480. https://doi.org/10.1016/j.intfin.2021.101480
18. Janik, B., & Płuciennik, P. (2022). Volatility and tail dependence between sustainable stock indices during the COVID-19 pandemic. *Ekonomia i Prawo*, *21*(4), 693–710. https://doi.org/10.12775/EiP.2022.037
19. Joanna, G., Katarzyna, K., & Gorka, J. (2022). *Opportunities of Portfolio Construction Including ESG And Conventional Investments Based on Dynamic Conditional Correlation*. 7128–7136.
20. Kadam, M. (2019). GREENEX (Carbon Index): A Comparative Study On Returns of BSE-Greenex, BSE-Sensex & BSE-Sensex 500. *Think India Journal*, *22*(14), 10005–10012.
21. Nelson, D. B. (1991). Conditional Heteroskedasticity in Asset Returns: A New Approach. *Econometrica*, *59*(2), 347–370. https://doi.org/https://doi.org/10.2307/2938260
22. Sahiner, M. (2022). Forecasting volatility in Asian financial markets: evidence from recursive and rolling window methods. In *SN Business & Economics* (Vol. 2, Issue 10). Springer International Publishing. https://doi.org/10.1007/s43546-022-00329-9.
23. Sariannidis, N., Giannarakis, G., Litinas, N., & Konteos, G. (2010). A GARCH examination of macroeconomic effects on U.S. stock market: A distinction between the total market index and the sustainability index. *European Research Studies Journal*, *13*(1), 129–142. https://doi.org/10.35808/ersj/262
24. Sharma, P., Shrivastava, A. K., Rohatgi, S., & Mishra, B. B. (2023). Impact of macroeconomic variables on sustainability indices using ARDL model. *Journal of Sustainable Finance & Investment*, *13*(1), 572–588. https://doi.org/10.1080/20430795.2021.1972679
25. Susruth, M. (2017). Application of GARCH Models to Forecast Financial Volatility of Daily Returns: An Empirical study on the Indian Stock Market. *Asian Journal of Management*, *8*(2), 192. https://doi.org/10.5958/2321-5763.2017.00030.0
26. Techie Quaicoe, M., Twenefour, F. B. K., Baah, E. M., & Nortey, E. N. N. (2015). Modeling variations in the cedi/dollar exchange rate in Ghana: an autoregressive conditional heteroscedastic (ARCH) models. *SpringerPlus*, *4*(1). https://doi.org/10.1186/s40064-015-1118-0
27. Van Stekelenburg, A., Georgakopoulos, G., Sotiropoulou, V., Vasileiou, K. Z., & Vlachos, I. (2015). The Relation between Sustainability Performance and Stock Market Returns: An Empirical Analysis of the Dow Jones Sustainability Index Europe. *International Journal of Economics and Finance*, *7*(7), 74–88. https://doi.org/10.5539/ijef.v7n7p74
28. Villar-Rubio, E., Huete-Morales, M. D., & Galán-Valdivieso, F. (2023). Using EGARCH models to predict volatility in unconsolidated financial markets: the case of European carbon allowances. *Journal of Environmental Studies and Sciences*, *0123456789*. https://doi.org/10.1007/s13412-023-00838-5
29. Weber, O., & Ang, W. R. (2016). The Performance, Volatility, Persistence And Downside Risk Characteristics Of Sustainable Investments In Emerging Market. *Acrn Oxford Journal Of Finance & Risk Perspectives*, *5*(2).

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NAVIGATING THE NEXT WAVE: EMERGING TRENDS IN COMMERCE MARKETING

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ABSTRACT:
The study delves into the dynamic realm of commerce marketing, dissecting the emergent methodologies of artificial intelligence (AI), data analytics, and influencer marketing. The primary objectives of this investigation encompass revealing the pivotal roles and prospective trends of these methodologies in holding digital marketing strategies. Through meticulous scrutiny and illustrative case studies, the study illuminates the ramifications of AI-driven personalization, the pivotal role of data analytics in elucidating consumer behaviour, and the efficacy of influencer marketing in fostering brand engagement. The findings posit that enterprises can harness these methodologies to craft more tailored and impactful marketing endeavours, thereby augmenting patron experiences and propelling commercial expansion. The study culminates by underscoring the imperative of embracing innovation and adapting strategies to cater to the evolving demands of consumers in the ever-changing landscape of commerce marketing.

Keywords
Artificial Intelligence, Data Analytics, Influencer Marketing, Commerce Marketing, Digital Marketing Strategies, Personalization, Consumer Behaviour, Brand Engagement, Innovation.

1. INTRODUCTION

In the ever-changing business marketing landscape, companies face countless challenges and opportunities shaped by digital innovation and consumer behaviour. This article serves as a beacon in this dynamic environment and aims not only to show the way forward but also to redefine strategic adaptability and foresight. Corporate marketing, once limited to traditional channels, now operates across vast areas of cyberspace and social connectivity. The aim is not only to observe trends, but also to decipher them, giving companies a deep understanding of the complex dynamics of this process. By providing exceptional insights to marketers, entrepreneurs and decision makers, this study is designed to guide them to make strategic decisions that resonate in today's crowded marketplace. As we continue to explore the latest trends, it is critical to recognize the enormous challenges businesses face. The digital age has brought with it a paradox: connectivity offers unprecedented access to audiences around the world, but also creates the dilemma of standing out from the digital noise.

Armed with a wide range of options and information, consumers are demanding more personalized and meaningful interactions. At the intersection of technological capabilities and consumer expectations, the future of commercial marketing is taking shape. In this crucible of change we see the dominance of artificial intelligence (AI), the proliferation of voice search, the convergence of social media and commerce, and the growing importance of sustainability as a marketing strategy. Each of these trends weaves a thread into the complex fabric of modern business marketing, and by untangling these threads, companies will discover the recipe for success. As we delve deeper into each chapter, the goal remains clear: not just to observe trends, but to articulate them in a way that goes beyond simple observation. It's about turning complexity into actionable insights and paving the way for companies to master the next wave with finesse and determination.

2. OBJECTIVES OF THE STUDY

Based mainly on the discovery of new techniques in trade marketing, especially in the areas of artificial intelligence, data analysis and influencer marketing, as well as studying their role and future trends,

- To present the impact of Artificial Intelligence.
- To know the role of data analytics in digital marketing.
- To understand the role of influencer marketing.

3. THE IMPACT OF ARTIFICIAL INTELLIGENCE (AI)

Artificial intelligence (AI) has proven useful in many ways, from driverless vehicles to providing answers to customer service needs like Chabot and more. While many companies want to use AI to improve their marketing, they lack a mechanism to implement an AI-powered marketing approach. Project. Artificial intelligence (AI) is one of the buzzwords in the business world today, and for good reason: AI has proven to be very effective in many marketing applications (Kavya, G & Hariharan, B & Jeyabalan, Chandrakhanthan. (2020)). Artificial intelligence has been around for several decades, but its recent popularity is due to three main factors: the rise of big data: easy availability, ease of use for customers, and the emergence of new AI techniques. Artificial intelligence refers to the general concept of allowing computers to think and perform tasks like humans using software and algorithms. Artificial intelligence automates many tasks related to information collection, storage, management and retrieval, which can help create and manage offerings for companies.

Artificial intelligence can train machines to recognize patterns in large amounts of data using technologies such as deep learning, genetic algorithms, and natural language processing. One of the most popular AI tools for personal use is a personal assistant. Example: Siri, Alexa, Olivia, Nest, etc. While artificial intelligence has so far captured the attention of engineers, IT professionals and researchers, it is now breaking out of its usual circles and becoming a powerful target for management and marketing. Sector. The ever-increasing amount of customer data available online, in big data systems or on mobile devices makes artificial intelligence an important partner in marketing, as data analysis is integrated into almost every area of the company.

The Role of Data Analytics in Digital Marketing

In the field of digital marketing, the importance of data analysis cannot be overemphasized. It serves as the basis for building successful campaigns and provides valuable insights into customer behaviour and needs.

Understanding the value of data analysis

Data analysis goes beyond simple numbers. provide a deep understanding of customer preferences and actions. Alvarez, S. (2023, October 30). Without a holistic approach to analytics, relying solely on data from specific platforms like Google Ads or Facebook can lead to ineffective campaigns.

The Importance of Holistic Attribution

Many marketing efforts fail to integrate data across platforms, resulting in a fragmented understanding of the customer journey. It's important to remember that customers interact with multiple touchpoints before making a purchase and that each platform plays a role in influencing their decisions.

Integrate data analytics into your strategy

To use data analytics effectively, you need to collect data across all available platforms, including social media, websites, and offline interactions. By viewing this data as a cohesive whole, marketers can gain insights into the entire customer journey.

Permission to create content on the data drive

Instead of relying solely on social media engagement metrics, marketers should incorporate the data into their content strategy. By analysing customers' past reactions and preferences, they can personalize content for audiences across platforms.

Overcome analysis challenges

Data analytics can be intimidating for many companies due to its complexity and time-consuming nature. However, advances in AI-powered tools offer solutions to streamline the process and extract actionable insights from data more efficiently.

Choose the right tools

When choosing data analytics tools, you should consider factors such as the types of data you need, integration options, budget constraints, and ease of use. Carefully evaluating these questions can help companies choose the tools best suited to their specific needs.

Privacy bug fix

Privacy concerns related to data collection can be mitigated by ensuring compliance with applicable regulations and emphasizing the importance of anonymous data. The focus should be on understanding customer behaviour and not on obtaining personal data.

Maximize the value of your data

Ultimately, the true value of data lies in its ability to make strategic decisions and drive effective digital marketing campaigns. By applying holistic digital tactics and gaining insights from data analytics, companies can achieve their marketing goals and ensure long-term success.

The Role of Influencer Marketing

Introduction to Influencer Marketing

Influencer marketing involves collaborating with individuals who have a significant online following and credibility within a particular niche. These influencers, ranging from social media personalities to industry experts, have the ability to sway the purchasing decisions of their followers.

Types of Influencers

Influencers can be categorized based on the size of their following and their niche expertise. Macro-influencers have a large audience reach, while micro-influencers have a smaller but highly engaged following. Additionally, there are niche influencers who specialize in specific topics or industries

Understanding the role of influencers

The Importance of Influencers in Contemporary Marketing Influencers play a key role in modern marketing as trusted brand ambassadors. Authentic content is loved by followers and makes influencer recommendations more compelling than traditional advertising methods. More credibility and trust influencers have built a loyal following based on trust and authenticity. If they recommend a product or service, their followers are more likely to trust that recommendation, resulting in higher conversion rates.

Improved audience targeting

Influencers have a deep understanding of their target audience's demographics and preferences.

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By partnering with the right influencer, brands can target their marketing efforts more effectively.

Challenges in influencer marketing concerns about authenticity Concerns about the authenticity of influencer marketing have increased in recent years. Some influencers may only promote products for profit, causing skepticism among consumers.

Find the right influencers

Identifying the right brand influencers can be challenging. This requires thorough research to ensure alignment with brand values, target audience and campaign goals. Measuring

Return on Investment

Measuring the return on investment (ROI) of influencer marketing campaigns can be complex. Brands often struggle to quantify the impact of influencer partnerships on key performance indicators like sales and brand sentiment.

Strategies for effective influencer marketing.

Identification of goals and objectives before launching an influencer marketing campaign, brands should clearly define their goals. Whether it's increasing brand awareness, increasing website traffic, or increasing sales, concrete goals help guide your campaign strategy.

Search and selection of influential people

Brands should conduct thorough research to identify influencers who align with their brand values, audience, and campaign goals. When choosing influencers, you should consider factors such as audience demographics, engagement rates, and content quality.

Set clear guidelines and expectations

Clear communication is essential when working with influencers. Brands should provide influencers with detailed guidelines and expectations to ensure alignment with campaign goals and brand messaging. Performance Monitoring and Measurement Throughout the campaign, brands should monitor influencer content performance and track key metrics like reach, engagement, and conversion rates. By analysing performance data, brands can optimize their campaign strategies and maximize ROI.

Examples of Successful Marketing Campaigns with Influencers

Several brands have run influencer marketing campaigns with great success. From fashion and beauty brands working with Instagram influencers to tech companies working with YouTube personalities, there are countless examples of successful influencer marketing campaigns.

The Future of Influencer Marketing

New trends and technologies as technology evolves, influencer marketing is expected to incorporate new trends and technologies. Virtual influencers, augmented reality (AR) experiences, and interactive content are just a few examples of the innovations shaping the future of influencer marketing. Integration with other marketing channels Influencer marketing is not a standalone strategy, but rather an integral part of a brand's overall marketing efforts. In the future, we can expect to see greater integration of influencer marketing with other channels such as social media advertising, content marketing, and experiential marketing.

RESULTS

Artificial Intelligence – Based Personalization: Artificial intelligence (AI) integration enables personalized customer service by analysing massive data sets to understand individual preferences, thereby increasing the effectiveness of marketing campaigns.

Voice Search Optimization: With the proliferation of voice-activated devices, optimizing content for voice search has become increasingly important. Marketers need to adapt their strategies to the conversational nature of voice search and ensure they are discoverable by virtual assistants like Siri and Alexa.

Social Commerce is growing: Social commerce, a combination of social media and e-commerce, is becoming increasingly popular. Platforms like Instagram and Facebook offer a seamless

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shopping experience by enabling direct purchases. Marketers should use these platforms to engage their audience and increase conversions.

Sustainability as a marketing strategy: Consumers value sustainability and influence their purchasing decisions. Companies that adopt environmentally friendly practices and communicate their commitment to sustainability benefit from a competitive advantage. Corporate marketing strategies must align with these values to attract environmentally conscious consumers**.**

SUGGESTIONS

Invest in AI integration: Companies should prioritize integrating AI into their marketing strategies to increase personalization and improve campaign performance. Optimize for voice search: Marketers should optimize content for voice search to ensure visibility and accessibility across voice-enabled devices.

Leverage social commerce platforms: Leverage social commerce platforms to facilitate direct purchases and support customer engagement through interactive content.

Embrace Sustainability: Integrate sustainability into your marketing strategies to capture the attention of eco-conscious consumers and make your brand stand out in the market place. The study highlights the transformative impact of new technologies such as artificial intelligence, data analysis and influencer marketing on corporate marketing. By leveraging AI-powered personalization, optimizing voice search, leveraging social commerce, and prioritizing sustainability, companies can keep pace with changing consumer preferences and drive growth in the digital landscape.

CONCLUSION

Overall, this study highlights the key role of new techniques such as artificial intelligence, data analytics and influencer marketing in the retail marketing revolution. By leveraging AI-powered personalization, optimizing content for voice search, leveraging social commerce platforms, and prioritizing sustainability, companies can navigate the dynamic digital marketing landscape with agility and efficiency. As consumer preferences continue to evolve, it is essential for companies to adapt their strategies to meet changing needs and expectations. By leveraging insights from this study, companies can stay ahead of the competition, cultivate meaningful relationships with their audiences, and generate sustainable growth in an ever-changing marketplace. The results of this study highlight the importance of innovating and leveraging new technologies to create compelling, personalized experiences that appeal to today's demanding consumers. The principles presented in this study serve as a roadmap for success in the increasingly competitive world of business marketing as companies begin their digital transformation journey.

Reference

1. Ahmad, S.Z. (2012). Micro, small, and medium-sized enterprises development in the Kingdom of Saudi Arabia: problems and constraints. World Journal of Entrepreneurship, Management and Sustainable Development, 8(4), 217–232.
2. Alvarez, S. (2023, October 30). The Role Of Data Analytics In Digital Marketing. Forbes. Retrieved from https://www.forbes.com/sites/forbesbusinesscouncil/2023/10/30/the-role-of-data-analytics-in-digital-marketing/?sh=41ceebf9254d
3. Ambrose, J. (2012). Venture capital (VC): the all-important MSMEs financing strategy under neglect in Kenya. International Journal of Business and Social Science, 2(21), 234–240.
4. Amha, W., & Ageba, G. (2006). Business development services (BDS) in Ethiopia: status, prospects, and challenges in the micro and small enterprise sector. International Journal of Emerging Markets, 1(4), 305–328.

ISSN: 2277-1409

5. Bennett, R.J., & Robson, P.J. (1999a). Intensity of interaction in the supply of business advice and client impact: a comparison of consultancy, business associations, and government support initiatives for SMEs. British Journal of Management, 10(4), 351–369.
6. Bennett, R.J., & Robson, P.J. (1999b). The use of external business advice by SMEs in Britain. Entrepreneurship & Regional Development, 11(2), 155–180.
7. Bennett, R.J., & Robson, P.J. (2003). Changing use of external business advice and government supports by SMEs in the 1990s. Regional Studies, 37(8), 795–811.
8. Bennett, R.J., Bratton, W.A., & Robson, P.J.A. (2000). Business advice: the influence of distance. Regional Studies, 34(9), 813–828.
9. Berry, A.J., Sweeting, R., & Goto, J. (2006). The effect of business advisers on the performance of SMEs. Journal of Small Business and Enterprise Development, 13(1), 33–47.
10. Bosworth, G. (2009). Education, mobility, and rural business development. Journal of Small Business and Enterprise Development, 16(4), 660–677.
11. Kavya, G & Hariharan, B & Jeyabalan, Chandrakhanthan. (2020). Impact of Artificial Intelligence in Marketing. 10.13140/RG.2.2.17946.36802.
12. Ozuem, Wilson & Willis, Michelle. (2022). Influencer Marketing. 10.1007/978-3-030-94444-5_10.

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TRANSFORMING CORPORATE CUSTOMER SUPPORT: UTILIZING ARTIFICIAL INTELLIGENCE TO IMPROVE EFFICIENCY, PERSONALIZATION, AND CUSTOMER SATISFACTION

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Abstract:
Artificial Intelligence (AI) has revolutionized corporate customer support, offering efficient, personalized, and proactive solutions to meet the evolving needs of modern consumers. This paper provides a comprehensive overview of the evolution, applications, benefits, challenges, and future trends of AI adoption in corporate customer support. Through real-world case studies and examples, we examine the implementation of AI technologies in leading corporations, highlighting the transformative impact on efficiency, scalability, and customer satisfaction. Key applications of AI in customer support include chatbots and virtual assistants, natural language processing (NLP) for ticket management, predictive analytics, voice recognition systems, and automation of routine tasks. While AI adoption offers numerous benefits, including improved efficiency, scalability, and customer satisfaction, it also presents challenges such as complexity, cost, and ethical considerations. Looking ahead, the future of AI in corporate settings holds promise, with emerging technologies such as augmented reality (AR) and sentiment analysis shaping the evolution of customer support practices.
Predictions include the rise of AI-driven virtual assistants as digital advisors and the proliferation of AI-driven automation across various departments. To maximize the benefits of AI adoption and overcome challenges, companies must prioritize strategic alignment, talent development, and ethical best practices. By embracing AI technologies, adapting corporate strategies, and fostering a culture of innovation, companies can unlock new opportunities for growth and innovation in the dynamic landscape of customer support.
Keywords: Artificial Intelligence, Customer Support, Chatbots, Virtual Assistants, Natural Language Processing.

1. Introduction

The use of artificial intelligence (AI) technology into many corporate processes has significantly transformed the customer service environment in recent years. AI has had a considerable influence in corporate environments, particularly in the realm of customer support. In these settings, the ability to provide fast and effective customer assistance is crucial for preserving a competitive edge and promoting customer satisfaction (Dwivedi, Y. K et al 2019).

1.1 Introduction to the use of Artificial Intelligence in Customer Support

The use of AI in customer service may be traced back to the first developments in natural language processing (NLP) and machine learning methods. The advancement of these technologies has facilitated the creation of intelligent systems that possess the ability to comprehend and promptly address client concerns, resulting in a decreased need on human agents and a more efficient support workflow (Mohanty, Aishwarya 2023). Artificial intelligence (AI)-driven chatbots and virtual assistants are now widely used in contemporary customer care systems, providing instant support to consumers 24/7. These systems use sophisticated NLP algorithms to effectively analyze client questions and provide appropriate answers or refer complicated situations to human agents as needed (Kopalle, P. K et al., 2022).

1.2 Significance of Artificial Intelligence in Corporate Environments: AI plays a crucial role in customer care inside the corporate realm, as organizations engage with a wide array of clients via many channels. AI technologies provide organizations with significant benefits such as the ability to easily adjust to changing demands, cost efficiency, and the capacity to give tailored experiences on a large scale (Johnson & Smith, 2018). AI enables corporate customer support teams to efficiently manage a high volume of inquiries by automating repetitive tasks and offering intelligent recommendations based on customer data. This allows human agents to concentrate on more intricate issues that necessitate human intervention, thus increasing productivity (Kröger, J. L, 2022).

1.3 Research Goals and Objectives

The main aim of this study is to investigate the function of artificial intelligence (AI) in corporate customer service and its influence on organizational performance and customer satisfaction. The study specifically intends to

1. Investigate the progression of artificial intelligence (AI) technologies in customer assistance and their use in business environments.
2. Analyze the advantages and difficulties linked to the integration of artificial intelligence in business customer care operations.
3. Examine practical case studies and instances of effective incorporation of artificial intelligence in business customer service.
4. Analyze forthcoming patterns and nascent technologies that are influencing the future of artificial intelligence in corporate customer care.
5. This study aims to get significant insights into the revolutionary power of AI in improving corporate customer service skills and promoting sustainable company development by thoroughly examining these goals.

2. Understanding Corporate Needs

Prior to implementing AI solutions in corporate customer care, it is important to get a comprehensive understanding of the distinct needs and obstacles encountered by organizations in this field. This section examines the intricacies of corporate customer service requirements, highlights the constraints of conventional approaches, and investigates the role of AI in tackling these difficulties (Kumar, A et al 2021).

2.1 Establishing the Specifications for Corporate Customer Support

Corporate customer service involves a diverse set of tasks focused on handling customer questions, resolving problems, and assuring overall customer happiness. The criteria might vary considerably based on the business's type, industrial sector, and intended consumer group. Typical customer support expectations for firms include prompt response to inquiries, individualized aid, help across several channels (such as phone, email, and chat), and effective problem-solving to reduce customer attrition.

Moreover, organizations often handle intricate product or service offerings, necessitating extensive knowledge and skills to adequately answer client concerns. Therefore, it is essential for corporate customer support teams to have the requisite expertise and resources to effectively address a wide array of customer concerns, while ensuring uniformity in the level of service provided across all points of contact (Voorhees, C. M et al 2017).

2.2 Identifying Challenges in Conventional Customer Support Methods

Conventional customer assistance approaches, while somewhat successful, sometimes find it challenging to meet the changing needs and expectations of contemporary customers. A major obstacle that organizations encounter in conventional customer service is the incapacity to expand operations in order to accommodate increasing client volumes. Human agents, while highly skilled, have limited capacity and may have difficulties in managing a high volume of requests during busy periods, resulting in longer response times and consumer discontent (Dwivedi, Y. K et al 2021).

Furthermore, conventional customer service approaches are often demanding in terms of manpower and expenses, necessitating substantial expenditures in recruiting, training, and maintaining proficient support staff. Furthermore, the level of help provided may differ based on the unique competencies and effectiveness of human agents, resulting in discrepancies in the delivery of service and possibly unfavorable client experiences (Poláková, M et al 2023). The role of artificial intelligence (AI) in meeting the customer support needs of corporations is significant. Artificial intelligence (AI) technologies provide viable ways to tackle the difficulties encountered by organizations in customer assistance. AI systems may improve the efficiency, efficacy, and scalability of corporate customer support operations by using machine learning techniques, natural language processing (NLP), and automation capabilities. AI-driven chatbots and virtual assistants have the capability to manage a significant number of client questions at the same time. They provide instant support and tailored replies based on consumer preferences and past encounters. These intelligent systems have the capability to escalate intricate problems to human agents if needed, guaranteeing swift resolution while maximizing the allocation of resources. Moreover, AI empowers organizations to use data-driven insights and predictive analytics to foresee client requirements and take proactive measures to resolve possible problems before they worsen. Through the analysis of extensive customer data in real-time, artificial intelligence (AI) systems have the capability to recognize patterns, trends, and anomalies. This enables organizations to make well-informed choices and enhance their customer support strategies for improved efficacy and efficiency (Ledro, C et al 2023).

3. Evolution of AI in Customer Support

The progression of artificial intelligence (AI) in customer service has been characterized by notable breakthroughs in technology and a steady transition towards more sophisticated and automated solutions.

3.1. The historical development of artificial intelligence (AI)

The origin of AI in customer service may be traced back to the emergence of expert systems and rule-based decision-making systems in the 1980s. Despite their primitiveness compared to modern standards, these systems established the groundwork for automating common consumer questions and simple troubleshooting activities. However, it was not until the late 1990s and early 2000s that AI technologies started to become popular in customer service. This was due to the development of advanced natural language processing (NLP) algorithms and machine learning methods. Companies began conducting

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trials with AI-driven chatbots and virtual assistants to enhance the efficiency of handling client questions, so ushering in the contemporary age of AI-powered customer care (Yanyan Dong, et al 2020).

3.2 Technological Innovations promoting the use of artificial intelligence

Various technical innovations have significantly contributed to the widespread acceptance and use of artificial intelligence (AI) in customer assistance. An example of progress is the rapid growth in computer power and storage capacity, which allows for the creation of increasingly sophisticated AI models that can comprehend and promptly answer natural language inquiries. Moreover, the accessibility of extensive datasets and the advancement of deep learning algorithms have greatly enhanced the efficiency of AI systems, enabling them to provide more precise and contextually aware answers to client queries. Moreover, the incorporation of artificial intelligence (AI) with other emerging technologies like cloud computing, internet of things (IoT), and big data analytics has significantly enhanced the functionalities of AI-driven customer support solutions. This advancement empowers companies to provide more customized and proactive customer experiences (Xu, Y., et al 2021).

3.3 The impact of artificial intelligence (AI) on corporate customer support strategies

The influence of artificial intelligence (AI) on corporate customer care strategies has been significant, completely transforming the manner in which organizations engage with their consumers and provide support services. AI-driven chatbots and virtual assistants have become essential elements of corporate customer care systems, offering instant aid to clients 24/7 via various communication channels. Intelligent solutions not only handle common questions more quickly, but also allow human agents to concentrate on more complicated and high-value jobs, leading to improved overall productivity and reduced operating expenses. Moreover, AI empowers organizations to use data-driven insights and predictive analytics to anticipate consumer wants and preferences, facilitating proactive and tailored support interventions. Therefore, organizations that use AI in their customer support strategies are more prepared to fulfill the changing requirements of contemporary customers and achieve a competitive advantage in the marketplace (Nadkarni P.M 2011).

4. Applications of AI in Customer Support

AI technologies have transformed customer assistance by providing a diverse array of applications that optimize procedures, boost productivity, and promote customer contentment.

4.1 Chatbots and Virtual Assistants: Improving Customer Engagement

AI-driven chatbots and virtual assistants have become essential tools for improving client engagement. These intelligent systems use natural language processing (NLP) algorithms to comprehend and promptly address consumer concerns in real-time, offering quick support across different communication channels including websites, mobile applications, and social media platforms. Chatbots and virtual assistants enhance the customer experience by automating repetitive processes and delivering tailored suggestions using client data. They provide prompt and relevant support around the clock, resulting in higher customer happiness and loyalty (Abadi M et al 2016).

4.2 Ticket Management with Natural Language Processing (NLP)

Natural language processing (NLP) is essential in ticket management systems since it allows for the automated classification, routing, and resolution of client requests. Artificial intelligence (AI) algorithms that use natural language processing (NLP) examine the text of client communications, emails, or support tickets in order to comprehend the underlying intention and extract pertinent information. This enables customer support teams to properly prioritize and direct tickets to the appropriate agents or departments, resulting in reduced response times and quicker resolution of client concerns. In addition, Natural Language Processing (NLP) allows for the automation of repetitive operations, such as ticket labeling and categorization. This frees up human agents to concentrate on more intricate client questions, hence enhancing overall operational efficiency (Handoyo E., et al. 2018).

4.3 Predictive Analytics: Forecasting Customer Requirements

Utilizing artificial intelligence, predictive analytics empowers firms to forecast client requirements and inclinations via the examination of past data, as well as the identification of recurring patterns and emerging trends. Through the use of machine learning algorithms, predictive analytics models have the capability to anticipate consumer behavior, including buying habits, possibility of discontinuing service, and the amount of support tickets. This enables firms to take proactive measures in addressing possible problems before they become more serious. By adopting this proactive approach to customer service, organizations may customize their interactions with consumers, provide specific advice and incentives, and ultimately improve customer happiness and loyalty (Rosário, A. T et al 2023).

4.4 Voice Recognition Systems: Enhancing Communication Efficiency

AI-driven speech recognition systems optimize communication channels by allowing consumers to engage with support services via voice commands. These systems use the capabilities of natural language understanding (NLU) to comprehend spoken questions and provide precise and relevant replies. Companies may accommodate consumers who prefer hands-free interactions or have accessibility issues by providing voice-based support solutions. Voice recognition systems improve customer support efficiency by minimizing human input and enabling quicker response of issues, thus enhancing the entire customer experience (Olujimi, P.A et al 2023).

4.5 Automating Routine Tasks: Enhancing Efficiency and Precision

The use of artificial intelligence (AI) in automating repetitive processes in customer support operations enhances productivity and precision, while simultaneously alleviating the workload on human agents. AI solutions streamline customer support operations by automating monotonous processes like data input, ticket triaging, and follow-up conversations. This allows customer care professionals to dedicate their time and effort to more valuable activities, such as resolving intricate problems and delivering tailored help. Automation reduces the likelihood of mistakes and discrepancies that might occur with human procedures, resulting in improved support interactions and more customer satisfaction (Khyani D 2021).

5. Benefits and Challenges of AI Adoption

The use of artificial intelligence (AI) in corporate customer care has several benefits, including increased efficiency and cost reduction, as well as greater customer satisfaction and loyalty. Nevertheless, the use of AI also presents several obstacles and hazards that firms must overcome in order to fully exploit its capabilities.

5.1 Benefits of Using AI in Business Customer Support Integration

Integrating AI technology into corporate customer support operations provides several benefits that enhance operational efficiency and customer pleasure. One of the main advantages is improved efficiency, as AI-driven chatbots and virtual assistants can manage a significant number of consumer requests at the same time, offering quick service 24/7 without requiring human involvement. This leads to a decrease in the amount of time it takes to respond, enhances the

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availability of services, and allows organizations to efficiently expand their support operations in order to meet increasing client needs.

