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From the Desk of the Chief Editor

Dear Readers,

It is my pleasure to welcome you to the April-June 2025 edition of Omniscient. The arrival of each new issue reminds us that learning is a continuous journey, one that grows richer when we exchange ideas and listen to diverse perspectives.

Our university has always been a place where curiosity is nurtured, creativity is valued and knowledge is pursued with purpose. In recent months, we have seen greater collaboration across disciplines, fresh enthusiasm for research and a willingness among both students and faculty to explore new possibilities. This growing energy is not only a sign of academic progress but also a reflection of our shared commitment to building a vibrant intellectual community.

This issue captures that spirit beautifully. It brings together articles and empirical studies that are insightful, relevant and thought-provoking. A journal is much more than a collection of research papers; it is an ongoing conversation between the writer and the reader. Through this exchange, ideas evolve, perspectives broaden and new questions emerge. I hope that each page of this edition strengthens that connection and inspires further exploration.

The diversity of topics presented here reflects the richness of our academic ecosystem. Whether addressing global challenges, exploring innovations in education, or presenting fresh approaches to familiar subjects, each contribution adds value to the collective dialogue.

I extend my heartfelt appreciation to the editorial team for their tireless dedication, to our reviewers for their careful insights and to all contributors for sharing their valuable work. Most importantly, I would like to thank our readers for their engagement, as their curiosity keeps this platform alive. Let us carry forward the spirit of inquiry, reflection and shared growth, ensuring that Omniscient continues to be a space where knowledge is both celebrated and advanced.

Prof. K. P. Singh

Vice-Chancellor

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CONTENT

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Empowering Women for Sustainable Social Change through STEAM Education: An Overview

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Abstract

It is impossible to imagine a world where women do not exist. However, it is unfortunate that our Society still considers women inferior and incapable of making their own decisions. The government, lawmakers, scholars, and social activists must take steps to support women's empowerment, sustainability, and emancipation. India needs to give this ongoing issue more careful consideration. Despite the government's best efforts to prevent female feticide, promote women rights education, and enforce relevant legislation, the situation remains alarming. This article reviewed the literature and collected information from numerous journals. Google Scholar, Science Direct, Elsevier, and SSRN were used to collect the necessary information. The study highlights the importance of Education in empowering women to create long-term social change. The study examines how STEAM education can empower women with the skills and knowledge needed to succeed in traditionally male-dominated industries. Women with equal access to Education and training in STEAM fields can achieve leadership positions and significantly contribute to innovation and problem-solving. Women who have received training in STEAM subjects are more likely to think creatively and develop original solutions to challenging issues. The paper concludes that investing in women's Education catalyzes positive social change while addressing the barriers women face in accessing Education and offering solutions to overcome these challenges. Additionally, the article draws attention to the links between Education, gender equality, and sustainable development.

Keywords: *Women's Empowerment, Sustainable development, STEAM, Women's Education, Gender equality*

Introduction

"A woman can create, nurture, and transform the world around her."-Diane Mariechild. One's gender at birth should not determine their rights or opportunities (OSAGI, 2021). The EU policy supports women's empowerment and gender equality globally by promoting and financially supporting it as a pillar. Higher Education Institutions (HEIs) formulate internal policies that endorse the Sustainable Development Goals (SDGs) and are crucial in equipping students with the requisite skills to address the problems of the 21st century. The Global Gender Gap Report reveals that no nation has attained gender equality. In 2021, the worldwide gender gap score was 67.7%, indicating that 32.3% remains to be addressed (World Economic Forum, 2021). Due to the identification of gender-related traits in educational materials, there is a lack of institutional

initiatives to promote gender equality in schools (Reyes & Alvarez, 2018). It also tracks progress in bridging these gaps over time and computes a gender equality score for each sub-index. Educational attainment has significantly improved, with 95% of the gender gap already being addressed. Regardless, gender gaps persist in higher education around the world, even though tertiary enrollment rates have reached parity in the majority of nations (UIS Stat in 2016). STEAM education is vital for developing technological skills and empowering individuals, particularly women. Research shows that women in STEAM careers tend to have higher earning potential, greater job satisfaction, and more leadership opportunities (Kanta et al., 2024). Despite these advantages, women remain underrepresented in STEAM fields. According to UNESCO, only 30% of global science, technology, engineering, and mathematics researchers are women. The STEAM industries exacerbate this issue, potentially discouraging young girls from pursuing careers in these areas (Custódio et al., 2024).

The Western Australian Department of Education (2019) defines STEM as an educational strategy that promotes creativity, inquiry, communication, teamwork, and critical thinking (EducationCloset, 2019). STEAM with A for the arts has emerged as an alternative to traditional STEM education to prepare today's students for the future as leaders, innovators, scientists, engineers, educators, entrepreneurs, and learners. This approach emphasizes creativity, risk-taking, collaborative and experiential learning, and perseverance in problem-solving. (Education Closet, 2019). STEAM combines science, technology, engineering, arts, and mathematics. It involves using design thinking and an investigative process to integrate ideas from these disciplines, focusing on interdisciplinary learning (Belbase et al., 2022). This approach is being promoted in various parts of the world, including African regions and Latin America, and through partnership and collaboration initiatives in European nations (Belbase et al., 2022). The STEAM approach requires a deliberate connection between standards, assessments, and lesson design/implementation (Education Closet, 2019). This approach highlights learning experiences in two or more strands through interaction. By investigating and collaborating with integrity, ethics, cohabitation, and mutual respect, trans-disciplinary knowledge and skills complement each other (EducationCloset, 2019). Therefore, through trans-disciplinary consciousness and conscience, STEAM provides a new vision to encourage student creativity, collaboration, and community building (All Education Schools.com, 2019). The Bridges Conference Proceedings offer several examples demonstrating mathematics and the arts close relationship and their

complementary nature (Belbase et al., 2022). In this scenario, STEAM education plays a vital role in breaking down and transcending the boundaries of disciplines, providing a new interface between theory and practice (Connor et al., 2015; Quigley et al., 2019). The arts help unite the disciplines into a cohesive whole with a more expansive scope and disciplinary identity, as well as imitate real-world difficulties and problems by fencing in the fundamental elements of the entire (Quigley & Herro, 2019). The shift from STEM to STEAM has brought about a paradigm change in Education (Yakman, 2019). More specifically, this study explores how STEAM education can serve as a solid tool to equip women with the knowledge, skills, and abilities needed to succeed in fields that men have traditionally dominated. Providing women with equal opportunities for STEAM education and training can empower them to become leaders and contribute significantly to creativity and problem-solving. The underrepresentation of women in STEAM fields is a global issue (Rahman & Halim, 2022). Empowerment is a crucial aspect of leadership in management and Education (Battel et al., 2021). A lack of female involvement in critical STEM fields can hinder innovation and impede global progress. At worst, it may have potentially dire consequences (Wajngurt et al., 2019). A study conducted by Zeng et al. (2023) through semi-structured interviews revealed that learning approaches differ within the context of STEAM pedagogy. The aim is to promote an inquiry-based, transdisciplinary educational approach to develop future innovators and business owners (Kumar & Deák, 2024). According to a study conducted by Wajngurt and Sloan (2019) with American university students, women are more likely to pursue STEM fields if they have previously taken courses that integrate the arts into STEM, as opposed to traditional STEM courses. These findings highlight the importance of incorporating the arts into STEM education to attract more women and support the idea that female students are more interested in pursuing a STEM degree when they attend STEAM courses. The paper examines various strategies and solutions related to education. It highlights the importance of gender-responsive educational policies and practices that challenge stereotypes and promote equal opportunities for girls and boys. The review emphasizes integrating gender perspectives into curricula and textbooks to create inclusive and equitable educational environments.

Additionally, it analyzes initiatives to empower girls in STEM education and address the barriers that hinder their participation. The assessment also examines efforts to improve women's representation in higher education and leadership roles. The review presents practical examples

of actions that have successfully advanced gender equality in education. It critically evaluates the effectiveness of these interventions and identifies areas for improvement. Incorporating Science, Technology, Engineering, Arts, and Mathematics (STEAM) into educational and professional trajectories is vital for advancing gender equality and empowering women worldwide. Despite the increasing demand for STEAM competencies in the contemporary labor market, women remain underrepresented in these domains. This underrepresentation is due to multiple systemic obstacles, such as gender stereotypes, the absence of role models, and insufficient support networks. This article examines the convergence of STEAM education with women's empowerment, emphasizing the obstacles, tactics, and practical efforts established to tackle these gaps.

Rationale of the study

The purpose of this study is to highlight the significance of empowering women through STEAM education to bring about long-term social change, promote gender equality, and establish communities that are both inclusive and innovative. Women have historically been underrepresented in STEM professions, which has resulted in persistent gender discrepancies in employment, wealth, and influence. Historically, this has continued to be the case. Therefore, educating women and encouraging their participation in STEAM professions is necessary to bridge this discrepancy and create gender equality in these many fields. Empowering women benefits society by encouraging creative expression, economic expansion, and social advancement. Early intervention initiatives that engage girls in STEAM disciplines from an early age can foster their curiosity and self-assurance. Initiatives like the Creative Coding initiative, which amalgamates coding with art, have demonstrated favorable results in enhancing girls' engagement in STEAM disciplines (Maric & Rani, 2024). To achieve social justice and equality between the sexes, empowering women is necessary. Empowering women is most effectively achieved through education, especially in STEM (science, technology, engineering, and mathematics) fields.

As a result of having a high level of STEAM education, women are more equipped to defy gender stereotypes, seek employment in these disciplines, and create positive societal change. The study emphasizes the significance of social transformation and sustainability, highlighting the connections between gender equality, STEAM education, and broader societal challenges. To bring about a long-lasting societal change, it is essential to eliminate the structural hurdles that

impede women's empowerment and establish an atmosphere that supports women working in STEAM professions. The purpose of this study is to provide a comprehensive review of the numerous approaches and strategies that may be utilized to empower women through STEAM education.

Research Question

- What are the most effective techniques and strategies for promoting gender equality in STEAM education?
- What is the impact of sociocultural variables on women's success and involvement in STEAM education programs that promote long-term social change?

Methodology

This study utilized various platforms such as SSRN, Science Direct, Elsevier, and Google Scholar to conduct a literature review and gather data from multiple journals. The report outlines the selection criteria for the Empowering Women for Sustainable Social Change initiative via STEAM education that was selected for the study. It also explains the methodology used to collect information and data for the report.

Empowering Women through STEAM Education for Social Change

STEAM Education to empower women for social change is a crucial and multifaceted project with far-reaching effects. STEAM professions not only offer excellent job opportunities but also encourage creativity and contribute to the advancement of Society. However, due to various challenges, such as systemic barriers, lack of motivation, stereotypes, and societal norms, women have historically been underrepresented in these fields. Empowering women through STEAM education not only promotes gender equality but also unlocks untapped potential, bringing diverse skills and perspectives to the workforce. The female literacy rate in India has been increasing, but it remains lower than that of males (Census of India, 2011). This gender disparity in Education is particularly noticeable in the northern states of India. Although there may be a higher number of female students enrolled in schools in these states, many girls drop out after only a few years of study. The progress towards women's emancipation in India is noteworthy, although much work still needs to be done. Women's roles in higher Education have undergone a significant transformation globally. To empower women, there is a growing awareness about the importance of incorporating gender perspectives in formulating public policies and adopting gender-inclusive strategies to achieve development objectives. In India, the issue of women's

empowerment through higher Education depends on a just distribution of resources, both presently and in the future. It should be a fundamental principle of all programs and initiatives aimed at establishing a society based on liberty and democracy and upholding fundamental rights while promoting equal opportunities and intergenerational harmony. The literature review focused on students' evolving attitudes and opinions towards including the arts in STEAM subjects. In addition to art, the skills required to promote entrepreneurship and creativity are also required (Nakano & Wechsler, 2018).

Furthermore, it explores the most effective instructional methods for students to navigate the complexities of this innovative pedagogy. This approach can equip students with the necessary skills to become adaptive innovators and business owners. The focus of Education has shifted from a one-size-fits-all approach to a more inclusive, personalized, and creative learning experience (Kumar & Deák, 2024). This approach is essential to provide students with the necessary skills and mindsets to succeed in a changing world and contribute to future social and economic progress. Teachers play an indispensable role in helping female students acquire these critical skills by adopting innovative teaching strategies and providing flexibility in the curriculum (Litz, D. 2011). The STEAM framework includes a variety of creative learning approaches that have been integrated into the education systems of several European countries, which enhance students' skills (Jesionkowska et al., 2020). However, many obstacles exist in our country's STEAM framework of various creative learning methods in educational institutions. To overcome that, we must advance in women's Education and empowerment (Liao, 2016). It is essential to examine these stories from a broader perspective to see how different pedagogical learning methods can shape the skills of women for future innovators and entrepreneurs. Inclusive pedagogical techniques that address the varied needs of students can foster a helpful learning environment. These methodologies encompass adaptable learning trajectories, peer-to-peer education, and cooperative initiatives that promote involvement and engagement (Sánchez-Soriano et al., 2024).

Additionally, the Telesecundaria Rural initiative in Mexico sought to dismantle gender stereotypes and empower girls in rural regions by offering them the opportunity to cultivate STEAM competencies. The project encompassed practical activities and coaching, resulting in favorable shifts in the girls' perspectives of their capabilities and future ambitions (Hernández et al., 2024). In India, economic empowerment via financial inclusion has been a significant

technique for enhancing women's involvement in STEAM. Strategic governmental measures, accessible banking services, and focused financial education have promoted women's economic autonomy and ability to engage in STEAM professions (Ramya & Deepak, 2024).

Challenges and Opportunities

Empowering women through STEAM education can lead to significant social change. They can succeed in various fields by providing women with the necessary skills, confidence, and opportunities. However, several challenges and opportunities are associated with using STEAM education to empower women and effect long-lasting social change. Notwithstanding advancements, women continue to be underrepresented in STEAM fields. The World Economic Forum (2021) reports that merely 28% of engineering professionals and 32% of IT professionals worldwide are women. The gender gap is exacerbated by systemic obstacles, such as gender stereotypes, insufficient female role models, and implicit bias (UNESCO, 2019). The involvement of women in STEAM is essential for attaining gender equality and fostering innovation while effectively tackling global concerns. Professions in STEAM disciplines typically provide substantial remuneration and enhanced work security. STEAM education empowers women with technical and artistic abilities, facilitating access to lucrative careers in artificial intelligence, biotechnology, and digital design (Li et al., 2022). Facilitating women's entry into these sectors elevates their economic standing and bolsters their financial autonomy. STEAM education can aid in dismantling entrenched gender stereotypes by motivating girls to engage in occupations previously dominated by males. Initial engagement with STEAM disciplines in a nurturing, inclusive setting has demonstrated an enhancement of girls' self-assurance in their competencies and a challenge to societal conventions (Master et al., 2017). Women who thrive in STEAM disciplines frequently evolve into leaders, entrepreneurs, and agents of change. They enhance innovation by providing varied views on problem-solving. Studies indicate that diversity within STEAM teams fosters more innovative and efficient solutions (Phillips, 2014).