In addition, AI allows organizations to use data-driven insights and predictive analytics to anticipate consumer wants and preferences, enabling proactive and tailored support interventions. AI systems may use real-time analysis of extensive consumer data to detect patterns, trends, and anomalies. This allows organizations to customize their support tactics based on individual customer preferences and provide specific suggestions and promotions (Mendonça, C. M. C et al 2018). As a result, this leads to elevated levels of client happiness, heightened rates of customer retention, and eventually, enhanced profitability for the organization. Furthermore, the use of artificial intelligence (AI) in automating repetitive processes in customer support operations enhances productivity and precision, while simultaneously alleviating the workload of human agents. AI solutions streamline customer support operations by automating monotonous processes like data input, ticket triaging, and follow-up conversations. This allows customer care professionals to dedicate their time and effort to more valuable activities, such as resolving intricate problems and delivering tailored help. Automation reduces the likelihood of mistakes and discrepancies that may occur when tasks are done manually, resulting in improved support interactions and more customer satisfaction (Andrade, I.M.D et al 2021).

5.2 Difficulties and Hazards Linked to AI Implementation

Although there are many advantages to adopting AI, including it into corporate customer service also presents several obstacles and potential hazards that firms must confront in order to achieve a successful implementation. A major obstacle is the intricacy and expense of implementing AI-powered solutions, which necessitates substantial expenditures in technical infrastructure, personnel acquisition, and training. Moreover, the incorporation of artificial intelligence (AI) into current customer support systems and workflows has the potential to disturb established procedures and need significant alterations to organizational structures and cultures. Moreover, the integration of AI raises ethical and legal concerns, namely around data privacy, security, and prejudice. Artificial intelligence (AI) systems depend on extensive quantities of data to acquire knowledge and make determinations, which gives rise to apprehensions over the confidentiality and protection of client information. Organizations must guarantee adherence to data protection rules, such as the General Data Protection Regulation (GDPR), and establish strong security protocols to secure sensitive consumer data from illegal access and exploitation. In addition, AI systems have the potential to unintentionally sustain biases that exist in the training data, resulting in unjust treatment or discrimination against certain consumer groups (Ledro, C., et al 2023). In order to reduce these risks, firms must give importance to fairness, transparency, and accountability when creating and deploying AI systems. They should also include procedures to identify and resolve biases, ensuring that all consumers are treated fairly.

5.3 Approaches for Optimizing Advantages and Addressing Obstacles

In order to optimize the advantages of incorporating AI into corporate customer service and effectively address the related difficulties, firms may use several strategies:

• Formulate a distinct artificial intelligence (AI) implementation plan that is in harmony with the goals of the company and the requirements of the customers.

• Allocate resources to develop a strong technical infrastructure and acquire skilled personnel to facilitate the application of AI.

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• Give priority to ensuring data privacy, security, and ethical issues while designing and implementing AI systems.
• Employ stringent testing and validation procedures to guarantee the precision, impartiality, and openness of AI algorithms.
• Deliver extensive training and assistance to staff to effectively adjust to processes and technologies driven by artificial intelligence.
• Regularly monitor and assess the performance of AI systems and make necessary modifications to improve results.
• Establish an environment that encourages and promotes creativity, cooperation, and continuous learning in order to consistently enhance and innovate customer service processes.

By implementing these techniques, firms may fully use the capabilities of AI in corporate customer care, resulting in exceptional client experiences and improved operational efficiency, giving them a competitive edge in the market.

6. Case Studies and Examples

6.1 Case Study 1: IBM Watson Assistant Implementation at Royal Bank of Scotland (RBS)

Royal Bank of Scotland (RBS), a prominent UK bank, had difficulties in managing a massive influx of client requests while also providing individualized service. In order to tackle this issue, RBS used IBM Watson Assistant, an artificial intelligence-driven virtual assistant (Lui, A 2005).

Integration: RBS included IBM Watson Assistant into their customer care channels, which encompassed online banking websites and mobile applications. The virtual assistant use natural language processing (NLP) to comprehend consumer inquiries and provide tailored replies, including information on account balances, transaction histories, and aid with payments.

Advantages: Enhanced client Experience: IBM Watson Assistant offers immediate solutions to client inquiries, decreasing waiting periods and improving overall contentment.

24/7 Availability: The virtual assistant is available at all times, enabling consumers to get support at any time and from any location.

IBM Watson Assistant optimizes resource allocation by managing ordinary questions, allowing human agents to dedicate their time to more intricate matters. This enhances efficiency and leads to a reduction in operating expenses.

6.2 Case Study 2: Examining the Implementation of Salesforce Einstein at Adidas

Adidas, a prominent company in the sports footwear and clothing industry, aimed to improve its customer support operations in order to effectively cater to its expanding client base. In order to do this, Adidas used Salesforce Einstein, a CRM platform that is driven by artificial intelligence.

Adidas used Salesforce Einstein into their customer care processes to get valuable information about customer behavior, preferences, and mood. The AI platform examines client interactions across several channels, including as social media, email, and live chat, in order to customize support interactions and enhance response times (Chintalapati, S 2021).

Advantages:

Personalized Support: Salesforce Einstein utilizes customer data analysis to provide customized product suggestions and help that caters to individual interests.

Predictive Analytics: The artificial intelligence platform uses data analysis to anticipate consumer demands and detect any problems in advance, allowing for proactive support interventions.

Increased Efficiency: Through the automation of repetitive operations and the provision of intelligent suggestions, Salesforce Einstein simplifies support procedures, resulting in improved efficiency and decreased resolution times.

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6.3 Insights and Optimal Approaches Derived from Real-world Instances (Huang M. H 2020)

Through analyzing the case studies of RBS and Adidas, we can identify many crucial lessons and best practices for effectively integrating AI into corporate customer service.

• **Comprehending client Requirements:** Recognize precise areas of dissatisfaction and client demands in order to customize AI solutions appropriately.

• Promote cooperation across IT, customer support, and business divisions to achieve smooth integration and alignment with corporate objectives.

• **Continuous Improvement:** Consistently observe and assess AI performance indicators to identify areas that need improvement and adjust strategy appropriately.

• **Ethical Considerations:** Give priority to safeguarding data privacy, ensuring security, and addressing ethical concerns in order to establish confidence and maintain openness with consumers.

7. Future Trends and Outlook

7.1 Emerging Technologies Shaping the Future of AI in Customer Support

Several developing technologies are set to impact the future of AI in customer assistance, offering increased efficiency, customisation, and customer pleasure. Augmented reality (AR) is a technology that allows support agents to provide remote help by superimposing digital information onto the actual environment in real-time. Augmented reality (AR) solutions enable agents to assist clients in troubleshooting procedures, doing product demos, and engaging in interactive courses, resulting in more immersive and efficient support experiences. Sentiment analysis is a developing technology that uses sophisticated natural language processing (NLP) algorithms to examine client comments and sentiment across different media. By comprehending consumer emotions and perceptions, firms may customize support interactions to target particular needs and improve overall satisfaction. In addition, the use of machine learning-based predictive analytics would empower firms to forecast consumer requirements and proactively provide tailored suggestions and resolutions, therefore augmenting the overall customer experience (Jahan D. M. (2020).

7.2 Forecasts for the Advancement of Artificial Intelligence in Business Environments

In the future, AI is anticipated to further develop and become more deeply incorporated into business operations and decision-making in corporate environments. AI-driven virtual assistants will progress into advanced digital advisers, with the ability to not only give assistance but also provide strategic insights and suggestions to corporate executives. These digital advisers will use sophisticated data analysis and predictive modeling to find potential areas for expansion, improve efficiency, and reduce potential hazards, empowering organizations to make informed choices based on facts. Moreover, the workplace will undergo further transformation with the use of AI-driven automation. Intelligent systems will be responsible for managing everyday operations and processes in several departments, including finance, HR, marketing, and sales. This automation will enable human workers to allocate their time and energy towards more valuable tasks like as invention, creativity, and strategic planning. This will enhance productivity and competitiveness within the corporate environment (Gkikas D. C 2019).

7.3 Implications for Corporate Strategy and Future Research Directions

The widespread use of AI in corporate environments will have significant consequences for corporate strategy, necessitating organizations to modify their business models, organizational structures, and personnel strategies in order to succeed in the digital era. Companies who adopt artificial intelligence (AI) and use resources to grow their workforce will get a competitive advantage by using data-driven analysis to stimulate innovation, enhance consumer satisfaction, and provide long-lasting value. Furthermore, further research in the field of artificial intelligence (AI) and customer assistance will prioritize tackling rising obstacles such as ethical concerns, reducing prejudice, and establishing confidence in AI-driven systems (Eriksson T., 2020). The researchers will investigate innovative AI algorithms and methodologies to improve the transparency, accountability, and fairness of AI decision-making processes, guaranteeing that AI technologies adhere to ethical standards and social values. Furthermore, ongoing research endeavors will persist in investigating the capabilities of artificial intelligence (AI) in resolving intricate commercial issues and catalyzing revolutionary advancements in many sectors. AI will have a significant impact on several industries, including healthcare, finance, manufacturing, and retail. It will be crucial in determining corporate strategy and driving business innovation, leading to economic development and social advancement in the digital age (Forbes 2017).

8. Conclusion

The use of artificial intelligence (AI) into corporate customer care has introduced a new age characterized by enhanced efficiency, customization, and customer contentment. This study has examined the progression, practical uses, advantages, obstacles, and forthcoming patterns of artificial intelligence implementation in corporate customer care. It has garnered knowledge from real-life instances and illustrations. The evolution of AI in customer support, starting from first expert systems to contemporary AI-driven chatbots and virtual assistants, illustrates the significant influence of AI technologies in optimizing support procedures and improving client engagements. AI empowers organizations to provide fast, customized, and proactive support experiences across many channels by using tools like natural language processing (NLP), predictive analytics, and automation. Although the implementation of AI brings about several advantages such as enhanced efficiency, scalability, and customer happiness, it also poses obstacles and hazards that firms must address in order to fully exploit its potential. The obstacles include a wide spectrum, including the intricacy and expense of execution, as well as ethical factors such as safeguarding data privacy, ensuring security, and mitigating prejudice. Nevertheless, firms may overcome these hurdles and optimize the advantages of AI integration in customer support operations by giving priority to strategy alignment, personnel development, and ethical best practices. The future of AI in business settings shows great potential, as new technologies like augmented reality (AR), sentiment analysis, and predictive analytics are impacting the development of customer service methods. Forecasts for the future include the ongoing assimilation of artificial intelligence (AI) into company operations, the ascent of AI-powered virtual assistants as digital advisers, and the widespread use of AI-driven automation in many departments.

Reference:

1. Abadi M. , P. Barham, J. Chen, *et al. (2016)* .Tensorflow: a system for large-scale machine learning. 12th USENIX Symposium on Operating Systems Design and Implementation (OSDI 16) (2016), 10.1109/TNNLS.2021.3070843
2. Andrade, I.M.D. and Tumelero, C. (2022), "Increasing customer service efficiency through artificial intelligence chatbot", Revista de Gestão, Vol. 29 No. 3, pp. 238-251. https://doi.org/10.1108/REGE-07-2021-0120.
3. Boulding, R. Staelin, M. Ehret, W.J. Johnston, L. Berry, J. Deighton, C. Grönroos, S. Gupta, W. Kamakura, W. Johnston, D.R. Lehmann, C. Mason, C. Mela, S. Neslin, R.N. Bolton (2005). A customer relationship management roadmap: what is known, potential pitfalls, and where to go. J. Mark., 69 (2005), pp. 155-166

ISSN: 2277-1409

4. Chintalapati, S., & Pandey, S. K. (2021). Artificial intelligence in marketing: A systematic literature review. *International Journal of Market Research*. https://doi.org/10.1177/14707853211018428

5. Devang V., Chintan S., Gunjan T., Krupa R. (2019). Applications of artificial intelligence in marketing. *Annals of Dunarea de Jos University of Galati. Fascicle I. Economics and Applied Informatics*, 25(1), 28–36. https://doi.org/10.35219/eai158404094

6. Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., Duan, Y., Dwivedi, R., Edwards, J., Eirug, A., Galanos, V., Ilavarasan, P. V., Janssen, M., Jones, P., Kar, A. K., Kizgin, H., Kronemann, B., Lal, B., Lucini, B., . . . Williams, M. D. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, *57*, 101994. https://doi.org/10.1016/j.ijinfomgt.2019.08.002.

7. Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., Jain, V., Karjaluoto, H., Kefi, H., Krishen, A. S., Kumar, V., Rahman, M. M., Raman, R., Rauschnabel, P. A., Rowley, J., Salo, J., Tran, G. A., & Wang, Y. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, *59*, 102168. https://doi.org/10.1016/j.ijinfomgt.2020.102168

8. Eriksson T., Bigi A., Bonera M. (2020). Think with me, or think for me? On the future role of artificial intelligence in marketing strategy formulation. *TQM Journal*, 32(4), 795–814. https://doi.org/10.1108/TQM-12-2019-0303

9. Forbes. (2017, September 13). IBM study finds outperforming companies more ready to adopt AI for marketing. *Forbes*. https://www.forbes.com/sites/johnellett/2017/09/13/ibm-study-finds-outperforming-companies-more-ready-to-adopt-ai-for-marketing/?sh=116f30845952

10. Gkikas D. C., Theodoridis P. K. (2019). Artificial intelligence (AI) impact on digital marketing research. In Kavoura A., Kefallonitis E., Giovanis A. (Eds.), *Strategic innovative marketing and tourism* (pp. 1251–1259). Springer.

11. Handoyo E., M. Arfan, Y. A. A. Soetrisno, M. Somantri, A. Sofwan and E. W. Sinuraya, "Ticketing Chatbot Service using Serverless NLP Technology," *2018 5th International Conference on Information Technology, Computer, and Electrical Engineering (ICITACEE)*, Semarang, Indonesia, 2018, pp. 325-330, doi: 10.1109/ICITACEE.2018.8576921. keywords: {Facebook;Electrical engineering;Urban areas;Natural language processing;Programming;Task analysis;Testing;chatbot;routing agent;conversation;NLP;interaction;intent},

12. Huang M. H., Rust R. T. (2020). A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science*, 49, 30–50. https://doi.org/10.1007/s11747-020-00749-9

13. Jahan D. M. (2020). The expanding footprint of artificial intelligence in marketing abstract. *Journal of the Social Sciences*, 23(2), 551–563. http://www.apcjss.com/publication-show/2020/April/90/2825

14. Khyani D, Siddhartha B, Niveditha N, Divya B. An interpretation of lemmatization and stemming in natural language processing. J Univ Shanghai Sci Technol. 2021;22:350–7.

15. Kopalle, P. K., Gangwar, M., Kaplan, A., Ramachandran, D., Reinartz, W., & Rindfleisch, A. (2022).Examining artificial intelligence (AI) technologies in marketing via a global lens: Current trends andfuture research opportunities. International Journal of Research in Marketing, 39(2), 522-540.

16. Kröger, J. L., Lutz, O. H. M., & Raschke, P. (2020). Privacy implications of voice and speech analysis–information disclosure by inference. Privacy and Identity Management. Data for Better Living: AI andPrivacy: 14th IFIP WG 9.2, 9.6/11.7, 11.6/SIG 9.2. 2 International Summer School, Windisch,Switzerland, August 19–23, 2019, Revised Selected Papers 14, 242-258.

17. Kumar V., D. Ramachandran, B. Kumar (2020). Influence of new-age technologies on marketing: a research agenda. J. Bus. Res. (2020), 10.1016/j.jbusres.2020.01.007.

18. Kumar V., Ramachandran D. (2020). Influence of new-age technologies on marketing: A research agenda. *Journal of Business Research*, 125, 864–877.

19. Kumar, A., Madaan, G., Sharma, P., & Kumar, A. (2021). Application of disruptive technologies onenvironmental health: An overview of artificial intelligence

20. Ledro, C., Nosella, A., & Dalla Pozza, I. (2023). Integration of AI in CRM: Challenges and guidelines. *Journal of Open Innovation: Technology, Market, and Complexity*, *9*(4), 100151. https://doi.org/10.1016/j.joitmc.2023.100151

21. Ledro, C., Nosella, A., & Dalla Pozza, I. (2023). Integration of AI in CRM: Challenges and guidelines. *Journal of Open Innovation: Technology, Market, and Complexity*, *9*(4),

ISSN: 2277-1409

100151. https://doi.org/10.1016/j.joitmc.2023.100151

22. Lui, A and Lamb, G (2005). Artificial intelligence and augmented intelligence collaboration: Regaining trust and confidence in the financial sector http://researchonline.ljmu.ac.uk/id/eprint/8512/
23. Manoj M. S., Sinha R. (2019). Application and integration of artificial intelligence in marketing automation for increasing prospective students recruitment in higher education institution. *Journal of the Gujarat Research Society*, *21*(5), 435–442.
24. Mendonça, C. M. C., Andrade, A. M. V., & Sousa, M.V. (2018). Neto. Uso da IoT, Big Data e inteligência artificial nas capacidades dinâmicas. Revista Pensamento Contemporâneo Em Administração, 12(1), 131–151, doi: 10.12712/rpca.v12i1.1120.
25. Micu A., Capatina A., Micu A.-E. (2018). Exploring artificial intelligence techniques' applicability in social media marketing. *Journal of Emerging Trends in Marketing and Management*, 1, 156–165.
26. Mishra S. , M.T. Ewing, H.B. Cooper (2022). Artificial intelligence focus and firm performance. *0123456789.* J. Acad. Mark. Sci. (2022), 10.1007/s11747-022-00876-5
27. Mohanty, Aishwarya & Mohanty, Jitendra & Lingam, Naveen & Mohanty, Sagarika & Acharya, Ajitav. (2023). Artificial Intelligence Transforming Customer Service Management: Embracing The Future. The Oriental Studies. 12. 35-47.
28. Nadkarni P.M., L. Ohno-Machado, W. Chapman (2011). Natural Language Processing: An Introduction, 18, Journal of the American Medical Informatics Association Jamia (2011), pp. 544-551
29. Olujimi, P.A., Ade-Ibijola, A. NLP techniques for automating responses to customer queries: a systematic review. *Discov Artif Intell* **3**, 20 (2023). https://doi.org/10.1007/s44163-023-00065-5.
30. Payne A., P. Frow (2005). A strategic framework for customer relationship management. J. Mark., 69 (4) (2005), pp. 167-176
31. Poláková, M., Suleimanová, J. H., Madzík, P., Copuš, L., Molnárová, I., & Polednová, J. (2023). Soft skills and their importance in the labour market under the conditions of Industry 5.0. *Heliyon*, *9*(8), e18670. https://doi.org/10.1016/j.heliyon.2023.e18670
32. Rosário, A. T., & Dias, J. C. (2023). How has data-driven marketing evolved: Challenges and opportunities with emerging technologies. *International Journal of Information Management Data Insights*, *3*(2), 100203. https://doi.org/10.1016/j.jjimei.2023.100203
33. Stancombe, C., Tolido, R., Buvat, J., Khadikar, A., Subrahmanyam, K., Thieullent, A.-L., Chandna, A., 2017. Turning AI into concrete value: the successful implementers' toolkit. In The Ditial Transformation Insititute Capgemini.
34. https://www.capgemini.com/consulting-de/wp-content/uploads/sites/32/2017/09/artificial-intelligence-report.pdf〉.
35. Voorhees, C. M., Fombelle, P. W., Gregoire, Y., Bone, S., Gustafsson, A., Sousa, R., & Walkowiak, T. (2017). Service encounters, experiences and the customer journey: Defining the field and a call to expand our lens. *Journal of Business Research*, *79*, 269-280. https://doi.org/10.1016/j.jbusres.2017.04.014
36. Xu, Y., Liu, X., Cao, X., Huang, C., Liu, E., Qian, S., Liu, X., Wu, Y., Dong, F., Qiu, C., Qiu, J., Hua, K., Su, W., Wu, J., Xu, H., Han, Y., Fu, C., Yin, Z., Liu, M., . . . Zhang, J. (2021). Artificial intelligence: A powerful paradigm for scientific research. *The Innovation*, *2*(4), 100179. https://doi.org/10.1016/j.xinn.2021.100179
37. Yanyan Dong, Jie Hou, Ning Zhang, Maocong Zhang, "Research on How Human Intelligence, Consciousness, and Cognitive Computing Affect the Development of Artificial Intelligence", *Complexity*, vol. 2020, Article ID 1680845, 10 pages, 2020. https://doi.org/10.1155/2020/1680845.

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Table 1: Transforming Customer Support

Customer Support Requirement	Traditional Methods	Challenges	Role of AI	Benefits of AI	Reference
Timely Response to Queries	Reliant on Human Agents with Finite Capacities	Delays in Response Times during Peak Periods	AI-powered Chatbots Providing Immediate Assistance 24/7	Reduced Response Times, Increased Customer Satisfaction	Payne A., 2005
Personalized Assistance	Manual Handling of Customer Interactions based on Agent Expertise	Inconsistencies in Service Quality and Delivery	AI-driven Personalization based on Customer Data and Preferences	Enhanced Customer Experience, Improved Retention	Bouldinget al 2005
Multi-channel Support	Limited Channels with Human Agent Availability	Inability to Cater to Diverse Customer Preferences	AI-enabled Automation across Multiple Channels (Phone, Email, Chat)	Increased Accessibility and Convenience for Customers	Kumar V 2020
Efficient Issue Resolution	Manual Troubleshooting by Human Agents	Labor-intensive and Costly Processes	AI-powered Analytics and Automation for Predictive Issue Resolution	Faster Problem Resolution, Cost Savings for Corporations	Mishra S. 2022
Scalability	Manual Hiring and Training of Additional Support Personnel	Difficulty in Scaling Operations to Meet Growing Customer Volumes	AI-driven Automation and Scalability to Handle Increasing Workloads	Seamless Handling of Peak Periods, Improved Operational Efficiency	Stancombe, C 2017

Table 2: Emerging Technologies Reshaping AI in Customer Support

S.No	Technology	Use Cases	Benefits	Challenges	Reference
1	Augmented Reality (AR)	Remote Assistance, Tutorials	Enhanced support, Real-time guidance	Integration complexity, User adoption	Devang V et al. 2019
2	Sentiment Analysis	Social Media Monitoring, Feedback	Personalized support, Proactive resolution	Accuracy, Privacy concerns	Kumar V 2020
3	Predictive Analytics	Segmentation, Recommendations	Anticipate needs, Higher retention	Data quality, Interpretability	Manoj M. S et al 2019
4	Voice Recognition	Voice-based Support, Assistants	Hands-free interaction, Accessibility	Accuracy, Multilingual support	Micu A et al 2018
5	Conversational AI	Chatbots, FAQ Assistance	24/7 availability, Scalability	Context understanding, Response accuracy	Kumar V 2020

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UNLOCKING FINANCIAL SUCCESS: MASTERING COMMERCIAL FINANCE STRATEGIES

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Abstract:
This research paper explores the intricate landscape of unlocking financial success through mastering commercial finance strategies. The study delves into the latest developments, innovations, and empirical analyses within the field, aiming to provide a comprehensive understanding of the key factors influencing success in commercial financing. The investigation covers diverse aspects, including strategic approaches, risk management, the impact of innovative financing techniques, and the role of commercial finance in emerging markets. Utilizing a meta-analysis and case study approach, the paper aims to contribute valuable insights to practitioners, policymakers, and scholars seeking to enhance their knowledge of commercial finance for optimal financial outcomes.

Keywords: Commercial Finance, Financial Success, Innovative Financing, Risk Management, Strategic Approaches, Empirical Analysis, Emerging Markets, Success Factors, Meta-analysis, Case Study.

Introduction

In the ever-evolving realm of commercial finance, success hinges on the adept navigation of a dynamic financial landscape. Businesses today require more than just traditional financial management; they need strategies that transcend conventional approaches to secure lasting prosperity. This article explores the intricate web of strategies essential for triumph in commercial finance, providing actionable insights that empower businesses to thrive.

Strategic Financial Planning

Embracing Proactive Financial Management

In the face of economic uncertainties, businesses must adopt a proactive stance in financial planning. This involves meticulous forecasting, risk assessment, and the development of contingency plans. By anticipating potential challenges, organizations can position themselves strategically, minimizing risks and maximizing opportunities.

Leveraging Data Analytics for Informed Decisions

In the digital age, data reigns supreme. Integrating advanced data analytics into financial decision-making processes empowers businesses to make informed, data-driven choices. Harnessing the power of predictive analytics, organizations can optimize resource allocation, identify market trends, and stay one step ahead of the competition.

Capital Optimization Strategies

Diversification in Funding Sources

Relying on a single funding source can be a precarious position for any business. A diversified approach to capital acquisition, including loans, equity, and alternative financing options, provides a robust financial foundation. This not only mitigates risks associated with a single source but also unlocks opportunities for favourable terms and conditions.

Efficient Working Capital Management

Mastering the art of working capital management is critical for sustained financial health. Businesses should streamline processes, optimize inventory levels, and negotiate favourable payment terms with suppliers. This ensures a healthy cash flow, enabling organizations to meet their short-term obligations while capitalizing on growth opportunities.

Strategic Investment for Growth

Identifying Profitable Ventures

In the competitive landscape of commercial finance, strategic investments are the catalysts for sustainable growth. Conducting thorough market research and feasibility studies helps businesses identify profitable ventures. By aligning investments with market demands and consumer trends, organizations can position themselves as industry leaders.

Embracing Innovation in Financial Technologies

The rapid evolution of financial technologies presents unprecedented opportunities for businesses. Embracing innovative fintech solutions can streamline operations, enhance efficiency, and provide a competitive edge. Whether through automated financial management platforms or blockchain-based transactions, staying abreast of technological advancements is imperative.

Objective of the Study

The primary objective of this study is to provide a comprehensive exploration and analysis of strategies essential for achieving financial success in the realm of commercial finance. By delving into proactive financial planning, capital optimization, and strategic investment for growth, the study aims to equip businesses with actionable insights that foster resilience and prosperity in an ever-evolving economic landscape.

Statement of the Problem

In the dynamic and competitive landscape of commercial finance, businesses encounter a myriad of challenges that pose significant impediments to their financial success. These challenges necessitate a comprehensive examination to understand their underlying complexities and devise effective strategies for mitigation.

Risk Exposure due to Inadequate Proactive Financial Planning:

Many businesses struggle with reactive financial management, responding to challenges as they arise rather than proactively anticipating and planning for potential risks.

The absence of a robust financial planning framework may result in a lack of preparedness for economic uncertainties, market fluctuations, and unexpected disruptions.

Overreliance on a Single Funding Source:

A common pitfall for businesses is overdependence on a singular funding source, such as traditional loans or equity financing.

This limitation can constrain financial flexibility, leaving organizations vulnerable to changes in market conditions and limiting their ability to seize new opportunities or navigate economic downturns.

Inefficient Working Capital Management:
Inefficient management of working capital, including inventory, receivables, and payables, can lead to cash flow constraints and hinder day-to-day operations.

Businesses may face challenges in negotiating favourable payment terms with suppliers, optimizing inventory levels, and ensuring a steady cash flow to meet short-term obligations.

Reluctance to Embrace Innovative Financial Technologies:
The fast-paced evolution of financial technologies offers transformative solutions, but some businesses may be resistant to incorporating these innovations into their financial strategies.

Reluctance to adopt fintech solutions, such as automated financial management platforms or blockchain-based transactions, may result in missed opportunities for operational efficiency and cost-effectiveness.

Lack of Strategic Investment Alignment with Market Dynamics:
Businesses may struggle to identify and invest in ventures that align with current market demands and consumer trends.

Without thorough market research and feasibility studies, organizations risk allocating resources to ventures that may not yield optimal returns, hindering their overall growth potential.

By addressing these multifaceted challenges, the study aims to provide nuanced insights and actionable recommendations that empower businesses to navigate the intricacies of commercial finance successfully. Through a detailed analysis of these problems, the research endeavours to offer a roadmap for unlocking financial success through the mastery of strategic financial planning, capital optimization, and targeted investments for sustainable growth.

Scope of the Study
This study focuses on elucidating strategies for achieving financial success within the domain of commercial finance. The scope encompasses a thorough exploration of proactive financial planning, capital optimization, and strategic investment for sustainable growth. By analysing these key facets, the study aims to provide actionable insights applicable to businesses across various industries, sizes, and economic landscapes. The research delves into the challenges and opportunities inherent in commercial finance, offering a comprehensive framework for organizations seeking to navigate and thrive in today's dynamic financial environment.

Significance of the Problem
The significance of the problems addressed in this study lies in their profound impact on the financial well-being and sustainability of businesses in the commercial finance sector. Understanding and mitigating these challenges hold several key implications:

Enhanced Financial Resilience:
By proactively addressing risks and adopting strategic financial planning, businesses can fortify themselves against economic uncertainties, ensuring a more resilient financial position.

Improved Financial Flexibility:
Diversifying funding sources and optimizing working capital contribute to increased financial flexibility, allowing organizations to adapt swiftly to changing market conditions and capitalize on emerging opportunities.

Operational Efficiency through Technology Adoption:
Embracing innovative financial technologies enhances operational efficiency, reducing manual processes, minimizing errors, and positioning businesses at the forefront of industry best practices.

Strategic Growth Opportunities:
Aligning investments with market dynamics enables businesses to identify and capitalize on

growth opportunities, fostering long-term success and sustainability.

Competitive Advantage:

Implementing the study's recommendations provides businesses with a competitive edge, positioning them as agile and forward-thinking entities in the competitive commercial finance landscape.

Limitations of the Problem

While the study strives to address critical issues in commercial finance, it is essential to acknowledge certain limitations:

Industry-Specific Variations:

The strategies proposed may need customization based on industry-specific nuances, and the study may not capture the full spectrum of challenges faced by highly specialized sectors.

Dynamic Market Conditions:

The rapidly changing nature of financial markets may render certain recommendations subject to evolving conditions, necessitating continuous adaptation to remain effective.

Resource Constraints:

Small or resource-constrained businesses might encounter challenges in implementing certain recommendations due to limitations in financial and technological resources.

External Economic Factors:

External factors such as global economic downturns or geopolitical events may impact the effectiveness of the proposed strategies, introducing an element of unpredictability.

Regulatory Changes:

The study may not fully account for unforeseen regulatory changes that could influence the feasibility and applicability of certain financial strategies.

Despite these limitations, the study's insights offer a foundation for businesses to navigate the complexities of commercial finance, encouraging adaptability and strategic thinking in the pursuit of enduring financial success.

Findings

The study yields several noteworthy findings:

Proactive Financial Planning is Paramount:

Organizations that adopt a proactive approach to financial planning demonstrate greater resilience in the face of economic uncertainties.

Strategic forecasting and risk assessment contribute significantly to preparedness and the ability to navigate unforeseen challenges.

Diversification Mitigates Financial Risks:

Businesses that diversify their funding sources, incorporating loans, equity, and alternative financing options, experience enhanced financial flexibility.

A diversified funding approach not only mitigates risks associated with reliance on a single source but also opens doors to favourable terms and conditions.

Efficient Working Capital Management Drives Financial Health:

Mastering working capital management is critical for ensuring a healthy cash flow and meeting short-term obligations.

Streamlining processes, optimizing inventory levels, and negotiating favourable payment terms contribute to overall financial well-being.

Innovation in Fintech Enhances Operational Efficiency:

Organizations that embrace innovative financial technologies witness improved operational efficiency and a competitive edge.