Challenges

Our goal should be to guarantee women and girls access to high-quality STEAM education, especially in rural and impoverished areas, and to address prejudices and cultural norms that could prevent or limit women from seeking professions in STEAM education. Raising the profile of accomplished women in STEAM disciplines can help guide and motivate the upcoming

generation of female leaders. It is also crucial to supply materials and assistance to help women overcome impostor syndrome and develop self-assurance in their STEAM-related skills.

Opportunities

Mentorship programs and STEAM outreach initiatives can help young girls get interested in STEAM fields at a young age. Pairing women and girls with accomplished STEAM professionals can offer advice, encouragement, and inspiration. Schools should also incorporate inclusive, gender-sensitive STEAM curricula to foster diversity and motivate female involvement in STEM fields. Women entrepreneurs in STEAM disciplines also need help with their businesses, such as networking, getting money, and getting training. Encouraging STEAM organizations to adopt diversity and inclusion policies can assist in creating welcoming and helpful environments for women, which will keep women working in these fields. Advocacy and Changing Policies It is important to support programs that encourage girls and women to study and work in STEAM fields and laws that promote gender equality in schools and workplaces. By providing women greater power through STEAM education, we can solve these problems and take advantage of opportunities. This will lead to lasting societal changes and a better future for everyone. Get girls interested in STEM-related activities and fields early to get them interested and excited. This might include scientific festivals, robotics workshops, coding clubs, and other STEM-related activities that let people do things. Promoting early engagement of girls in STEM disciplines dismantles gender stereotypes and cultivates a favourable disposition towards STEM (Buenestado-Fernández et al., 2023). After all, Various international initiatives seek to mitigate the gender disparity in STEAM. For instance, the Girls Can Code program from UNESCO educates young girls on using computers, while groups like Girls Who Code and Women in STEM offer mentoring, training, and networking opportunities (UNESCO, 2019). These programs have successfully gotten more women involved in STEAM professions by tackling problems like access to resources and mentorship.

Education

1. To break down myths about gender inequalities in STEAM professions and promote advocacy based on data. This will make women more likely to apply for STEAM programs. Also, discussing affirmative action programs can help people understand why STEAM needs more women and people of colour.

2. Create specific measures to support women in STEAM fields. For example, implementing supernumerary programs, like those in IITs, can increase the proportion of female students enrolled in STEAM programs. Public and private educational institutions should implement more such policies to encourage women to pursue STEAM degrees.
3. To get more girls to sign up for STEAM-related programs, make coaching programs less expensive and give scholarships only to girls. This will help close the gender gap in STEAM professions.
4. Encourage investment in STEAM programs by the public and private sectors so that governments, businesses, and civil society organizations can collaborate to create and fund projects that support women's early STEAM education. Financially incentivized initiatives can be particularly advantageous. Programs for sponsored apprenticeships that offer on-the-job training can help women enter the workforce. For instance, Microsoft's Tech-Saksham initiative supports women engineers in finding employment by providing them with skill training.
5. Implement interventions in the educational ecosystem, such as enhanced teacher preparation programs that educate educators to reject gendered norms. Government programs that assist young children in achieving better reading and numeracy outcomes can also contribute to the readiness of the future workforce for STEM fields. To ensure equal opportunities for all students to pursue STEM education, schools should incorporate gender equity into the curriculum.

Employment

1. Women who have succeeded in their fields can help younger women by offering guidance and networking opportunities through mentoring programs, conferences, events, and talks. Creating such initiatives can promote a sense of community and reduce loneliness at work. For example, Vigyan-Shaala's "Kalpana" program helps women in STEAM who are not well represented by building networks to help them find mentors and make connections.
2. It is important for STEAM workplaces to give diversity and inclusion training to both managers and employees. This training will help them better understand and meet the demands of their female workers.
3. Reducing the age limit on research grants and fellowships could get more women to apply, especially those returning to work after a sabbatical.

Retention

1. The gender salary gap is one of the many reasons women are discouraged from pursuing careers in STEAM. Gender-responsive evaluation policies must be implemented to encourage women's participation.
2. Flexible and gender-sensitive policies, such as making workplaces more welcoming, offering family support, helping with childcare, and allowing employees to set their hours, can help keep women in the workforce. IBM and Unilever are two companies that have made headway towards creating a flexible work culture by putting gender equality first.

Interpretation

Empowering women through STEAM education profoundly impacts individuals, communities, and cultures while promoting gender equality. Here are a few ways that this empowerment can appear:

- STEAM professions often provide better-paying employment with more growth opportunities. Women's empowerment in these areas can increase financial stability and autonomy for them and their families, which can lower poverty rates and help close the gender pay gap.
- Women's different experiences and points of view help the STEAM fields come up with new ideas and ways of doing things. Getting more women to work in these areas can help society advance by creating new and better products, services, and technologies.
- Women have not been well represented in several STEAM sectors in the past, which has led to a significant disparity between the sexes. Bridging this gap and giving women more power via education and support will help make many jobs more equal for men and women. When more women in STEAM fields can be role models and mentors, women are more likely to follow their interests in science, technology, engineering, arts, and math. This circle of positive feedback encourages more women to work in these fields and do well.
- Giving women in STEAM greater influence may help create a more diverse and welcoming workforce by challenging traditional gender-role ideas. It might also lead to bigger societal changes, like changing how people think about gender roles and giving women more chances in all industries.
- In a world where technology rules, providing women in STEAM fields additional support and chances to succeed is important. Utilized on top in science and technology, countries need to use all of their skills and different points of view to encourage new ideas.

- Many of the world's problems, like poverty, healthcare, and climate change, need solutions from multiple STEAM disciplines. Giving women more authority in these areas can help find long-term answers to these problems and improve the future for future generations.

Educating women in STEAM fields is ultimately empowering for them on a personal level, and it has a significant positive impact on communities, societies, and the world. It is crucial to achieving gender parity and building a more prosperous and inclusive future for everyone.

Futuristic paradigm

The article examines women's problems in STEAM fields and how they might be empowered. It shows how important STEAM education is for empowering women and how important it is to close the gender gap in STEAM fields. We need to do more studies right away on what works to help women overcome problems in school and at work. Looking at how things like mentorship programs and outreach are practical, analyzing the creation of an inclusive curriculum and how it affects women's participation in STEAM will help us understand how to get more women involved in these fields. Also, looking into how rules and norms in the workplace encourage gender diversity in STEAM fields will help address organizational problems better. Comparative studies in different countries and areas could show how cultural variations and other variables affect women's engagement in STEAM. Focusing on these areas will help future research make a big difference in the fight for gender equality and empowerment in STEAM. We need complete monitoring and evaluation mechanisms to determine how well specific programs and initiatives work. This includes gathering data that is broken down by sex, checking how well students are learning, keeping an eye on retention rates, and looking at the long-term effects on girls' lives. Consistent evaluation makes it easier to find problems, improve techniques, and make sure people are held accountable. Also, it is important to look at gender gaps in education, how well interventions work, and the best ways to do things. Sharing information and evidence-based methods can help make policies, improve program design, and help people better understand the factors that affect gender equality in education.

Conclusion

Women's empowerment is an important part of the future of STEAM education. To reach its full potential, lawmakers, teachers, communities, and business leaders must work together. A future where everyone, regardless of gender, can contribute to and benefit from a knowledge-based society will make it easier to achieve investments in education, changes in cultural attitudes, and

a shared commitment to gender equality. STEAM education goes beyond the classroom; it may also be a powerful tool for changing society. It speeds up innovation, economic growth, social justice, and women's empowerment. We move closer to a dynamic, equal future where everyone can do well and prosper, regardless of gender, by breaking down barriers and encouraging inclusive learning environments. Educating women in STEAM (science, technology, engineering, arts, and mathematics) is essential for making permanent societal changes. We can close the gender gap and use different points of view to solve complex global problems by making STEAM education available to everyone. We can create a dynamic ecosystem where women are encouraged to lead and develop new ideas by putting in place programs that support diversity, mentorship, and support systems. By pushing for STEAM education to be included in different communities, women may be catalysts for meaningful social change and help create a fairer and lasting future. Let us stay committed to using women's latent creativity and potential in STEAM subjects for the greater good of society. The study implies that paying for women's education can help them overcome the obstacles that make it hard to learn and provide them with the tools they need to make positive societal changes. STEAM is important for scientific research, technical progress, and industrial growth. They deal with complex problems and significantly impact how the modern world is made. To give women and girls more power through STEM education, teachers, legislators, and society need to work together. Creating inclusive learning environments, fighting gender bias, and offering mentorship and networking opportunities are all important parts of this project. Making connections between schools, teachers, businesses, and community partners is important for boosting STEM results for kids because it gives them real-world examples of how STEM areas work. Focusing on these school years is important to raise awareness and get more girls involved in STEM and business courses. A collaborative approach is necessary for bringing together different skills and experiences in problem-solving, including those from different groups. This strategy lets more people help shape the future of humanity. Encouraging girls and women to work in STEM will lead to a more egalitarian and prosperous society in the long run. However, we need to look at successful programs, best practices, challenges, and chances to get more women involved and in charge of STEAM disciplines. The study suggests that paying for women's education can help them overcome obstacles and improve society.

References

Battel et al., (2021). "We Make the Village" - Inspiring STEM among young girls and the power of creative engineering education in action. 2021 IEEE Frontiers in Education Conference (FIE). https://doi.org/10.1109/fie49875.2021.9637322

Buenestado-Fernández, M., Ibarra-Vazquez, G., Patiño, A., & Ramírez-Montoya, M. S. (2023). Stories about gender inequalities and influence factors: a science club case study. International Journal of Science Education, 46(5), 403–420. https://doi.org/10.1080/09500693.2023.2235456

Connor, A. M., Karmokar, S., & Whittington, C. (2015). From STEM to STEAM: Strategies for enhancing engineering and technology education. International Journal for Engineering Pedagogy, 5(2), 37–47. https://doi.org/10.3991/ijep.v5i2.4458

EducationCloset. (2019). What is STEAM? https://educationcloset.com/steam/what-is-steam

Herro, D., & Quigley, C. (2016). Exploring teachers' perceptions of STEAM teaching through professional development: Implications for teacher educators. Professional Development in Education, 43(3), 416–438. https://doi.org/10.1080/19415257.2016.1205507

Herro, D., Quigley, C., &Cian, H. (2018). The challenges of STEAM instruction: Lessons from the field.Action in Teacher Education, 41(2), 172–190. https://doi.org/10.1080/01626620.2018.1551159

Kumar, B., Deák, C., (2023). Evolving Minds: A Literature-Driven and Empirical Exploration of STEAM Skill Development and Learning Approaches, Journal of Innovation Management, 11(4), 71-96.; DOI: https://doi.org/10.24840/2183-0606_011.004_0004

Kanta, A., Psyrra, G., Sobhani, N., Bafes, K., Gollini, I., & Mangina, E. (2024). Empowering and Inspiring Higher education students in the STEM/ STEAM Fields: A review for UK and Ireland. 2022 IEEE Global Engineering Education Conference (EDUCON), 1–10. https://doi.org/10.1109/educon60312.2024.10578727

Liao, C. (2016). From Interdisciplinary to Transdisciplinary: An Arts-Integrated Approach to STEAM Education. Art Education, 69(6), 44–49. https://doi.org/10.1080/00043125.2016.1224873

Litz, D. (2011). Globalization and the changing face of educational leadership: Current trends & emerging dilemmas. International Education Studies, 4(3). https://doi.org/10.5539/ies.v4n3p47

Li, J., Luo, H., Zhao, L., Zhu, M., Ma, L., & Liao, X. (2022). Promoting STEAM Education in Primary School through Cooperative Teaching: A Design-Based

Research Study. Sustainability, 14(16), 10333. https://doi.org/10.3390/su141610333

Maric, J., & Rani, L. M. (2024). Tailoring Full STEAM Ahead Empowerment: Creative Coding for 21st Century girls. EAI Endorsed Transactions on Creative Technologies, 10. https://doi.org/10.4108/eetct.5312

Rahman, N. A., &Halim, L. (2022). STEM Career Interest: The Effect of gender. Creative Education (Print), 13(08), 2530–2543. https://doi.org/10.4236/ce.2022.138160

Sánchez-Soriano, M., Arango-Ramírez, P. M., Pérez-López, E. I., & García-Montalvo, I. A. (2024). Inclusive governance: empowering communities and promoting social justice. Frontiers in Political Science, 6. https://doi.org/10.3389/fpos.2024.1478126

Shaji, George. (2024). Bridging the Gender Gap in STEM: Empowering Women as Drivers of Technological Innovation. Partners Universal Innovative Research Publication, 2(2), 89–105. https://doi.org/10.5281/zenodo.10956569

UNESCO. (2016). Measuring gender equality in science and engineering: The SAGA science, technology and innovation gender objectives list (STI GOL). SAGA Working paper 1. Paris, France: UNESCO.

UNESCO. (2017). Measuring gender equality in science and engineering: The SAGA toolkit. SAGA Working Paper 2. Paris, France: UNESCO.

UNESCO. (2018). Telling SAGA: Improving measurement and policies for gender equality in science, technology and innovation. SAGA Working Paper 5. Paris, France: UNESCO.

UNESCO.Director-General 2009–2017. (2017). Cracking the code: Girls' and women's Education in science, technology, engineering and mathematics (STEM). UNESCO.UNESCO Institute for Statistics.(2018). Women in science.UNESCO Institute for Statistics.

Wajngurt, C., & Sloan, P. J. (2019). Overcoming Gender Bias in STEM: The Effect of Adding the Arts (STEAM). InSight a Journal of Scholarly Teaching, 14, 13–28. https://doi.org/10.46504/14201901wa

Yakman, G. (2019).Why STEAM education? Accessed on December 21, 2019, from https://steamedu.com/wpcontent/uploads/2016/12/WhySTEAMshortWebApr2019.pdf

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Stress and Its Impact on Police Personnel: A Comprehensive Study of Punjab

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Abstract

Police play a pivotal role in maintaining societal order, safeguarding lives and property, and combating crime. Their primary responsibility is to serve citizens impartially. However, contemporary life is marked by pervasive stress, and police personnel are not immune to its effects. Several factors contribute to mounting stress levels among them, including excessive workloads, extended hours, overtime, court duties, VIP assignments, personal safety concerns, superiors' attitudes, and external pressures. This stress adversely impacts both their personal and professional lives, compromising their efficiency and effectiveness. Various studies revealed that stress levels in India are notably higher than in many other countries. Alarmingly, there is a rising incidence of suicides among police officers, underscoring the perilous consequences of stress. This study employs the Interview Schedule method to investigate stress levels among a selected sample of police personnel. The primary objective of this research is to propose measures for ameliorating the well-being of police personnel.