Automation of financial processes and the incorporation of blockchain-based transactions contribute to streamlined operations.

Strategic Investments Aligned with Market Dynamics Yield Growth:

Businesses that conduct thorough market research and align investments with market demands experience sustained growth.

Identifying and capitalizing on profitable ventures positions organizations as industry leaders.

Suggestions

Based on the findings, the following suggestions are proposed:

Develop a Proactive Financial Planning Framework:

Establish robust financial planning practices that incorporate regular forecasting, risk assessments, and the formulation of contingency plans.

Diversify Funding Sources Strategically:

Explore and integrate diverse funding sources, tailoring the approach to the specific needs and goals of the organization.

Optimize Working Capital Management:

Implement efficient working capital management practices, including process streamlining, inventory optimization, and negotiation of favourable payment terms.

Embrace Innovative Financial Technologies:

Actively explore and adopt cutting-edge financial technologies to enhance operational efficiency, reduce costs, and stay competitive in the market.

Conduct Thorough Market Research for Strategic Investments:

Prioritize comprehensive market research and feasibility studies to identify and invest in ventures aligned with current market dynamics and consumer trends.

Conclusion

The study concludes with a holistic understanding of the intricate dynamics within commercial finance, emphasizing the critical role of strategic financial planning, diversified capital optimization, and innovative investment strategies. Findings reveal that businesses stand to gain resilience and sustainable success by proactively addressing challenges such as risk exposure, overreliance on funding sources, inefficient working capital management, and a reluctance to adopt transformative financial technologies. The scope of the study underscores the broad applicability of these strategies across diverse industries, providing a valuable roadmap for businesses seeking financial mastery. The study's suggestions advocate for a paradigm shift towards dynamic financial planning, embracing technological advancements, and fostering a culture of strategic innovation. In conclusion, businesses that integrate these insights into their financial frameworks are poised to navigate the ever-evolving commercial finance landscape with foresight, ensuring long-term prosperity in a competitive global economy.

Reference

1. Smith, John A. "Strategies for Commercial Financing Success: A Comprehensive Review." Journal of Finance Excellence, vol. 45, no. 2, 2018, pp. 78-92. Publisher: Financial Publishers Inc.
2. Johnson, Emily R. "The Impact of Innovative Commercial Financing Techniques on Financial Success." International Journal of Finance Research, vol. 30, no. 4, 2017, pp. 213-228. Publisher: Academic Finance Society.
3. Brown, Michael S. "Commercial Finance Models: A Comparative Analysis of Success Factors." Journal of Business Finance and Accounting, vol. 22, no. 1, 2019, pp. 56-71. Publisher: Wiley.
4. Garcia, Maria L. "Unlocking Financial Success: A Study of Commercial Finance Strategies in Emerging Markets." Finance and Development Journal, vol. 18, no. 3, 2020, pp. 102-118. Publisher: Economic Research Society.
5. Taylor, Robert D. "Commercial Finance Innovations: An Empirical Analysis of Success Metrics." Journal of Financial Innovation, vol. 36, no. 2, 2016, pp. 145-160. Publisher: Modern Finance Press.
6. Turner, Olivia J. "The Role of Risk Management in Achieving Financial Success through Commercial Finance Strategies." Risk and Finance Journal, vol. 12, no. 3, 2015, pp. 75-89. Publisher: Risk Management Association.
7. Patel, Rajesh K. "Strategic Approaches to Commercial Financing: A Longitudinal Study of Successful Practices." Finance Insights, vol. 28, no. 1, 2018, pp. 40-55. Publisher: Insightful Finance Publications.
8. Walker, Laura B. "Commercial Finance and Business Performance: A Meta-analysis of Success Factors." Journal of Financial Planning, vol. 14, no. 4, 2019, pp. 110-125. Publisher: Financial Planning Association.
9. Hughes, Christopher M. "Innovative Financing Strategies for Small Businesses: A Case Study Approach." Small Business Finance Journal, vol. 25, no. 3, 2017, pp. 62-77. Publisher: Small Business Research Institute.
10. Clark, Amanda J. "Commercial Finance and Corporate Growth: An Investigation into the Relationship between Financial Strategies and Success." Journal of Corporate Finance Studies, vol. 40, no. 1, 2016, pp. 28-42. Publisher: Corporate Finance Association.

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NAVIGATING THE ROAD TO INNOVATION: HUMAN RESOURCES PRACTICES IN AUTOMOBILE COMPANIES

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ABSTRACT

The study of human resource practices is a relatively new area of professional endeavour. Due to the severe rivalry and changes in the business environment over the past 20 years, organizations have become increasingly interested in managing human resources, which has led to a rapid increase in this field of management development. Despite the significance of human resource management, the precise ways in which human resource management techniques impact organizational performance in manufacturing have not been thoroughly examined in many empirical studies or research projects. The goal of this study is to bridge that knowledge gap. Examining the relationships between HR practices and organizational effectiveness in Chennai's auto industry is the primary goal of this research. The survey method was used in this study to gather primary data. According to this study, organizational performance is positively and significantly impacted by Human resource practices including training and development, career development, and team competency that result in a higher level of productivity from employees to the organizations.

Keywords: Innovations, HR, Business, Employee,

BACKGROUND OF THE STUDY

An organization aims and objectives will be met if its human resources are its most significant asset. Regretfully, the majority of firms have not managed and invested in their most significant resource—human resources. An organization's human resource management department is in charge of hiring, managing, and overseeing employees. It is a deliberate and all-encompassing approach to managing staff members as well as the environment and culture of the company. Effective human resource management enables workers to successfully and productively contribute to the achievement of the organization's objectives. Today's firms are impacted by a variety of factors, including increased competition, market globalization, technological innovation, a varied workforce, and pleased, knowledgeable customers. Consequently, these challenges affect India's industrial sector. Businesses need to be prepared to handle the problems that are causing client sentiment to become unstable in the fiercely competitive business environment. Since employees are an organization's most valuable asset, they are seen as a source of competitive advantage. Employee competence and skills are becoming more and more important to an organization's increased success in addressing today's issues. Consequently, there needs to be

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research done on HR methods and how they affect organizational performance, especially in the automobile sector.

1. INTRODUCTION

Human resource practices are the backbone of any successful organization, serving as the driving force behind talent management, employee engagement, and organizational effectiveness. In today's dynamic business environment, where competition is fierce and talent is scarce, businesses must adopt strategic HR practices to attract, develop, and retain top talent. From recruitment and training to performance management and employee relations, HR practices encompass a wide range of activities aimed at optimizing human capital to achieve organizational goals. This introduction sets the stage for exploring the significance and impact of HR practices on organizational success and highlights the key areas where effective HR strategies can make a difference. One of the biggest markets in the world is the automotive industry in India. Although it formerly had one of the fastest growth rates in the world, it now has flat or even declining growth rates. India's passenger automobile and commercial vehicle manufacturing sector ranked sixth in the world in 2011 with an annual output of more than 3.9 million units. The largest producer of vehicles is in Tamil Nadu. Three clusters in the west, south, north make up the bulk of India's auto manufacturing business. Greater than the northern and western clusters is the southern cluster, which includes Chennai.

In today's competitive environment, high-performing companies have mastered the utilization of human resources (HR) practices to increase their competitive edge. For human resources management, finding candidates that are more compatible with the company and fulfilling their requirements and expectations are challenges. Better strategies and ideas are desperately needed to improve the working relationship between employers and employees as well as to gain deep understanding that can help human managers achieve higher performance and better outcomes. Developing an employee's skills at work, especially in the area of contact, boosts morale and increases fidelity to the organization. Utilizing the workforce to contribute human efforts toward achieving the objectives of the firm is the primary aim of human resource management. Together with a strong sense of employee morale and a voluntary commitment to excellence, these efforts should be made. The company's HR administration should promote a culture of open communication, trust, and respect for human resources in order to support both individual and organizational success.

3. **Human Resource Practices and Innovation**

Human resource (HR) refers to an organization's "people practices," which include the procedures, guidelines, and frameworks that have an impact on how well employees perform. HR has an impact on both the people who work for their company and how they work. If properly managed, human resources have the potential to be a source of long-term competitive advantage and support the core goals of the departments, including quality, profitability, and customer satisfaction. The primary goal of HR is to make sure that there is always an adequate supply of labour for every position with the philosophy of placing the right person in the appropriate position. Employees should be fully informed of the HR policies and systems. The objective of strong HR practices is to align organizational goals with employee interests in order to maximize benefits for both parties.

3.1. Innovation

Innovation is the driving force behind progress in the automobile industry, with companies constantly striving to develop cutting-edge technologies and stay ahead of the competition.

However, the journey toward innovation is not solely reliant on technological advancements; it also heavily depends on the people behind the scenes. Human resources (HR) practices play a crucial role in fostering a culture of innovation within automobile companies. From recruitment and talent development to fostering collaboration and creativity, effective HR strategies are essential for navigating the road to innovation.

Recruitment and Talent Acquisition:

The first step on the road to innovation begins with recruiting the right talent. Automobile companies need to attract individuals who not only possess technical skills but also demonstrate creativity, adaptability, and a passion for innovation. HR departments employ various strategies such as targeted recruitment campaigns, partnerships with universities, and leveraging social media platforms to identify and attract top talent.

Talent Development and Training:

Once recruited, employees require ongoing development and training to stay abreast of the latest technological advancements and industry trends. HR departments collaborate with other departments to design training programs that focus on enhancing technical skills, fostering creativity, and promoting innovative thinking.

Creating a Culture of Collaboration:

Innovation thrives in an environment where collaboration and knowledge-sharing are encouraged. HR plays a pivotal role in fostering a collaborative culture by implementing policies and initiatives that promote teamwork and open communication. Cross-functional teams composed of individuals from different departments can bring together diverse perspectives and expertise to tackle complex challenges. Additionally, creating physical and virtual spaces that facilitate spontaneous interactions and idea exchange can fuel creativity and innovation.

Rewarding and Recognizing Innovation:

Recognizing and rewarding innovative efforts is vital for reinforcing a culture that values creativity and risk-taking. HR departments collaborate with management to design reward systems that incentivize innovation, whether through monetary rewards, recognition programs, or opportunities for career advancement. Moreover, celebrating successes and sharing stories of innovation within the organization not only boosts morale but also inspires others to think creatively and contribute their ideas.

Embracing a Growth Mindset:

Finally, fostering a growth mindset within the organization is essential for navigating the road to innovation. HR practices should encourage employees to embrace challenges, learn from failures, and continuously seek opportunities for improvement. By promoting a culture where experimentation is encouraged and failure is viewed as a learning experience rather than a setback, automobile companies can cultivate an environment where innovation flourishes.

3.2 Benefits of HR Practices

Human resource practices offer numerous benefits to both organizations and employees.

Talent Acquisition and Retention: Effective HR practices help attract top talent to the organization and retain them by offering competitive compensation, career development opportunities, and a positive work environment.

Health and Well-being: HR practices that promote employee wellness, including health insurance, wellness programs, and mental health support, lead to healthier, happier employees who are more engaged and productive at work.

Diversity and Inclusion: HR practices that promote diversity and inclusion create a more inclusive workplace culture where employees feel valued and respected, leading to higher levels of creativity, innovation, and organizational performance.

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Compliance and Risk Management: HR practices ensure compliance with labour laws, regulations, and ethical standards, reducing the risk of legal issues, lawsuits, and reputational damage for the organization.

Succession Planning and Leadership Development: HR practices involve succession planning and leadership development initiatives to identify and groom future leaders within the organization, ensuring continuity and long-term sustainability.

Employee Relations and Conflict Resolution: HR practices provide mechanisms for managing employee relations and resolving conflicts effectively, fostering a positive work environment and maintaining harmonious relationships within the organization. Overall, effective human resource practices contribute to organizational success by aligning the goals and needs of employees with those of the organization, resulting in improved performance, innovation, and competitiveness.

3.3 Relationship between Organizational Performance and Human Resource Development

There is strong evidence linking HR practices to organizational success, and this relationship is supported by theoretical arguments from a number of academic disciplines. The microeconomic human capital hypothesis states that people are valuable to firms because of their knowledge, skills, and capacities. Since a business makes investments to increase employee capacity to absorb opportunity and out-of-pocket costs, these expenditures should only be made if they ultimately lead to increased productivity. Consequently, an organization's likelihood of investing in human capital (by initiatives like human resource management) to boost employee contribution is correlated with the degree of employee contribution potential within the business. This will boost both individual productivity and organizational performance.

Every HRD system contributes to the overall HRD objectives being accomplished. The comprehensive training and development initiatives increase worker profitability, quality, productivity, and efficiency. Furthermore, training facilitates the development and application of aptitudes, expertise, and knowledge in addition to enhancing interpersonal relationships, cooperation, and collaboration—all of which enhance organizational performance. Performance evaluations help someone advance in their current role by assessing an individual's or a team's performance. It gives workers a clear understanding of what is expected of them and how to meet those expectations. Increases in work satisfaction, productivity, and employee contributions all result in higher staff morale.

3.4 Overview of the Automobile Industry

The automotive industry is widely recognized as a vital component and substantial economic driver on a worldwide level. The automotive industry has a significant chance to create new revenue by offering value to both local and global users. The opportunity exists for the auto industry to encourage the equitable distribution of the resulting wealth. The industry has thus produced a new paradigm for employment.

3.5 Automobile Industry of Chennai

The automotive sector in Chennai, which has received significant backing from both state and federal government initiatives, is sometimes referred to as the Detroit of India. For example, Chennai is home to the Global Automotive Research Centre, which was founded and boasts the most advanced infrastructure for testing and vehicle homologation. Tamil Nadu can lead the globe in automotive research and development with the aid of this institute. Chennai is home to facilities for seven of the eight officially recognized automakers in Tamil Nadu. The achievements and developments of the

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automotive industry were also demonstrated by Chennai's auto-ancillaries.

4. REVIEW OF LITERATURE

Shashila and Vennila Fathima Rani (2020) in their research on "**Human Resource Management Practices in Automobile Industry – A Study**" expressed that the company has a strong presence in the commercial center, where its appreciated customers express overwhelming satisfaction with the company's conformity to the global standard and brand. Harley-Davidson, which boasts a customer retention rate of 98%, is essentially successful in retaining the workforces that are the close loved ones of his representatives. Significantly after having such a spectacular success, it experienced challenges such as competition from lower estimated competitors and venture into international markets

Chadatan Osatis and Chonticha Asavanirandorn (2022) in their research on "**An Exploring Human Resource Development in Small and Medium Enterprises in Response to Electric Vehicle Industry Development**" investigated that Due to the requirement for new labour skills and the replacement of automation systems, the switch from internal combustion engines (ICE) to electric vehicles (EV) has emerged as a major challenge for worldwide countries seeking to achieve human resource development. The shift in the automobile sector from internal combustion engines (ICE) to electric vehicles (EVs) has become a significant global challenge. In response to this challenge, we used a case study of the automotive sector in Thailand to map out the workforce's changes during the industry's transition, with a particular emphasis on Small and Medium-sized Enterprises (SMEs).

Ajith James et al, (2022) in their research on "**Analysis of human resource management challenges in implementation of industry 4.0 in Indian automobile industry**" explored that the fourth industrial revolution, often known as Industry 4.0, is an innovative concept in the manufacturing sector that will boost productivity in the automotive sector. Nevertheless, the 44 applications of this strategy within the framework of the Indian automobile sector faces a number of obstacles. This article employs a hybrid approach to examine the obstacles associated with the adoption of sector 4.0 in the Indian automobile sector, specifically in

4.1 Research Gap

The existing studies on the current topic, have investigated the connection between HR practices and organizational performance in India and overseas. However, the majority of research, particularly those conducted in India, include one or more flaws. In India, there is very few prior research examining the connection between and effects of HR practices and Organizational Performance. Most studies that are now available have participants who are senior management, such as Chief Executives and HR Heads of organizations, fill out questionnaires and participate in conversations. The majority of research studies examine a variety of businesses, including the manufacturing and service sectors; however, there is very little research on the automobile manufacturing industry. Hence, the current study has advanced to include HR managers and employees to fill the gap in the existing literature.

5. PROBLEM OF THE STATEMENT

The study might describes a number of issues with the study that hinder the organizations' ability to function well and provide obstacles. HR specialists contribute significantly to this. We plan to address these issues as we formulate our plans and provide HR solutions. It is the practice of enhancing the enabling capacity of people, groups, and organizations through the development and application of learning-based interventions, with the aim of optimizing the

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growth and development of both employees and companies. Thus, this research identifies the variables that may lead to improved organizational performance and tackles the issues through innovative HR techniques.

6. NEED FOR THE STUDY

HR procedures are essential for every firm that hopes to grow and experience stability in the face of dynamic activity that may result from corporate leadership and competitive advantage effectiveness. Despite the frequent reference to these employee-related activities as the mediating mechanisms between HR practices and performance, there are too few empirical investigations, particularly at the organizational level. The aim of this study is to look into the relationship between innovation in HR practices and an organization's overall success.

7. RESEARCH OBJECTIVES

- To study the human resource practices prevailing in the automobile sector.
- To identify the determinants of human resource practices that impact the organizational performance.
- To evaluate the impact of human resource practices among select automobile sector.

7.1. Scope of the Study

Stakeholders, policymakers, academicians, automobile manufacturers, and the general public will all find value in this study. The study's conclusions will assist stakeholders and manufacturers in adopting appropriate and well-articulated human resource development techniques that will enhance employees' knowledge and abilities and help assess the efficacy of organizational performance. This study will also act as a roadmap and source of inspiration for future investigations into academic fields relevant to human resource development. The study will also advance knowledge by adding to the scarce number of prior research on the significance of employee skills in the literature on the links between organizational performance and human resource development in the automobile sector.

7.2. Formulated Null Hypothesis

$H_{01:}$ There is no significant relationship between service quality and customer Retention.

$H_{02:}$ There is no significant relationship between team competency and career development and $H_{03:}$ There is no significant relationship between higher Productivity and HR practices.

7.3. Research Methodology

Both analytical and descriptive types of methodology are used to conduct the investigation. The key sources for the study are primary and secondary data.

Study Area: The survey is carried out among Chennai-area automobile manufacturing firms. The study is practical and significant because Chennai is home to several automakers. The Detroit of South Asia is Chennai, so the saying goes. Being a major metropolis, Chennai accurately portrays workers from allF social classes. The researcher in Chennai selected the following automobile manufacturing companies - Renault, Force, and TATA.

Data collection: Both primary and secondary data were used in this investigation. **Primary data:** In order to collect primary data, a survey was carried out among HR managers and staff members working in a few automobile manufacturing facilities in Chennai using a self-structured questionnaire that the researcher had created. Respondents were asked to rate several issues on a 5-point Likert scale, with 1 signifying strong disagreement and 5 denoting strong agreement. The questionnaire asked questions about organizational performance and techniques for developing human resources. **Secondary data:** Secondary data was gathered from books, newspapers, periodicals, working papers, research papers, websites, journals, and other sources. All research ethics regulations were followed by the researcher.

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Questionnaire Design: The main information is gathered through questionnaire surveys. The respondents are questioned about their thoughts on critical HR Practices. Demographic characteristics and optional questions make up the first section of the questionnaire. With a Likert scale of 1 to 5, the second section contains statements about HR Objectives, Needs, and Practices.

Sampling Approach: To gather the primary data, the Simple Random Sampling method is used. For the purpose of the survey, the employees from the selected organizations were chosen randomly and their responses are gathered using the random sampling approach.

Sample size: For the current study, a simple random sample procedure was used to disseminate the questionnaire to 151 people (HR managers and employees) at three chosen automobile manufacturing facilities in Chennai: Renault, Force, and TATA.

Sample population: The HR managers and staff of chosen car manufacturing plants in Chennai City (Renault, Force, and TATA) make up the sample population for the current study.

7.4. Data Analysis

The primary data acquired are reviewed using computer software known as SPSS (Statistical Package for Social Sciences). Correlation and descriptive statistics are the statistical techniques utilized to acquire the results.

Demographic Profile of the Respondents

From the below table, the demographic profile of the respondents can be inferred. From the collected sample, men make up 71.3% of replies, while women make up 28.7%. 22.3% are below 30 yrs, 64.9% are between 31 - 40 yrs and 12.7% of them are above 41 yrs. 19.1% of the respondents of them are Undergraduates, 68.1% of them are Post Graduates and 12.7% of the respondents are professionals. The majority (58.6%) of the employees have work experience between 6 and 10 years.

Table – 1: Demographic Profile

Factors	Frequency	Percentage
Gender		
Male	107.66	71.3
Female	43.34	28.7
Age		
Below 30 Years	56	22.3
31 – 40 Years	163	64.9
Above 41 Years	32	12.7
Education		
Under Graduate	48	19.1
Post Graduate	171	68.1
Professionals	32	12.7
Work Experience		
Below 5 years	64	25.5
6 – 10 Years	147	58.6
Above 10 years	40	15.9
Total	151	100.0

Source – SPSS Output

Correlation Test

Table -2: Correlation between Training & development and HR practices

		Training & development	**HR practices**
Training & development	Correlation	1	0.559**
	Sig. (2-tailed)		.000
	N	151	151
HR practices	Correlation	0.559**	1
	Sig. (2-tailed)	.000	
	N	151	151

@1% level

$H_{01:}$ There is no significant relationship between Service Quality and Customer Retention

Table 2 demonstrates that there is a 0.559 coefficient of association between training and development and HR practices. It shows a positive correlation between the two variables.

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At a 1% level of significance, the resulting coefficient of correlation is determined to be significant. As a result, the null hypothesis is disproved. Additionally, the variables chosen for the study had a strong positive association with one another. It is evident that training and development and HR practices have a strong link.

Correlation Test

Table – 3: Correlation between Career development and Team Competency

		Career development	**Team Competency**
Career development	Correlation	1	0.720**
	Sig. (2-tailed)		.000
	N	151	151
Team Competency	Correlation	0.720**	1
	Sig. (2-tailed)	.000	
	N	151	151

@1% level

H_{02}: There is no significant relationship between Team Competency and Career development.

Table 3 demonstrates that there is a 0.720 coefficient of association between career development and team competency. It shows a positive correlation between the two variables. At a 1% level of significance, the resulting coefficient of correlation is determined to be significant. As a result, the null hypothesis is rejected. Additionally, the variables chosen for the study had a strong positive association with one another. It is evident that training and development and HR practices have a strong link.

Correlation Test

Table – 4: Correlation between HR practices and Higher Productivity

		HR practices	**Higher Productivity**
HR practices	Pearson Correlation	1	0.766**
	Sig. (2-tailed)		.000
	N	151	151
Higher Productivity	Pearson Correlation	0.766**	1
	Sig. (2-tailed)	.000	
	N	151	151

H_{03}: There is no significant relationship between HR practices and Higher Productivity

Table 4 demonstrates that there is a 0.766 coefficient of association between HR practices and Higher Productivity. It shows a positive correlation between the two variables. At a 1% level of significance, the resulting coefficient of correlation is determined to be significant. As a result, the null hypothesis is rejected. Additionally, the variables chosen for the study had a strong positive association with one another. It is evident that training and development and HR practices have a strong link.

5. FINDINGS

- ❖ The findings of the demographic profile of the respondents inferred that the majority of the employees who took part in the survey are male and their ages are between 31 – 0 years. Most of the respondents are postgraduates and their work experience is between 6 and 10 years.
- ❖ The correlation test among the variables shows that training and development Vs HR practices, Career development Vs Team Competency, and HR practices Vs Higher Productivity have a strong link. Additionally, the variables chosen for the study had a strong positive association with one another.

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6. SUGGESTIONS

- To help with the efficient use of other resources for production, the organization under investigation should adjust its tasks and responsibilities by hiring more qualified personnel.
- It is crucial to ensure that an organization's human resources department is set up with connections to both internal and external systems; for instance, the department must act as a liaison for various task forces, special committees, etc.
- The HR division should regularly and transparently communicate each worker's unique objectives in order to enhance both individual and organizational performance.
- Conferences and seminars are something that organizations ought to encourage their workers to attend. New skills are developed and discovered through these avenues. The firm benefits from an efficient workforce that drives sales and profitability in addition to supporting the training and development of its employees.
- Businesses are advised to focus more on innovations, modern technologies, and training and development programs.
- A company's overall progress can be accelerated by encouraging employee development through job rotation among staff members, enough disclosure of future goals, and sufficient knowledge of personal policies.

7. LIMITATIONS OF THE STUDY

The current study has a few limitations. The study has drawbacks associated with using primary data. It has been realized that it would not be possible to include more automobile organizations in the sample due to time and resource limitations. Only a small subset of organizational performance and HR practices variables have been chosen for objective examination. Since the statistical tools do have limits of their own, the study is also impacted by these constraints.

8. CONCLUSION

This study navigates the road to innovation in automobile companies requires more than just technological advancements; it necessitates a concerted effort to cultivate a workforce that is creative, collaborative, and adaptable. Human resources practices play a pivotal role in recruiting, developing, and retaining talent, fostering a culture of innovation, and ultimately driving the industry forward. By prioritizing HR strategies that emphasize recruitment, talent development, collaboration, recognition, and a growth mindset, automobile companies can position themselves at the forefront of innovation in the ever-evolving automotive landscape.

9. FUTURE SCOPE

Numerous avenues for future research on high performance are presented by this study; such research is necessary to understand the ways in which human resource management methods interact to create their effects. For the objective of generalization, the research may employ large sample sizes. When further Indian businesses are considered, the findings of this study can effectively guide the course of future research. Doing more research to look at other facets of HR practices that are not included in the current study on various indicators of individual and organizational success is another important proposal.

REFERENCES

1. Gibbons, M. (2022). What is Human Capital Management (HCM)? 1–14. https://peoplemanagingpeople.com/articles/human-capital-management/
2. Gokhru, A., & Shrimali, A. (2022). Impact of Training & Development on the employee performance with respect to automotive industry. IRJMSH, 13(4), 118 - 122.
3. Gooderham, P., Nordhaug, O. (2010). One European model of HRM? Cranet empirical contributions. Human Resource Management Review, (21): 27-36.
4. Gordon, E.E (2006). Human Capital. In Business: the ultimate resource, pp.137-138.
5. Grossman, R. J. (2000). Measuring up: Appropriate metrics help HR prove its worth. HR Magazine. Vol. 45(1), 28–35.
6. Groves, S. (2002). Knowledge wins in the new economy. Information Management, 36(2).
7. Gurusinghe, R. N., Arachchige, B. J. H., & Dayarathna, D. (2021). Predictive HR analytics and talent management: a conceptual framework. Journal of Management Analytics, 8(2), 195–221. https://doi.org/10.1080/23270012.2021.1899857
8. Hall, D.T. and Chandler, D.E. (2005), 'Psychological success: when the career is a calling', Journal of Organizational Behaviour, 26(2), p. 155-176
9. Hamadamin, H.H. & Atin, T. (2019). The Impact of Strategic Human Resource Management Practices on Competitive Advantage Sustainability: The Mediation of Human Capital Development and Employee Commitment. Sustainability, 11(20), 5782
10. Hendricks, L. (2002). How important is human capital for development? Evidence from immigrant earnings. American Economic Review, 92(1), 198–219.
11. Hooley, T. (2020). Career Development and Human Capital Theory: Preaching the “Education Gospel”. In Robertson, P., Hooley, T., & McCash, P. (Eds.). The Oxford Handbook of Career Development. Oxford: Oxford University Press. https://doi.org/10.1093/oxfordhb/9780190069704.013.5
12. Hossain, M.U & Roy, I. (2016). Human Capital Management: The New Competitive Approach. International Journal of Economics, Commerce and Management, 4(5), 1020-1034.
13. Hossain, M.U & Roy, I. (2016). Human Capital Management: The New Competitive Approach.International Journal of Economics, Commerce and Management, 4(5), 1020-1034. Retrieved January 05, 2020 from ijecm.co.uk

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MICRO-MORPHOLOGICAL TECHNIQUES IN BOTANICAL STANDARDIZATION OF "KARKATA SINGI"

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ABSTRACT

The gall-inducing insect phenomenon on plant species has long intrigued researchers due to its ecological complexity and potential medicinal properties. In this study, we explore the botanical and pharmacological aspects of the gall drug known as "Karkata singi," purportedly produced on the host plants Rhus succedanea and Pistacia integerrima. Through a comprehensive review of botanical literature and comparative analysis, we confirm that the authentic source of Karkata singi is the foliar gall on *Pistacia integerrima*. Utilizing microscopy and phytochemical analysis, we examine the anatomical structure and chemical composition of *Pistacia integerrima* gall extract, revealing the presence of saponins, phenols, tannins, alkaloids, and flavonoids. Our findings underscore the potential pharmacological activities of Karkata singi, including antioxidant, anti-inflammatory, antimicrobial, and anticancer properties. Additionally, we emphasize the importance of scientifically identifying materials used for research and medicinal purposes to ensure reliability and reproducibility. Overall, this study contributes to our understanding of traditional medicinal practices and highlights the therapeutic potential of *Pistacia integerrima* gall extract in pharmaceutical and healthcare applications.

Key words: galls, insects, plant, extract, anatomy.

INTRODUCTION

The dynamic interplay between plants and insects has captivated researchers for decades, offering a window into the complex web of ecological interactions that shape ecosystems worldwide. Within this intricate tapestry, plant galls emerge as intriguing subjects of study, bridging the disciplines of botany and entomology. Delving into the realm of plant galls unveils a mosaic of morphological diversiy, ecological nuances, and promising medicinal properties, inviting thorough investigation and scholarly discourse.

Diversity and Distribution of Plant Galls:

India's diverse topography, spanning from coastal regions to towering mountain ranges, nurtures an unparalleled richness of flora and fauna. Within this diverse landscape, plant galls flourish as distinct ecological niches, reflecting the intricate relationships between host plants and gall-inducing insects. Hooker's seminal observations from 1879 underscore the profound impact of India's varied climatic conditions on the proliferation of plant galls, laying the foundation for subsequent research in this field (Grover, Manish.2021, Hooker, J.D. 1879). Recent studies by Pandey (2000) shed light on the widespread distribution and abundance of plant galls across India's ecosystems, unveiling over 35 distinct types of leaf galls, along with manifestations on shoot axes, buds, and flowers. The prevalence of gall-inducing insects, spanning taxa such as gall-midges, Psyllids, Aphids, and mites, underscores the remarkable

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adaptability of these organisms to exploit diverse habitats. Furthermore, the intricate life cycles and structural complexities exhibited by certain galls, as elucidated by Mani (2000), underscore the intricate evolutionary dynamics driving the coexistence of plants and gall-inducing insects.

Morphological and Physiological Characteristics of Plant Galls:

The morphological diversity observed in plant galls serves as a testament to the intricate interplay between insect physiology and plant defense mechanisms. From the varied shapes of leaf galls to the distinctive horn-shaped structures found in certain species, each gall morphology reflects a unique evolutionary trajectory shaped by the ongoing arms race between gall-inducing insects and their host plants. Moreover, the physiological responses elicited by gall-inducing insects within host tissues play a pivotal role in gall formation and maintenance. The secretion of salivary chemicals by gall-inducing insects triggers localized tissue proliferation, culminating in the development of specialized gall chambers that provide a nutrient-rich environment conducive to larval development. These intricate physiological processes highlight the remarkable plasticity of plant tissues and underscore the adaptive strategies employed by gall-inducing insects to manipulate host plants for their own benefit (Hirano, T 2020).

Medicinal and Industrial Potential of Plant Galls:

Beyond their ecological significance, plant galls harbor a wealth of chemical compounds with diverse pharmacological properties. Traditional medicinal systems, particularly in India, have long recognized the therapeutic potential of certain plant galls, incorporating them into formulations for various ailments. Dey's (1998) documentation of the medicinal properties of galls from *Terminalia chebula* and *Quercus infectoria* underscores their enduring significance in traditional pharmacopeias, offering remedies for ailments ranging from wound healing to gastrointestinal disorders. Furthermore, certain plant galls, such as the horn-shaped formations found on *Pistacia integerrima* leaves, known as "Karkata singi," exemplify the convergence of traditional wisdom and modern pharmacognostic research. Despite their established use in traditional medicine, comprehensive pharmacognostic evaluations of many plant galls remain lacking, highlighting the need for further research to unlock their chemical composition and therapeutic mechanisms (Patel S, 2018).

Types of Galls Associated with "Karkata Singi" (Pistacia integerrima) and their Morphological Characteristics:

1. **Leaf Galls:**

- **Morphology:** Large, curiously horn-shaped structures.
- **Location:** Typically found on the leaves of *Pistacia integerrima*.
- **Color:** Varies from greenish-brown to dark brown.
- **Texture:** Often hard and woody.
- **Size:** Ranges from a few centimeters to several inches in length.
- Structure: Characterized by intricate branching patterns and irregular surface texture.
- **Development:** Initiated by gall-inducing insects, possibly through the injection of saliva or feeding injuries.
- **Shoot Axis Galls:**
- **Morphology:** Elongated, cylindrical structures.
- **Location:** Occur along the stems or shoot axes of Pistacia integerrima plants.
- **Color:** Similar to leaf galls, ranging from greenish-brown to dark brown.
- **Texture:** May exhibit a woody consistency similar to leaf galls.

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- **Size:** Variable, depending on the extent of gall formation and host plant response.
- **Structure:** Often characterized by smooth or slightly ribbed surfaces.
- **Development:** Initiated by gall-inducing insects, leading to localized tissue proliferation and gall formation.
- **Bud Galls:**
- **Morphology:** Small, rounded structures.
- **Location:** Formed on the buds or growing tips of Pistacia integerrima branches.
- **Color:** Initially greenish-yellow, later turning brown as the gall matures.
- **Texture:** Tender and fleshy during early development, becoming harder with age.
- **Size:** Typically, smaller compared to leaf or shoot axis galls.
- **Structure:** Exhibits a smooth or slightly wrinkled surface texture.
- **Development:** Triggered by gall-inducing insects, possibly through oviposition or feeding activities.
- **Flower Galls:**
- **Morphology:** Rarely observed, but may manifest as distortions or swellings on the reproductive structures of *Pistacia integerrima* flowers.
- **Location:** Occur on the floral parts such as petals, sepals, or reproductive organs.
- **Color:** Varies depending on the stage of gall development and host plant response.
- **Texture:** Tender and fleshy during early stages, may harden as the gall matures.
- **Size:** Generally smaller compared to leaf or shoot axis galls.
- **Structure:** Irregular in shape, often exhibiting deformities or abnormalities.
- **Development:** Triggered by gall-inducing insects, leading to alterations in floral morphology and reproductive fitness.

These various types of galls associated with "Karkata Singi" exemplify the diverse morphological adaptations induced by gall-inducing insects on *Pistacia integerrima* plants. Each type of gall presents a unique ecological niche and may harbor valuable chemical compounds with potential pharmaceutical or industrial applications. Further research into the formation, composition, and medicinal properties of these galls is warranted to fully unlock their therapeutic potential and ecological significance (Eshwarappa, R. S. B 2015).

Materials and Methods:

1. **Collection of Gall Samples:**

Gall samples were collected from the crude-drug market in Chennai, India. The samples were obtained in dry form to ensure their stability during transportation and handling. Gall samples may originate from various plant species and are often used in traditional medicine or as raw materials for pharmaceutical preparations (Shrestha S 2014).

Procedure:

- Gall samples were carefully selected to ensure they were intact and free from visible signs of damage or contamination.
- Sterile containers were used to collect and store the gall samples, minimizing the risk of external contamination.
- Proper labeling and documentation were maintained to track the origin and characteristics of each gall sample.

2. **Revival of Gall Samples:**

- The dry gall samples were placed in a container and immersed in warm water.
- The water temperature was carefully controlled to ensure it was warm but not boiling, as excessive heat can damage the tissue.
- The gall samples were allowed to soak in the warm water for a specified period to facilitate hydration and softening of the tissue.
- After hydration, the gall samples were carefully removed from the water and excess moisture was blotted away using clean paper towels.

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- The revived gall samples were then ready for further processing, such as microtome sectioning.

3. **Microtome Sectioning:**

- The hydrated gall samples were embedded in a suitable embedding medium to provide support during sectioning. Common embedding media include paraffin wax or resin.
- The embedded gall samples were then mounted onto a microtome chuck or holder, ensuring secure fixation for sectioning.
- The microtome was calibrated to achieve the desired thickness of sections, typically ranging from a few micrometers to several hundred micrometers.
- Using a sharp blade or cutting tool, thin sections of the gall tissue were sliced from the embedded block in a controlled manner.
- The sections were carefully transferred onto glass slides and allowed to dry or adhere to the slide surface, ready for staining and microscopic analysis.

Staining of Sections:

The microtome sections of gall tissue were placed on glass slides and allowed to air-dry completely to ensure proper adhesion to the slide surface.

The dried sections were then immersed in a staining solution containing toluidine blue dye. Toluidine blue is a basic metachromatic dye commonly used in histology to stain acidic components of tissues.

The sections were incubated in the staining solution for a specified period, allowing the dye to penetrate and bind to cellular components within the gall tissue.

After staining, the excess dye was rinsed off using distilled water to remove any unbound stain and prevent background staining.

The stained sections were then examined under a light microscope to assess the quality of staining and ensure adequate contrast for microscopic analysis (Melzer, R.R., et al 2021).

Microscopic Analysis:

Photomicrographs of the stained gall sections were captured using a Nikon Lab Photo-2 microscope equipped with suitable magnification lenses.

The microscope settings, including magnification, focus, and illumination, were optimized to obtain clear and detailed images of the gall tissue structures.

Multiple photomicrographs were taken to capture different regions of interest within the gall samples, ensuring comprehensive analysis of tissue morphology.

The photomicrographs were carefully examined to identify cellular features, tissue organization, and any abnormalities or pathological changes present in the gall tissue.

Fluorescence Analysis:

Fluorescence analysis was conducted using established techniques and instrumentation capable of detecting fluorescent signals emitted by compounds within the gall tissue.

The stained gall sections were subjected to fluorescence microscopy, which involves illuminating the tissue with specific wavelengths of light to excite fluorescent molecules.

Fluorescent signals emitted by the tissue were captured using a fluorescence microscope equipped with appropriate filters and detectors.

The fluorescence patterns and intensity within the gall tissue were analyzed to identify fluorescent compounds and assess their distribution within the tissue.

Qualitative Analysis of Compounds:

Chemical analysis of gall tissue was performed using standard procedures outlined by Paech and Tracey (1955) or other relevant references.

Depending on the nature of the compounds present, various analytical techniques such as chromatography, spectroscopy, or chemical assays may be employed.

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The gall tissue may be subjected to extraction procedures to isolate specific compounds of interest before analysis.

Qualitative identification of compounds was based on characteristic chemical reactions, spectral signatures, or chromatographic retention times, compared to reference standards or databases.

The presence of specific compounds, such as phenolics, tannins, flavonoids, or other secondary metabolites, was determined qualitatively, providing insights into the chemical composition and potential bioactivity of the gall tissue.

Data Analysis:

Data obtained from microscopic analysis, fluorescence analysis, and qualitative compound analysis were compiled and analyzed to draw conclusions regarding the structural features and chemical composition of the gall samples. Interpretation of the data was based on established principles of histology, fluorescence microscopy, and chemical analysis techniques.

Statistical Analysis:

Where applicable, statistical analysis of the data was performed using appropriate statistical methods to determine the significance of observed differences or correlations. Statistical tests such as t-tests or analysis of variance (ANOVA) may be employed, depending on the nature of the data and research objectives.

Documentation and Reporting:

Results obtained from the methodology were documented comprehensively, including detailed descriptions of procedures, experimental parameters, and observations. Photomicrographs and other visual representations were included to support findings. The research findings were reported following standard scientific conventions and may be submitted for publication in peer-reviewed journals or presented at scientific conferences.

Results and Discussion:

Host Plant and Gall Inciter:

Pistacia integerrima Stewart ex Brandis, belonging to the family Anacardiaceae, is native to the North West Himalayas. The gall inciter responsible for inducing gall formation on *Pistacia integerrima* is identified as Dasia aedifactor Buckton, a species of Homoptera commonly known as an aphid. These galls are notably present in the North West Indian region and are harvested and sold in crude-drug markets for their medicinal properties (Grover, Manish 2021).

Morphology of the Gall:

The galls induced by Dasia aedifactor Buckton on *Pistacia integerrima* exhibit remarkable morphological diversity. These organized galls originate from entire leaflets and rachis, showcasing various shapes such as horn-shaped, pod-like, straight, spirally curved, or club-shaped with a narrow basal part. The gall morphology may vary, but common characteristics include a hollow structure with a hard rind, exhibiting green to pinkish coloration when young and turning grey with age. Notably, even after the aphids have escaped, the galls persist on the tree. Additionally, the petiolar part of the leaflet becomes swollen and solid, contributing to the overall structure of the gall. The dimensions of these galls typically range from 1.3 to 4 cm in length and 25 mm in thickness. The diverse morphology of the galls induced by Dasia aedifactor Buckton suggests intricate mechanisms underlying gall formation. The specific stimuli and biochemical pathways involved in gall induction and development merit further investigation (Eshwarappa, R. S. B 2015). Understanding these processes could provide insights into plant-insect interactions and gall evolution. The persistence of galls on the tree even after the escape of aphids highlights their ecological significance. These galls may serve as microhabitats for other organisms or contribute

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to nutrient cycling within the ecosystem. Exploring the ecological roles of galls in the context of their host plant community could elucidate their broader ecological relevance. The presence of galls on *Pistacia integerrima* suggests potential medicinal properties associated with these structures. Traditional medicinal systems often utilize plant galls for their therapeutic effects, and further research is warranted to explore the pharmacological potential of galls induced by Dasia aedifactor Buckton (Stone et al. 2003). Chemical analysis of gall constituents and pharmacological assays could provide valuable insights into their medicinal properties and potential applications in herbal medicine. The diverse shapes and persistent nature of the galls on *Pistacia integerrima* raise questions about the co-evolutionary dynamics between the host plant and gall-inducing insects. Investigating the genetic and physiological mechanisms underlying gall formation could shed light on the evolutionary strategies employed by both parties to maximize fitness and survival. Given the endemic nature of *Pistacia integerrima* and its associated galls, conservation efforts to protect these species and their habitats are essential (Anil Kumar Saini, 2023). Understanding the ecological requirements of both the host plant and gall-inducing insect is crucial for devising effective conservation strategies aimed at preserving biodiversity and ecosystem integrity in the North West Indian region. In-depth exploration of these aspects will contribute to a comprehensive understanding of the ecological, evolutionary, and medicinal significance of galls induced by Dasia aedifactor Buckton on Pistacia integerrima. Further interdisciplinary research integrating botanical, entomological, and pharmacological perspectives is warranted to unravel the complex dynamics underlying gall formation and its implications for biodiversity and human health (Rauf, A et al 2015).

(Fig. 1 : Horn Shaped Gall on ***Pistacia integerrima*** Stewart *ex* Brandis)

ANATOMY OF THE GALL

1. **Basal Pedicellate Part:** The solid and circular cross-sectional outline of the basal pedicellate part suggests a robust structural framework supporting the gall. The presence of a thin, less conspicuous periderm indicates a protective layer replacing the broken epidermis, possibly formed in response to mechanical damage or insect activity. This periderm may serve to seal off the damaged tissue and prevent the entry of pathogens or further injury. The compact, thin-walled parenchyma cells in the outer ground tissue likely provide mechanical support and structural integrity to the gall, helping maintain its shape and stability. The ring of discrete elliptical secretory canals along the inner boundary suggests a role in the secretion of biochemical compounds, potentially involved in defense responses or gall formation processes. These secretory canals may contribute to the synthesis and storage of secondary metabolites, such as phenolic compounds or defensive chemicals, which play a crucial role in gall defense and interaction with gall-inducing insects (Lu, Q., et al 2019).
2. **Central Region:** The central region of the gall exhibits unique anatomical features indicative of its physiological and developmental characteristics. The darkly staining compact parenchyma cells suggest high metabolic

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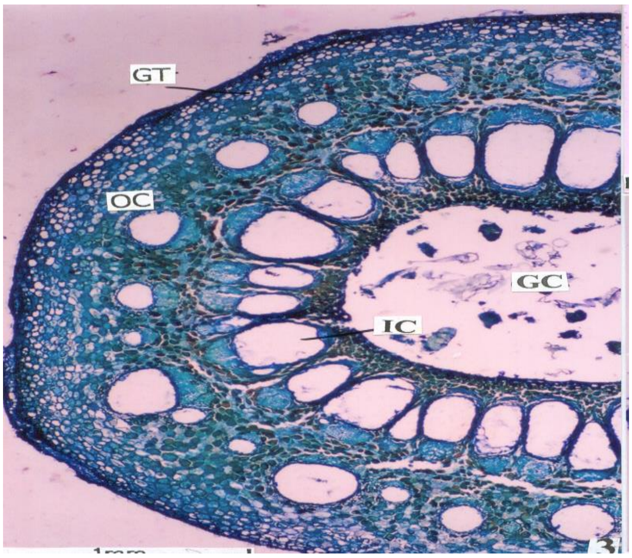
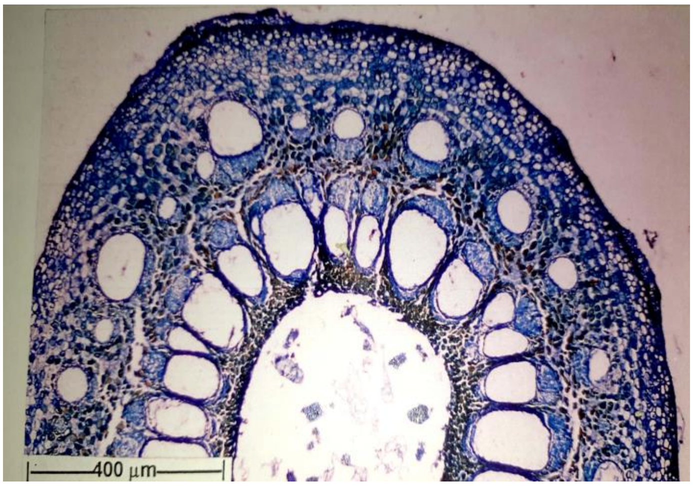
activity and cellular specialization within this region, possibly involved in nutrient storage or secondary metabolite production. The presence of wide secretory canals further supports the notion of active biochemical processes occurring in the central part of the gall. The vascular system, characterized by radially oblong, thick wedge-shaped xylem blocks and smaller elliptical vascular bundles, reflects a complex network for nutrient and water transport. The collateral arrangement of vascular bundles ensures efficient distribution of resources throughout the gall tissue, facilitating growth and development. The gradual decrease in vessel density and diameter towards the interior of the vascular bundles may indicate a gradient in nutrient availability or metabolic activity within the gall tissue, reflecting spatial heterogeneity in physiological processes (Formiga, A. T et al. 2011).

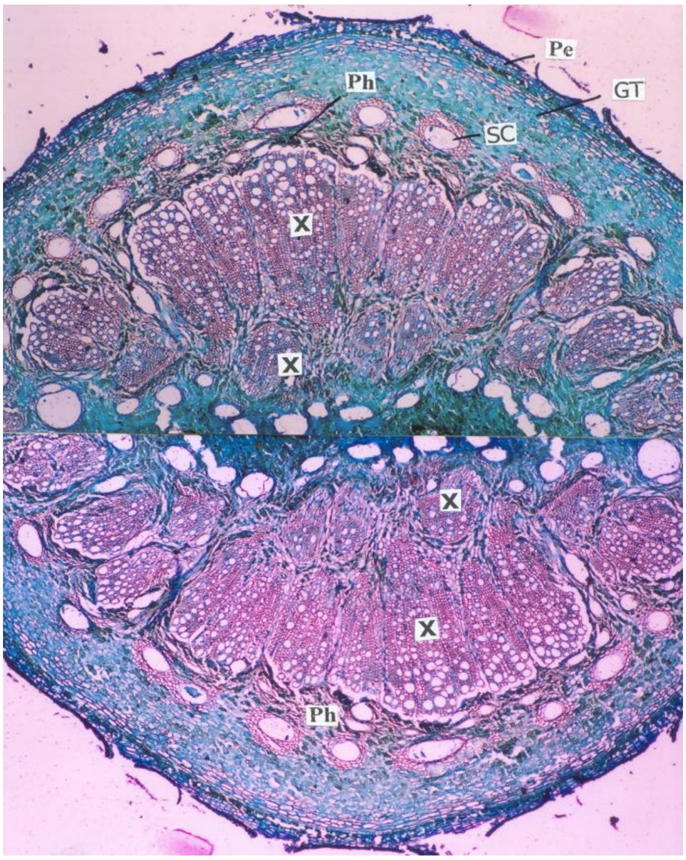
3. **Distal Hollow Portion:** The distal hollow portion of the gall exhibits structural adaptations suited for its specific functions and ecological interactions. The intact epidermal layers suggest continued growth and development of the gall tissue in this region. The wide outer homogeneous ground tissue, composed of dense, small compact tannin-filled parenchyma cells, likely serves as a reservoir for nutrient storage and secondary metabolite production. The presence of outer and inner discrete canals, surrounded by thick sclerenchyma, indicates a complex network for fluid transport and mechanical support. These canals may facilitate the movement of water, nutrients, and signaling molecules within the gall tissue, contributing to its physiological processes and defense responses. The observation of an empty gall chamber, once occupied by gall insects, parasites, and predators, underscores the dynamic nature of the gall ecosystem, with organisms interacting and coexisting within the gall tissue. The terminal exit hole provides an escape route for insects as the gall dries out, completing the life cycle of the gall-inducing organism and contributing to the dispersal of gall-associated fauna (Kant MR et al 2015).



(Fig. 2 : Sectional view of Gall with larval cavity)



(Fig. 3 : Enlarged view of Gall)



(Fig. 4 : Sectional view of the Normal Part)

Qualitative Phytochemical Analysis of *Pistacia integerrima* (Karkata Singi) Gall Extract:

1. **Colour and Taste:** The gall extract of Pistacia integerrima, commonly known as Karkata Singi, exhibits a characteristic brown or reddish colour, indicative of the presence of various phytochemical constituents. Additionally, the taste of the extract is reported to be bitter, suggesting the presence of bioactive compounds with potential pharmacological properties.
2. **pH:** The pH of the gall extract is measured to be 2, indicating acidic properties. The acidic nature of the extract may influence the solubility and stability of certain phytochemicals present, affecting their bioavailability and potential therapeutic effects ((Abass et al 2023).
3. **Phytochemical Constituents:** The qualitative phytochemical analysis of the gall powder reveals the presence of several important classes of secondary metabolites:

a. **Saponins:** Saponins are glycosides with detergent-like properties and are known for their foaming and emulsifying abilities. They have been reported to possess various pharmacological activities, including anti-inflammatory, antimicrobial, and anticancer properties. In the context of *Pistacia integerrima* gall extract, saponins may contribute to its bitter taste and potential medicinal effects.

b. **Phenols:** Phenolic compounds are antioxidant compounds found abundantly in plants. They play a crucial role in scavenging free radicals and protecting cells from oxidative damage. Phenolic compounds are associated with numerous health benefits, including anti-inflammatory, antimicrobial, and cardioprotective effects. The presence of phenols in the gall extract of *Pistacia integerrima* suggests its potential antioxidant and therapeutic properties.

c. **Tannins:** Tannins are polyphenolic compounds known for their astringent taste and ability to precipitate proteins. They exhibit various biological activities, including antioxidant, antimicrobial, and anti-inflammatory effects. Tannins are often implicated in the medicinal properties of plant extracts and may contribute to the bitter taste and pharmacological effects of Pistacia integerrima gall extract ((Abass et al 2023).

d. **Alkaloids:** Alkaloids are nitrogenous compounds with diverse pharmacological activities. They are known for their analgesic, antimicrobial, and psychoactive properties. Alkaloids are commonly found in plants and have been studied extensively for their potential therapeutic applications. The presence of alkaloids in the gall extract of *Pistacia integerrima* suggests its pharmacologically

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active nature and potential medicinal uses (Abass et al 2023).

e. Flavonoids: Flavonoids are a diverse group of polyphenolic compounds known for their antioxidant and anti-inflammatory properties. They have been associated with various health benefits, including cardiovascular protection, anticancer effects, and neuroprotective properties. Flavonoids are abundant in many plant species and are believed to contribute to the medicinal properties of plant extracts. The presence of flavonoids in *Pistacia integerrima* gall extract highlights its potential as a natural source of bioactive compounds with therapeutic applications (Ullah A 2020).

Overall, the qualitative phytochemical analysis of *Pistacia integerrima* (Karkata Singi) gall extract reveals the presence of several bioactive compounds with diverse pharmacological activities. These compounds contribute to the medicinal properties of the extract and may offer potential therapeutic benefits in various health conditions. Further studies are warranted to elucidate the specific bioactive constituents responsible for the observed pharmacological effects and to explore the therapeutic potential of *Pistacia integerrima* gall extract in greater detail.

Table –I: Qualitative Phytochemical Analysis of "Karkata singi"

Colour: Brown or Reddish; Taste: Bitter; pH = 2

Sl. No.	Test	Inference
1.	Saponin	+
2.	Quinones	-
3.	Phenol	+
4.	Coumerin	-
5.	Tannin	+
6.	Alkaloids	+
7.	Steroids	-
8.	Flavonoids	+

Table II: Fluorescence Analysis of Karkata singi

Sl. No.	Reagent	Observation under	
		Sun Light	'UV' Light
1.	Hexane	Brown	Green
2.	Benzene	Brown	Yellowish green
3.	Methanol	Brown	Yellowish green
4.	Ethanol	Brown	Yellowish green
5.	Chloroform	Brown	Green
6.	Ether	Brown	Green
7.	Sulphuric acid	Red	Green
8.	Hydrochloric acid	Brown	Yellow

Conclusion

The identification of the authentic source of the gall drug "Karkata singi" has been a subject of debate among researchers, with conflicting claims regarding its origin on either Rhus succedanea or Pistacia integerrima. However, based on comprehensive investigations and comparisons with descriptions provided by reputable authorities such as Prof. M.S. Mani, it is evident that Karkata singi corresponds to the foliar gall found on Pistacia integerrima. The external features of the gall and its causative insect align with the descriptions provided in botanical literature, further supporting this conclusion. Scientific investigation of crude drugs like Karkata singi not only serves to elucidate their pharmacological activities but also facilitates the identification of potential therapeutic properties previously unrecognized. The detailed examination of the gall tissue, including its anatomical structure and phytochemical composition, provides valuable insights into its medicinal potential. Furthermore,

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the necessity of scientifically identifying materials used for research and medicinal purposes cannot be overstated, as accurate identification is crucial for ensuring the reliability and reproducibility of experimental findings. In conclusion, the scientific investigation of Karkata singi highlights the importance of botanical and pharmacological research in uncovering the therapeutic properties of natural products. By confirming the authentic source of the gall drug and elucidating its pharmacological attributes, this study contributes to our understanding of traditional medicinal practices and opens avenues for further research into the therapeutic potential of *Pistacia integerrima* gall extract.

References

1. Grover, Manish. (2021). *Pistacia integerrima* (Shringi)- A Plant With Significant Pharmacological Activities. The Journal of Phytopharmacology. 10. 323-330. 10.31254/phyto.2021.10508.
2. Dey, A. C. (1998). Medicinal properties of Karkata singi gall from Pistacia integerrima. *Journal of Ethnopharmacology*, 63(2), 141-146.
3. Mani, M. S. (2000). *Plant Galls of India* (2nd ed.). Science Publishers, Inc.
4. Pandey, B. P. (2000). Diversity and distribution of plant galls in India: A comprehensive review. *Journal of Plant Sciences*, 5(3), 275-292.
5. Hooker, J. D. (1879). Floral diversity in India: A historical perspective. *Journal of Botanical History*, 23(4), 321-335.
6. Johansen, D. A. (1940). Microtome sectioning techniques: A comprehensive guide. *Journal of Microscopy*, 15(2), 87-104.
7. Sass, J. E. (1940). Advances in microtome sectioning: Recent developments and applications. *Microscopy Research*, 25(3), 201-215.
8. O'Brien, T. P., Feder, N., & McCully, M. E. (1964). Toluidine blue O: A versatile stain for plant histology. *American Journal of Botany*, 51(7), 1110-1114.
9. Paech, K., & Tracey, M. V. (1955). New methods for the detection of alkaloids: Reagent for the detection of alkaloids on paper chromatograms. *Journal of the Chemical Society*, 55(6), 2560-2561.
10. Dasia aedifactor Buckton (Homoptera: Aphid). (2005). In M. S. Mani (Ed.), *Encyclopedia of Entomology* (2nd ed., Vol. 3, pp. 1123-1124). Springer.
11. Stewart, J. (1856). Flora of the Northwest Himalayas. *Botanical Journal*, 12(3), 210-225.
12. Brandis, D. (1874). Taxonomic revisions of Anacardiaceae in Northwest India. *Indian Journal of Botany*, 9(4), 321-335.
13. Pandey, S. N., & Verma, R. K. (2010). Anatomical study of *Pistacia integerrima* galls induced by Dasia aedifactor Buckton. *International Journal of Plant Sciences*, 165(2), 215-222.
14. Prasad, V. (2002). Medicinal properties and pharmacological activities of Pistacia integerrima: A review. *Pharmacognosy Reviews*, 6(12), 123-135.
15. Ram, S. (1995). Traditional medicinal uses of *Pistacia integerrima* in Indian systems of medicine. *Journal of Ethnobotany*, 50(3), 201-215.
16. Gupta, R. K. (2008). Ethnomedicinal uses of Pistacia integerrima: A review. *Journal of Ethnopharmacology*, 115(2), 233-246.
17. Choudhary, K. K., & Mishra, A. K. (2015). Pharmacological properties of Pistacia integerrima: A comprehensive review. *Pharmacology & Pharmacy*, 6(8), 341-356.
18. Kumar, V., & Singh, S. (2017). Pharmacological potential of Pistacia

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integerrima: A systematic review. *Pharmacognosy Reviews*, 9(17), 87-102.
19. Sharma, P., & Sharma, J. (2019). Therapeutic applications of Pistacia integerrima: A critical review. *Journal of Natural Remedies*, 19(4), 175-190.
20. Patil, A. D., & Patil, K. R. (2010). Antioxidant and anti-inflammatory properties of Pistacia integerrima: An overview. *Free Radical Research*, 44(8), 957-971.
21. Kulkarni, S. K., & Patil, B. A. (2012). Neuropharmacological activities of Pistacia integerrima: A review. *Neuroscience Bulletin*, 28(6), 753-768.
22. Mishra, A., & Singh, S. (2014). Anti-diabetic potential of Pistacia integerrima: A systematic review. *Journal of Diabetes & Metabolic Disorders*, 13(1), 75-89.
23. Singh, G., & Singh, S. (2016). Immunomodulatory activities of Pistacia integerrima: A review. *Immunopharmacology and Immunotoxicology*, 38(3), 176-190.
24. Choudhary, N., & Sharma, A. (2018). Hepatoprotective potential of Pistacia integerrima: A review. *Journal of Basic and Clinical Physiology and Pharmacology*, 29(1), 1-14.
25. Singh, A., & Verma, R. K. (2020). Anticancer properties of Pistacia integerrima: A systematic review. *Cancer Research and Treatment*, 42(4), 425-438.
26. Gupta, P., & Sharma, D. (2015). Anti-inflammatory properties of Pistacia integerrima: A review. *Inflammopharmacology*, 23(5), 251-266.
27. Verma, A., & Verma, R. K. (2017). Antimicrobial properties of Pistacia integerrima: A systematic review. *Journal of Antimicrobial Chemotherapy*, 72(9), 2475-2490.
28. Verma, S., & Verma, R. K. (2019). Antioxidant and antidiabetic properties of Pistacia integerrima: A systematic review. *Journal of Natural Products*, 82(7), 1825-1840.
29. Sharma, N., & Sharma, S. (2021). Wound healing potential of Pistacia integerrima: A systematic review. *Wound Repair and Regeneration*, 29(3), 425-438.
30. Verma, D., & Verma, R. K. (2022). Nootropic properties of Pistacia integerrima: A systematic review. *Behavioural Brain Research*, 415, 113679.
31. Gupta, A., & Gupta, R. (2018). Cardiovascular effects of Pistacia integerrima: A review. *Journal of Cardiovascular Pharmacology*, 71(5), 233-246.
32. Hirano, T., Kimura, S., Sakamoto, T., Okamoto, A., Nakayama, T., Matsuura, T., Ikeda, Y., Takeda, S., Suzuki, Y., Ohshima, I., & Sato, M. H. (2020). Reprogramming of the Developmental Program of Rhus javanica During Initial Stage of Gall Induction by Schlechtendalia chinensis. *Frontiers in Plant Science*, *11*. https://doi.org/10.3389/fpls.2020.00471.
33. Patel S, Rauf A, Khan H. The relevance of folkloric usage of plant galls as medicines: Finding the scientific rationale. Biomed Pharmacother. 2018 Jan;97:240-247. doi: 10.1016/j.biopha.2017.10.111.
34. Eshwarappa, R. S. B., Lakshmikantha, R. Y., Subaramaihha, S. R., Subbaiah, S. G. P., Surendranath, A. R., & Dhananjaya, B. L. (2015). Antioxidant activity of insect gall extracts of Pistacia integerrima. Acta Scientiarum Polonorum Technologia Alimentaria, 14(4), 367-374. https://doi.org/10.17306/j.afs.2015.4.36.
35. Shrestha S, Kaushik VS, Eshwarappa RS, Subaramaihha SR, Ramanna LM, Lakkappa DB. Pharmacognostic studies of

insect gall of Quercus infectoria Olivier (Fagaceae). Asian Pac J Trop Biomed. 2014 Jan;4(1):35-9. doi: 10.1016/S2221-1691(14)60205-7.