Keywords: *Stress, Police, Crime, Safety.*

Police Administration is playing a significant role in society. Its main duty is to maintain law & order in the state, which often is not an easy task. Another vital duty of the Police is to serve the citizens without any discrimination. Stress nowadays has become a common thing in people's lives, and even police personnel also suffer from stress owing to numerous factors. People under stress behave differently compared to those who are not living under stress. During the traditional times, stress among the police was less compared to the modern period because of the emergence of new multi-dimensional challenges. The World Health Organisation (WHO) defines stress as a state of worry or mental tension caused by a difficult situation. Stress is a natural human response that prompts us to address challenges and threats in our lives. Everyone experiences stress to some degree, and the way we respond to stress, however, makes a big difference to our overall well-being" (Stress, 2023). This stress among the police personnel affects not only their social life but also their working life, which hampers their capability and capacity to do work properly. As per the study conducted by Cigna TTK Health Insurance, stress levels in India are very high as compared to other countries of the world, either developed or developing. In today's world, we have even seen an increasing number of suicides among police personnel, which shows the dangerous effects of stress on their lives.

Just like in any line of work, if stress is left unaddressed, it can result in significant repercussions. These outcomes don't just impact the officer personally; they also extend to individuals the officer interacts with regularly, including coworkers, superiors, friends, family, and the general public (Beshears, 2017). Political interference increases stress among the police personnel, and even the Punjab Police Act of 2007 mentions the separation of law & order and investigation, but unfortunately, this objective has not been achieved yet.

There are two dimensions of stress among police personnel: internal and external. Internal dimension includes the pressure from higher officials, increasing workload, overtime, etc, and the external dimension includes an increase in crime rate, rude behaviour of the public, traumatic events like managing dead bodies, etc. Both primary and secondary data will be collected. There is no doubt on the fact that stress level decreases the productivity of police personnel in many ways. There are various studies conducted on the relationship between stress and productivity, and there is a negative relationship between the stress level and the productivity of employees. As per the University of Oxford, an extensive study into happiness and productivity has found that workers are 13% more productive when happy. With the passage of time, there has been a manifold increase in the functions of police. Earlier, people used to hesitate while approaching police, but now the situation has changed; people even approach police for their petty issues, like for getting music system shut after 10 p.m., finding their lost dog, etc.

Former **DGP Prakash Singh,** after retiring from the service in 1996, started raising his voice for the reforms in the police system. This shows that there must be pressure and stress even among the higher officials, and that honorable Prakash Singh is still working for the improvement of the police. Even he is known for the landmark judgment of 2006 in which the Supreme Court gave special directions and instructions to the state governments as the Police come under the state list (Schedule VII of the Constitution).

Theoretical Perspectives on Stress in Policing

Theoretical perspectives on stress in policing encompass a multidisciplinary examination of the various frameworks and models employed to understand the complex dynamics of stress within law enforcement. Police officers often face unique stressors inherent to their profession, including exposure to danger, trauma, and societal pressures.

- **General Adaptation Syndrome (GAS)**: The GAS theory, proposed by Hans Selye, suggests that individuals exposed to stressors undergo three stages: alarm, resistance, and exhaustion. In policing, officers often face unpredictable and potentially life-threatening situations, causing them to cycle through these stages. Alarm occurs when an officer

encounters a stressful event, resistance reflects their efforts to adapt and cope, and exhaustion can manifest as burnout or physical health issues. Recognizing these stages can help law enforcement agencies implement strategies for stress prevention and management (Stephenson, Schram, Canetti, & Orr, 2022).

- **Transactional Model of Stress and Coping**: This model, developed by Richard Lazarus and Susan Folkman, emphasizes the role of cognitive appraisal in the stress response. In policing, officers' perception and appraisal of stressors play a crucial role in their emotional and physiological reactions. For example, an officer might perceive a routine traffic stop as less stressful if they believe they can handle it effectively. Training officers in stress-reducing cognitive techniques can improve their coping mechanisms and overall well-being (Paulsen, 2008).
- **Social Support Theory**: Social support theory posits that individuals with strong social networks and support systems are better equipped to cope with stress. In policing, camaraderie among officers and support from their families and peers can mitigate the negative effects of stress. Law enforcement agencies can foster supportive work environments and provide resources for officers to seek help when needed, thus enhancing their resilience (Butler, 2018).
- **Job Demands-Resources (JD-R) Model:** The JD-R model suggests that job-related demands and resources influence employees' well-being and performance. Policing is inherently demanding, but agencies can mitigate stress by providing officers with adequate resources, such as training, equipment, and mental health support. Balancing the demands of the job with available resources is critical in preventing stress-related burnout (Frank, 2018).
- **Occupational Stress Theory:** This theory focuses on how the unique demands of a profession, such as policing, can lead to chronic stress. Policing involves exposure to trauma, shift work, and the constant need to make split-second decisions. Occupational stress theory calls for tailored interventions and support systems that address the specific stressors inherent in policing (Shaik 2022).

Implications

Understanding stress in policing through these theoretical frameworks can guide law enforcement agencies and policymakers in developing strategies to reduce stressors and promote the well-being of police officers. Prioritizing officer mental health not only benefits individuals but also leads to improved community policing, as officers who are less stressed

are better equipped to make sound decisions and build positive relationships with the communities they serve.

Factors contributing to Stress

Stress nowadays is in every field, whether that is business or any profession, but the stress level among the police is the highest. It is due to the immense stress that the profession of policing is considered one of the most stressful professions. The threats to their lives while maintaining discipline and law & order become factors affecting their cognitive abilities by increasing their stress levels. The high stress level affects not only their mental health but also their physical well-being, which further acts as a factor increasing their stress. There are many factors contributing to the increasing stress among the police personnel, which are given below:

- **High-Pressure Work Environments**: Police officers often face high-stress situations, such as responding to emergencies, dealing with criminals, and making split-second decisions. The constant need to be alert and make critical judgments can lead to chronic stress.
- **Self-Financing Policing**: Financial concerns are a common source of stress among police personnel, as they frequently find themselves in situations where they have to cover policing-related expenses out of their own funds
- **Exposure to Traumatic Events:** Police personnel frequently witness traumatic and distressing events, such as accidents, violence, and crime scenes. This exposure to trauma can lead to post-traumatic stress disorder (PTSD) and other psychological issues.
- **Long and Irregular Working Hours**: Police officers often work long shifts and irregular hours, which can disrupt their sleep patterns and affect their overall well-being. The unpredictability of their schedules can make it difficult to maintain a healthy work-life balance.
- **Public Scrutiny:** Police officers are under constant public scrutiny, and negative media coverage can add to their stress. Criticism and distrust from the community can lead to feelings of frustration and helplessness.
- **Administrative Burdens:** Paperwork, bureaucracy, and administrative tasks can be time-consuming and add to the workload of police personnel. These tasks can be seen as a hindrance to their core duty of maintaining law and order.
- **Personal and Professional Life Balance**: Balancing the demands of a law enforcement career with family and personal life can be challenging. The stress from the job can spill over into their personal lives, affecting relationships and overall well-being.

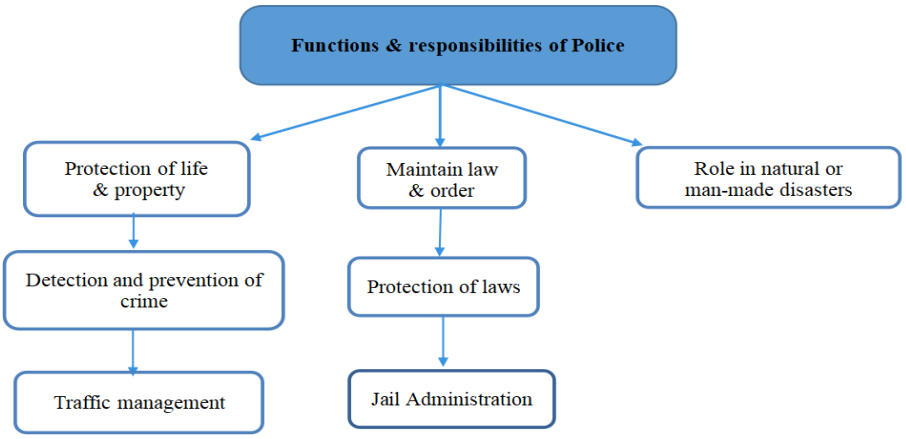
- **Lack of Mental Health Support:** In some cases, there may be a lack of adequate mental health support and resources for police officers, making it difficult for them to seek help for stress-related issues.
- **Peer Pressure and Stigma:** There may be a culture of not discussing or seeking help for mental health issues within the police force, which can create a stigma around mental health and prevent officers from seeking assistance.

COVID-19: New Challenges for Police Personnel

Police officers served as the initial responders in high-risk situations. Nevertheless, the emergence of COVID-19 posed a fresh peril to them, as they, like any other citizen, faced the risk of virus exposure. The distinction lay in the fact that police, similar to other vital services like healthcare professionals, firefighters, paramedics, and others, were obligated to answer calls, typically entailing encounters with unfamiliar circumstances. The COVID-19 pandemic has had a significant impact on the mental stress experienced by police officers and law enforcement personnel around the world. Several factors have contributed to this impact: Mehdizadeh, S, & Kamkar, K. (2020).

- **Increased Workload:** Police officers have been tasked with enforcing lockdowns, monitoring quarantine protocols, and ensuring public safety during the pandemic. This has led to an increased workload and longer working hours, which can contribute to heightened stress levels.
- **Health Concerns:** Police officers have faced higher risks of exposure to the virus due to their frontline roles in enforcing restrictions and interacting with the public. Fear of contracting the virus, potentially spreading it to their families, and concerns about personal protective equipment (PPE) availability have added to their stress. This exposure heightened the risk of infection for police officers, leading to anxiety about their health and the health of their families.
- **Changing Roles and Protocols:** Law enforcement agencies had to adapt to new protocols and procedures to ensure the safety of both officers and the public. Adapting to new ways of interacting with the public while maintaining social distancing and using PPE can be challenging and stressful.
- **Uncertainty and Fear**: The uncertainty surrounding the pandemic, its duration, and its economic and social impacts has led to increased stress among police officers. The fear of potential exposure to the virus during routine interactions or arrests can take a toll on mental well-being.

- **Risk to Families:** The fact that police officers' daily interactions with the public can put them at risk of exposure to COVID-19, and in turn, may further expose their loved ones to the virus, also adds stress. In some cases, they may be returning home to family members with compromised immune systems for different reasons, such as illness, medication, or pregnancy.
- **Dealing with Public Reactions**: Enforcing pandemic-related restrictions and regulations has sometimes led to confrontations with the public, resulting in negative reactions, verbal abuse, or even physical altercations. Such interactions can be emotionally draining and increase stress levels.



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Objectives

1. To find out the stress level among the Punjab Police
2. To find out the consequences of increasing the workload
3. To analyse the political interference in the Punjab Police
4. To examine the role of stress in disrupting the social life of police officials
5. To suggest the measures for improving the conditions of the Police

Research Methodology

The primary emphasis of the research centers around the stress experienced by Punjab Police personnel. The study will utilize both primary and secondary data to gather the necessary information from Punjab Police personnel. It is a descriptive and analytical study that delves into the on-field experiences of the Punjab Police. A sample size of 100 police personnel from the S.A.S. Nagar district has been chosen for the study. Questionnaires will be developed for data collection, and stratified random sampling will be employed at the Thana level. Secondary

sources for information will encompass articles, books, newspapers, online resources, government documents, and more.

Each on-duty police officer had the opportunity to participate in the research, and involvement was completely voluntary, with no incentives provided. The researchers conducted in-person visits to the S.A.S Nagar district in Punjab, taking place in the post-COVID-19 period between November 2024 and March 2025. During these visits, they informed the officers about the project and discussed ethical considerations to obtain informed consent. The majority of the officials were from the thana level (Police stations).

Analysis of Police

Table 1

	Age					Gender		
	20-30	30-40	40-50	50-60	Total	Male	Female	Total
No. of Respondents	32	36	26	06	100	84	16	100
Percentage	32%	36%	26%	06%	100%	84%	16%	100%

In this research work, 32% of the participants fell within the 20-30 age bracket, while 36% were in the 30-40 range, 26% were aged 40-50, and merely 6% represented the 50-60 age category. The study also indicated that 84% of the participants identified as male, whereas 16% identified as female.

Table 2

Qualification	No. of Respondents	Percentage	Designation	No. of Respondents	Percentage
Metric	38	38%	Constable	28	28%
Higher Secondary	24	24%	Head-Constable	26	26%
Graduate	30	30%	ASI	18	18%
Post Graduate	08	08%	SI	12	12%
MPhil/Ph.D.	0	0%	Inspector	16	16%
Total	100	100%	Total	100	100%

When the respondents were asked about their qualification, 38% were found to be matriculate, 24% were higher secondary, 30% were graduates, and 08% were postgraduate. There were no respondents who were MPhil or Phd.

As the study was conducted at Thana level, 28% of the respondents were Constables, 26% Head Constables, 18% Assistant Sub Inspectors (ASI), 12% Sub Inspectors, and 16% Inspectors.

Table 3

S. N.	Questions	Yes/%		No/%		Sometimes/ %		Total/%	
1.	Do you have enough time for your family with the job?	14	14%	26	26%	60	60%	100	100 %
2.	Do you think your job is stressful?	86	86%	14	14%	-	-	100	100 %
3.	Do you get enough respect from the public?	32	32%	20	20%	48	48%	100	100 %
4.	Do you face any pressure from your higher officials for doing inappropriate work?	76	76%	24	24%	-	-	100	100 %
5.	Are you satisfied with your working hours?	22	22%	78	78%	-	-	100	100 %
5.1	If not, then do you think it increases your stress?	58	74.35%	20	25.65%	-	-	78	100 %
6.	Do you get enough time for recreational activities?	18	18%	30	30%	52	52%	100	100 %
7.	Is leave sanctioned during urgent situations?	32	32%	16	16%	52	52%	100	100 %
8.	Do you face political pressure in your work?	22	22%	06	06%	72	72%	100	100 %
9.	Do you think your stress level affects your work?	42	42%	16	16%	42	42%	100	100 %
10.	Does your job stress affects you social life?	38	38%	12	12%	50	50%	100	100 %
11.	Are you satisfied with the behavior of your higher officials?	58	58%	42	42%	-	-	100	100 %

Key Insights: These findings reveal several key insights about respondents' work experiences:

- **Work-Life Balance:** 60% sometimes have time for family, 26% don't, and only 14% feel they have enough time for family.
- **Job-Related Stress:** A significant 86% experience job-related stress, while only 14% do not.
- **Public Respect:** 32% receive enough public respect, 20% do not, and 48% receive it occasionally.
- **Workplace Pressures:** A concerning 76% face pressure from higher officials for inappropriate work, while 24% do not.

- **Working Hours:** Only 22% are satisfied with their working hours, and 74.35% believe longer hours lead to more stress.
- **Leisure Time**: 18% have enough time for recreation, 30% do not, and 52% have occasional opportunities.
- **Urgent Leave:** 30% get leave during urgent situations, 16% do not, and 26% sometimes get leave.
- **Political Pressure**: 22% experience political pressure at work, 6% never do, and 72% encounter it occasionally.
- **Stress Impact:** 42% report stress affecting work, 38% affecting their social life.
- **Satisfaction with Higher Officials**: 58% express satisfaction, while 42% are not satisfied.