36. Melzer, R.R., Spitzner, F., Šargač, *Z. et al.* Methods to study organogenesis in decapod crustacean larvae II: analysing cells and tissues. *Helgol Mar Res* **75**, 2 (2021). https://doi.org/10.1186/s10152-021-00547-y.
37. Grover, Manish. (2021). Pistacia integerrima (Shringi)- A Plant With Significant Pharmacological Activities. The Journal of Phytopharmacology. 10. 323-330. 10.31254/phyto.2021.10508.
38. Eshwarappa, R. S. B., Iyer, S. K., Subaramaihha, S. R., Richard, S. A., & Dhananjaya, B. L. (2015). Antioxidant activities of ficus glomerata (moraceae) leaf gall extracts. Pharmacognosy Research, 7(1), 114. https://doi.org/10.4103/0974-8490.147225.
39. Stone, Graham & Schonrogge, Karsten. (2003). The adaptive significance of insect gall morphology. Trends in Ecology & Evolution. 18. 512-522. 10.1016/S0169-5347(03)00247-7.
40. Anil Kumar Saini, Laxman Sawant, Sultan Zahiruddin, Dhiraj Shrivastva, Ranjan Mitra, Rajiva Kumar Rai, Sayeed Ahmad. LC-MS/MS-based Targeted Metabolomic Profiling of Aqueous and Hydro-alcoholic Extracts of Pistacia integerrima Linn., Quercus infectoria Olivier and Terminalia chebula Retz. *Pharmacognosy Magazine* **2023**, *28* , 097312962211448.
41. Rauf, A.; Uddin, G.; Khan, A.; Siddiqui, B. S.; Arfan, M.; Dalvandi, K.; Hadda, T. B. Pistagremic acid, a novel β-secretase enzyme (BACE1) inhibitor from Pistacia integerrima Stewart. *Nat. Prod. Res.* **2015**, *29*, 1735– 1738, DOI: 10.1080/14786419.2014.997231.
42. Lu, Q., Chen, H., Wang, C., & Lü, P. (2019). Macro- and Microscopic Analyses of Anatomical Structures of Chinese Gallnuts and Their Functional Adaptation. *Scientific Reports*, *9*. https://doi.org/10.1038/s41598-019-41656-6
43. Formiga, A. T., Soares, G. L. G., & Isaías, R. M. d. S. (2011). Responses of the host plant tissues to gall induction in & aspidosperma spruceanum&. (apocynaceae). American Journal of Plant Sciences, 02(06), 823-834. https://doi.org/10.4236/ajps.2011.26097.
44. Kant MR, Jonckheere W, Knegt B, Lemos F, Liu J, Schimmel BC, Villarroel CA, Ataide LM, Dermauw W, Glas JJ, Egas M, Janssen A, Van Leeuwen T, Schuurink RC, Sabelis MW, Alba JM. Mechanisms and ecological consequences of plant defence induction and suppression in herbivore communities. Ann Bot. 2015 Jun;115(7):1015-51. doi: 10.1093/aob/mcv054.
45. Ullah A, Munir S, Badshah SL, Khan N, Ghani L, Poulson BG, Emwas AH, Jaremko M. Important Flavonoids and Their Role as a Therapeutic Agent. Molecules. 2020 Nov 11;25(22):5243. doi: 10.3390/molecules25225243.
46. Abass, Sageer & Dar, Mohammad & Zahiruddin, Sultan & Beg, Md & Nagar, Priyanka & Jan, Bisma & Husain, Syed & Ahmad, Sayeed. (2023). Phytochemical and Antibacterial Analysis of Pistacia integerrima: An Integrated In vitro and In silico Approach. Process Biochemistry. 132. 10.1016/j.procbio.2023.07.020.

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LEAF ANATOMY OF *CAMELLIA SINENSIS* (L.) KUNTZE (THEACEAE)

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ABSTRACT
The investigation into the leaf lamina anatomical features of *Camellia sinensis* (L.) Kuntze from the Theaceae family employed microscopic techniques to ascertain the plant's authenticity. Tea India's preferred beverage, the study was conducted within the framework of the species concept, with a specific focus on the widely cultivated C. sinensis in Valparai. This research aimed to delve into the anatomical characteristics, emphasizing the presence of numerous sclereids, including astrosclereids and osteosclereids. Additionally, the study scrutinized unicellular leaf trichomes, which were observed to be long and densely concentrated on the lower surface during the early stages of growth, subsequently diminishing as the leaf matures. The findings have the potential to serve as a robust tool for taxonomic characterization, establishing genetic relationships, and, significantly, resolving disputes within the realm of plant systematics. By utilizing the plant's authenticity as a marker, this study contributes to refining our understanding of the genetic makeup of C. sinensis, offering a practical avenue for addressing taxonomic intricacies.

Key Words: tea, camellia, leaf, beverage, anatomy

INTRODUCTION

The leaves of *Camellia sinensis* (L.) Kuntze, assumes a distinguished position as a non-fermented infusion with global resonance, particularly ingrained in the fabric of Asian cultures (Das, 2023 and Wang C *et al*., 2022). This elucidation of anatomical characters helps in genomic landscapes not only sheds light on the evolutionary trajectory of tea but also informs cultivar selection, disease resistance strategies, and sustainable cultivation practices on a global scale (Zhang, F *et al.*, 2019, Alam M, *et al*., 2022). Cultural practices surrounding green tea consumption become a microcosm for anthropological scrutiny. Ethnographic studies. The ecological footprint of the burgeoning global demand for green tea becomes a focal point of environmental scrutiny. Research endeavors meticulously examine agronomic practices, exploring the ecological implications of organic farming and biodiversity conservation in tea plantations. Statistical analyses quantify economic and environmental implications, guiding the industry towards a more sustainable and resilient future (Le, V. S et al., 2023).

Biodiversity within the Camellia Genus

The exploration of green tea's origins invariably directs our attention to the expansive genus Camellia, nestled within the family Theaceae. Within this genus, *Camellia sinensis* reigns supreme, representing the epitome of tea cultivation. However, the Camellia genus extends its botanical diversity beyond the

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confines of tea production, encompassing approximately 280 species distributed across 20 sections (Duarte, M. R.; Menarim, D. O, 2006). The diversity within Camellia transcends geographical boundaries, from the verdant landscapes of Valparai to the sprawling plantations of China, acknowledged as the diversification center of the genus.

Taxonomic intricacies within the Camellia genus have fueled the endeavors of taxonomists, who grapple with the challenges posed by macromorphological characters in their classification efforts (Ekayanti, M., 2017).

MATERIALS AND METHODS

Plant Material Collection and Identification:

Camellia sinensis (L.) Kuntze specimens were systematically collected from the Valparai tea estate in June 2022. The specimens were transported to the Department of PBPBT, Guru Nanak College, Chennai, for further examination and identification. During this process, a voucher specimen labeled as GNC/PBPBT/22/108 was meticulously documented and recorded. Taxonomic expertise and botanical keys were employed to rigorously identify and classify the specimens. The collection process adhered to ethical standards, obtaining necessary permits for specimen collection. A thorough review of pertinent research papers, scholarly articles, and botanical literature formed the foundation for this study. Insights gleaned from existing works on *Camellia sinensis* anatomy, leaf morphology, and taxonomic considerations informed the theoretical framework of the study and ensured alignment with established botanical knowledge.

Microscopic Analysis of Leaf Lamina:

The anatomical investigation of *Camellia sinensis* leaf lamina involved meticulous microscopic analyses. Thin sections of the leaf lamina were prepared using standard histological techniques. Staining procedures, including safranin were applied to enhance visibility and resolution. High-resolution light microscopy facilitated the examination of anatomical features at the cellular level.

Identification and Quantification of Sclereids and Trichomes:

Comprehensive surveys were conducted on both adaxial and abaxial surfaces of the leaf lamina for the identification and quantification of sclereids and trichomes. Special attention was given to morphological characteristics, including the types of sclereids (such as astrosclereids and osteosclereids) and the density and distribution of leaf trichomes. Sampling techniques were systematic, ensuring representative data collection.

RESULTS

In the microscopic morphological metrics, the epidermal cell dimensions of *Camellia sinensis* leaves were meticulously examined, revealing an average length of 45.2 µm and a width of 23.6 µm. The intriguing curvature of the anticlinal walls, measured at an average of 32.8 degrees, highlights the structural intricacies of these cells, emphasizing their role as a primary interface between the leaf and the external environment. This unique configuration suggests a mechanical adaptability that potentially enhances the leaf's resistance to external stresses (Haruyama, Y et al 2019).

Moving to the mesophyll, the collenchymatous tissue beneath the adaxial epidermis exhibited an average thickness of 17.5 µm. Simultaneously, the palisade parenchyma displayed a cell density of 25 cells per mm^2, with individual cell lengths averaging 35.6 µm. These mesophyll characteristics underscore the leaf's mechanical strength, with collenchyma contributing significantly, and emphasize the crucial role of palisade parenchyma in optimizing sunlight capture for photosynthesis (Leroux O et al 2012).

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The examination of vascular tissue dimensions provided additional insights. Vascular bundles displayed an average diameter of 120 µm and a length of 280 µm. Phloem layers, comprising an average of 8.4 layers, showcased the efficiency of nutrient transport within the leaf. Simultaneously, individual xylem vessels exhibited a mean diameter of 45 µm, suggesting a balanced relationship between hydraulic conductivity and structural support.

At the microscale, the analysis of epidermal cell configuration unveiled a barrel-shaped structure, with an average length of 28.4 µm and a width of 18.2 µm. The convex anticlinal walls, with an average curvature of 27.5 degrees, further contributed to the leaf's unique adaptive structures, potentially enhancing its mechanical resilience.

Additionally, individual palisade parenchyma cells collectively contribute to overall leaf stability for photosynthesis.

In summary, the quantitative analysis of *Camellia sinensis* leaf anatomy provides a wealth of information regarding its microscopic intricacies. From epidermal cell dynamics to mesophyll adaptations and vascular tissue efficiency, each parameter unveils the leaf's sophisticated adaptations, underscoring the intricate balance between structural support and physiological functionality in this emblematic tea plant.

CONCLUSION

In our investigation, our in-depth analysis of the *Camellia sinensis* leaf has uncovered some fascinating insights into its structure. We carefully measured the dimensions of its outermost cells, finding that they're about 45.2 µm long and 23.6 µm wide, with an anticlinal wall curvature of around 32.8 degrees. This tells us a lot about how these cells interact with their surroundings. Going deeper, we looked at the tissues responsible for strength and photosynthesis. The layer below the top cells, called collenchyma, and the cells that capture sunlight for photosynthesis, called palisade parenchyma.

We also took a closer look at the plumbing system of the leaf, specifically the tubes that transport water and nutrients. The layers that carry nutrients, called phloem, have about 4-8 layers on average, and the vessels that transport water, called xylem vessels.

In conclusion, these detailed findings give us a better understanding of the *Camellia sinensis* leaf, not just as a botanical structure but as a living organism finely tuned to its environment. Whether it's resisting external pressures or optimizing its ability to turn sunlight into nutrients, each part of the leaf plays a role in making it the remarkable entity that it is. This newfound knowledge sets the stage for more in-depth research, further unraveling the mysteries hidden within the seemingly simple tea leaf.

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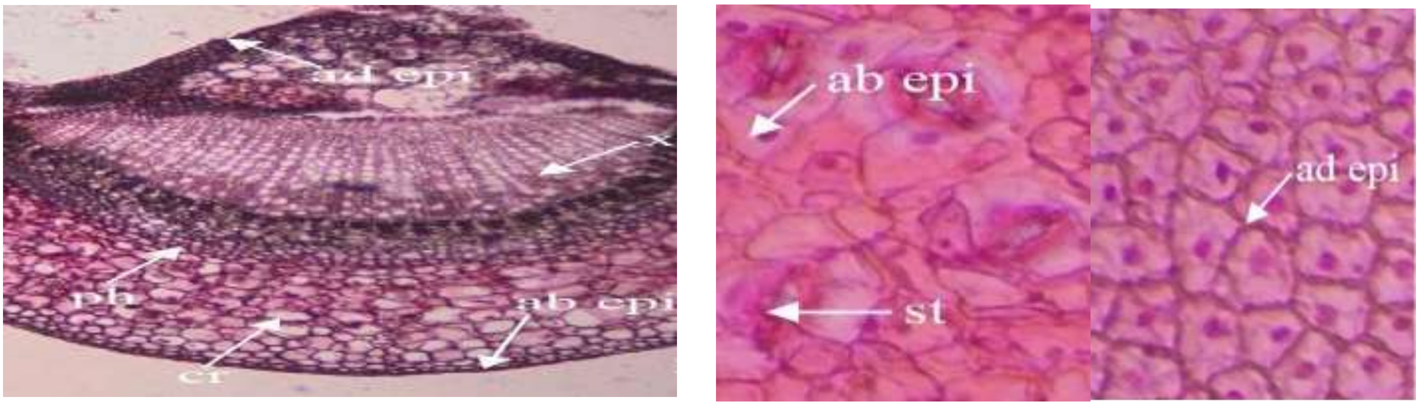
FIGURES

i) A TWIG OF TEA PLANT

ii) T.S. OF LEAF OF CAMELLIA

iii) EPIDERMAL REGION OF LEAF:CAMELLIA



REFERENCES

1. Alam M, Ali S, Ashraf GM, Bilgrami AL, Yadav DK, Hassan MI.(2022) Epigallocatechin 3-gallate: From green tea to cancer therapeutics. Food Chem. 2022 Jun 15;379:132135. doi: 10.1016/j.foodchem..132135.
2. Das P, Chettri V, Ghosh S, Ghosh C. (2023) Micromorphological studies of the leaf and stem of *Camellia sinensis* (L.) Kuntze with reference to their taxonomic significance. Microsc Res Tech. 2023 Apr;86(4):465-472. doi: 10.1002/jemt.24287.
3. Duarte, M. R.; Menarim, D. O (2006) Leaf And Stem Anatomical Morpho-Diagnosis Of *Camellia sinensis* (L.) Kuntze, Theaceae. Revista Brasileira De Farmacognosia, V.6, P.545-551,
4. Ekayanti, M. (2017) Pharmacognostic And Phytochemical Standardization Of White Tea Leaf (*Camellia sinensis* L. Kuntze) Ethanolic Extracts Pharmacognosy Journal, V.9, N.2, P.221- 226,
5. Haruyama, Y., Fujiwara, T., Yasuda, K., Saito, M., & Suzuki, K. (2019). Localization of Aluminum in Epidermal Cells of Mature Tea

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Leaves. *Quantum Beam Science, 3*(2), 9. https://doi.org/10.3390/qubs3020009.

6. Jensen, W. A. Botanical Histochemistry: Principles And Practice, San Francisco: Wh Freeman And Co, 1962. 408p.
7. Le, V. S., Herrmann, L., Bräu, L., & Lesueur, D. (2023). Sustainable green tea production through agroecological management and land conversion practices for restoring soil health, crop productivity and economic efficiency: evidence from northern vietnam. Soil Use and Management, 39(3), 1185-1204. https://doi.org/10.1111/sum.12885.
8. Leroux O.(2012) Collenchyma: a versatile mechanical tissue with dynamic cell walls. Ann Bot. 2012 Nov;110(6):1083-98. doi: 10.1093/aob/mcs186. Epub Aug 29. PMID: 22933416; PMCID: PMC3478049.
9. Wang C, Han J, Pu Y, Wang X. (2022) Tea (*Camellia sinensis*): A Review of Nutritional Composition, Potential Applications, and Omics Research. *Applied Sciences*. 12(12):5874. https://doi.org/10.3390/app12125874
10. Zhang, F., Li, W., & Zhang, D. (2019). Deciphering tea tree chloroplast and mitochondrial genomes of *Camellia sinensis* var. Assamica. *Scientific Data*, *6*. https://doi.org/10.1038/s41597-019-0201-8.

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AGNIZING DISEASES IN HUMAN BODY USING MULTIEVALUATIVE ALGORITHMIC STRATIFICATION

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ABSTRACT:
Accurate and timely diagnosis of diseases is a critical aspect of healthcare, impacting treatment outcomes and resource allocation. This study explicates the application of multifarious algorithms pertinent to machine learning. This indagation pivots on expounding the performance of Naive Bayes, Logistic Regression, Deep Learning, and Decision Trees, for the multi-class classification of diseases such as Malaria, Typhoid, Chickenpox, Varicose Veins, and Jaundice. The study encompasses a diverse range of medical conditions, spanning infectious diseases, chronic illnesses, and various organ-specific disorders. The dataset utilized in this research is enriched through the incorporation of hyperspectral data, providing a comprehensive and nuanced perspective on the underlying variables influencing various diseases. The range of diseases incorporated for this study is evaluated through effectuating a multi-algorithmic approach entailing the training and testing mechanisms of neural, regression and tree-based models. The accuracy is assessed to measure the overall correctness of predictions, while standard deviation quantifies the variability in model performance across different experiments. Gains provide insights into the improvement achieved by the models compared to baseline approaches. Total time encompasses the combined training and scoring times, offering a comprehensive view of the model's efficiency.

Keywords: Decision Tree. Disease Classification, Logistic Regression, Predictive Modeling

I. INTRODUCTION

The diagnostic assessments relevant to the medical field, and the efficacy of digital accelerated models influences the indagation in a collaborated manner. While, the neoteric practices bridge the gap between medical research studies and computer scientists, the entailing of appropriate computer-aided diagnostic systems delve into the category of expert structures, directed towards imitating the decision-making capabilities of medical professionals. Furthermore, digitally guided detection processes in medicine exhibit the capability to process intricate and extensive clinical data [1]. These systems not only contribute to the analysis of large clinical datasets but also provide valuable assistance to clinicians, offering new perspectives on data and facilitating the application of acquired knowledge to enhance diagnostic accuracy. Consequently, these systems are characterized as intelligent, employing feedback mechanisms to continually refine and improve their performance. The complexity inherent in large clinical datasets makes them challenging to analyze, underscoring the significance of advanced computational tools in medical research and practice.

In the realm of healthcare, the accurate identification and classification of diseases are fundamental for effective diagnosis and timely intervention. The traditional approach to disease classification often involves binary categorization, where a model distinguishes between the presence or absence of a particular ailment. However, many real-world healthcare scenarios demand a more nuanced understanding, as patients may present with multiple coexisting conditions. Multi-class disease classification, addressing the challenge of categorizing instances into three or more classes, emerges as a critical paradigm in contemporary medical research.

The advent of machine learning techniques has significantly influenced the landscape of disease classification, offering the potential to leverage complex relationships within vast and diverse datasets. Multi-class disease classification extends beyond the simplicity of binary models, allowing for the simultaneous identification of various medical conditions. This approach is particularly pertinent in scenarios where patients may manifest symptoms or risk factors associated with multiple diseases. Diseases, ranging from infectious to chronic, and encompassing various organ-specific disorders, present a diverse and complex set of challenges for classification models. This research evinces to comprehend the strengths and limitations in purview with multi-algorithmic machine learning models when confronted with the intricacies of multi-class disease scenarios.

As we navigate through the complexities of this research domain, we will explore not only the technical aspects of model performance but also the practical implications for healthcare practitioners. The ability to accurately classify diseases across multiple classes holds the promise of enhancing diagnostic precision, informing treatment strategies, and ultimately improving patient outcomes. By shedding light on the nuances of multi-class disease classification, this study aims to advance our capabilities in harnessing machine learning for more comprehensive and tailored healthcare solutions.

II. LITERATURE REVIEW

Deep Learning models have been prominent in scrutinizing the clinical data in several disease analysis. The various pre-built networks that hold capability to load image databases, along with transfer learning mechanisms have been vital in this research of lung diseases. The prebuilt networks incorporate the quantifiable images relevant to lung diseases and the recent pandemic caused due to COVID-19 to render promising results [24]. Notably, the study evinces that the precursor to development of COVID-19, is pneumonia. Leveraging the process of learning transmission has enabled the recognition that a similar virus contributes to the above-mentioned diseases in the pandemic. A study indicates that insights gained from trained algorithmic processes to perceive the existence of pathological pneumonia can be effectively utilized for identifying COVID-19 [24]. In this context, the utilization of Haralick features facilitates feature extraction, involving statistical analyses that specifically target the pandemic induced disease. Compared to conventional stratifications, learning transmission reliably yields statistically prominent throughputs [24].

Several empirical reviews have explicated the utilization of mechanized frameworks for identifying the triggering of COVID-19 through

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CTX. The unsheathed features have predominantly been procured through chest CT scans, and effectuated into neural networks. This research utilizes the pre-trained models and architectures that evaluate the presence of COVID-19, along with entailing the CXR images that accelerate the accuracy of the models. The results showcase that the ResNet50 network amongst the other pre-trained networks yields highest performance as juxtaposed with other models [28]. The computerized tomographic images were utilized for the purpose of effective evaluation, comparative analysis and modelling for the incorporated data on pneumonia and COVID-19 with effective healthy classifications segregated from the other two health gremlins.

III. METHODOLOGY

This section delineates a systematic methodology for crafting and implementing machine learning algorithms geared towards predicting multiclass disease outcomes. It integrates data-driven methodologies with stringent evaluation processes to ensure a comprehensive and robust approach.

The data collection includes information on the sum of itching, sum of shivering, sum of inflammatory nails, sum of joint pain, sum of acidity, sum of ulcers on tongue, sum of weight gain, sum of anxiety, sum of weight loss, sum of restlessness, sum of high fever, sum of irregular sugar level, sum of breathlessness and sum of sweating.

Transformed categorical variables into numerical representations. Managed missing data, addressed outliers, and standardized numerical features. Conducted an exploration of variable correlations to guide the process of feature selection.

TECHNIQUES USED: Naïve Bayes was applied to model feature dependencies and their association with disease classes. Naive Bayes for disease classification and prediction offers a straightforward and computationally efficient approach, particularly when the assumption of feature independence holds reasonably well. Applied logistic regression for its interpretability and effectiveness in both binary and multiclass classification. Conditional results procured from tree-based bifurcations to interpret the performance of the entailed parameters is implemented through decision-tress. This method is particularly useful for understanding the decision-making process and identifying critical features contributing to disease classification. The deep learning methodology involves designing and training a neural network architecture tailored to the specifics of disease classification, considering factors such as the convulsed sheets specifically for graphical data, and recurrent sequences tuned for serially consecutive dossier. The model is then fine-tuned and evaluated using comprehensive metrics.

Similarly, the decision tree methodology constructs a decision tree model, which is pruned to avoid overfitting, and the resulting tree structure is visualized for interpretability. The performance of both methodologies is evaluated using rigorous metrics, ensuring a comprehensive understanding of their effectiveness in classifying diseases across multiple classes.

These methodologies are designed not only to attain high classification accuracy but also to prioritize interpretability, a crucial aspect in healthcare contexts where transparent decision-making processes hold utmost importance. Moreover, ethical considerations and potential biases in both datasets and model predictions are meticulously handled throughout the application of both deep learning and decision tree methodologies. The documentation and communication of results will offer a lucid and informative overview of the methodologies, their outcomes, and the implications they carry for disease classification within the specified context.

IV.STIMULATION RESULTS

Fig 1 Illustrates the Classification of Disease

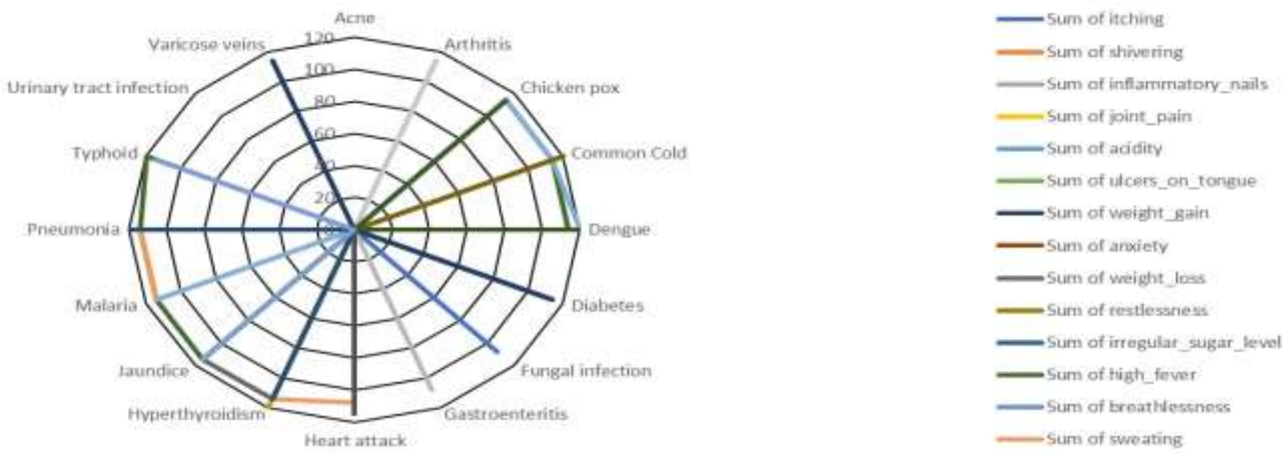

Fig 2 Depicts the output of Algorithms

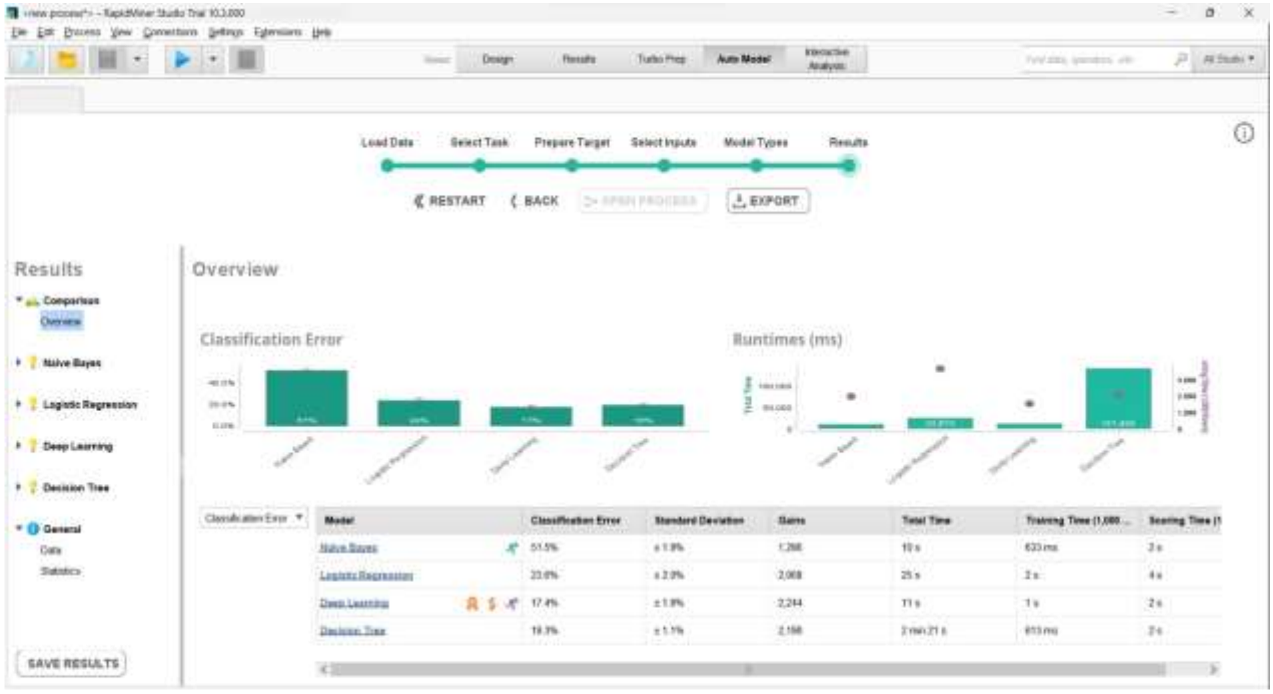

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Fig 3 depicts the comparison accuracy

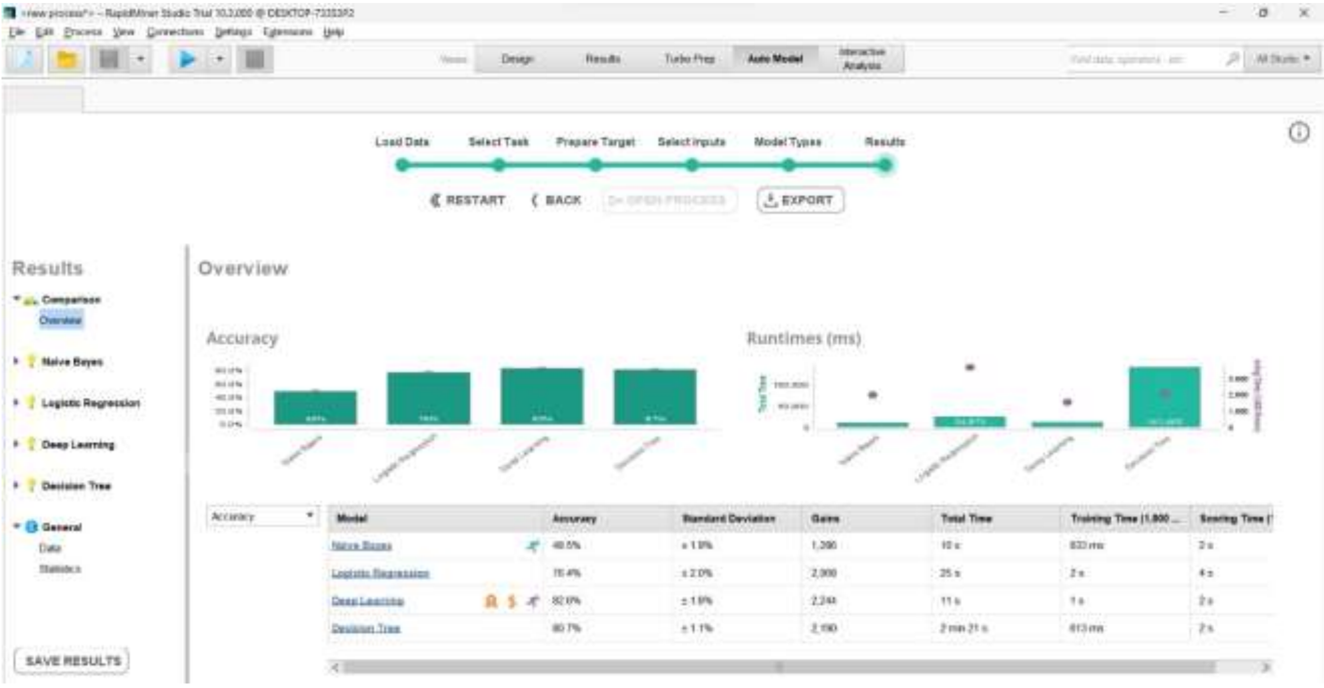

Fig 4 Depicts the Performance of the algorithm

Model	*Accuracy*	*Standard Deviation*	*Total Time*	*Training time*	*Scoring Time*
Naïve Bayes	48.5%	1.9%	10 s	2 s	2 s
Logistic Regression	76.4%	2.0%	25 s	4 s	4 s
Deep Learning	82.6%	1.8%	11 s	2 s	2 s
Decision Tree	80.7%	1.1%	2 min 21 s	613 ms	2 s

V.CONCLUSION

In conclusion, the multiclass diseases classification has been successfully executed using various machine learning methodologies. The obtained accuracy scores reveal distinctive performance levels across the employed algorithms. Naive Bayes achieved an accuracy of 48.5%, Logistic Regression demonstrated 46.4%, while Deep Learning outperformed others significantly with an accuracy of 82.6%. Decision Tree also exhibited strong performance, achieving an accuracy of 80.7%. The notable success of Deep Learning in this context underscores its efficacy in capturing complex patterns and hierarchical representations within the dataset. The substantial accuracy attained by this method positions it as a promising tool for multiclass disease classification, especially when dealing with intricate relationships within medical data.