These findings highlight various challenges and dynamics within respondents' workplaces and underscore the importance of addressing work-related stress and balancing professional and personal life.

Table 4

Have you ever suffered from stress or depression due to your work?

Response	No. of Respondents	Percentage
Yes	26	26%
No	18	18%
Frequently	56	56%
Total	100	100%

The data indicates that a substantial portion of respondents (56%) have experienced work-related stress or depression frequently ("Many times"). A significant minority (26%) reported experiencing it at least once ("Yes"). In contrast, 18% stated they haven't faced work-related stress or depression ("No"). These results underscore the need to address workplace mental health issues and implement strategies to reduce stress and depression among employees.

Suggestions

- The state governments should appoint the required number of psychologists for counselling policemen.
- There should be a provision for periodic psychiatric evaluation of the police personnel, which will show their mental health.
- Police should be provided the basic facilities. There should a proper funding focusing on fuel, police vehicles, which should be maintained properly.

- Taking into consideration the Digital India policy, the Police should be provided with high-speed Internet, as low-speed Internet often increases the frustration among the policemen.
- The state should work on the principle of time management. Although the Punjab Government declared that the personnel would be deployed on an eight-hour shift and would be given a weekly off on a regular basis. This should be implemented properly as soon as possible.
- Punjab Government, in order to decrease the workload, should recruit more staff as per the requirements of time.
- The state government should work on the demand of separating politics and the police, as this political interference in police work not only increases the stress of police personnel but also affects society as a whole, as very often the poor and needy are denied justice.
- There should be a proper mechanism for giving rewards to the well-performers, which would act as a motivating force among them.
- The state should establish a grievance redressal system where the police personnel can lodge a complaint without any hesitation or fear of the higher officials.
- There is an urgent need for a stringent law to protect police personnel from attacks while their jobs. Many times, the culprits, after attacking cops, roam freely by getting bail easily.
- India should proactively manage police stress through comprehensive support systems, involving collaboration among law enforcement, mental health professionals, and support networks.
- In addition to this, practices such as yoga, meditation, and psychological counseling can contribute significantly to maintaining the mental well-being of police personnel.

Conclusion

This study aimed to analyze the stress levels among police personnel and identify the underlying reasons behind the increasing stress. In addition, the study aimed to suggest measures for improving the working conditions of police officers. The police department is one of the most crucial arms of the government, and as crime rates continue to rise, public expectations from law enforcement have similarly increased. While much attention is given to these expectations, it is equally important to consider the growing demands and pressures placed on police personnel. Various studies have consistently highlighted the challenging and often miserable conditions faced by police officers, from long working hours to exposure to traumatic events. Unfortunately, the recommendations put forward in these studies are

frequently ignored or inadequately addressed by state governments, which exacerbates the situation.

There is no doubt that police forces across the country are in dire need of reforms to address these issues. Effective law enforcement can only be achieved if the well-being of police personnel is prioritized, ensuring they have the support, resources, and work-life balance necessary to perform their duties effectively. A comprehensive reform in the police sector is essential, not just for the benefit of the officers but for the betterment of society as a whole, enabling law enforcement agencies to serve the public more efficiently and responsibly.

References

Beshears, M. (2017, March 30). *How police can reduce and manage stress*. Police1. https://www.police1.com/stress/articles/how-police-can-reduce-and-manage-stress-AThewNlseDwMYCcB/

Butler, L. (2018). Social Support Theory. *Sociology Department, Faculty Publications.* Retrieved from https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1783&context=sociologyfacpub

Common Cause & Lokniti – Centre for the Study Developing Societies (CSDS). (2021). *Status of Policing in India Report - Volume 2*. https://www.csds.in/app/webroot/uploads/custom_files/1629182720_SPIR%202020-2021%20Vol.%20II.pdf

Frank, J., Lambert, E. G., Qureshi, H., & Smith, B. W. (2018). Examining police officer work stress using the Job Demands–Resources Model. *Journal of Contemporary Criminal Justice.* https://www.researchgate.net/publication/319405082_Examining_Police_Officer_Work_Stress_Using_the_Job_Demands-Resources_Model

Gaur, J. R., Kathane, P., & Singh, A. (2021, May). Analysis of causes of suicides among police personnel of Haryana & Himachal Pradesh, India. *Journal of Emerging Technologies and Innovative Research*, 8(5), a679–a684.

Health and Safety Executive for Northern Ireland (HSENI). (n.d.). *What is work-related stress?* https://www.hseni.gov.uk/what-work-related-stress

Iyer, M. (2023, August 24). *Suicide rate among Indian men 2.5 times higher than in women.* The Times of India. https://timesofindia.indiatimes.com/city/mumbai/suicide-rate-among-indian-men-2-5-times-higher-than-in-women/articleshow/103000480.cms

Kawoosa, V. M. (2020, June 22). *Stress, apathetic attitude taking toll on policing: Study*. Hindustan Times. https://www.hindustantimes.com/india-news/stress-apathetic-attitude-taking-toll-on-policing-study/story-YxU95pBYRBuopCdR8Ck1VJ.html

Kumar, T. K. Vinod. (2013). *Public Events and Police Response: Understanding Public Order*

Policing in Democratic India. Oxford University Press.

Mahapatra, R. (2021, September 15). *How COVID-19 changed the crime profile of India in 2020*. DownToEarth. https://www.downtoearth.org.in/news/governance/how-covid-19-changed-the-crime-profile-of-india-in-2020-79040

Mathur, P. (2013). *Stress in Police in India*. Gyan Publishing House. New Delhi.

McLaren, N. (1998). A critical review of the biopsychosocial model. *Australian & New Zealand Journal of Psychiatry*, 32(1), 86–92.

Mehdizadeh, S., & Kamkar, K. (2020). COVID-19 and the impact on police services. *Journal of Community Safety and Well-Being,* 5(2), 42–44. https://doi.org/10.35502/jcswb.139

Mehdizadeh, S., & Kamkar, K. (2020, July 2). COVID-19 and the impact on police services. *Journal of Community Safety and Well-Being*, 5(2). https://www.journalcswb.ca/index.php/cswb/article/view/139/272

National Institute of Mental Health and Neurosciences (NIMHANS). (2016). *National Mental Health Survey, 2015–16 - Mental Health Systems*. https://main.mohfw.gov.in/sites/default/files/National%20Mental%20Health%20Survey%2C%202015-16%20-%20Mental%20Health%20Systems_0.pdf

Padyab, M., Hansson, J., Sundqvist, J., Inzunza, M., & Ghazinour, M. (2023). A comparative study of stress experienced by Swedish and Norwegian police officers. *Frontiers in Health Services, 3*, 1072246. https://doi.org/10.3389/frhs.2023.1072246

Paulson, R. (2008). *Levels of Stress and Coping Strategies employed by Police Service Officers in Cape Town, South Africa*. University of the Western Cape. https://core.ac.uk/download/pdf/58913432.pdf

Queirós, C., Passos, F., Bártolo, A., Marques, A. J., da Silva, C. F., & Pereira, A. (2020). Burnout and stress measurement in police officers: Literature review and a study with the Operational Police Stress Questionnaire. *Frontiers in Psychology, 11*, 587. https://doi.org/10.3389/fpsyg.2020.00587

Shaik, K. (2022). Occupational stress among police personnel - A literature review. *Dogs Rangsang Research Journal*, 12(2). https://www.researchgate.net/publication/362218730_OCCUPATIONAL_STRESS_AMONG_POLICE_PERSONNEL_-A_LITERATURE_REVIEW

Singh, P. (2018, January 8). *Give police its due. The Indian Express.* https://indianexpress.com/article/opinion/columns/directors-general-of-police-conference-pm-narendra-modi-give-police-its-due-5015436/

Singh, V. (2020, September 18). *Role of policing in combating India's growing suicide count*. TIMESNOWNEWS.COM. https://www.timesnownews.com/columns/article/role-of-

policing-in-combating-indias-growing-suicide-count/654642

Stephenson, M. D., Schram, B., Canetti, E. F. D., & Orr, R. (2022). Effects of acute stress on psychophysiology in armed tactical occupations: A narrative review. *International Journal of Environmental Research and Public Health*, 19(3), 1802. https://doi.org/10.3390/ijerph19031802

Vasudeva, R. (2017, November 25). Punjab: Police top brass start process to get more cops on duty in stations. *Hindustan Times*. https://www.hindustantimes.com/punjab/punjab-police-top-brass-start-process-to-get-more-cops-in-duty-in-stations/story-XwRoaO6aigflSwn0qFAvKP.html

World Health Organization. (2023, February 21). *Stress*. https://www.who.int/news-room/questions-and-answers/item/stress

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Positive Emotions and Positive Thinking: A Bridge to Positive Psychology

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Abstract

Psychology—the scientific study of the mind and behavior—is intrinsically tied to how individuals think and feel. Emotions and thoughts form the very foundation of psychological processes, just as air, water, and food are vital for sustaining physical health. In the same way, emotional experiences are essential for cultivating a balanced and healthy personality. The experience of positive emotions—such as joy, love, and contentment—leads to a sense of well-being and happiness. These feelings naturally foster positive thinking, and the relationship is reciprocal: optimistic thoughts also give rise to uplifting emotions. Over time, this dynamic interplay significantly influences an individual's mental framework, or psyche. In essence, the dominant emotional experiences a person undergoes shape the nature of their psychological outlook. At the heart of positive psychology lies a focus on human strengths, fulfillment, well-being, and the potential for flourishing. It seeks to understand and enhance the factors that allow individuals to thrive. Positive psychology is deeply rooted in the cultivation of affirmative emotional states, as these emotions lay the groundwork for mental resilience, inner satisfaction, and personal growth. Emotions, particularly positive ones, are powerful drivers of thought. Together, emotions and thoughts influence not only behavior but the overall functioning of the mind. When individuals experience positive emotions, they enter a state of psychological wellness that transcends mere mood. This mental state has tangible benefits—it enhances cognitive flexibility, strengthens the immune system, and improves cardiovascular and other bodily functions. Consequently, positive emotions contribute not just to emotional and mental health but to physical well-being and life success. This discussion aims to illuminate the strong interconnection between positive emotions, positive thinking, and the broader framework of positive psychology. It highlights how our emotional and cognitive experiences serve as a bridge to psychological flourishing, emphasizing the transformative power of positivity in shaping both mind and life.

Keywords: *Positive Psychology, Emotions, Positive Thinking.*

Introduction

In contemporary society, amidst rapid technological progress and innovation, the study of human psychology assumes paramount importance. Our mental well-being serves as the foundation for a happy and fulfilling life, and positive psychology emerges as a vital discipline in this pursuit. Unlike traditional psychology, which often focuses on pathologies and weaknesses, positive psychology directs attention to strengths, life satisfaction, well-being, and the flourishing of individuals. At its core, positive psychology embraces a scientific approach to understanding human emotions and behavior, emphasizing positivity over negativity. It

strives to uplift and enrich lives by exploring what is fulfilling and empowering rather than depleting and consuming. By accentuating themes such as gratitude, joy, resilience, compassion, and love, positive psychology fosters a holistic view of well-being.

Central to this field is the PERMA model, articulated by Martin Seligman, which delineates the essential components of happiness and well-being: Positive emotions, Engagement, Relationships, Meaning, and Accomplishment. This framework underscores that true well-being encompasses not only the presence of positive emotions but also meaningful engagement, satisfying relationships, a sense of purpose, and personal accomplishments. Moreover, positive psychology acknowledges the significance of all emotions in human experience, valuing both positive and negative feelings as integral to our growth and understanding. It does not seek to disregard or diminish the validity of negative emotions but rather aims to balance our perspective, ensuring that we appreciate the richness and complexity of human emotions.

In essence, positive psychology represents a transformative approach to enhancing individual happiness and overall life satisfaction. By promoting a mindset that embraces strengths and positivity, it empowers individuals to cultivate lives that are not only happier but also more meaningful and fulfilling. This paradigm shift underscores the profound impact that our psychological well-being has on every aspect of our lives in today's technologically advanced world.

Emotions

Emotions are complex psychological phenomena that involve physiological, behavioural, and cognitive components. Psychologically, emotions are complex psychological and physiological responses to internal and external stimuli that influence our subjective experiences, thoughts, behaviors, and physiological arousal.

They are often triggered by events or situations, and they can have a significant impact on our thoughts, feelings, and behaviours. There are many different theories about the nature of emotions. One of the most influential theories is the ***James-Lange theory (1885-85),*** which states that emotions are caused by physiological changes in the body. For example, when we feel fear, our heart rate and breathing increase, and our muscles tense up. These physiological changes then lead to the subjective experience of fear. Emotions are what make us stay connected with our humane side. Emotions are the state of mind and/or the reactions resulting from one or other stimuli. Emotions are subjective and differ from person to person; every person experiences them differently and uniquely. From the reason for triggering a particular

emotion to the extent of the emotion being felt and the reaction to the emotion displayed, it is all highly individualistic. Emotions are complex. They are a complex response to stimuli with a tendency to lean towards the positive or the negative. For instance, rage is conceived to be the more intense type of anger, whereas annoyance is conceived to be a milder type of anger; in a similar way, when happiness and trust interplay, it leads to the creation of an emotion called love. Emotions cannot be universally classified in terms of being merely negative and positive because their classification is individualistic; it depends upon who is experiencing them and under what circumstances. For example, a person can get overwhelmed by the emotion of anxiety while appearing for a simple doctor visit and body test. In contrast, another person might be calm and hopeful for the same. Variations based on an individual's experiences, the emotions have been divided into three major subtypes: negative, positive, and neutral. However, it is important to understand that the types of emotions are different for every individual; meaning that anger might not be perceived as simply a negative emotion by certain people, but rather is conceived as the driving force for motivation, hence making it a healthy emotion. However, it is also essential to understand that all emotions are important to experience a healthy functioning life.

Gale Researcher Guide, Klineburger (2018) suggested that an individual's emotions are driven by a group of structures inside the brain called the Limbic System. Our emotional state is stimulated by certain specific chemicals called hormones that are released by the Limbic System.

The emotions we experience are heavily influenced by the types of chemicals or hormones our bodies release. For example, oxytocin—often referred to as the "love hormone"—plays a vital role in generating feelings of attachment, affection, and romantic love. Emotions are not only indicators of our mental and emotional state but also exert significant influence on various bodily functions. Take fear as an example. When a person feels afraid, the sympathetic nervous system is activated as part of the body’s fight-or-flight response. This leads to physiological changes such as dilated pupils, a rapid heartbeat, palpitations, and sudden sweating. These responses prepare the body to react quickly to perceived threats. However, the connection between the body and emotions is bidirectional—just as emotions can alter the body, physical states can also shape how we feel.