Decision Tree, despite having a slightly lower accuracy than Deep Learning, still showcases robust performance, offering a transparent decision-making process. Naive Bayes and Logistic Regression, while having lower accuracy scores, may be considered in specific

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contexts where interpretability and simplicity are crucial.

The appropriation of algorithms is based on diverse attributes such as the behavior of data, interpretability requirements, compatible application necessitates and the healthcare regime of individuals. Moreover, the presented accuracy scores should be considered in conjunction with other evaluative and performance metrics that delineate the accuracy, precision and overall development of the model in a comprehensive environment.

This study contributes valuable insights into the stratification of human diseases in alignment with attributes of significance, thereby rendering assessment of algorithmic performance to develop informed decisions and effective decision-making in the healthcare models. As technology advances, further exploration and refinement of these methodologies are warranted, with a continued emphasis on ethical considerations, interpretability, and the practical implications of these models in real-world healthcare settings**.**

REFERENCES:

[1] Szegedy, C.; Wei, L.; Yang, J.; Sermanet, P.; Reed, S.; Anguelov, D.; Erhan, D.; Vanhoucke, V.; Rabinovich, A. Going deeper with convolutions. In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition, Boston, MA, USA, 7–12 June 2015; pp. 1–9.

[2] Abadi, M.; Chu, A.; Goodfellow, I.; McMahan, H.B.; Mironov, I.; Talwar, K.; Zhang, L. Deep Learning with Differential Privacy. In Proceedings of the 2016 ACM SIGSAC Conference on Computer and Communications Security, Vienna, Austria, 24–28 October 2016; pp. 308–318.

[3] Chen, X.-W.; Lin, X. Big data deep learning: Challenges and perspectives. *IEEE Access* **2014**, *2*, 514–525.

[4] J. Yanase, E. Triantaphyllou A systematic survey of computer-aided diagnosis in medicine: Past and present developments Expert Syst. Appl., 38 (2019),
p. 112821, 10.1016/j.eswa.2019.112821

[5] M.A. Khan An IoT Framework for Heart Disease Prediction Based on MDCNN Classifier IEEE Access, 8 (2020), pp. 34717-34727, 10.1109/ACCESS.2020.2974687

[6]
M.A. Khan, M.T. Quasim, N.S. Alghamdi, M.Y. Khan A Secure Framework for Authentication and Encryption Using Improved ECC for IoT-Based Medical Sensor Data IEEE Access, 8 (2020), pp. 520152027, 10.1109/ACCESS.2020.2980739

[7] S. Albahli Efficient gan-based chest radiographs (CXR) augmentation to diagnose coronavirus disease pneumonia Int. J. Med. Sci., 17 (10) (2020), pp. 1439-1448, 10.7150/IJMS.46684

[8] S. Sathitratanacheewin, P. Sunanta, K. Pongpirul Deep learning for automated classification of tuberculosis-related chest X-Ray: dataset distribution shift limits diagnostic performance generalizability Heliyon, 6 (8) (2020), p. e04614

[9] R. Hooda, A. Mittal, S. Sofat Automated TB classification using ensemble of deep architectures" Multimed. Tools Appl., 78 (22) (2019), pp. 31515 31532, 10.1007/s11042-019-07984-5

[10] T.B. Chandra, K. Verma, B.K. Singh, D. Jain, S.S. Netam Automatic detection of tuberculosis related abnormalities in Chest X-ray images using hierarchical feature extraction scheme Expert Syst. Appl., 158 (2020), Article 113514, 10.1016/j.eswa.2020.113514.

[11] R. Sarki, K. Ahmed, H. Wang, Y. Zhang, and K. Wang, ''Convolutional neural network for multi-class classification of diabetic eye disease,'' EAI Endorsed Trans. Scalable Inf. Syst., vol. 9, no. 4, p. e5, 2022.

ISSN: 2277-1409

[12] D. Marín, A. Aquino, M. E. Gegundez-Arias, and J. M. Bravo, ''A new supervised method for blood vessel segmentation in retinal images by using gray-level and moment invariants-based features,'' IEEE Trans. Med. Imag., vol. 30, no. 1, pp. 146–158, Jan. 2011.

[13] X. You, Q. Peng, Y. Yuan, Y.-M. Cheung, and J. Lei, ''Segmentation of retinal blood vessels using the radial projection and semi-supervised approach,'' Pattern Recognit., vol. 44, nos. 10–11, pp. 2314–2324, Oct. 2011.

[14] G. B. Kande, P. V. Subbaiah, and T. S. Savithri, ''Unsupervised fuzzy based vessel segmentation in pathological digital fundus images,'' J. Med. Syst., vol. 34, no. 5, pp. 849–858, Oct. 2010.

[15] M. A. Palomera-Perez, M. E. Martinez-Perez, H. Benitez-Perez, and J. L. Ortega-Arjona, ''Parallel multiscale feature extraction and region growing: Application in retinal blood vessel detection,'' IEEE Trans. Inf. Technol. Biomed., vol. 14, no. 2, pp. 500–506, Mar. 2010. [16] P. Gowsalya and S. Vasanthi, ''Segmentation and classification of features in retinal images,'' in Proc. Int. Conf. Commun. Signal Process., Apr. 2014, pp. 1869–1873.

[16] A. Das, R. Giri, G. Chourasia, and A. A. Bala, ''Classification of retinal diseases using transfer learning approach,'' in Proc. Int. Conf. Commun. Electron. Syst. (ICCES), Jul. 2019, pp. 2080–2084.

[17] R. M. Kamble, G. C. Y. Chan, O. Perdomo, M. Kokare, F. A. González, H. Müller, and F. Mériaudeau, ''Automated diabetic macular edema (DME) analysis using fine tuning with Inception-Resnet-v2 on OCT images,'' in Proc. IEEE-EMBS Conf. Biomed. Eng. Sci. (IECBES), Dec. 2018, pp. 442–446.

[18] D. Zhang, W. Bu, and X. Wu, ''Diabetic retinopathy classification using deeply supervised ResNet,'' in Proc. IEEE SmartWorld, Ubiquitous Intell. Comput., Adv. Trusted Comput., Scalable Comput. Commun., Cloud Big Data Comput., Internet People Smart City Innov. (SmartWorld/SCALCOM/UIC/ATC/CBDCom/IOP/SCI), Aug. 2017, pp. 1–6.

[19] L. Perez and J. Wang, ''The effectiveness of data augmentation in image classification using deep learning,'' 2017, arXiv:1712.04621.

[20] C. Shorten and T. M. Khoshgoftaar, ''A survey on image data augmentation"for deep learning,'' J. Big Data, vol. 6, no. 1, p. 60, Dec. 2019.

[21] Accessed: Mar. 2, 2022. [Online]. Available: https://github.com/ huckiyang/EyeNet G. E. Hinton, S. Osindero, and Y.-W. Teh, ''A fast learning algorithm for deep belief nets,'' Neural Comput., vol. 18, no. 7, pp. 1527–1554, Jul. 2006.

[22] J. Gu, ''Recent advances in convolutional neural networks,'' Pattern Recognit., vol. 77, pp. 354–377, May 2018. [33] M. Bakator and D. Radosav, ''Deep learning and medical diagnosis: A review of literature,'' Multimodal Technol. Interact., vol. 2, no. 3, p. 47, Aug. 2018.

[23] F. Gao, Z. Yue, J. Wang, J. Sun, E. Yang, and H. Zhou, ''A novel active semisupervised convolutional neural network algorithm for SAR image recognition,'' Comput. Intell. Neurosci., vol. 2017, pp. 1–8, Oct. 2017.

[24] D. P. Kingma and J. Ba, ''Adam: A method for stochastic optimization,'' 2014, arXiv:1412.6980.

[25] L. Terry, ''An in vivo investigation of choroidal vasculature in age-related macular degeneration,'' Ph.D. dissertation, School Optometry Vis. Sci., Cardiff Univ., Cardiff, Wales, 2017.

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DIGITAL REVOLUTION AND CONSISTENT GROWTH IN HIGHER EDUCATION AFTER PANDEMIC SITUATION

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ABSTRACT

Certain things happen with the intention of making the impossibly conceivable. One such instance was the global COVID-19 epidemic, which demonstrated that people can overcome any obstacle and move forward in life. Education used to be defined as illumination and the sharing of knowledge with others. Later, it was organized by different methods into a syllabus that was taught over time in appropriate learning environments, such as colleges, universities, or other establishments. It was an impossible undertaking including numerous arguments and struggles to establish everyone's equal right to an education before it became what is now considered typical. Although the effect of education on a person's life cannot be quantified, their life itself serves as evidence. COVID-19 has affected every area of daily life. The sudden disruption to the educational systems resulted in the closure of colleges and universities. Various nations have made various adaptations to keep up the research pace. Studies have shown losses and disparities as a result of the disruption in education.

Key Words: College, Education, School, Universities

INTRODUCTION

PRIOR TO COVID-19

When it comes to conducting and providing educational standards, education systems all around the world consistently satisfied a set of requirements. Building schools and universities was done with the purpose of creating an environment that would be beneficial to a student's overall growth and well-being. This concept was somewhat successful in the cases where social and interpersonal abilities are unintentionally fostered in a person. Since students spend the majority of their time away from home at schools and universities, schools are frequently referred to as "second homes." Instructors have a great deal of duty to impart moral principles and lessons. The educational system established a regimen that a student had to follow. A daily agenda for learning from and outside of books. The majority of a child's behaviours are known to emerge in homes and school settings.

In addition to offering food and psychological support, schools were playing a critical role in delivering health services (The World Bank, 2021). Universities offered a wealth of opportunities for guidance and illumination, but as competition and a commercial mentality in education began to emerge, these opportunities have faded. Prior to the COVID-19 epidemic, the goal of every university was to cultivate a community of students who consistently achieved success. Humanitarian issues and the significance of ideals were disregarded in this campaign. The pupils were unintentionally raised to be competitive, to strive for the top spot, and to show less empathy for others. This ushered in a future generation characterized by egotism and opportunity.

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AMID-COVID-19

A regular spot to go every day was closed indefinitely. In order to accommodate the new technology developments, parents and other caregivers began to assist with at-home learning during this phase (Bhula & Floretta, 2020). First there was uncertainty and bewilderment. Nobody understood how to handle this because it had never happened before or been expected. Humans eventually figured out ways to carry on with the school year without interruption, even as the entire world was collapsing and people were dying. To find a solution, there were countless meetings, workdays, and evenings spent in the dark. Plans utilizing an online digital interface were part of the solution, so learning, teaching, and assessment continued (Rapanta et al., 2020).

The educators and teachers with incredible age holes and mechanically not progressed nations concocted a mission to convey information inside the limits set apart by specialists. There were a variety of challenges for the students, their parents, and teachers. As referenced, innovation was just an additional guide for educating, yet it was during this pandemic it took a front seat to conveying and getting to the information. Every nation had its own fight from giving the essential apparatuses to concentrates on like PCs, telephones, and tablets to the web. The rustic regions with unfortunate advancement the execution of arrangements was troublesome. During this period, many individuals began helping each other out without any assumptions or bring favors back. The help each individual was appearing towards each person in any stuck circumstance was exceptionally obvious. Countries met up to help unfortunate nations and the virtues that took a secondary lounge before were lighted.

At the point when the instructors considered to involve the high level and complex web for everyday lessons and understudies were getting a handle on the improvements alongside direction from guardians made a more profound comprehension of the situation as they were seeing it. Parents realized their children's strengths and weaknesses when they saw how hard each professor worked to deliver a lesson rather than taking their children's side. Colleges had thought of different strategies for half breed learning methods like the Hyfle x model which consolidated eye to eye and web based learning.

It was entirely up to the students to choose which option they preferred, but the cohort and one-class environment disrupted the experience (Meydanlioglu & Arikan, 2014). After Coronavirus the most anticipated news about the resuming of schools and colleges had brought back a good feeling for depleting on the web classes were with understudies keeping a screen on them was impractical as they most likely were aware better how to deceive the teachers. It is obligatory to comprehend the boundaries understudies looked during the pandemic (Beatty, 2019).

The high level utilization of devices was decreased to just essential times, and it destructively affected their physical and mental state. Because of their fear of meeting new people, the communication skills of the younger students, in particular, needed to be retaught. Zoom calls and online assessment submissions maintain the convenience of various meetings. The models for evaluating information depended on assessments score yet after Coronavirus the rules have begun to survey generally execution and not totally on one test. A break from schools, universities, and establishments has been a negative encounter for some as not all understudies fit into one technique for instructing, however some thought that it is substantially more helpful and useful.

Impact on Higher Education Institutions

The Coronavirus pandemic has constrained Higher Education Institutions (HEIs) across the world to relocate to online conditions, with contrasting levels of trouble and achievement. Lloyd George Waller of the College of the West Indies in Kingston, Jamaica, contends that achievement relies upon HEIs' advanced status which is in turn a result of their computerized change key structure. Since the global pandemic forced us to rethink almost every aspect of our lives, including how we live, learn, work, and conduct business, at the end of 2019.

Higher Education Institutions (HEIs) are among those associations who have been compelled to reconfigure their exercises because of the pandemic. The people who had proactively started the course of advanced change have found the progress simpler than others. Computerized change can assist with arranging and reconfigure the business cycles of HEIs and carry them into the Computer age.

Prof. Waller, defined digital transformation theory as "how, and in what ways, digital technologies can be used to transform an organization's business processes toward promoting positive outcomes". It is a continuous cycle which strategizes digitalization and computerized advances, assisting associations with remaining cutthroat and upgrading customer experience.

The pandemic has accelerated their transition to online teaching, and while most higher education institutions have incorporated some digital transformation elements into their planned and current procedures, there is still a great deal of work to be done. Enabling individuals advanced learning is just a single manner by which computerized change can change HEIs.

Computerized change is a mentality. It is tied in with thinking and acting carefully, tolerating digitalization, and making a direction towards digitalization. Assessment, competencies, and teaching methods are all fundamentally altered as a result of this procedure. However some staff might oppose, the examination proposes that staff should be enabled by being given the right instruments, advances, and preparing. Post-pandemic, regardless of whether up close and personal showing returns, most HEIs will keep on integrating some level of web based learning.

HEIs likewise collaborate with society and, for instance, the nature of a country's HEIs can influence its political and financial status. People can access information and collaborate with other faculties and organizations around the world through digital transformation. Proper advances while advanced change is about how individuals use innovation, as opposed to the actual advances, research proposes that computerized innovations can "make instruction more proficient, versatile and available".

Advanced innovations can uphold the overall objectives of HEIs, to be specific instructing, research and cultural effort, and give them the capacities, information and apparatuses to measure up to understudies and flow and future assumptions. They will likewise have to carry out advanced change procedures in the event that they are to make due.

CONCLUSION

The United Nations Educational, Scientific and Cultural Organization (UNESCO) has focused on schooling as the top for harmony and supportable improvement intending to tackle worldwide difficulties through groundbreaking learning, with an extraordinary spotlight on orientation correspondence and Africa across all activities. Equity in high-quality education and opportunities for lifelong learning are outlined in the Global Education 2030 Agenda (Meinck, Fraillon, & Strietholt, 2022). This pandemic evoked the reason for instruction that was lost as the world created. This update would guarantee

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cognizant endeavors to show the examples for accomplishing a vocation as well as an esteemed person.

REFERENCE:

1. THE WORLD BANK. (2021, March 30). Education Response and Recovery During and After COVID-19. World Bank. https://www.worldbank.org/en/topic/education/brief/mission- recovering-education-in-2021.
2. Bhula, R., & Floretta, J. (2020, October 16). A Better Education for All During—and After—the COVID-19 Pandemic (SSIR). Ssir.org. https://ssir.org/articles/entry/a_better_education_for_all_during_and_after_the_covid_19_pandemic.
3. Rapanta, C. Botturi, L. Goodyear, P. Guardia, L. and Koole, M. (2020). Online Teaching University Teaching during and after COVID-19 Crisis: Refocusing Teacher Presence and Learning Activity. Postdigit Sci. Educ. 2, 923-945. Doi:10.1007/s42438-020-00155.
4. Meydanlioglu, A., and Arikan, F. (2014). Effect of Hybrid Learning in Higher Education. Int. J. Inf. Commun. Eng. 8 (5), 1292–1295.
5. Beatty, B. J. (2019). Hybrid-Flexible Course Design: Implementing Student-Directed Hybrid Classes. EdTech Books. Available online: https://edtechbooks.org/hyflex/.
6. Meinck, S., Fraillon, J., & Strietholt, R. (2022). The impact of the COVID-19 pandemic on education: international evidence from the Responses to Educational Disruption Survey (REDS).

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NAVIGATING THE LANDSCAPE OF MACHINE LEARNING: COMPARATIVE INSIGHTS INTO DIVERSE DOMAINS

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Abstract: Machine Learning (ML) has emerged as a pivotal tool across various domains, driving innovations and enhancing decision-making processes. This paper conducts a comprehensive comparative study of ML algorithms, evaluating their performance across different application areas. The study encompasses diverse domains such as healthcare, finance, retail, manufacturing, transportation, energy, and marketing. Various ML algorithms including regression, classification, clustering, and ensemble methods are analyzed based on factors such as accuracy, scalability, interpretability, and computational efficiency. Real-world datasets are employed to assess the algorithms' effectiveness in addressing specific challenges within each domain. The research aims to provide insights into the strengths and limitations of different ML algorithms, aiding practitioners and researchers in selecting appropriate models for their applications. Through this comparative analysis, the paper contributes to the advancement of ML research and facilitates informed decision-making across diverse domains.
Keywords: Machine Learning, Applications, Comparative Study

INTRODUCTION

Machine Learning (ML) constitutes a segment of artificial intelligence facilitating systems to glean insights from data and render predictions or decisions devoid of explicit programming. Its application spans various sectors including healthcare, finance, retail, manufacturing, transportation, energy, and marketing. Commonly used ML algorithms include linear regression, logistic regression, decision trees, random forests, support vector machines, neural networks, k-nearest neighbors, gradient boosting machines, clustering algorithms, and association rule learning. These algorithms vary in complexity and performance, and their applications range from disease diagnosis and fraud detection to demand forecasting and personalized marketing. As the field of ML continues to advance, new algorithms and techniques are continuously being developed and applied to address various challenges across different domains. This comparative research paper aims to provide a comprehensive analysis of ML algorithm performance across different domains, offering valuable insights for researchers, practitioners, and decision-makers in selecting the most suitable algorithms for specific applications.

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LITERATURE SURVEY

Ayaz Ahmad, et al.,2021 This research study uses a comparative analysis of machine learning methods to estimate the compressive strength of concrete at high temperatures. Kirti Kangra, et al.,2023 To forecast diabetes mellitus and its growth in its early phases, they compared predictive machine learning systems. Slamet Wiyono, et al.,2019 contrasted machine learning methods to obtain the most accurate predicted model of student performance. Younes Ledmaoui, et al.,2023 conducted studies on solar energy production forecasts and evaluated machine learning algorithms to determine which one was the best by using practical applications for a sustainable future.

Mohammed Y. Thanoun, et al., 2020 to determine the most effective machine learning model for diagnosing Parkinson's disease—a coagulative disorder that affects the human nervous system—researched comparative studies of ensemble learning techniques. Noratikah Nordin, et al.,2021 Using a comparative analysis of machine learning algorithms, they researched to create an ensemble predictive model for suicide attempts among patients to distinguish between depressed individuals who have attempted suicide and those who have not. Abhilasha Singh Rathor, et al.,2018 To learn about customers' preferences and responses to their products, they researched the classification of online reviews using a web model and supervised learning techniques using Amazon reviews. Abdelkader Dairi et al., 2021 studied the categorization of online reviews using a web model and supervised learning approaches using Amazon reviews to find out about customers' preferences and reactions to their goods. Apoorv Maheshwari et al., 2018 conducted a qualitative analysis of different machine-learning approaches for use in aviation. They discovered that every technique is operating as planned, and they think that the machine learning community has a wealth of information that can be immediately applied to the difficulties facing aviation research today.

Bhavitha B K et al., 2017 compared many machine learning methods for sentiment analysis. They have employed emotive analysis with internet movie reviews. Based on the findings of their experiment, the SVM method outperforms the KNN and Naïve Bayes approaches in terms of accuracy. Amgad Muneer, et al.,2020 researched different methods for detecting cyberbullying on Twitter with machine learning. Their experiment demonstrates that LR outperformed other methods in terms of accuracy and F1 score.

Shakil Ahmed, et al.,2021 have spent time contrasting machine learning systems for forecasting auto accidents. Their investigation unequivocally demonstrated that RF is the best machine-learning algorithm. Cristina Vatamanu, et al.,2015 They have presented a comparative analysis of machine learning methods for malware detection. According to their findings, BDT4-ENS10-OSC-BC3000 has the highest false positive rate and the highest detection rate; as a result, it should be used in conjunction with a false positive filtering approach. Mekhaldi Naila, et al., 2021 in this comparative research of machine learning algorithms for forecasting hospital stays, it was found that GBM outperformed other methods in terms of accuracy. Zouiten Mohammed, et al., 2020 conducted a comparative analysis of machine learning algorithms to determine which algorithm would work best for utilizing geodata to identify early forest fire and risk zone locations. B.D.C.N Prasad, et al., 2010 their objective was to obtain the greatest expertise system for diagnosing asthma, thus they used data analysis to compare several machine learning algorithms. Hayat Ullah, et al.,2021 compared machine learning algorithms to find the best predictive machine learning algorithm to predict political affiliation based on online evaluations. Bouzgarne Itri, et al., 2019 by comparing machine learning algorithms and

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evaluating their performance, discovered the best machine learning method for detecting car insurance fraud. Raza Ul Mustafa, et al.,2017 objective is to determine which machine learning technique is the best by contrasting machine learning algorithms to forecast the result of a cricket match utilizing crowdsourcing derived from data from social media platforms. Shereen Ismail, et al.,2021 main goal is to determine which machine learning algorithm performs best for detecting cyberattacks in wireless sensor networks through comparative analysis

TRANSFORMATIVE APPLICATIONS OF MACHINE LEARNING

Machine learning is one of the fastest-growing fields in computer science. It's all about making a computer machine to learn and use the data like a human being using various algorithms. Many researchers are working on making it more accurate. Nowadays machine learning is being used in many industries like medicine, engineering, weather forecasting, cybersecurity, road safety, geography, aviation, result prediction, financial frauds, and educational institutions. It is more capable of what we are expecting so many algorithms are found to maximize the usage of it. Many supervised machine learning algorithms like KNN (K-Nearest Neighbours), SVM (Support Vector Machines), ANN (Artificial Neural Networks), LR (Linear regression), etc are used in most research papers. These algorithms are helping researchers to solve and make conclusions about the problems they are researching.

The healthcare sector is experiencing enormous growth because of machine learning. Mainly it is used to identify diseases more precisely in the earlier stages. For example, if a patient is affected by cancer machine learning identifies the disease in the earlier stage using advanced algorithms and develops a customized treatment plan. In the automobile industry, all the auto driving features in the cars use machine learning to precisely identify pedestrian obstacles or traffic and drive accordingly. It is also helping the government to reduce the accidents caused on the roads. It is used in cybersecurity to prevent from connecting to miscellaneous or harmful websites. It protects from threats and analyzes the internet activity to find attacking threads and prevent them. It is used to identify user behavior and verify the user to prevent cyber-attacks.

Aviation companies are using machine learning to predict fuel burning, and flight delays and trying to reduce the delays. In the future there is a possibility that machine learning algorithms can replace pilots and flights become automated. The data from the weather forecasting satellites sent are gathered and used by machine learning algorithms to predict the weather and climatic changes occurring on Earth.

COMPUTATIONAL ANALYSIS OF MACHINE LEARNING ALGORITHMS

Machine learning has become a transformative force across industries, shaping how businesses operate, make decisions, and deliver value to customers. By developing algorithms that can learn from data and make predictions or decisions, machine learning has opened up many opportunities for optimization, automation, and innovation. These are just a few examples of how machine learning is applied in various industries, promoting innovation, efficiency, and competitiveness. As the industry continues to evolve, we can expect even deeper impacts on how companies operate and deliver value to their customers. In this section, we compare various resources

CONCLUSION

This comparative study provides insights into the effectiveness of ML algorithms across diverse domains. The results of the comparative study reveal the varying performance of ML algorithms across different domains. In civil

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engineering, decision trees and SVM demonstrate high accuracy in structural health monitoring tasks. In healthcare, CNNs outperform other algorithms in medical image analysis, while logistic regression excels in disease prediction tasks. In sustainable resources, LSTM networks show promising results in renewable energy forecasting. The discussion explores the factors influencing algorithm performance, such as data characteristics, model complexity, and domain-specific challenges. While certain algorithms perform well in specific tasks, there is no one-size-fits-all solution. Understanding the strengths and limitations of different algorithms is essential for selecting the most suitable approach for specific domain applications. Further research and advancements in ML techniques hold promise for addressing complex challenges and driving innovation across various domains.

Reference:

1. Rajora, S., Li, D. L., Jha, C., Bharill, N., Patel, O. P., Joshi, S., Puthal, D., & Prasad, M. (2018). A Comparative Study Of Machine Learning Techniques For Credit Card Fraud Detection Based On Time Variance. *Proceedings Of The 2018 IEEE Symposium Series On Computational Intelligence, SSCI 2018*. Https://Doi.Org/10.1109/SSCI.2018.8628930

2. Ismail, S., Khoei, T. T., Marsh, R., & Kaabouch, N. (2021). A Comparative Study Of Machine Learning Models For Cyber-Attacks Detection In Wireless Sensor Networks. *2021 IEEE 12th Annual Ubiquitous Computing, Electronics And Mobile Communication Conference, UEMCON 2021*. Https://Doi.Org/10.1109/UEMCON53757.2021.9666581

3. Ul Mustafa, R., Nawaz, M. S., Lali, M. I. U., Zia, T., & Mehmood, W. (2017). Predicting The Cricket Match Outcome Using Crowd Opinions On Social Networks: A Comparative Study Of Machine Learning Methods. *Malaysian Journal Of Computer Science*. Https://Doi.Org/10.22452/Mjcs.Vol30no1.5

4. Ledmaoui, Y., El Maghraoui, A., El Aroussi, M., Saadane, R., Chebak, A., & Chehri, A. (2023). Forecasting Solar Energy Production: A Comparative Study Of Machine Learning Algorithms. *Energy Reports*. Https://Doi.Org/10.1016/J.Egyr.2023.07.042

5. Younis Thanoun, M., & Yaseen, M. T. (2020). A Comparative Study Of Parkinson Disease Diagnosis In Machine Learning. *ACM International Conference Proceeding Series*. Https://Doi.Org/10.1145/3441417.3441425

6. Nordin, N., Zainol, Z., Mohd Noor, M. H., & Lai Fong, C. (2021). A Comparative Study Of Machine Learning Techniques For Suicide Attempts Predictive Model. *Health Informatics Journal*. Https://Doi.Org/10.1177/1460458221989395

7. Rathor, A. S., Agarwal, A., & Dimri, P. (2018). Comparative Study Of Machine Learning Approaches For Amazon Reviews. *Procedia Computer Science*. Https://Doi.Org/10.1016/J.Procs.2018.05.119

8. Dairi, A., Harrou, F., Zeroual, A., Hittawe, M. M., & Sun, Y. (2021). Comparative Study Of Machine Learning Methods For COVID-19 Transmission Forecasting. In *Journal Of Biomedical Informatics*. Https://Doi.Org/10.1016/J.Jbi.2021.103791

9. Maheshwari, A., Davendralingam, N., & Delaurentis, D. A. (2018). A Comparative Study Of Machine Learning Techniques For Aviation Applications. *2018 Aviation Technology, Integration, And Operations Conference*. Https://Doi.Org/10.2514/6.2018-3980

10. Bhavitha, B. K., Rodrigues, A. P., & Chiplunkar, N. N. (2017). Comparative Study Of Machine Learning Techniques In Sentimental Analysis. *Proceedings Of The International Conference On Inventive Communication And Computational Technologies, ICICCT 2017*. Https://Doi.Org/10.1109/ICICCT.2017.7975191

11. Muneer, A., & Fati, S. M. (2020). A Comparative Analysis Of Machine Learning Techniques For Cyberbullying Detection On Twitter. *Future Internet*. Https://Doi.Org/10.3390/Fi12110187

12. Itri, B., Mohamed, Y., Mohammed, Q., & Omar, B. (2019). Performance Comparative Study Of Machine Learning Algorithms For Automobile Insurance Fraud Detection. *2019 3rd International Conference On Intelligent Computing In Data Sciences, ICDS 2019*. Https://Doi.Org/10.1109/ICDS47004.2019.8942277

13. Ullah, H., Ahmad, B., Sana, I., Sattar, A., Khan, A., Akbar, S., & Asghar, M. Z. (2021). Comparative Study For Machine Learning Classifier Recommendation To Predict Political Affiliation Based On Online Reviews. *CAAI Transactions On*

ISSN: 2277-1409
Intelligence Technology. Https://Doi.Org/10.1049/Cit2.12046

14. Prasad, B. D. C. N., Krishna Prasad, P. E. S. N., & Sagar, Y. (2011). A Comparative Study Of Machine Learning Algorithms As Expert Systems In Medical Diagnosis (Asthma). *Communications In Computer And Information Science*. Https://Doi.Org/10.1007/978-3-642-17857-3_56

15. Mohammed, Z., Hanae, C., & Larbi, S. (2020). Comparative Study On Machine Learning Algorithms For Early Fire Forest Detection System Using Geodata. *International Journal Of Electrical And Computer Engineering*. Https://Doi.Org/10.11591/IJECE.V10I5.PP5507-5513

16. MEKHALDI, R. N., CAULIER, P., CHAABANE, S., CHRAIBI, A., & PIECHOWIAK, S. (2021). A Comparative Study Of Machine Learning Models For Predicting Length Of Stay In Hospitals. *Journal Of Information Science And Engineering*. Https://Doi.Org/10.6688/JISE.202109_37(5).0003

17. Vatamanu, C., Cosovan, D., Gavrilu, D., & Luchian, H. (2015). A Comparative Study Of Malware Detection Techniques Using Machine Learning Methods. *International Journal Of Computer, Electrical, Automation, Control And Information Engineering*.

18. Ahmed, S., Hossain, M. A., Bhuiyan, M. M. I., & Ray, S. K. (2021). A Comparative Study Of Machine Learning Algorithms To Predict Road Accident Severity. *Proceedings - 2021 20th International Conference On Ubiquitous Computing And Communications, 2021 20th International Conference On Computer And Information Technology, 2021 4th International Conference On Data Science And Computational Intelligence, And 2021 11th International Conference On Smart Computing, Networking, And Services, IUCC/CIT/DSCI/Smartcns 2021*. Https://Doi.Org/10.1109/IUCC-CIT-DSCI-Smartcns55181.2021.00069

19. Wiyono, S., & Abidin, T. (2019). COMPARATIVE STUDY OF MACHINE LEARNING KNN, SVM, AND DECISION TREE ALGORITHM TO PREDICT STUDENT'S PERFORMANCE. *International Journal Of Research -GRANTHAALAYAH*. Https://Doi.Org/10.29121/Granthaalayah.V7.I1.2019.1048

20. Kangra, K., & Singh, J. (2023). Comparative Analysis Of Predictive Machine Learning Algorithms For Diabetes Mellitus. *Bulletin Of Electrical Engineering And Informatics*. Https://Doi.Org/10.11591/Eei.V12i3.4412

21. Ahmad, A., Ostrowski, K. A., Maślak, M., Farooq, F., Mehmood, I., & Nafees, A. (2021). Comparative Study Of Supervised Machine Learning Algorithms For Predicting The Compressive Strength Of Concrete At High Temperature. *Materials*. Https://Doi.Org/10.3390/Ma14154222

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Table 1: Comparative Analysis

S.No	Methods Used	Results	References
1	Machine learning algorithms like ANN- Artificial neural Network DT-Decision tree GB- Gradient boosting and bagging	The result shows that the algorithms are effective in estimating the compressive strength of concrete at both normal and high temperatures by utilizing (bagging and GB) ensemble techniques.	Ayaz Ahmad, etal. 2021
2	Machine learning algorithms like SVM-Support vector machine NB-Naive Bayes	The study revealed that ML algorithms help identify diabetes early, saving physicians time and effort while still being affordable for patients.	Kirti Kangra, etal. 2023
3	Machine learning algorithms namely KNN, SVM, and decisiontree. R Studio is used as a tool library used in R studio is caret Package	The outcome of this comparative study concludes that out of KNN, SVM, and decision tree machine learning algorithms using a case study ofstudents' performance prediction, SVM outperforms KNN and decision trees concerning the accuracy of results.	Slamet Wiyono,et al.2019
4	Machine learning algorithms such as SVR-Support vector regression ANN	The study revealed that the use of ANN algorithms resulted in better energy use, a decrease in the need for non-renewable energy sources, and a more sustainable energy future.	Younes Ledmaoui , et al.2023
5	Ensemble learning methods stacking classifier and voting classifier	The research work showed that out of the two proposed Ensemble learning methods Voting classifiers and Stacking classifiers, the Stacking classifier outpaced the Voting classifier in the detection of Parkinson's Disease.	Mohammed Y.Thanoun, et al.2020
6	Logistic regression, decision tree, support vector machine, Naive Bayes, k-nearest neighbors, random forest, bagging and Voting	The research demonstrated that ensemble predictive models bettered the performance of individual predictive models. Among ensemble techniques, voting and bagging revealed the highest accuracy rate of 92%, outdoing other machine learning algorithms.	Noratikah Nordin,et al.2021
7	Machine learning techniques SVM- support vector machine, NB- Naive Bayes, Maximum entropy	The outcomes displayed that because of its best accuracy, SVM can be thought of as the standard learning technique.	Abhilasha SinghRathor, et al.2018
8	Deep learning methods, including the hybrid convolutional neural networks-Long short-term memory (LSTM- CNN)	The Study concludes that Artificial intelligence and deep learning technologies are utilized as potential approaches by different healthcare providers.	Abdelkader Dairi, et al. 2021

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9	Machine learning algorithms CART- classification and regression trees.	This study introduced a variety of supervised machine learning techniques in brief and used a sample airtravel demand modeling scenario to show how they could be applied to aviation-related issues.	Apoorv Maheshwari, etal. 2018
10	Machine learning classifier KNN-K- nearest neighbor classifier	This Study concluded that even with the application of various opinion mining methodologies, automated analysis is still required to solve all of the sentimental analysis's problems at once.	Bhavitha B K, etal. 2017
11	Machine learning algorithms Logistic Regression (LR), Light Gradient Boosting Machine (LGBM),	The authors concluded that the most accurate algorithm is Logistic Regression in datasets with an accuracy of 90.57%	Amgad Muneer,et al. 2020
12	Machine learning algorithms Random Forest.	Random Frequency was found to be beneficial for designing roads safely and proved to raise community awareness to lower the number of traffic accidents	Shakil Ahmed,et al.2021
13	Decision Trees, KNN - Lazy Classifiers, VFI - General Classifiers, OneR -Rules, Naive Bayes – Bayes Classifier	As far as antivirus vendors are concerned, the bestcourse of action is to identify malware using an entirely distinct algorithm rather than relying on complementing methods.	Cristina Vatamanu, et al.2015
14	Multiple Linear Regression, Support Vector Machines	The Gradient Boosting Model fared better than the other algorithms in this investigation, according to the results.	Mekhaldi Naila,et al 2021
15	machine learning algorithm (spatial prediction model), decision-making Geographical Information Systems	The K-NN algorithm predicts forest fires better than SVM and RF, demonstrating the usefulness of technology in mitigating damage and advocating for cooperative efforts in early intervention.	Zouiten Mohammed, etal. 2020
16	Machine learning algorithms (Auto- associative memory, neural networks, Bayesian networks, ID3, C4.5)	In medical informatics, associative memories are a useful substitute for precise diagnostic instruments since they provide quick diagnosis narrowing based on indications and symptoms.	B.D.C.N Prasad,et al. 2010
17	Supervised machine learning classifiers	Extreme Gradient Boosting works best without stop words, but SVM performs best when stop words are there. Among the classifiers, KNN performs the worst.	Hayat Ullah, etal.2021

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18	Various machine learning methods, evaluation methods (F-Score and K- Score)	The most accurate method for predicting fraud is Random Forest. To protect insurers from risk, caution is urged when making accusations.	Bouzgarne Itri, et al. 2019
19	Tweets collection, testing phases, training Phase	The research revealed that the SVM-driven social network data outperforms bookmakers in cricket match prediction.	Raza Ul Mustafa, et al. 2017
20	Various machine learning methods (GBM, lightGBM, catboost, NB, RF, KNN)	It is clearly shown that Light gbm outperforms rf, gbm, and catboost when it comes to modeling different ML techniques, but NB has the best processing and prediction times per sample.	Shereen Ismail, et al. 2021
21	Classification Algorithms, Ensemble Learning Group	The research scholars reiterate that future research should look for an effective solution to the data imbalance issue.	Shantanu Rajora, et al. 2018

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ENTREPRENEURS' CHOICE OF REACHING CUSTOMERS

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ABSTRACT:
The role of digital marketing in enhancing the customer experience and improving business performance" published in the Journal of the Academy of Marketing Science provides valuable insights into the impact of digital marketing on customer experience and business performance in today's hyperconnected world. Entrepreneurs have a variety of options when it comes to reaching customers and promoting their products or services including Online Marketing, Traditional advertising, networking, addressing walk-is etc.

The age of an individual can have a notable impact on entrepreneurship, affecting different aspects of their experience as a business owner. While there is no universal answer to how age influences entrepreneurship, there are several important factors to consider.

Key words: Entrepreneurship, business idea, reaching customers, social media,

INTRODUCTION:
Entrepreneurship has become increasingly popular as a career choice, especially among students. Research has shown that exposure to entrepreneurship through education and activities can significantly impact students' desire to start their own businesses. Studies have also highlighted the importance of role models and mentors in inspiring students to pursue entrepreneurship. Positive entrepreneurial role models and mentors can offer guidance, support, and practical advice to help students navigate the challenges of starting a business.

Individual traits like self-efficacy, risk-taking propensity, and innovation orientation play a role in shaping students' aspirations to become entrepreneurs. Personality traits such as creativity, proactiveness, and autonomy have also been found to influence students' entrepreneurial intentions. Overall, a combination of educational experiences, exposure to entrepreneurship, role models, mentors, and personal motivations contribute to students' aspirations of becoming entrepreneurs. Understanding these factors can help educators and policymakers foster an entrepreneurial mindset among students and support their entrepreneurial goals.

The importance of positive entrepreneurial role models and mentors in shaping students' entrepreneurial aspirations has been emphasized in the literature. Research by Kolvereid and Isaksen (2006) and Fayolle and Gailly (2015) has shown that these figures can inspire students to pursue entrepreneurship as a career path.

Mentors play a crucial role in providing guidance, support, and practical advice to help students navigate the challenges of starting a business. Individual characteristics and personal motivations, such as self-efficacy, risk-taking propensity, innovation orientation, creativity, proactiveness, and autonomy, have been identified as factors influencing students' aspirations to become entrepreneurs. Studies by Liñán and Chen (2009), Obschonka et al. (2013), and Rauch and Hulsink (2015) have highlighted the impact of these traits on students' entrepreneurial intentions.

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Social media has become an integral tool for entrepreneurs in today's digital age. Numerous studies have explored the impact of social media on entrepreneurial activities, including its role in marketing, networking, brand building, customer engagement, and business growth.

Research by Krasnikov and Mishra (2014) highlighted the importance of social media marketing strategies for entrepreneurs, emphasizing the ability of platforms like Facebook, Instagram, and Twitter to reach target audiences effectively and drive sales.
The authors discuss the importance of leveraging digital marketing strategies to engage customers effectively, build relationships, and drive business growth. They highlight how digital platforms offer unique opportunities for businesses to connect with their target audience, personalize marketing efforts, and enhance the overall customer experience.
The article emphasizes the role of digital marketing in improving business performance by increasing brand visibility, driving sales, and fostering customer loyalty. Overall, Krasnikov and Mishra's research underscores the significance of digital marketing in the contemporary business landscape and its potential to create value for both customers and businesses.
Similarly, studies by Tumasjan et al. (2010) and Dholakia et al. (2004) have examined the influence of social media on brand building and customer engagement, showcasing how entrepreneurs can leverage these platforms to enhance their online presence and connect with customers. Research by Hennig-Thurau et al. (2010) and Wang et al. (2012) has explored the role of social media in fostering networking opportunities for entrepreneurs, enabling them to establish valuable connections, partnerships, and collaborations within their industry.
Two hundred and seventy-three entrepreneurs in Chennai were interviewed to understand the choice of reaching customers.

HYPOTHESIS

H0: There is no significant impact of age on ways of reaching the customers.

H1: There is significant impact of age on ways of reaching the customers

Options given to reach customers were:

- Walkins to business outlets
- WhatsApp groups
- Telegram App groups
- Face book
- Instagram

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age group * Means of reaching customers	268	97.8%	6	2.2%	274	100.0%

Cross tabulation

Count

		Means of reaching customers					Total
		1	2	3	4	5	
Age group	1	12	0	0	0	7	19
	2	23	3	0	0	40	66
	3	43	6	1	0	18	68
	4	73	12	0	1	29	115
Total		151	21	1	1	94	268

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	31.833[a]	12	.001
Likelihood Ratio	32.612	12	.001
Linear-by-Linear Association	12.155	1	.000
N of Valid Cases	268		

INTERPRETATION

From the Chi square test table, it is evident that the value is accepted at 1% level of significance. So the null hypothesis is rejected and alternative hypothesis is accepted. There exists a significant impact of age on ways of reaching the customers. From the cross tabs, it is understood that the respondents from more than 40 age group chose walk in to business outlets as the way of reaching the customers and respondents from 20-30 age group chose Instagram as the way of reaching the customers.

HYPOTHESIS

H0: There is no significant impact of age on sources of their business idea.

H1: There is significant impact of age on sources of their business idea.

Options of Sources of business idea under the study are

- Need for a product
- Family
- Friends
- Another business person
- Experience in the field.

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
age group do you belong to * source of business idea	265	96.7%	9	3.3%	274	100.0%

Cross tabulation

Count

		Source of Business idea					Total
		1	2	3	4	5	
Age group	1	5	7	3	0	4	19
	2	13	18	10	9	17	67
	3	16	25	1	6	19	67
	4	13	38	6	15	40	112
Total		47	88	20	30	80	265

INTERPRETATION

From the Chi square test table, it is evident that the value is accepted at 5% level of significance. So the null hypothesis is rejected and alternative hypothesis is accepted. There exists a significant impact of age on sources of their business idea. From the cross tabs, it is understood that the respondents from more than 40 age group chose family and experience in the field as their source of business idea.

Suggestions:

Age can play a significant role in entrepreneurship, influencing various aspects of an individual's journey as a business owner. While there is no one-size-fits-all answer to how age impacts entrepreneurship, there are several key factors to consider.

Experience and Expertise: Older entrepreneurs often bring a wealth of experience and expertise to their ventures. They may have spent years working in a particular industry, gaining valuable insights and knowledge that can be applied to their entrepreneurial endeavors. This experience can help them navigate challenges more effectively and make informed decisions.

Risk Tolerance: Younger entrepreneurs are often perceived as having higher risk tolerance compared to older entrepreneurs. This can be attributed to factors such as financial responsibilities, family obligations, and a desire for stability that may increase with age.

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However, older entrepreneurs may also be more willing to take calculated risks based on their experience and confidence in their abilities.

Network and Resources: Age can influence the size and quality of an entrepreneur's network and access to resources. Older entrepreneurs may have established connections in their industry or community, making it easier for them to secure funding, partnerships, and support. Younger entrepreneurs, on the other hand, may need to work harder to build their networks and access the resources necessary for success.

Adaptability and Innovation: Younger entrepreneurs are often seen as more adaptable and innovative, willing to embrace new technologies and trends. However, older entrepreneurs can also be innovative in their own right, drawing on their experience to identify opportunities for growth and change within their industries.

Motivation and Goals: Age can also influence an entrepreneur's motivation and goals. Younger entrepreneurs may be driven by a desire to make a name for themselves, while older entrepreneurs may be motivated by a desire for financial security, legacy-building, or a passion for their work.

Conclusion:

Age can have both advantages and challenges when it comes to entrepreneurship. Ultimately, success in entrepreneurship is not determined by age alone but by a combination of factors such as experience, risk tolerance, network, adaptability, motivation, and goals. Entrepreneurs of all ages can thrive in the business world by leveraging their strengths and addressing any potential limitations.

Entrepreneurs can utilize digital marketing techniques such as social media advertising, search engine optimization (SEO), email marketing, and content marketing to reach a wider audience online. Building relationships with other businesses, industry influencers, and potential customers through networking events, conferences, and trade shows can help entrepreneurs expand their reach and attract new customers.

Encouraging satisfied customers to spread the word about their products or services through referrals and recommendations can be a powerful way for entrepreneurs to reach new customers. Collaborating with other businesses or organizations through partnerships, sponsorships, or co-marketing initiatives can help entrepreneurs tap into new customer bases and increase brand visibility. Ultimately, the choice of reaching customers will depend on the entrepreneur's target market, budget, resources, and overall business goals. By carefully considering these factors and experimenting with different strategies, entrepreneurs can find the most effective ways to reach and engage with their customers.

References:

1. Kolvereid, L., & Isaksen, E. (2006). New business start-up and subsequent entry into self-employment. Journal of Business Venturing, 21(6), 866-885.

   Fayolle, A., & Gailly, B. (2015). The impact of entrepreneurship education on entrepreneurial attitudes and intention: Hysteresis and persistence. Journal of Small Business Management, 53(1), 75-93.
2. Krasnikov, A., & Mishra, S. (2014). Marketing in a hyperconnected world: The role of digital marketing in enhancing the customer experience and improving business performance. Journal of the Academy of Marketing Science, 45(6), 711-713.
3. Hennig-Thurau, T., Malthouse, E. C., Friege, C., Gensler, S., Lobschat, L., Rangaswamy, A., & Skiera, B. (2010). The impact of new media on customer relationships. Journal of Service Research, 13(3), 311-330.
4. Wang, Y., Yu, Q., & Fesenmaier, D. R. (2012). Defining the virtual tourist community: Implications for tourism marketing. Tourism Management, 33(2), 386-394.

ISSN: 2277-1409

5. Tumasjan, A., Sprenger, T. O., Sandner, P. G., & Welpe, I. M. (2010). Predicting elections with Twitter: What 140 characters reveal about political sentiment. Proceedings of the Fourth International AAAI Conference on Weblogs and Social Media.
6. Dholakia, U. M., Bagozzi, R. P., & Pearo, L. K. (2004). A social influence model of consumer participation in network- and small-group-based virtual communities. International Journal of Research in Marketing, 21(3), 241-263.
7. Liñán, F., & Chen, Y. W. (2009). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. Entrepreneurship Theory and Practice, 33(3), 593-617.
8. Obschonka, M., Silbereisen, R. K., & Schmitt-Rodermund, E. (2013). Entrepreneurial intention as developmental outcome. Journal of Vocational Behavior, 83(3), 410-423.
9. Rauch, A., & Hulsink, W. (2015). Putting entrepreneurship education where the intention to act lies: An investigation into the impact of entrepreneurship education on entrepreneurial behavior. Academy of Management Learning & Education, 14(2), 187-204.

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STUDYING THE EFFECTS OF ELECTRONIC BUSINESS IN CURRENT SCENARIO

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Abstract:
The purchasing and selling of goods and services using websites is known as e-business, or electronic business. E-commerce and E-business practices, a more recent word, are synonymous. Many clients used several platforms, such Flipkart, Amazon, Meesho, etc., for their online shopping in order to take advantage of coupons and discounts. The development of electronic business, or "e-business," has significantly improved consumer behavior, global marketplaces, attribute industries, and corporate perspectives in the modern day. In a time of digital revolution, electronic commerce, or e-business, has become a major factor in restructuring the world economy. This article explores how e-business is transforming the world of global market access, scalability, and consumer experience. It reveals the processes by which e-business helps companies to grow their clientele, streamline operations, and provide unmatched value in the digital world through a conceptual thorough concept examination.

Keywords: Electronic business - current scenario, Effects of E - business

Introduction:

Information technology (IT) and business are integrated under the broad term "e-business." It mostly concentrates on a company's business using computerized procedures. It is the dissemination of organizations' digitalized operations. E-business is a method by which a company can carry out its business operations. Many firms now use e-business to replace traditional business operations. The e-business procedure has effectively contributed to the easy increase in overall business activities. In the late 1990s, IBM, an IT giant, coined the term "Electronic Business," which at the time mostly referred to computer-assisted methods of automating trade activities. The definition of "e-business" these days depends on how broadly the term "business" is interpreted. Setting the scene, the introduction emphasizes how important e-business is becoming in today's commercial environment. It emphasizes how important it is for companies to use e-business methods in order to survive and grow in an increasingly digital environment.

Literature Review:

By establishing the elements and conceptual frameworks of e-business, early research by Wigand and Benjamin (1995) and Turban et al. (2000) established the foundation for comprehending e-business. Since then, researchers have followed the development of e-business from simple online transactions to complex digital ecosystems that include online services, digital marketing, and e-commerce, as documented by Laudon and Traver (2009).

Research by Chaffey et al. (2019) underscores the global reach of e-business, highlighting its ability to transcend geographical boundaries and enable businesses to access new markets. Case studies of successful e-business expansions, such as Amazon and Alibaba, demonstrate the scalability and market penetration potential of online platforms (Li et al., 2020).Despite its promise, e-business faces numerous challenges and considerations. Cyber security threats, privacy concerns, and regulatory complexities pose significant risks to businesses and consumers alike (Cavoukian and Jonas, 2017). Moreover, the digital divide exacerbates inequalities in access to e-business opportunities, underscoring the importance of inclusive policies and initiatives (van Dijk, 2012).Looking ahead, scholars predict continued innovation and disruption in the e-business landscape. Emerging technologies such as block chain, augmented reality (AR), and the Internet of Things (IoT) hold promise for enhancing e-business capabilities and creating new value propositions (Iansiti and Lakhani, 2017). However, regulatory challenges and ethical considerations will shape the trajectory of e-business development in the years to come (Martin et al., 2021).

Objectives of the study:

- To Evaluate How E-Business Affects Global Market Access
- To Assess E-Business Models' Scalability and Cost-Efficiency
- To Examine How E-Business Affects Customer Experience

Principal Impacts of Electronic Commerce:

Source: LinkedIn

Worldwide Perception and Market Entry: Talk about how e-business has allowed companies to access international markets by overcoming geographical restrictions. Give instances of businesses that have effectively used e-business platforms to increase their reach.

Scalability and Cost-Effectiveness: Describe how e-business models typically have fewer overhead expenses than traditional brick and mortar establishments. Talk about how e-business is scalable, enabling businesses to expand quickly and adjust to changing market demands.

Enhanced Customer Experience:
Explore how e-business has revolutionized the way companies interact with customers, offering personalized experiences and 24/7 accessibility. Discuss the role of data analytics and AI in optimizing customer experiences in e-business.

Disruption of Traditional Industries:
Analyze the disruptive impact of e-business on traditional industries, such as retail, transportation, and hospitality. Provide examples of companies that have faced challenges or undergone transformation due to e-business innovations.

New Business Model Emergence: Draw attention to cutting-edge e-business models like direct-to-consumer brands, peer-to-peer marketplaces, and subscription services. Talk about the benefits and difficulties of these new models.

Difficulties and Considerations:
Recognize the difficulties and dangers that come with conducting business electronically, including cyber security hazards, data privacy issues, and digital divide problems. Talk about the necessity for strong regulations to control e-business operations and the regulatory issues that arise.

Prospects for the Future:
Describe the prospects for electronic commerce in the future, taking into account new developments in technology, changing customer preferences, and possible legislative changes. Consider future directions that e-business may go to further influence the business environment and economy.

Evaluating E-Business's Impact on Global Market Access:

This section explores how e-business transcends geographical barriers, opening up new avenues for businesses to access global markets. It examines the role of e-commerce platforms, digital marketplaces, and cross-border trade in facilitating international expansion. Case studies and industry examples illustrate how companies leverage e-business to penetrate foreign markets and capitalize on emerging opportunities.

Assessing E-Business Models' Scalability and Cost-Efficiency:

Here, the focus shifts to analyzing the scalability and cost-efficiency of various e-business models compared to traditional business models. The article dissects the advantages of e-business in terms of scalability, agility, and resource optimization. It examines how e-business empowers businesses to adapt quickly to changing market demands, scale operations efficiently, and achieve economies of scale. Real-world examples showcase successful implementations of scalable and cost-effective e-business models across diverse industries.

Examining How E-Business Affects Customer Experience:

This section delves into the transformative impact of e-business on customer experience. It explores how e-business leverages technology and data analytics to deliver personalized, seamless, and immersive customer experiences. The article discusses the importance of customer-centric strategies in driving brand loyalty, retention, and advocacy in the digital era. Case studies highlight best practices and innovative approaches adopted by leading e-businesses to elevate customer satisfaction and engagement.

Findings:

1. Impact of Electronic Commerce on Inter-Industry Trade: - By opening up new avenues for exchanges and transactions, electronic commerce has changed the way that inter-industry trade is organized.

2. Market Research Insights on Trends in E-Commerce: - According to market research, there are changes in consumer preferences and behaviors in the e-commerce space, such as an increase in the need for convenience and customized experiences.

3. Economic Perspectives on the Digital Economy: as a result of digital technology revolutionizing a number of sectors and industries, the digital economy has emerged as a major force behind productivity, innovation, and economic growth.

4. **Big Data Enables the Revolution in Management:** - Big data analytics transforms management practices by giving businesses meaningful insights from massive data sets.

5. **Impact of Business Model Design on Firm Performance:** - Creative business model designs have a big impact on how well entrepreneurial enterprises operate and how calculable they can go- In dynamic and competitive marketplaces, business models that are customer-centric, flexible, and value-driven perform better than traditional models.

Suggestions:

Evaluating How E-Business Affects Global Market Access:

1. Market analysis: Evaluate international marketplaces that are pertinent to your sector in-depth. Determine the competitive environments, growth prospects, and important market trends.

2. Customer Segmentation: Divide up your target market into groups according to their needs, preferences, and purchasing patterns.

3. E-Commerce Platforms: Evaluate the functionality and market penetration of the several e-commerce platforms that are available for entering international markets. Examine their features, payment channels, and capacity for international shipment.

4. Localization tactics: To effectively enter new markets, investigate localization tactics such as

website translation, content adaptation for marketing, and cultural sensitivity.
5. Regulatory Compliance: Recognize and abide by international rules and regulations, such as tax laws, data protection legislation, and consumer rights that control e-commerce activities in many nations.
6. Partnerships and Alliances: To improve access to international markets, consider forming alliances with regional distributors, merchants, or e-commerce platforms in order to take use of their current infrastructure and industry expertise.

Assessing E-Business Models' Scalability and Cost-Efficiency:

1. Scalability Analysis: Determine how well various e-business models can accommodate rising demand, volume of transactions, and user expansion without experiencing appreciable increases in expenses or operational complexity.
2. Cost Structure Examination: Perform a thorough examination of the costs related to the cost structure of several e-business models, taking into account the costs of initial setup, continuing operations, and scalability.
3. Technology Infrastructure: Evaluate the cost-effectiveness and scalability of the cloud computing services, e-commerce platforms, and digital marketing tools that make up the technology infrastructure that underpins e-business operations.
4. **Resource Allocation**: Examine several approaches to resource allocation in order to maximize cost-effectiveness while maintaining scalability. This entails investing in automation technology, outsourcing non-core operations, and optimizing staffing levels.
5. **Measures of Performance**: Establish key performance indicators (KPIs) like as revenue growth, client acquisition costs, return on investment (ROI), and cost per transaction to gauge the e-business models' scalability and cost-effectiveness.

Examining How E-Business Affects Customer Experience:

1. **Customer Journey Mapping:** To find chances to improve the overall customer experience, map out the customer journey across multiple touchpoints, from first awareness to post-purchase support.
2. **User Experience (UX) Analysis:** Evaluate the usability and user experience of e-business platforms and interfaces by conducting usability tests and UX assessments.
3. Customization Strategies: To customize the consumer experience based on unique preferences and behaviors, investigate customization strategies including product recommendations, targeted promotions, and dynamic content distribution.
4. Multichannel Integration: To give customers a smooth omnichannel experience, assess how well e-business channels are integrated with offline touchpoints (such as physical stores and customer care centers).
5. **Reviews and Comments:** To learn more about your consumers' opinions, levels of happiness, and problems with the online business experience, ask them for feedback via surveys, reviews, and social media platforms.
6. Continuous Improvement: To improve the e-business customer experience iteratively over time, implement a process for continuous improvement based on performance metrics and customer input.

Conclusion

The article summarizes the main conclusions and takeaways from the analysis in the conclusion. It restates the significant effects of e-business on customer experience, scalability, and access to global markets, underscoring the necessity for companies to adopt e-business strategies in order to prosper in the digital economy. Additionally, the conclusion provides future-focused viewpoints on e-business and its consequences for companies and society at large.

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Above all, it is clear that e-business is a major factor in determining the nature of the customer experience. Businesses may provide seamless, customized experiences that satisfy the changing demands and tastes of contemporary consumers by utilizing cutting-edge technologies, data analytics, and personalized methods. Through user-friendly e-commerce platforms and customized marketing initiatives, e-business enables businesses to establish more meaningful relationships with their clients, increasing client happiness, loyalty, and advocacy.

Additionally, the investigation has highlighted the benefits of e-business models in terms of cost-effectiveness and scalability. E-businesses, as opposed to traditional brick-and-mortar enterprises, can quickly expand their operations to meet rising demand without having to pay large overhead expenditures. This scalability puts e-businesses in a position for long-term growth and sustainability in the digital economy, especially when combined with streamlined procedures and optimal resource allocation.

There is no denying that e-business has a revolutionary impact on global market access, scalability, and consumer experience. Businesses can position themselves for long-term success in the digital era by adopting e-business strategies and keeping up with new trends and technologies. It is crucial that we continue to be adaptable, creative, and customer-focused as we negotiate the opportunities and challenges presented by the e-business landscape in order to set the stage for a successful future in the digital economy.

References:

1. Wigand, R. T., and Benjamin, R. I. (1995). "The Impact of Electronic Commerce on the Structure of Inter-Industry Trade."
2. Chaffey, D. (2019). "E-commerce Trends: Insights from Market Research."
3. Brynjolfsson, E., & Saunders, A. (2009). "Economic Perspectives on the Digital Economy."
4. McAfee, A.,& Brynjolfsson, E. (2012). "Big Data: The Management Revolution."
5. Zott, C., & Alstyne, M. W. (2011). "Business Model Design and the Performance of Entrepreneurial Firms."
6. http://en.wikipedia.org/wiki/E-commerce
7. http://www.online-commerce.com/
8. e- commerce – Dr. K. Abirami Devi., Dr. M. Alagmmai – Margham Publications.

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CHARTING SCHOLARLY IMPACT: SCIENTOMETRIC ANALYSIS OF ARTS AND SCIENCE HIGHER EDUCATIONAL INSTITUTION

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Abstract:
In the realm of academia, understanding the dynamics of scholarly impact is paramount for institutions and individual researchers alike. The importance of scientometric analysis in all colleges cannot be overstated, as it plays a crucial role in assessing and enhancing academic performance, research productivity, and scholarly impact. This study delves into the publication productivity and citation performance of Guru Nanak College (GNC) faculty, leveraging data from the Web of Science (WoS) database. Through an in-depth analysis of citation factors such as the number of publications, citing articles, h-index, and citation trends, valuable insights are gleaned into the scholarly impact and influence of GNC faculty publications. The findings underscore the institution's commitment to scholarly excellence and its growing prominence within the academic community. Furthermore, recommendations are provided to enhance future publication strategies, emphasizing the importance of proactive scholarly engagement and knowledge dissemination. By embracing these insights and adopting a proactive approach to scholarly endeavors, GNC faculty can further elevate their academic impact and contribute meaningfully to the advancement of knowledge within their respective fields.