For instance, if a person is experiencing a racing heart and profuse sweating—common symptoms of anxiety or panic—they can consciously regulate their breathing and focus on calming thoughts. This intentional act can stimulate the parasympathetic nervous system,

which counteracts the stress response by slowing the heart rate and promoting relaxation. Cross-cultural research suggests that emotions manifest uniquely in the body and that each emotion is associated with specific physiological patterns. This means that our bodies may serve as expressive maps for our emotional states. Studies have shown that hormones like oxytocin not only foster emotional connections but also enhance trust, empathy, and ethical behavior. Physical gestures such as hugging or affectionate touch can significantly elevate emotional well-being, both for the person giving and the one receiving ***(Barraza & Zak, 2009)***. Psychologists have even proposed that each emotion leaves a distinct "blueprint" or imprint on the body. These physical-emotional associations reveal that the relationship between emotions and bodily sensations is highly intricate and deeply interconnected, making it a rich and evolving area of exploration within psychological science.

Emotions are not just abstract mental states; they are intimately connected to bodily responses and sensations. When we experience different emotions, our bodies react in distinct ways, giving rise to a range of physiological sensations. The connection between emotions and body sensations is bidirectional. Just as emotions can give rise to bodily responses, the reverse is also true. By deliberately changing our bodily state, such as adopting a relaxed posture, engaging in deep breathing exercises, or engaging in physical activities, we can influence our emotional state. It's important to note that while there are general patterns of bodily responses associated with different emotions, individuals may experience variations in how emotions manifest in their bodies. Additionally, cultural and individual differences can influence the way emotions and body sensations are perceived and expressed. For instance, happiness or joy is often accompanied by a set of bodily sensations. It can manifest as lightness or warmth in the chest, a feeling of relaxation and ease, and even a smile or laughter. The experience of love may be associated with a fluttering sensation in the heart, a warmth spreading through the body, or a sense of connection and openness. Whereas, when confronted with a threat, the body undergoes various changes in response to the emotion of fear. The heart rate increases, breathing becomes rapid and shallow, muscles tense up, and there may be a heightened sense of alertness or readiness to flee. These bodily sensations are part of the fight-or-flight response, an evolutionary mechanism that prepares the body to respond to potential danger.

Types of Emotions

- **The Positive Emotions:** Positive emotions refer to a range of pleasant and uplifting emotional experiences that contribute to overall well-being and life satisfaction. These emotions are generally associated with positive thoughts, behaviours, and physiological

responses. Positive emotions have numerous benefits for individuals. They contribute to improved mental health by reducing stress, anxiety, and depression. They enhance resilience, helping individuals cope with adversity and bounce back from challenging situations. Positive emotions also foster better relationships and social connections, as they promote empathy, kindness, and positive interactions with others. Furthermore, positive emotions have a profound impact on physical health. They can boost the immune system, lower blood pressure, and reduce the risk of cardiovascular diseases. Research suggests that positive emotions can promote longevity and overall physical well-being. Positive emotions also play a crucial role in cognitive functioning. They enhance creativity, problem-solving abilities, and cognitive flexibility. When we experience positive emotions, our thinking becomes more flexible, open, and optimistic. This positive mindset helps us approach tasks with greater motivation and perseverance, leading to improved performance and achievement. Some of the most common examples of positive emotions are Joy, Pride, Motivation, Hope, Love, Gratitude, Resilience, Humility, Amusement, Inspiration, etc.

- **The Negative emotions:** Negative emotions refer to a range of unpleasant and distressing emotional experiences that can have a detrimental impact on an individual's well-being. These emotions are generally associated with negative thoughts, behaviours, and physiological responses. Amongst multiple reasons for the negative emotions, some are the unmet needs of an individual, insufficient coping abilities, etc. Commonly felt negative emotions are fear, anger, sadness, annoyance, loneliness, disgust, rage, melancholy, shame, anxiety, etc. Negative emotions can lead to a detrimental effect on physical health in addition to psychological distress, impaired cognitive functioning, strained relationships, and reduced well-being.
- **The Neutral emotions:** Neutral emotions are called the “adukkhamasukha”, translating into something that is neither painful nor pleasant; neither positive nor negative in nature. The term "adukkhamasukha" is derived from the Pali language, which is used in Buddhist teachings. It refers to neutral feelings or emotions. In Pali, "adukkha" means neither painful nor unpleasant, while "asukha" means neither joyful nor pleasant. Therefore, "adukkhamasukha" signifies a state of neutrality or being neither happy nor unhappy, neither pleasant nor unpleasant. It represents a middle ground where there is neither a strong positive nor negative emotional experience. These are the emotions that have a neutral reaction and are often characterized by a lack of intensity or strong affective valence. Feeling indifferent (neither happy nor sad), neutrality, apathy, and equanimity are

some examples of having a neutral state of mind. In Buddhism, adukkhamasukha is considered to be the ideal state of mind, as it is free from suffering. It refers to the middle part of the spectrum of felt experience. The term adukkhamasukha refers to an area between pain and pleasure, an area in the affective neutral tonality which appears to be relatively bland.

There are many ways to cultivate adukkhamasukha. One way is to practice mindfulness meditation. Mindfulness meditation involves paying attention to the present moment without judgment. When we practice mindfulness meditation, we learn to let go of our attachments to both positive and negative emotions. This allows us to experience a state of neutrality and peace. Another way to cultivate adukkhamasukha is to practice compassion. Compassion is the ability to understand and share the suffering of others. When we practice compassion, we open our hearts to the world and let go of our own pain. This allows us to experience a sense of connection and belonging. Adukkhamasukha is not a state of mind that we can always achieve. However, by practising mindfulness meditation and compassion, we can learn to cultivate this state of peace and equanimity more and more in our lives.

Blending of Emotions: Though categorized, emotions still hold the tendency to be combined to form very different emotions, similar to how we combine and mix colours in a colour palette and form completely new and different shades of the colours. The basic emotions of happiness, sadness, fear, disgust, anger, and surprise are known to act as the building blocks. When these basic emotions are experienced together, it is known as emotional blending, they form complex, different, and sometimes even mixed emotions. For example, when anger and disgust come together, they may form rage while when happiness and trust come together, they can form the emotion of love, a person may feel happy and sad at the same time (e.g. graduating from college, leaving home for joining a job, joining a different organization etc), feeling sad and relieved at the same time (e.g. ending a difficult relationship or a job). Emotional blending can be a complex and nuanced experience. It can be difficult to predict how two or more emotions will blend together. However, emotional blending can be a valuable tool for understanding and expressing our emotions. It can also help us to cope with difficult emotions.

Thinking

Thinking, the conscious deed of our brains, is an approach to understanding and making sense of the world around us. As an individual develops, the ability to think rationally and logically

develops naturally. Especially when we interact with society and the people around us, we learn to polish and refine our thoughts, along with providing shape to them. Thinking aids in acknowledging the world and its existence, and attaching a reason to everything that happens around us, helping us eventually to comprehend the difference between good and bad.

Thinking is the exercise of human reason as a means of strengthening the relationship between stimulus and response. Hence, it can be said that thinking is an advanced intellectual process through which we operate and analyze the acquired or existing information. Such operations and analysis occur via abstracting, reasoning, imagining, problem solving, judging, and decision making.

Positive Thinking: The process of thinking is very individualistic in nature. Thoughts influence the psyche of an individual and, in turn, their behaviour. Positive thoughts intend to nourish a healthier psyche and hence aid in a progressive lifestyle.

Fredrickson (1998) in 'The broaden and build Theory of Positive Emotions' provides insight into positive thinking and its impact on an individual. Positive thinking, also referred to as positive cognition, is not merely being happy all the time but upholding an optimistic attitude. The ability to focus on the good in a particular situation without shutting the eyes to reality and the problems of one's life is the ability to have a positive attitude. Embracing positive thinking is not merely limited to always displaying an upbeat attitude, a happy-tension-free face, and a constant stress-free attitude; on the contrary, positive thoughts instill real values and skills in one's life that eventually help one to have a happier and satisfying life. To leave an imprint, the thoughts need not be bigger; even smaller, simpler, positive thoughts provide one with enough power to build and develop skills that aid in developing resources for a better life experience. From an increase in creativity and problem-solving capacity to better mood and coping skills resulting in less or no depression, the benefits are endless. The impact that positive thoughts and positive emotions have on the human mind and brain is truly remarkable. The kind and quality of life a person leads totally depends on his/her thinking.

Negative Thinking: Negative thoughts are linked with negative feelings such as sadness, anxiety, anger, and hopelessness. Every so often, we are not conscious of our negative thoughts as they arise automatically, appear rational, and realistic. The worse we feel, the more expected we are to think negatively and consider these thoughts to be true, even though they are irrational and unrealistic. Negative thoughts are experienced and encountered by all of us at some point in time, but are more dominant and extreme whenever we feel stressed, anxious, irritable, or depressed.

There are various types of common negative thought patterns known as *Thought Traps* that arise whenever we think negatively. The type of thought traps may differ depending on our mood and the particular state that we are in at any given point in time, Some examples are given below.

Mind reading: Sometimes, when we are facing some hard times in our lives, we are likely to be certain of and believe that we know what another is thinking. And instead of communicating our feelings to others and vice versa, we form a negative perception and keep facing the consequences of our entire life, and blaming it on destiny.

Labelling*:* (Calling yourself or others names in an overly negative manner). This is when someone believes that nothing good can happen to his/ her life and starts calling him/her self as sinister, ominous, or malevolent to others.

Fortune telling*:* Based on negative perception and thought, he/she creates negative prophecies about the future.

Catastrophising*:* This is like predicting the utter worst case scenario, 'making a mountain out of a molehill'.

Overgeneralising*:* Besides hard work, if something didn't work out once, presuming it will never be done, and keep cursing your destiny.

All-or-Nothing Thinking*:* Considering things as being "either-or".

Ignoring the Positives*:* This is focusing on the negative in a situation in lieu of considering the whole picture. The whole focus is made upon the negative aspect, and the positive aspect is always being ignored.

Emotional Reasoning: Using your emotions or mood as a source of inferring what's happening around you.

Personalising: Taking things personally, assuming responsibility like if something negative has happened he/she is him/ herself is responsible and useless.

Shoulds and Musts: Presumptuous that things have to be in a certain way, that we have to put up with certain rules, and if it doesn't happen, they declare themselves as a failure.

Positive Psychology, Positive Emotions and Positive Thinking

As per ***Barbara Fredrickson's (2001)*** point of view, positive emotions are the emotions that are perceived to have a positive and elevating imprint on the mind, attuning to positivity. Positive emotions have been observed to help improve one's life and attitude, as they are the emotions that are considered desirable to be experienced. Positive emotions are good and happy feelings and directly indicate individual flourishing. These have a higher intensity towards the

pleasurable end of the hedonic spectrum. These emotions aid in encouraging and motivating individuals to engage in their hobbies, ideas with other people, and hence resulting in individual growth. Positive emotions have a wide spectrum of benefits, but there are some main benefits in our daily lives necessary to have healthy, happy, and successful lives. These are:

- Positive emotions have mainly been seen to have increased and enhanced well-being and reduced stress. When an individual experiences positive emotion, stress-reducing hormones like serotonin are released, reducing the individual's stress levels. This helps the individual have a better life filled with laughs and fewer worries.
- Positive emotions help cultivate a stronger resilience. Resilience provides psychological strength and skills to the individual to cope with a stressful situation without getting overwhelmed. As individuals, we all experience multiple setbacks and a lot of hardships in our lives; resilience rescues people by providing them with the required strength to function appropriately in such adversity. These hardships are seen to have significant long-lasting psychological consequences. Resilient individuals use healthier coping mechanisms (Dolphin, Steinhardt, & Cance, 2015) and skills to handle and overcome difficult situations by fostering positivity. Practicing mindfulness, gratitude, and keeping oneself motivated are some ways to ensure the cultivation and proliferation of resilience in a person’s life.
- Positive emotions directly impact physical and mental health, self-efficacy, performance, social relationships, work life, etc. An individual with a positive attitude towards life is seen to have a healthier psychological state of mind and, as a result, has a satisfactory life with decreased anxiety and depression.
- When a person is driven by positive emotions, s/he usually ends up making healthier choices. From deciding on the lifestyle to the work life, all decisions the individual makes are with a healthier and positive outlook and are bound to have a positive impact.

The benefits of positive emotions are not limited to the above points. A variety of emotions come under the umbrella of positive emotions. Emotions are responsible for human flourishing, prosperity, and a life worth living. Some of the positive emotions are:

i. Gratitude
ii. Happiness
iii. Hope
iv. Forgiveness
v. Humility
vi. Love
vii. Resilience
viii. Pride
ix. Inspiration

x. Amusement

All these are desirable emotions, which make one feel happier and more fulfilled, and hence, are considered more worthy. These facilitate cognitive flexibility and scope by calming down the mind. Their direct application has an array of benefits. Each of the positive emotions induces a different type of experience and hence has different impacts on the lives of the individual. Certain essential emotions that tend to have extremely positive impacts are:

a) **Happiness**: A state of powerful positivity. According to ***Ryan and Deci (2001),*** happiness is a state that is signaled by emotions of joy, contentment, pride, satisfaction, and hope. Happiness has seemed to be experienced when the activity undertaken is pleasurable. Prosocial behaviour is directly linked to happiness; the better the prosocial behaviour displayed, the more happiness will be experienced. Humans are wired to experience this emotion since the human brain has been designed to experience happiness. Hormones like oxytocin, serotonin, dopamine and endorphins are regulated by our brains. The release of these hormones sets in motion the feeling of being satisfied and enchanted, ultimately resulting in a state of happiness. Happier individuals tend to have healthier social relationships.

b) **Gratitude**: "the appreciation of what is valuable and meaningful to oneself and represents a general state of thankfulness and/or appreciation" (Sansone & Sansone, 2010). Gratitude is one of an individual's most powerful positive emotions, resulting in a positive state of mind. It is known by multiple names like appreciation, gratefulness, and thankfulness; it is experienced once the individual has been a recipient of an act of benevolence. Specifically derived towards a particular person/ thing/ God/ society/ social institution, it is considered to be a social emotion. Though gratitude is individualistic, it can also be at a social level. Being thankful about and for one's life can be expressed by gratitude and helps one to stay motivated and perform even better. To apologize, cure and strengthen social relationships, and form new relationships – all are accomplished by simple acts of gratitude. Gratitude enhances the well-being of an individual, increases optimism and happiness, and leads to a better and healthier lifestyle; in all, it ensures overall positivity.

c) **Forgiveness:** DiBlasio (1998) emphasized willful decision–based forgiving. One of the most complex emotions is the emotion of forgiveness. Viewed as an emotion of character trait and virtue worth embracing for individuals seeking a greater sense of their well-being. It is the power to stop worrying and seeking revenge and is the pathway to finding peace. It is voluntarily letting go of bitterness, revenge, and anger. It ensures an individual's

upliftment and a peaceful future, thus a prosocial process. Forgiveness is a proper process wherein the first step is to let go of the anger, followed by the generation of internal forgiveness, and finally, internal peace. Constant effort and energy can help move an individual on the path of forgiveness. It has been discussed in detail in the previous chapter.

d) **Resilience**: According to the APA Help Center, the process of good adaptation in the face of adversity, trauma, tragedy, threats, or significant sources of stress accounts for resilience. Resilience is the 'strength' emotion, implying it enables people to recover from a hindrance/problem. It instills eminent skills, experiences, and competencies in the individual and aids in growth and development. Undergoing hardships and experiencing negative emotions and distressing situations, and still being able to uphold optimism, proper functioning, and motivation, requires power, and this power stems from resilience. Higher resilience paves the way to improved cognitive activity and more positivity. Ensuring better coping with stress and increased strength and resilience certifies less depression and better well-being, making life a lot easier.

While positive psychology and positive thinking are distinct concepts, they are deeply interconnected and mutually reinforcing. Positive psychology is an empirical field—the scientific study of human flourishing, well-being, and the full spectrum of emotional experience. It seeks to understand what enables individuals and communities to thrive by focusing not just on the absence of mental illness, but on the presence of strengths, resilience, and fulfillment. One of its primary aims is to nurture a constructive and growth-oriented mindset.

In contrast, positive thinking refers to the individual's tendency to maintain optimistic expectations about the future, as defined by Scheier and Carver (1993). It involves consciously fostering hopeful, constructive thoughts even in the face of challenges. Positive thinking serves as a mental tool to navigate adversity with confidence and resilience, encouraging individuals to see opportunities rather than obstacles.

Despite their differences, positive psychology and positive thinking are interdependent. Positive thinking contributes to the development of a positive psychological state by reshaping one's perspective and reinforcing a hopeful outlook. It acts as a catalyst for the flourishing principles promoted by positive psychology. Together, they influence a person's mental framework, affective responses, and behavioral patterns. This dynamic relationship guides how an individual processes emotions, copes with stress, and responds to everyday situations. In essence, positive thinking fuels the engine of positive psychology, and in return, positive

psychology provides the scientific grounding and practices that sustain and deepen positive thinking.

Conclusion

Emotions that are pleasing and uplifting are classified as positive, while those that evoke anger, fear, or resentment are seen as negative. These emotional states arise directly from our thoughts and influence the brain in fundamentally different ways, like two diverging paths. Consider a scenario where someone walks alone down a dark, deserted street and realizes they're being followed. Instinctively, the brain interprets this as a threat, triggering fear, a powerful negative emotion that overrides all others. The person's focus narrows entirely to the perceived danger, compelling them to run. In such heightened emotional states, the brain dismisses alternative responses, like calling for help or confronting the follower. This mental tunnel vision is part of our evolutionary survival instinct, where negative emotions constrict our thinking to ensure immediate action. In contrast, positive emotions such as joy, love, or appreciation broaden our mental horizons. When a child is praised for a simple act, like completing homework or tidying up, the recognition sparks pride, which cascades into feelings of happiness, satisfaction, and affection. This ripple effect of positive emotions fosters an expansive mindset, encouraging creativity, resilience, and deeper emotional well-being.The interplay of positive thoughts and emotions forms the foundation of positive psychology. Like any valuable skill, cultivating a positive mindset requires deliberate practice. Engaging in activities that evoke joy, gratitude, and contentment—be it music, art, cooking, or even tidying up—helps nurture these uplifting emotions. Common techniques to reinforce positivity include smiling more, expressing gratitude, meditating, journaling, and enjoying leisure time. With patience and consistency, positivity becomes a habit. Allowing ourselves time to relax, smile, and appreciate the small joys of life leads to emotional clarity, inner peace, and a revitalized sense of energy.

References

Anālayo, B. (2017). What about neutral feelings? Barre Center for Buddhist Studies. Retrieved from https://www.buddhistinquiry.org/article/what-about-neutral-feelings.

APA Help Center. (n.d.). Resilience guide for parents & teachers. American Psychological Association Help Center. Retrieved from https://www.apa.org/helpcenter/resilience.aspx.

Barraza, J. A., & Zak, P. J. (2009). Empathy towards strangers triggers oxytocin release and subsequent generosity. Annals of the New York Academy of Sciences, 1167, 182-189.

Deci, E. L., & Ryan, R. M. (2008). Hedonia, eudaimonia, and well-

being: An introduction. Journal of happiness studies, 9(1), 1-11.

DiBlasio, F. A. (1998). The use of a decision-based forgiveness intervention within intergenerational family therapy. Journal of family Therapy, 20(1), 77-96.

Dolphin, K. E., Steinhardt, M. A., & Cance, J. D. (2015). The role of positive emotions in reducing depressive symptoms among Army wives. Military Psychology, 27, 22-35

Fredrickson, B. L. (1998). Cultivated emotions: Parental socialization of positive emotions and self-conscious emotions. Psychological Inquiry, 9(4), 279-281.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: the broaden-and-build theory of positive emotions. American psychologist, 56(3), 218.

Fredrickson, B. L. (2004). The broaden–and–build theory of positive emotions. Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences, 359(1449), 1367-1377.

Fredrickson, B. L. (2004). The broaden–and–build theory of positive emotions. Philosophical transactions of the royal society of London. Series B: Biological Sciences, 359(1449), 1367-1377.

Karremans, J. C., Van Lange, P. A., & Holland, R. W. (2005). Forgiveness and its associations with prosocial thinking, feeling, and doing beyond the relationship with the offender. Personality and Social Psychology Bulletin, 31(10), 1315-1326.

Klineburger, P. C. (2018). Gale Researcher Guide for: Physical and Chemical Bases of Emotion. Gale, Cengage Learning.

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. Annual review of psychology, 52(1), 141-166.

Sansone, R. A., & Sansone, L. A. (2010). Gratitude and well being: The benefits of appreciation. Psychiatry (Edgmont), 7(11), 18.

Scheier, M. F., & Carver, C. S. (1993). On the power of positive thinking: The benefits of being optimistic. *Current directions in psychological science*, 2(1), 26-30.

Seligman, M. (2018). PERMA and the building blocks of well-being. *The Journal of Positive Psychology*, 13(4), 333-335.

Seligman, M. E. (2002). Positive psychology, positive prevention, and positive therapy. *Handbook of positive psychology*, 2(2002), 3-12.

Seligman, M. E. (2012). Flourish: A visionary new understanding of happiness and well-being. *Simon and Schuster.*

https://www.moodcafe.co.uk/media/19118/Negative%20Thinking.pdf
https://www.davuniversity.org/images/files/studymaterial/EDU224%20EXP%20PSYCHO%20II.pdf

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Navigating the Artificial Intelligence Revolution in Employment – A Systematic Literature Review

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Abstract

A worldwide fear of AI impacting the job has grappled one and all alike. This has attracted the attention of industry as well as academia. Although it is accepted that the effects of artificial intelligence on employment are varied, but not much is known about the precise positive and negative aspects of this revolution. To have a better understanding of the issues surrounding a systematic literature review has been undertaken in this research study. The research published between the year 2005 to 2024 are covered in the literature review, which was gathered from Google Scholar. The main findings of the paper evaluate earlier studies and contributions regarding artificial intelligence's (AI) effects on employment while highlighting new developments in the field. It highlights the main challenges to AI's expansion into the market and looks into possible advancements in the field going forward.

Keywords: *Artificial Intelligence, AI, employment, barriers, and Impact on employment.*

Introduction

The impact of artificial intelligence (AI) on employment has been a subject of growing academic inquiry, with researchers exploring its implications across industries, job structures, and economic trends. This literature review synthesizes existing research to understand how AI is reshaping the employment landscape, leading to job polarization, automation, augmentation of human labor, and shifts in workforce skills. Petropoulos (2018) highlights that AI driven technological advancements have led to job polarization, characterized by an increasing demand for both high skilled and low skilled jobs, while routine cognitive and manual jobs decline. This shift significantly impacts middle tier occupations, leading to structural employment changes. Similarly, Martens and Tolan (2018) suggest that while historical evidence indicates technology has had a net positive effect on employment, concerns persist that AI might fundamentally alter this trend by reducing the labor share of total income.

Tschang and Almirall (2021) provide a nuanced perspective, arguing that AI driven automation does not necessarily lead to mass unemployment but instead favors non routine skills, shifting employment structures towards more knowledge intensive roles. Graglia and Von Huelsen (2020)

position AI within the "sixth wave of innovation," emphasizing its rapid propagation and potential to replace human labor at an unprecedented scale. AI's influence varies across industries, as evidenced by Batiz Lazo, Efthymiou, and Davies (2022), who examine AI adoption in banking and accounting. They conclude that AI enhances efficiency, reduces errors, and increases competitiveness in these sectors. This aligns with Abuselidze and Mamaladze (2021), who highlight AI's role in automating repetitive tasks, thereby reducing the need for human intervention in monotonous roles while creating opportunities for higher-skilled workers.

In the service industry, Flavián and Casaló (2021) explore how AI is revolutionizing automated interactions, with increasing attention from both academics and practitioners. AI-driven services leverage Industry 4.0 technologies to streamline processes and improve efficiency. Lee and Park (2019) discuss AI's role in smart systems, factory automation, and knowledge-based workforces, showcasing its transformative impact on urban living and the gig economy. Shaukat et al. (2020) studies the accelerating adoption of robotics in various sectors, with one robot potentially replacing up to 70 human workers. They predict that by 2025, robots will be hired for approximately 3.5 million jobs, leading to declining employment opportunities in certain sectors, particularly low-skilled labor. However, they also emphasize the importance of investing in AI and robotics education to bridge the skills gap between humans and machines.

Park and Park (2020) had contextualized AI within the broader technological ecosystem, identifying IoT, 5G, and blockchain as complementary technologies driving the Fourth Industrial Revolution. These technologies collectively reshape employment by introducing new skills requirements and modifying traditional labor structures. Beyond employment, AI's broader societal impact is explored by Turyasingura et al. (2024) also, who highlight AI applications in environmental management, healthcare, and urban planning. Their findings stress the need for collaborative efforts between governments, industries, and academia to maximize AI's benefits while mitigating potential risks.

AI's transformative potential also raises concerns about labor displacement and economic inequality. While Li and Zheng (2018) had argued that AI enhances industry competitiveness and efficiency, Javed and Kabir Brishti (2020) warn that it also creates challenges in adapting to an evolving business landscape. As such complexity of AI's impact on employment, necessitating proactive policies to balance technological progress with workforce stability. The review indicates the necessity of adopting a holistic perspective in understanding AI's impact on employment.

Given the complexity and breadth of the topic, a systematic literature review is essential to compile findings comprehensively, identify overarching patterns, and provide a structured synthesis of existing research. Such an approach would facilitate deeper insights into workforce transformations, skill shifts, and policy implications, enabling a more informed response to AI-driven changes. The literature on AI and employment presents a complex and evolving picture. While AI-driven automation displaces routine jobs, it simultaneously creates opportunities for knowledge-intensive roles, particularly those requiring non-routine cognitive skills. The polarization of job markets, increasing reliance on robotics, and sector-specific AI applications highlight the need for continuous workforce adaptation. Policymakers and organizations must proactively address skill gaps, invest in education, and implement strategies that foster human AI collaboration to navigate the AI revolution in employment effectively.

Research Problem Statement

The effects of artificial intelligence on employment are varied, but not much is known about the precise positive and negative aspects of this revolution. We categorize the effects of AI on employment into different groups. Statistics from the 2023 Microsoft Word Index Annual Report show that 82% of executives want their staff to be prepared and possess artificial intelligence skills. To map out the current trends, obstacles, and effects of artificial intelligence in the workplace, a systematic literature review is still required. This paper examines at AI's effects on employment, both positive and negative.

Research methodology

In order to explore the topic " Navigating the Artificial Intelligence Revolution in Employment – A Systematic Literature Review," the study employed a systematic literature review approach, concentrating on current trends, significant barriers and impact of Artificial Intelligence. The research published between the year 2005 to 2024 are covered in the systematic literature review, which was gathered from Google Scholar. Keywords like " Artificial Intelligence," "AI," "trends," "opportunities," "employment," "barriers," and " Artificial Intelligence and impact on employment" are examples of search terms. Full papers and studies written in English were the main requirements for inclusion. Conference proceedings, research papers with just abstracts available, and articles written in languages other than English were excluded based on the exclusion criteria.

For the purpose of the study PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework was used. As such the research was conducted in four key steps. In the identification phase, a broad search for relevant research papers was carried out using the selected keywords. This led to the generation of an initial pool of studies. In the screening phase, duplicate records were removed, and the remaining articles were screened based on their titles and abstracts for relevance to AI and employment. Non-relevant studies were excluded. During the eligibility phase, the full texts of the shortlisted articles were reviewed thoroughly to ensure they met the inclusion criteria. Only studies written in English, those published within the defined timeframe, and those addressing the impact of AI on employment were retained. Articles such as conference proceedings, papers with only abstracts available, and publications in languages other than English were excluded. Finally, in the inclusion phase, a set of studies was finalized for in-depth analysis, focusing specifically on contributions that offered meaningful insights into AI's influence on employment dynamics.

Findings and discussions

The main findings of the paper critically evaluate earlier studies and contributions regarding artificial intelligence's (AI) effects on employment while highlighting new developments in the field. It highlights the main challenges to AI's expansion into the market and looks into possible advancements in the field going forward. The study also looks at how AI has changed over time and how new trends are influencing the workforce. The study sheds light on the socioeconomic effects of technical breakthroughs by highlighting the differences in AI adoption across jurisdictions and industries. Last but not least, it highlights the necessity of a well-rounded strategy that addresses worker issues and encourages creativity.

Word Cloud Analysis

A word cloud analysis is undertaken of keywords used in the research studies under considerations. This analysis helps in understanding the main topics of interest amongst the researchers and helps in identifying key issues and the gaps which has been omitted. The analysis is presented in the figure (Figure 1) below:

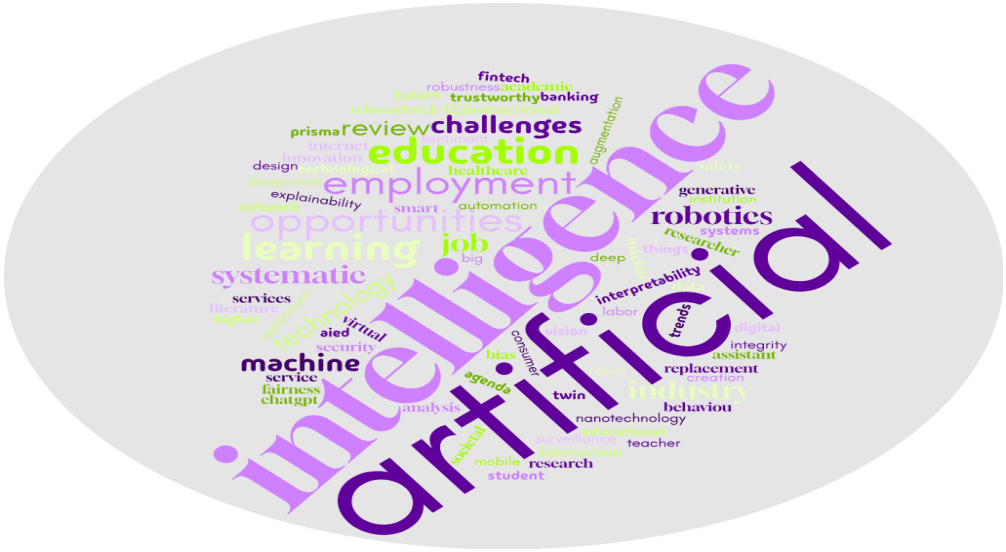

Figure 1 Word Cloud Analysis
Source: Made for the purpose of the study

The keyword analysis in the figure above reveals that Artificial Intelligence (AI) is a transformative force shaping various domains, including technology, education, employment, and finance. AI emerges as a central theme, highlighting its growing significance in modern industries. Its integration with emerging technologies is evident through keywords such as *Machine Learning, Deep Learning, Internet of Things (IoT), Industry 4.0, Robotics, 5G, Digital Twin, Big Data,* and *Technological Innovation*. These terms indicate AI's role in enhancing automation, decision making, and efficiency across industries such as healthcare, manufacturing, and smart services.