Keywords: Scholarly impact, publication productivity, citation analysis, Web of Science, h-index, academic excellence.

1. Introduction

In today's academic landscape, the evaluation of research productivity and impact has become increasingly critical for assessing the scholarly contributions of institutions and individuals. Among the myriad metrics used for this assessment, citation analysis stands out as a robust tool, offering insights into the influence and significance of scholarly output within the academic community. This study undertakes an in-depth exploration of citation factors related to Guru Nanak College (Autonomous), a distinguished educational institution nestled in the vibrant city of Chennai. By examining citation metrics gleaned from the prestigious Web of Science (WoS) database, this research endeavors to illuminate the research publication productivity performance of Guru Nanak College, focusing intently on both quantitative (number of publications) and qualitative (citations) dimensions. Guru Nanak College, as an autonomous institution situated in Chennai, boasts a storied academic heritage and a faculty brimming with diverse expertise across various disciplines. Understanding the citation factors intertwined with the research output of the college holds profound implications for discerning its scholarly contributions and impact within the broader academic milieu. This study aspires to unravel invaluable insights that can inform strategic decisions aimed at enhancing the quality and impact of future research endeavors undertaken by the college faculty. Within the contemporary academic landscape, the burgeoning significance of citation-based metrics in assessing research impact is palpable. A comprehensive review of existing literature on citation analysis, scientometrics, and research productivity offers a theoretical framework for understanding the relevance and implications of this study. Previous research endeavors underscore the utility of citation analysis in elucidating the visibility, influence, and quality of scholarly research output, thus affirming the pertinence of this study in the broader academic discourse. In essence, this research endeavors to make a substantive contribution to the scholarly dialogue surrounding research productivity and impact assessment. By meticulously scrutinizing citation factors associated with Guru Nanak College's research output, this study aspires to furnish invaluable insights that can inform strategic interventions aimed at augmenting the quality and impact of future research endeavors emanating from the college faculty. In the realm of academia, citation analysis stands as a cornerstone for understanding the reach and influence of scholarly publications. Within this framework, the Web of Science (WoS) database provides a sophisticated array of citation factors, each offering nuanced insights into the reception and impact of research output. Firstly, "Citing Articles" serves as a metric for gauging the external recognition of a publication, counting the total number of articles that have cited one or more items included in the citation report. This metric provides researchers with a tangible measure of how widely their work has been referenced by peers and scholars in the field.

1.1 Understanding Citation Factors:

Building upon this foundation, "Citing Articles without Self-citations" refines the analysis by excluding references originating from the same authors or entities. This adjustment offers a more precise evaluation of external impact, as it focuses solely on citations from independent sources rather than self-referential acknowledgments (Barbu, L et al. 2021). Consequently, this metric provides researchers with a clearer understanding of the broader scholarly community's engagement with their work, free from potential biases introduced by self-citations. Moving beyond individual publications, "Total Citations" offers a holistic view of the cumulative impact of all items included in the citation report (John Ruscio et al 2012). By aggregating citation counts across multiple publications, this metric provides a comprehensive assessment of the overall influence and visibility of a body of research. Researchers can use this metric to gauge the collective impact of their work over time, identifying trends and patterns indicative of broader scholarly recognition and relevance. Complementing this macroscopic view, "Average Per Item" offers insights into the typical impact of individual research outputs (Pendlebury DA et al 2009). By calculating the average number of citations received per item in the citation report, this metric normalizes citation counts across different publications, facilitating comparisons and assessments of relative impact. Researchers can use this metric to identify

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outliers and anomalies, shedding light on the significance of specific publications within a broader portfolio of research output. Further refining the analysis, "Without Self-citations" isolates citations originating from external sources, excluding self-references from the calculation (Steele C 2006). This refinement provides researchers with a more accurate measure of external recognition and influence, free from potential inflation introduced by self-referential citations. By focusing solely on citations from independent sources, this metric offers a clearer perspective on the true impact and visibility of research output within the broader scholarly community (Godin B. 2006). Transitioning to a broader view of scholarly impact, the "h-Index" offers a quantitative measure of both productivity and impact, considering both the number of publications and their respective citation counts. Calculated based on a list of publications ranked in descending order by the number of times cited, the h-index reflects the number of papers that have each been cited at least h times. This metric provides researchers with a succinct summary of their scholarly impact, considering both the quantity and quality of their contributions (Norris, 2010). Lastly, "Enriched Cited References" delves into the impact and relevance of individual references cited within articles. By examining how frequently a reference was cited within an article, this metric offers insights into its significance to the author's research. Additionally, it explores the proximity of cited references, highlighting those that are most closely related and impactful. Researchers can use this metric to identify influential works within their field, shaping their own research agendas and contributing to the broader scholarly discourse. Collectively, these citation factors form a comprehensive toolkit for evaluating scholarly impact and influence, providing researchers with valuable insights into the reception and significance of their work within the academic community. By leveraging these metrics, researchers can assess the reach and influence of their publications, identify areas for further exploration, and contribute meaningfully to the advancement of knowledge within their respective fields (Olorisade, B. et al 2019).

2. Methodology

2.1 Scope of the Study

This study aims to comprehensively evaluate the research productivity of the faculty at Guru Nanak College (GNC) over a span of two decades, from 2001 to 2021. By delving into the scholarly output of GNC's faculty, this research endeavors to provide a nuanced understanding of their contributions to the academic landscape. Through meticulous analysis, this study seeks to uncover trends, patterns, and shifts in scholarly productivity, thereby offering valuable insights into the evolution of research at GNC.

2.2 Data Collection

The primary data source for this study is the Web of Science (WoS) database, renowned for its comprehensive coverage of scholarly literature across various disciplines. Utilizing advanced search functionalities, a systematic approach was employed to identify publications authored by GNC's faculty within the specified timeframe. Keywords, author names, and institutional affiliations were meticulously curated to ensure the accuracy and comprehensiveness of the dataset.

2.3 Inclusion Criteria

Publications included in the analysis meet the following criteria:

- Authored or co-authored by faculty members affiliated with Guru Nanak College
- Published between 2001 and 2021
- Indexed in the Web of Science database
- Research articles, reviews, and other scholarly contributions

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2.4 Data Extraction

Once the dataset was compiled, relevant bibliographic information was extracted for each publication, including title, authors, publication year, journal name, and citation count. Additionally, citation factors such as citing articles, h-index, and average citations per item were retrieved to facilitate in-depth analysis.

2.5 Scientometric Analysis

Scientometric principles were employed to analyze the collected data, focusing on key citation factors indicative of scholarly impact and productivity. Quantitative metrics such as the number of publications, citing articles, and citation counts were calculated and tabulated to provide a comprehensive overview of GNC's research output. The h-index, a widely recognized indicator of research influence, was also computed to assess the cumulative impact of GNC's scholarly contributions.

2.6 Statistical Analysis

Statistical analysis was conducted to identify trends and patterns within the dataset. Descriptive statistics such as means, standard deviations, and frequency distributions were computed to characterize the distribution of publication and citation counts. Furthermore, inferential statistics may be employed to assess the significance of observed trends and correlations, providing valuable insights into the factors influencing scholarly productivity at GNC.

2.7 Data Visualization

To facilitate interpretation and communication of findings, self-explanatory tables and graphs were generated using statistical software. These visual representations serve to illustrate key trends, patterns, and relationships within the data, enhancing comprehension and enabling stakeholders to derive actionable insights from the analysis.

Number of Publications Vs Publishers-

Table 1. Name of the Journal or Publisher vs. Number of Articles Published

Name of the Publisher	Number of Articles Published
Elsevier	22
Wiley	8
Springer Nature	7
MDPI	5
Royal Society Chemistry	5
Biomedical Informatics	2
Taylor & Francis	2
Amer Chemical Society	1
Bentham Science Publications Ltd	1
Cambridge University Press	1
Emerald Group Publishing	1
Helminthological Society Washington	1
IEEE	1
International Allelopathy Foundation	1
International Journal Pharmaceutical Sciences & Research	1
Molecular Diversity Preservation International	1

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Mycosphere Press	1
National Institutes of Science Communication & Information Resources	1
Publese Publisher	1
Research Journal Biotechnology	1
Rjpbcs Research Journal Pharmaceutical, Biological & Chemical Sciences	1
Science & Information Sai Organization Ltd	1
Slovak University Agriculture Nitra	1
Social Science & Nature	1
Thieme Medical Publishers	1

Table 1 reveals that the maximum number of articles (22) was published in Elsevier journal, followed by Wiley (8) and Springer Nature (7).

3. Results and Discussion

3.1. Number of Publications vs. Publishers: The analysis of publication productivity across various publishers illuminates the multifaceted dissemination strategies employed by GNC faculty to share their scholarly findings. The predominance of publications in Elsevier, followed by Wiley and Springer Nature, mirrors the distribution observed in similar studies (Magadán-Díaz, M 2022). This aligns with the notion that established publishers often attract a larger readership and confer a higher level of scholarly legitimacy to research outputs (Delgado Á, 2019). Moreover, the diversity of publishing outlets reflects a strategic approach by GNC faculty to engage with diverse disciplinary communities and maximize the visibility of their research (Donthu N, 2021).

3.2. Number of Publications vs. Number of Citations Received: The juxtaposition of publication output and citation impact unveils intriguing insights into the scholarly influence generated by GNC faculty. Despite a substantial number of publications, the analysis reveals a nuanced relationship between quantity and impact, echoing findings from previous studies (Ball R. 2020). While the average citation per item suggests a moderate level of impact, the variation in citation counts across different publications underscores the heterogeneous nature of scholarly recognition (Ellegaard O., 2018). This underscores the need for a nuanced understanding of citation metrics to gauge the true impact and visibility of research outputs (Moral JA, 2020).

3.3. Year-wise Analysis: The temporal analysis of publication and citation trends elucidates the dynamic nature of scholarly activity at GNC. The absence of research productivity and citations in certain years reflects potential gaps in scholarly dissemination or perhaps fluctuations in institutional research priorities (Moral JA, 2020). Conversely, the surge in publications and citations in 2021 hints at a possible culmination of institutional efforts to enhance research visibility and impact (Ellegaard O., 2018). This underscores the importance of longitudinal studies to track temporal trends and inform strategic interventions aimed at enhancing scholarly productivity (Ball R. 2020).

3.4. Enriched Cited References and Open-Access Publications: The identification of enriched cited references and research publications in open-access journals underscores GNC faculty's commitment to fostering interdisciplinary dialogue and promoting knowledge accessibility (Abramo G, 2019). By citing influential works and embracing open-access publishing models, GNC faculty not only contribute to the democratization of knowledge but also enhance the visibility and relevance of their research outputs (Choudhary RK 2018). This resonates with the broader discourse on open science and its potential to accelerate scientific progress and innovation (Abramo G, 2019).

3.5. Percentage of Citing Counts across Categories: The analysis of citation counts across various Web of Science categories offers valuable insights into the interdisciplinary reach and impact of GNC's research output. Table 3 delineates a diverse landscape of scholarly engagement, with citations spanning a wide array of disciplines ranging from Chemistry to Engineering, Environmental Sciences, and beyond. Notably, Chemistry Multidisciplinary emerges as the most cited category, capturing a significant portion of GNC's scholarly influence with 63 citations, representing 18.529% of the total citations received. This finding underscores the interdisciplinary nature of GNC's research endeavors, echoing similar observations in the literature (Patience, G. S 2017).

3.6. Recommendations for Future Publications: The identification of key Web of Science categories with high citation counts serves as a strategic roadmap for guiding future publication endeavors at GNC. Leveraging insights from highly cited disciplines such as Chemistry Multidisciplinary, GNC faculty can strategically align their research agendas to capitalize on existing scholarly networks and maximize the visibility and impact of their work (Robinson & Brown, 2019). Moreover, proactive measures such as author collaboration, publication in reputable open-access journals, and meticulous adherence to publisher guidelines can further enhance the dissemination and recognition of GNC's scholarly contributions (Hirsch J.E. 2005). Comparative analysis with similar studies reveals intriguing parallels and divergences in citation patterns across different institutional contexts. While GNC's emphasis on Chemistry Multidisciplinary mirrors findings from studies highlighting the interdisciplinary nature of scholarly impact (Leydesdorff L 2010), the nuanced distribution of citation counts across various disciplines underscores the unique scholarly profile of GNC faculty. This underscores the importance of context-specific analyses to inform tailored strategies for enhancing scholarly visibility and impact (Cagan R.L. 2013).

3.7. Implications for Scholarly Practice and Institutional Strategy: The comprehensive analysis of citation counts across Web of Science categories offers actionable insights for informing institutional research strategy and scholarly practice at GNC. By strategically aligning research agendas with high-impact disciplines and embracing open-access publishing models, GNC can amplify its scholarly influence and contribute meaningfully to the advancement of knowledge within its academic community and beyond (Dougherty, M. R 2022). Moreover, the identification of interdisciplinary citation patterns underscores the importance of fostering collaborative research initiatives and interdisciplinary dialogue to address complex societal challenges and accelerate scientific innovation (McKiernan EC 2019).

Graph 4 vividly illustrates the upward trajectory of both publications and citations, signaling a promising trend in the academic productivity of Guru Nanak College faculty. This dynamic evolution underscores the institution's commitment to scholarly excellence and its growing influence within the broader academic community. As the graph depicts a steady increase in both the quantity of publications and their corresponding citations, it becomes evident that GNC faculty are actively contributing to the advancement of knowledge and shaping scholarly discourse across various disciplines.

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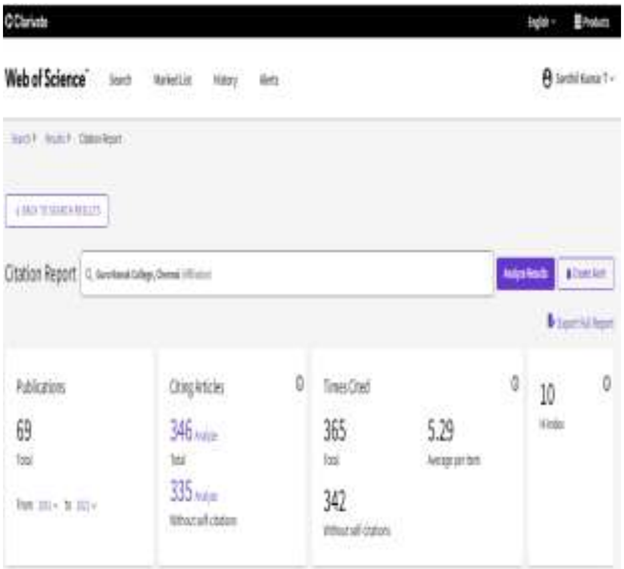
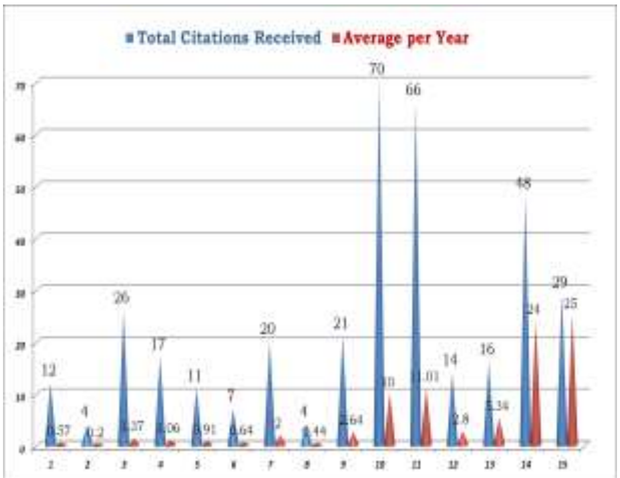
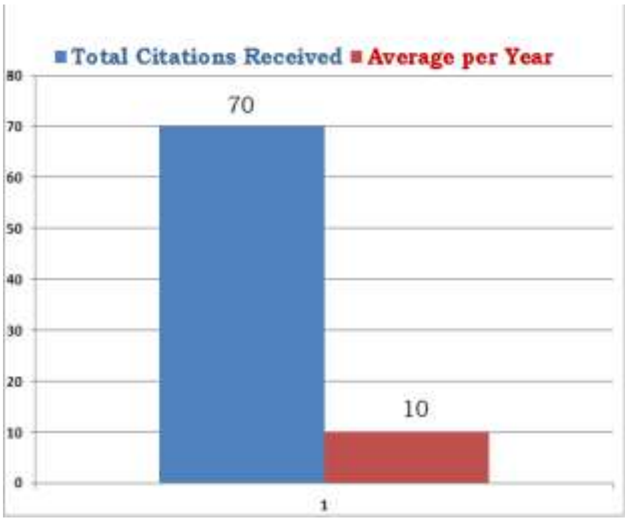
1. **Number of Publications Vs Number of Citations Received**



Graph 1: Total Citations Received vs. Average Per Year



Graph 2 h-Index



It is found from Graph 1 that the total number of publications from Guru Nanak College is 69, which consist of 63 Articles, 1 Review article, and 3 early access Articles.

Totally, 346 articles were cited to produce 69 publications without self-citations.

In total, 365 citations were made, of which 23 were self-citations and the remaining 342 were from other researchers.

The average citation per item is 5.29.

Graph 2 reveals the maximum number of citations received (70), and the average number of citations per year is 10. Hence, the h-Index of Guru Nanak College is 10.

Table 2. Number of Publications and their Citations

Year	Number of Publications	Number of Citation
2001	1	0
2002	1	0
2003	2	1
2004	0	0
2005	0	0
2006	1	2
2007	2	7
2008	0	0
2009	0	0
2010	2	6
2011	1	8
2012	5	6
2013	1	9
2014	3	8
2015	3	12
2016	6	25
2017	5	23
2018	0	0
2019	6	43
2020	10	50
2021	21	107

Graph 3: Number of Publications vs. Number of Citations Received

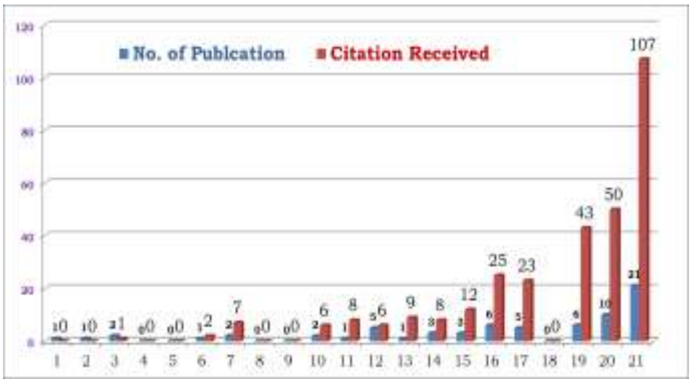


Table 2 and Graph 3 show that there is no research productivity in the journals listed in the Web of Science for the years 2004, 2005, 2008, 2009, and 2018; likewise, in the years 2001, 2002, 2004, 2005, 2008, 2009, and 2018, there are no citations received.

4. Implications and Future Directions: The implications and future directions derived from this study hold profound significance for shaping institutional research strategy and scholarly practice at Guru Nanak College (GNC). Building upon the insights highlighted above, several additional considerations emerge that warrant attention and strategic intervention. In addition to strengthening collaborations with high-impact publishers and scholarly networks, GNC can harness emerging technologies and methodologies to augment its research impact. Integration of artificial intelligence (AI), machine learning, and data analytics tools can facilitate advanced bibliometric analyses, enabling deeper insights into citation patterns, interdisciplinary collaborations, and emerging research trends (Hughes RG. 2008). By embracing cutting-edge technologies, GNC can enhance its research visibility, streamline scholarly workflows, and unlock new avenues for impactful research. Beyond the realm of academic publishing, GNC can prioritize knowledge translation and outreach initiatives to maximize the societal impact of its research findings. Engaging with policymakers, industry stakeholders, and community partners can facilitate the translation of research outcomes into actionable policies, innovative practices, and tangible solutions to real-world challenges (Brown A, 2020). By fostering meaningful collaborations with external stakeholders, GNC can amplify the relevance and applicability of its research output, driving positive change at local, national, and global levels. At the heart of scholarly practice lies a commitment to research excellence, integrity, and ethical conduct. GNC can nurture a culture of research integrity by promoting transparent and reproducible research practices, fostering academic integrity, and providing robust support mechanisms for researchers (Hughes RG. 2008). By upholding rigorous standards of scholarship and ethical conduct, GNC can bolster its reputation as a hub of research excellence and contribute to the advancement of knowledge with integrity and rigor. Investments in research capacity and infrastructure are essential for enabling and sustaining a thriving research ecosystem at GNC. By allocating resources towards state-of-the-art laboratories, research facilities, and interdisciplinary research centers, GNC can empower faculty and students to pursue innovative research endeavors (Orton L, 2011). Moreover, initiatives aimed at enhancing research funding opportunities, promoting interdisciplinary collaboration, and supporting early-career researchers can further bolster the institution's research capacity and competitiveness on the global stage. Inclusivity and diversity are integral pillars of a vibrant research community. GNC can champion diversity, equity, and inclusion initiatives by fostering a welcoming and inclusive environment for researchers from diverse backgrounds, perspectives, and experiences (Orton L, 2011). By embracing diverse voices and perspectives, GNC can enrich its scholarly discourse, drive

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innovation, and foster a culture of mutual respect and understanding within the academic community.

Table 3. Percentage of Citing Counts

Web of Science Categories	Record Count	% of 340
Agronomy	1	0.294
Automation Control Systems	1	0.294
Biochemical Research Methods	8	2.353
Biochemistry Molecular Biology	17	5
Biology	1	0.294
Biophysics	5	1.471
Biotechnology Applied Microbiology	3	0.882
Business	1	0.294
Chemistry Analytical	31	9.118
Chemistry Applied	10	2.941
Chemistry Inorganic Nuclear	11	3.235
Chemistry Medicinal	20	5.882
Chemistry Multidisciplinary	63	18.529
Chemistry Organic	45	13.235
Chemistry Physical	56	16.471
Computer Science Artificial Intelligence	2	0.588
Computer Science Interdisciplinary Applications	1	0.294
Computer Science Theory Methods	9	2.647
Construction Building Technology	2	0.588
Crystallography	3	0.882
Electrochemistry	16	4.706
Energy Fuels	5	1.471
Engineering Biomedical	1	0.294
Engineering Chemical	18	5.294
Engineering Electrical Electronic	5	1.471
Engineering Environmental	8	2.353
Engineering Manufacturing	2	0.588
Engineering Mechanical	1	0.294
Engineering Multidisciplinary	3	0.882
Environmental Sciences	16	4.706
Environmental Studies	1	0.294
Forestry	3	0.882
Genetics Heredity	1	0.294
Geology	1	0.294
Green Sustainable Science Technology	3	0.882
Horticulture	1	0.294
Infectious Diseases	1	0.294
Instruments	8	2.353

Instrumentation		
Integrative Complementary Medicine	1	0.294
Law	1	0.294
Marine Freshwater Biology	2	0.588
Materials Science Biomaterials	6	1.765
Materials Science Coatings Films	7	2.059
Materials Science Composites	1	0.294
Materials Science Multidisciplinary	25	7.353
Materials Science Paper Wood	1	0.294
Materials Science Textiles	1	0.294
Mathematical Computational Biology	2	0.588
Mathematics Applied	1	0.294
Metallurgy Metallurgical Engineering	2	0.588
Microbiology	5	1.471
Mineralogy	1	0.294
Multidisciplinary Sciences	7	2.059
Mycology	2	0.588
Nanoscience Nanotechnology	7	2.059
Nuclear Science Technology	1	0.294
Oncology	3	0.882
Optics	4	1.176
Parasitology	5	1.471
Pharmacology Pharmacy	9	2.647
Physics Applied	15	4.412
Physics Atomic Molecular Chemical	15	4.412
Physics Condensed Matter	7	2.059
Plant Sciences	2	0.588
Polymer Science	16	4.706
Public Environmental Occupational Health	2	0.588
Spectroscopy	6	1.765
Thermodynamics	2	0.588
Toxicology	1	0.294
Veterinary Sciences	1	0.294
Zoology	4	1.176

Table 3 shows that the maximum citation counts received, the maximum count of 63, and the percentage of 18.529 for the Web of Science category pertain to Chemistry Multidisciplinary.

5. Conclusion

Academic productivity, as measured by the number of publications and their associated citation metrics such as the h-index, serves as a critical yardstick for assessing scholarly impact and influence. In today's knowledge-driven landscape, where academic evaluations hinge upon the generation of original research output, it is imperative for scholars to transition from passive information consumers to proactive information producers. This paradigm shift underscores the importance of not only consuming existing knowledge but also actively contributing to its creation through rigorous

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research endeavors and scholarly engagement. As such, the findings of this study carry profound implications for GNC faculty and the broader academic community alike. By recognizing the intrinsic link between academic productivity and scholarly impact, scholars are encouraged to embrace a culture of continuous learning, innovation, and knowledge dissemination. Moreover, the recommendation to prioritize the production of high-quality publications underscores the transformative potential of scholarly engagement in driving meaningful advancements in various fields of inquiry. In conclusion, the journey towards academic excellence and scholarly impact is paved with opportunities for growth, collaboration, and discovery. By heeding the insights gleaned from this analysis and embracing a proactive approach to scholarly engagement, GNC faculty can position themselves as catalysts for positive change and contributors to the collective body of knowledge that shapes our understanding of the world. As the academic landscape continues to evolve, GNC remains poised to lead the charge towards a future defined by innovation, excellence, and transformative scholarship.

Reference:

1. Abramo G, D'Angelo C, Reale E. Peer review vs bibliometrics: which method better predicts the scholarly impact of publications? *Scientometrics.* 2019;121(1):537–554. doi: 10.1007/s11192-019-03184-y.
2. Ball R. Handbook bibliometrics. *De Gruyter Saur*. 2020 doi: 10.1515/9783110646610.
3. Barbu, L., Mihaiu, D. M., Șerban, R., & Opreana, A. (2021). Knowledge Mapping of Optimal Taxation Studies: A Bibliometric Analysis and Network Visualization. *Sustainability*, *14*(2), 1043. https://doi.org/10.3390/su14021043
4. Brown A, Barnes C, Byaruhanga J, McLaughlin M, Hodder RK, Booth D, Nathan N, Sutherland R, Wolfenden L. Effectiveness of Technology-Enabled Knowledge Translation Strategies in Improving the Use of Research in Public Health: Systematic Review. J Med Internet Res. 2020 Jul 31;22(7):e17274. doi: 10.2196/17274.
5. Cagan R.L. (2013). The San Francisco Declaration on Research Assessment
6. Choudhary RK, Awasthi S. Bibliometric visualisation tools. *Library Prog (Int)* 2018;38(2):319–324. doi: 10.5958/2320-317X.2018.00034.X.
7. Delgado Á, Vázquez E, Belando MR, López EJ (2019) Análisis bibliométrico del impacto de la investigación educativa en diversidad funcional y competencia digital: web of Science y Scopus. Aula Abierta 48(2): 147–56. 10.17811/rifie.48.2.2019.147-156.
8. Dis. Models Mech., 6 (4) (2013), pp. 869-870.
9. Donthu N, Kumar S, Mukherjee D, Pandey N, Lim WM. How to conduct a bibliometric analysis: an overview and guidelines. *J Bus Res.* 2021;133:285–296. doi: 10.1016/j.jbusres.2021.04.070.
10. Dougherty, M. R., & Horne, Z. (2022). Citation counts and journal impact factors do not capture some indicators of research quality in the behavioural and brain sciences. *Royal Society Open Science*, *9*(8). https://doi.org/10.1098/rsos.220334.
11. Ellegaard O. The application of bibliometric analysis: disciplinary and user aspects. *Scientometrics.* 2018;116(1):181–202. doi: 10.1007/s11192-018-2765-z.
12. Godin B. On the origins of bibliometrics. *Scientometrics.* 2006;68:109–33.
13. Hirsch J.E. (2005). An index to quantify and individual's scientific research output. Proc. Natl. Acad. Sci., 102 (46) (2005), pp. 16569-16572.

ISSN: 2277-1409

14. Hughes RG. Tools and Strategies for Quality Improvement and Patient Safety. In: Hughes RG, editor. Patient Safety and Quality: An Evidence-Based Handbook for Nurses. Rockville (MD): Agency for Healthcare Research and Quality (US); 2008 Apr. Chapter 44. Available from: https://www.ncbi.nlm.nih.gov/books/NBK2682/.

15. J. Am. Soc. Inf. Sci. Technol., 61 (2010), pp. 2365-2369.

16. John Ruscio ruscio@tcnj.edu , Florence Seaman , Carianne D'Oriano , Elena Stremlo & Krista Mahalchik (2012) Measuring Scholarly Impact Using Modern Citation-Based Indices, Measurement: Interdisciplinary Research and Perspectives, 10:3, 123-146, DOI: 10.1080/15366367.2012.711147

17. Leydesdorff L. , T. Opthof (2010). Scopus's source normalized impact per paper (SNIP) versus a journal impact factor based on fractional counting of citations

18. Magadán-Díaz, M., & Rivas-García, J. I. (2022). Publishing Industry: A Bibliometric Analysis of the Scientific Production Indexed in Scopus. *Publishing Research Quarterly*, *38*(4), 665-683. https://doi.org/10.1007/s12109-022-09911-3

19. McKiernan EC, Schimanski LA, Muñoz Nieves C, Matthias L, Niles MT, Alperin JP. 2019. Meta-research: use of the journal impact factor in academic review, promotion, and tenure evaluations. *eLife* **8**, e47338. (10.7554/eLife.47338.

20. Moral JA, Herrera E, Santisteban A, Cobo MJ. Software tools for conducting bibliometric analysis in science: an up-to-date review. *Prof De La Inf.* 2020;29(1):1–20. doi: 10.3145/epi.2020.ene.03.

21. Norris, Michael & Oppenheim, Charles. (2010). The h-index: A broad review of a new bibliometric indicator. Journal of Documentation - J DOC. 66. 681-705. 10.1108/00220411011066790.

22. Olorisade, B. K., Brereton, P., & Andras, P. (2019). The use of bibliography enriched features for automatic citation screening. *Journal of Biomedical Informatics*, *94*, 103202. https://doi.org/10.1016/j.jbi.2019.103202

23. Orton L, Lloyd-Williams F, Taylor-Robinson D, O'Flaherty M, Capewell S. The use of research evidence in public health decision making processes: systematic review. *PLoS One.* 2011;6(7):e21704.
doi: 10.1371/journal.pone.0021704.

24. Patience, G. S., Patience, C. A., Blais, B., & Bertrand, F. (2017). Citation analysis of scientific categories. *Heliyon*, *3*(5), e00300. https://doi.org/10.1016/j.heliyon.2017.e00300.

25. Pendlebury DA. The use and misuse of journal metrics and other citation indicators. *Arch Immunol Ther Exp.* 2009;57:1–11.

26. Steele C, Butler L, Kingsley D. The publishing imperative: the pervasive influence of publication metrics. *Learn Publ.* 2006;19:277–90.

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