AI's influence extends beyond industry and employment into education and research. The presence of keywords such as *AI in Education (AIED), Higher Education, Instructional Design, PRISMA, Systematic Review, Academic Integrity, Teacher, Student,* and *Education Institution* demonstrates AI's role in personalized learning, instructional design, and academic research. AI powered tools are being increasingly used to enhance learning experiences, support educators, and ensure academic integrity in higher education.

Ethical considerations surrounding AI development are also a key focus. The keywords *AI Safety, Robustness, Trustworthy AI, Fairness and Bias, Explainability,* and *Interpretability* highlight concerns about AI's transparency, reliability, and fairness. As AI systems become more integrated

into decision making processes, ensuring ethical AI practices and minimizing biases remain crucial challenges.

In the financial sector and smart systems, AI plays a vital role in enhancing customer experiences, risk management, and automation, as indicated by keywords such as *Banking, Fintech, Virtual Assistant,* and *Consumer Behavior*. AI driven innovations in financial services, including chatbots, predictive analytics, and fraud detection, are revolutionizing the industry and optimizing business processes. The presence of *Smart Systems and Services* suggests the continued evolution of AI powered solutions in improving efficiency and decision making.

Looking ahead, the keywords *Societal Trends, Challenges, Opportunities,* and *Agenda for Future Research* emphasize the need for ongoing exploration of AI's broader impact. Researchers and policymakers are actively examining AI's societal implications, ethical dilemmas, and future developments to ensure responsible and sustainable implementation. AI's rapid advancement presents both opportunities and challenges, requiring a balanced approach that fosters innovation while addressing ethical and workforce related concerns.

4.2 Thematic Analysis of Artificial Intelligence's Impact on Employment and Society

The study also undertakes a thematic analysis of the titles of research studies included in the analysis. This helps in clustering of the major themes and their key findings. The thematic analysis undertaking led to the compilation of research studies under 8 key themes. The themes and their key findings are given below:

Table 1: Thematic Analysis of Artificial Intelligence's Impact on Employment and Society

Theme	Key Findings	Source(s)
1. AI and Employment	AI is transforming the workforce through automation, augmentation, and job replacement. While AI creates new employment opportunities, it also displaces workers in routine jobs. The banking and accounting sectors are particularly affected.	Petropoulos (2018); Batiz Lazo et al. (2022); Shaukat et al. (2020); Martens & Tolan (2018); Abuselidze & Mamaladze (2021)
2. AI in Smart Systems and Services	AI driven smart systems enhance efficiency in industries such as finance, healthcare, and security surveillance. However, their adoption presents challenges related to reliability, ethics, and integration.	Lee & Park (2019); Flavián & Casaló (2021)
3. AI and Industry 4.0	AI, along with IoT, 5G, and digital twins, is driving the next industrial revolution,	Park & Park (2020); Rathore et al. (2021)

	improving automation and decision making but also posing workforce adaptation challenges.	
4. AI in Education	AI is reshaping education through adaptive learning, instructional design, and generative AI applications in higher education. It also raises concerns about academic integrity and ethical use.	Khawrin & Nderego (2023); Batista et al. (2024); Li et al. (2024)
5. Ethical and Safety Considerations in AI	AI fairness, bias, explainability, and robustness are critical concerns. The development of trustworthy AI is essential for widespread adoption.	Salhab et al. (2024)
6. AI and Societal Trends	AI influences societal trends, raising concerns about inequality, economic growth, and technological dependence. The debate continues on whether AI's benefits outweigh its risks.	Turyasingura et al. (2024); Graglia & Von Huelsen (2020)
7. AI in Banking and Fintech	AI driven innovations in banking and financial services improve customer experience, risk assessment, and fraud detection, but ethical concerns remain.	Ghandour (2021)
8. AI and Automation	AI driven automation is augmenting human capabilities rather than solely replacing jobs, leading to shifts in job roles and skill demands.	Tschang & Almirall (2021); Subhikshan (2023)

Source: made for the purpose of the study

The table above (table 1) presents a thematic analysis of AI's influence across various domains, highlighting key trends, opportunities, and challenges. AI is significantly transforming employment, with automation reshaping industries like banking, finance, and manufacturing. While AI driven smart systems and Industry 4.0 technologies enhance efficiency, they also create concerns regarding workforce displacement and adaptability. In education, AI fosters personalized learning and instructional design but raises ethical concerns related to academic integrity. The growing focus on AI safety, fairness, and bias highlights the need for responsible development and governance. AI's role in banking and fintech improves operational efficiency but presents ethical challenges. Overall, AI is a powerful force driving societal and economic change, requiring careful management to balance innovation with ethical and employment concerns.

AI's Impact Across Various Domains

The next step in the research included the analysis of AI's impact as analysed in different areas. The analysis let to the emergence of 7 major areas were the impact of Ai has been researched upon. These areas are given below in Table 2.

Table 2: AI's Impact Across Various Domains

Trend Area	Key Findings	Source(s)
1. AI and Employment	AI has mixed impacts on employment, leading to new job creation. The effect varies across industries, with some sectors benefiting from AI augmentation rather than replacement.	Petropoulos (2018); Martens & Tolan (2018); Batiz Lazo et al. (2022); Abuselidze & Mamaladze (2021); Graglia & Von Huelsen (2020); Tschang & Almirall (2021)
2. AI in Services & Business	AI is transforming service industries, focusing on automation, customer service, and operational efficiency. Companies are integrating AI with IoT and blockchain for enhanced automation.	Flavián & Casaló (2021); Tschang & Almirall (2021)
3. AI and Digital Twinning	AI, machine learning, and big data are playing a crucial role in digital twinning, enhancing simulations and predictive modeling.	Rathore et al. (2021)
4. AI in Higher Education	AI-driven tools, including ChatGPT, are improving student learning, research productivity, and administrative efficiency. AI applications include personalized learning, automation of tasks, and advanced analytics.	Khawrin & Nderego (2023); Batista et al. (2024)
5. AI in Banking & Finance	AI is increasingly used in banking for fraud detection, risk management, and process automation, although challenges remain in data security and regulatory compliance.	Ghandour (2021)
6. AI in K 12 Education	AI is being integrated into K 12 education, focusing on learning task design, challenges in adoption, and potential benefits for personalized education.	Li et al. (2024)
7. AI and Safety	Concerns about AI safety, ethical considerations, and regulatory frameworks are growing, leading to systematic reviews of challenges and future directions.	Salhab et al. (2024)

Source: made for the purpose of the study

The table above (table 2) indicates several key trends regarding AI adoption across multiple domains, including employment, education, business, and technology. In the context of employment, AI has both positive and negative implications. While automation has the potential to replace certain jobs, it also creates new employment opportunities, particularly in AI driven industries (Petropoulos, 2018; Martens & Tolan, 2018). The impact varies across sectors, with some industries benefiting from AI augmentation rather than direct replacement (Batiz Lazo et al., 2022; Abuselidze & Mamaladze, 2021)., AI adoption is increasing in Africa, where government policies, research institutions, and public private partnerships are fostering growth in AI related innovations (Turyasingura et al., 2024).

In business and service industries, AI is transforming operational processes, customer service, and decision making through automation and data driven insights. Companies are integrating AI with emerging technologies such as IoT and blockchain to enhance efficiency (Flavián & Casaló, 2021; Tschang & Almirall, 2021). Similarly, AI plays a significant role in digital twinning by improving simulations and predictive modeling through machine learning and big data applications (Rathore et al., 2021). In the banking and finance sector, AI is being utilized for fraud detection, risk management, and process automation, though concerns around data security and regulatory compliance remain a challenge (Ghandour, 2021).

The table also highlights AI's growing presence in education. AI driven tools, including ChatGPT, are increasingly used in higher education to enhance learning outcomes, improve research productivity, and automate administrative functions (Khawrin & Nderego, 2023; Batista et al., 2024). , AI is being incorporated into K 12 education, where it is used for learning task design, personalized learning, and classroom engagement, though challenges in adoption persist (Li et al., 2024). Furthermore, as AI continues to advance, concerns regarding AI safety, ethical considerations, and regulatory frameworks are gaining attention, leading to systematic reviews of risks and future challenges (Salhab et al., 2024).

The table further indicates that AI is shaping the future of work, with automation driving shifts in job roles and skill requirements. AI driven technologies are leading to hybrid work environments and the emergence of new career paths requiring AI related expertise (Park & Park, 2020; Shaukat et al., 2020). The demand for AI skilled professionals is rising, emphasizing the need for continuous upskilling and workforce reskilling (Graglia & Von Huelsen, 2020). Overall, AI is

having a transformative impact across multiple domains, necessitating regulatory oversight, strategic workforce planning, and innovation driven adoption strategies.

Challenges in Navigating the Artificial Intelligence Revolution in Employment

An analysis was also undertaken to analyze the challenges in navigating the artificial intelligence revolution in employment. The challenges have been compiles into six major categories. These categories are:

Table: 3 Challenges in Navigating the Artificial Intelligence Revolution in Employment

Theme	Challenges	Source
1. Job Displacement and Workforce Transformation	AI driven automation threatens job security, with estimates of human jobs at risk ranging from 47% to 9%.	Martens & Tolan (2018)
	The integration of AI and robotics in employment sectors reshapes traditional job roles.	Shaukat et al. (2020)
	AI applications in accounting still involve labor intensive processes despite advancements.	Batiz Lazo, Efthymiou, & Davies (2022)
	AI based automation in retail focuses on automating repetitive processes, leading to reduced human involvement.	Graglia & Von Huelsen (2020)
2. Skills Gap and Workforce Adaptation	Employees need to upskill continuously to stay relevant in AI driven workplaces.	Petropoulos (2018)
	AI integration in education faces challenges such as inadequate government expenditure and fragile technological infrastructure.	Khawrin & Nderego (2023)
	Teachers and students struggle with understanding deep AI concepts due to hardware and learning task design issues.	Li, Fengchao, & Zhang (2024)
3. Ethical and Societal Implications	AI based systems face challenges in mitigating bias and ensuring fairness in decision making.	Salhab et al. (2024)
	Protecting consumer data in AI powered services remains a key concern.	Flavián & Casaló (2021)
	The loss of emotional intelligence in AI driven banking interactions affects customer experiences.	Ghandour (2021)
4. AI Reliability and Trust	AI systems struggle with transparency, explainability, and defense against adversarial attacks.	Salhab et al. (2024)
	Replicating human reasoning and causal decision making in AI remains a significant challenge.	Tschang & Almirall (2021)

	AI software for environmental management faces data scarcity, particularly in developing regions.	Turyasingura et al. (2024)
5. Security and Privacy Risks	AI driven surveillance raises concerns regarding secure authentication and privacy.	Lee & Park (2019)
	AI services require robust data security frameworks to prevent breaches.	Abuselidze & Mamaladze (2021)
	AI adoption in banking introduces risks related to user acceptance and data privacy.	Ghandour (2021)
6. Integration Challenges in Various Sectors	AI and IoT generate vast amounts of data, but managing this information effectively is difficult.	Rathore et al. (2021)
	AI powered academic tools pose risks related to plagiarism and academic integrity.	Batista, Mesquita, & Carnaz (2024)
	AI adoption in smart systems faces obstacles such as repeat identification across multiple cameras and multi factor security concerns.	Lee & Park (2019)

Source: made for the purpose of the study

The challenges of AI in employment span multiple dimensions, impacting job security, skill requirements, ethics, security, and industry integration as shown in table above (Table 3). Job movement remains a major concern as AI automation reshapes traditional roles, requiring workers to continuously upskill. Ethical challenges such as AI bias, transparency, and privacy risks raise concerns about fairness and trust. Security issues, including data protection and AI driven surveillance, highlight the need for stringent regulations. , AI's integration across sectors faces hurdles in data management, system reliability, and academic integrity. Addressing these challenges requires a balanced approach that fosters innovation while ensuring workforce adaptability, ethical AI use, and robust security frameworks.

Positive Impact of AI on Employment: Thematic Analysis

Although challenges have been analysed by various authors. The systematic literature review also highlighted the positive impact of AI on employment as unearthed by the authors. These positive aspects are grouped below in table 4.

Table 4: Positive Impact of AI on Employment: Thematic Analysis

Theme	Key Insights
Job Creation & Industry Growth	AI drives demand for labor in industries that arise due to technological progress (Keynes, 1937).
	The introduction of automobiles reduced horse related jobs but created new industries (Petropoulos, 2018).
	AI has led to a surge in business focused applications like process optimization and decision making (Turyasingura et al., 2024).
Automation & Productivity	AI replaces human labor in routine tasks but not in non routine, complex tasks (Levy & Murnane, 2003).
	AI powered automation improves efficiency, particularly in high labor cost countries (Abuselidze & Mamaladze, 2021).
	Automation reduces wages but increases productivity (Martens & Tolan, 2018).
Workplace Transformation & Skill Augmentation	AI complements human work, requiring workers to upgrade their skills (Tschang & Almirall, 2021).
	Information technology enables skilled professionals to be more creative and productive (Nedelkoska & Quintini, 2018).
	AI enhances human productivity in non routine tasks (Daugherty & Wilson, 2018).
Reduction of Tedious & Hazardous Work	AI reduces the burden of labor intensive and repetitive tasks (Shaukat et al., 2020).
	AI powered machines can operate 24/7 and perform dangerous tasks (Shaukat et al., 2020).
Economic & Societal Advancements	AI drives economic and environmental efficiencies for a healthier planet (Turyasingura et al., 2024).
	AI applications improve healthcare, transportation, and education (Graglia & Von Huelsen, 2020).
	AI supports sustainable growth and operational efficiency in banking and financial sectors (Ghandour, 2021).
Impact on Education & Learning	AI enhances student support, teaching efficiency, and research productivity (Batista et al., 2024).
	AI improves instructional design in K 12 education (Li et al., 2024).
AI's Role in Service Sectors	AI in banking has transformed tax return services and financial processes (Batiz Lazo et al., 2022).
	Digital twins (DTs) in healthcare enable remote surgery and medical innovations (Rathore et al., 2021).
AI Safety & Risk Management	Robust AI systems enhance security and prevent adversarial attacks (Salhab et al., 2024).

Source: made for the purpose of the study

AI fosters job creation by increasing demand for labor in industries that arise due to technological progress (Keynes, 1937). While certain jobs decline, new industries emerge, similar to how automobiles replaced horse related jobs but led to new economic sectors (Petropoulos, 2018). AI applications in business problem solving, such as process optimization and decision making, contribute to economic expansion (Turyasingura et al., 2024).

AI driven automation replaces human labor in routine tasks but does not eliminate the need for human workers in non-routine, complex tasks (Levy & Murnane, 2003). It enhances efficiency, particularly in high labor cost regions, by reducing workforce costs and optimizing production (Abuselidze & Mamaladze, 2021). While automation may lead to lower wages, it boosts overall productivity (Martens & Tolan, 2018).

Rather than fully replacing human workers, AI augments their capabilities, requiring them to upgrade skills to align with emerging work environments (Tschang & Almirall, 2021). Advanced information technology helps skilled professionals enhance creativity and efficiency (Nedelkoska & Quintini, 2018). In non-routine tasks, AI serves as a productivity enhancing tool rather than a substitute (Daugherty & Wilson, 2018).

AI reduces the burden of labor intensive and monotonous tasks, allowing workers to focus on more strategic roles (Shaukat et al., 2020). AI powered machines can operate continuously and perform dangerous tasks, increasing workplace safety (Shaukat et al., 2020).

AI contributes to economic and environmental efficiencies, leading to a healthier and more sustainable planet (Turyasingura et al., 2024). It enhances healthcare, transportation, and education systems, improving overall quality of life (Graglia & Von Huelsen, 2020). AI driven financial applications optimize banking and operational efficiency (Ghandour, 2021).

AI enhances education by providing student support, improving teaching efficiency, and boosting research productivity (Batista et al., 2024). In K 12 education, AI driven instructional design fosters student engagement and deeper learning (Li et al., 2024).

In banking, AI powered automation has transformed financial services, including online tax return filing and digital financial management (Batiz Lazo et al., 2022). In healthcare, AI applications such as digital twins (DTs) improve remote surgical procedures and medical innovations (Rathore et al., 2021). AI systems enhance security by preventing adversarial attacks and system failures, ensuring the safety and reliability of automated processes (Salhab et al., 2024).

Negative Impact of Artificial Intelligence (AI) on Employment and Society

The negative impact of IA has also been studied through the systematic literature review. These negative impacts as identified and comprehended by various authors from the compiled resources are give below in table 5.

Table 5: Negative Impact of Artificial Intelligence (AI) on Employment and Society

The table below categorizes and presents the negative impacts of AI based on various scholarly sources. It highlights the key concerns associated with AI adoption, particularly in employment, wages, privacy, and trust.

Theme	Negative Impact	Source (In text Citation)
1. Employment Displacement	AI and automation displace workers from previously performed tasks, reducing employment opportunities.	(Keynes, 1937; Petropoulos, 2018; Abuselidze & Mamaladze, 2021)
2. Wages and Labor Market	The introduction of robots reduces employment to population ratio and wages.	(Acemoglu & Restrepo, 2018; Batiz Lazo et al., 2022)
3. Unemployment Increase	AI and robotics are expected to increase unemployment and require workers to upskill.	(Shaukat et al., 2020)
4. Automation in Jobs	In India's top IT service companies, job growth has declined by 40%, and automation threatens 69% of jobs.	(Singh, 2017; Graglia & Von Huelsen, 2020)
5. Sector Specific Impact	AI threatens employment in banking, accounting, and healthcare (e.g., nursing and laboratory professions).	(Vogler Ludwig, Düll & Kriechel, 2016; Batiz Lazo et al., 2022; Graglia & Von Huelsen, 2020)
6. Decoupling of Wages & Productivity	AI leads to a declining share of labor in national income and a decoupling of wages from productivity.	(Martens & Tolan, 2018)
7. Privacy & Ethical Concerns	AI raises privacy violation concerns and reduces human emotional interaction.	(Ghandour, 2021)
8. AI in Higher Education	AI could negatively impact academic labor by making scholars less inquisitive and reflexive.	(Batista et al., 2024)
9. Data & Infrastructure Gaps	Developing regions face AI challenges due to data scarcity, outdated regulations, and inadequate infrastructure.	(Turyasingura et al., 2024)
10. Trust & Reputation Risks	AI can lead to trust depletion, negative word of mouth, and co destruction in services.	(Flavián & Casaló, 2021)

11. AI Safety Concerns	Challenges include bias, adversarial attacks, robustness, and balancing interpretability with performance.	(Salhab et al., 2024)

Source: made for the purpose of the study

Artificial Intelligence is rapidly transforming industries, but its implications are not entirely positive. One of the most pressing concerns is employment displacement, where automation replaces human labor, reducing job opportunities, particularly in routine and repetitive tasks (Keynes, 1937; Petropoulos, 2018)., research indicates that automation leads to lower employment to population ratios and declining wages (Acemoglu & Restrepo, 2018).

The increasing adoption of AI driven systems is also linked to rising unemployment, particularly in sectors like IT, banking, accounting, and healthcare, where automation is rapidly replacing human roles (Singh, 2017; Graglia & Von Huelsen, 2020). This job loss has a cascading effect on national income, as automation decouples wages from productivity, thereby reducing labor's share in economic growth (Martens & Tolan, 2018).

Beyond employment, AI introduces significant privacy and ethical concerns, especially in sensitive areas like banking and education (Ghandour, 2021). AI powered tools may compromise personal data security, while in higher education, they risk making scholars less inquisitive and reflective in their work (Batista et al., 2024)., AI driven services may lead to customer distrust and negative word of mouth due to poor personalization or automated decision-making errors (Flavián & Casaló, 2021).

Furthermore, developing countries face additional challenges in AI adoption due to data scarcity, inadequate infrastructure, and outdated regulations (Turyasingura et al., 2024). Lastly, AI safety remains a major concern, with ongoing debates about bias, adversarial attacks, and balancing performance with ethical considerations (Salhab et al., 2024).

As such while AI offers substantial benefits, its negative impacts—particularly on employment, wages, privacy, and trust—must be carefully managed through policy interventions, workforce upskilling, and ethical AI governance.

Key Findings and Future Scope Categorized by Themes

Further analysis was undertaken to examine the future scope or areas where further studies can be undertaken. These future scopes were based on the key findings on the research studies under review. They are summarized below.

Table 6: Key Findings and Future Scope Categorized by Themes

Theme	Key Findings	Future Scope
1. Job Polarisation & Workforce Transformation	• Demand rises for high skilled and low skilled jobs, while middle skilled routine jobs decline (Petropoulos, 2018).	• Study policy responses to job polarisation.
	• AI replaces routine work but augments non routine jobs (Tschang & Almirall, 2021).	• Develop workforce reskilling strategies.
	• AI reshapes job roles, creating opportunities but also displacing traditional roles (Subhikshan, 2023).	• Analyze balance between job creation and job loss.
2. AI & Industry 4.0 Technologies	• AI drives automation in industries, enhances efficiency, and reduces errors (Batiz Lazo et al., 2022).	• Explore scalability and integration challenges in AI driven industries.
	• AI plays a key role in smart systems, knowledge-based work, and automation (Lee & Park, 2019).	• Develop frameworks for AI adoption in finance and industry.
	• AI adoption in banking improves decision making and security (Ghandour, 2021).	• Address regulatory and ethical concerns in AI enabled automation.
	• Digital twinning is a major AI integrated industrial trend (Rathore et al., 2021).	
3. AI & Education	• AI enhances learning processes but requires ethical considerations (Khawrin & Nderego, 2023).	• Develop AI integrated curricula for balanced learning.
	• Generative AI is transforming higher education through new pedagogical strategies (Batista et al., 2024).	• Address ethical concerns in AI driven education.
	• K 12 AI education is expanding but faces resource constraints (Li et al., 2024).	• Improve resource availability for AI education.
4. AI in Socio Economic Development	• AI supports environmental sustainability, healthcare, and urban planning (Turyasingura et al., 2024).	• Foster interdisciplinary collaboration to leverage AI for sustainability.
	• AI contributes to personalized services and digital inclusion but raises privacy concerns (Ghandour, 2021).	• Enhance AI driven governance and social policies.
	• AI helps manage digital evidence, machine vision, and hierarchical processing (Park & Park, 2020).	• Develop privacy frameworks to mitigate ethical risks.
	• AI driven service automation is a growing trend (Flavián & Casaló, 2021).	• Optimize AI human interaction in services.

5. AI & Automation in Services	• AI enhances efficiency in repetitive tasks, reducing manual labor (Abuselidze & Mamaladze, 2021).	• Explore innovative frameworks for automated customer engagement.
6. AI & Economic Impact	• AI driven innovations enhance economic competitiveness (Abuselidze & Mamaladze, 2021).	• Study long term economic impact of AI adoption.
	• AI supports task-based employment models (Martens & Tolan, 2018).	• Develop policies for balancing productivity gains and income distribution.
	• AI and big data integration shape industrial trends (Rathore et al., 2021).	
7. AI Ethics, Trust, & Safety	• Safe and trustworthy AI requires better data management, model verification, and ethical alignment (Salhab et al., 2024).	• Strengthen AI safety frameworks.
	• The convergence of digital and AI driven innovations alters society work interactions (Graglia & Von Huelsen, 2020).	• Align AI autonomy with human values.
		• Develop policies for ethical AI deployment.

Source: made for the purpose of the study

The table categorizes key findings and future research directions related to AI across multiple themes. **Job polarization and workforce transformation** highlight how AI reshapes job roles, increasing demand for high and low skilled jobs while reducing middle skilled routine work. Future research should focus on policy responses, workforce reskilling strategies, and balancing job creation with displacement. **AI and Industry 4.0 technologies** emphasize automation, smart systems, and improved decision making, particularly in finance and manufacturing. Challenges such as scalability, ethical concerns, and regulatory frameworks need further exploration.

In **AI and education**, findings suggest AI is revolutionizing learning processes in higher education and K 12, though ethical concerns and resource constraints persist. Future research should address curriculum integration, ethical AI use in classrooms, and resource allocation. Similarly, **AI in socio economic development** plays a crucial role in environmental sustainability, digital inclusion, and governance, yet privacy and ethical risks require frameworks to ensure responsible AI deployment. **AI and automation in services** show significant potential for improving efficiency, reducing manual tasks, and streamlining service delivery. Research should optimize AI human interactions and develop innovative customer engagement frameworks. **AI's economic impact** is seen in increased productivity and competitiveness, particularly through AI driven innovations and big

data integration. However, future studies should assess long term economic effects and develop policies to balance productivity gains and income distribution.

Finally, **AI ethics, trust, and safety** emerge as critical concerns, emphasizing the need for robust safety frameworks, ethical AI deployment, and aligning AI autonomy with human values. As AI continues to integrate into various domains, interdisciplinary research should focus on ensuring AI remains beneficial, fair, and transparent in all aspects of society.

References

Acypreste, R. D., & Paraná, E. (2022). Artificial Intelligence and employment: a systematic review. *Brazilian Journal of Political Economy*, *42*(4), 1014 1032.

Abuselidze, G., & Mamaladze, L. (2021, March). The impact of artificial intelligence on employment before and during pandemic: A comparative analysis. In Journal of Physics: Conference Series (Vol. 1840, No. 1, p. 012040). IOP Publishing.

Batiz Lazo, B., Efthymiou, L., & Davies, K. (2022). The spread of artificial intelligence and its impact on employment: Evidence from the banking and accounting sectors. In Business Advancement through Technology Volume II: The Changing Landscape of Industry and Employment (pp. 135 155). Cham: Springer International Publishing.

Batista, J., Mesquita, A., & Carnaz, G. (2024). Generative AI and higher education: Trends, challenges, and future directions from a systematic literature
review. Information, 15(11), 676.

Duratkar, M. G., & Joshi, P. R. (2024, December). Artificial intelligence & Its effect on employment: Vision 2025. In *AIP Conference Proceedings* (Vol. 3188, No. 1). AIP Publishing.

Granulo, A., Fuchs, C., & Puntoni, S. (2019). Psychological reactions to human versus robotic job replacement. *Nature human behaviour*, *3*(10), 1062 1069.

Graglia, M. A. V., & Von Huelsen, P. G. (2020). The sixth wave of innovation: Artificial intelligence and the impacts on employment. Journal on Innovation and Sustainability RISUS, 11(1), 3 17.

Ghandour, A. (2021). Opportunities and challenges of artificial intelligence in banking: Systematic literature review. TEM journal, 10(4), 1581 1587.

Iivari, M. (2024). *The UK Telecommunications Sector 2024* (Doctoral dissertation, Imperial College London).

Khawrin, M., & Nderego, E. (2023). Opportunities and challenges of AI towards education: a systematic literature review. International Journal on Language Research and Education Studies, 13(3), 266 271.

Lee, D., & Park, J. H. (2019). Future trends of AI based smart systems and services: challenges,

opportunities, and solutions. Journal of Information Processing Systems, 15(4), 717 723.

Li, L., Fengchao, Y., & Zhang, E. (2024). A systematic review of learning task design for K 12 AI education: Trends, challenges, and opportunities. Computers and Education: Artificial Intelligence, 100217.

Martens, B., & Tolan, S. (2018). Will this time be different? A review of the literature on the Impact of Artificial Intelligence on Employment, Incomes and Growth.

Petropoulos, G. (2018). The impact of artificial intelligence on employment. *Praise for Work in the Digital Age*, *119*, 121.

R., Subhikshan T. (2023). Impact of Artificial Intelligence on Employment Sector. Issue 2 Indian JL & Legal Rsch., 5, 1.

Rathore, M. M., Shah, S. A., Shukla, D., Bentafat, E., & Bakiras, S. (2021). The role of ai, machine learning, and big data in digital twinning: A systematic literature review, challenges, and opportunities. IEEE Access, 9, 32030 32052.

Salhab, W., Ameyed, D., Jaafar, F., & Mcheick, H. (2024). A systematic literature review on ai safety: Identifying trends, challenges and future directions. IEEE Access.

Turyasingura, B., Ayiga, N., Byamukama, W., Kayusi, F., Tumuhimbise, M., & Tumushabe, T. (2024). Application of Artificial Intelligence (AI) in Environment and Societal Trends: Challenges and Opportunities. Babylonian Journal of Machine Learning, 2024, 177 182.

Terpoorten, C., Klein, J. F., & Merfeld, K. (2024). Understanding B2B customer journeys for complex digital services: The case of cloud computing. *Industrial Marketing Management*, *119*, 178 192.

Simon, P. (2023). *The Nine: The Tectonic Forces Reshaping the Workplace*. Racket Publishing.

Shaukat, K., Iqbal, F., Alam, T. M., Aujla, G. K., Devnath, L., Khan, A. G., ... & Rubab, A. (2020). The impact of artificial intelligence and robotics on the future employment opportunities. Trends in Computer Science and Information Technology, 5(1), 050 054.

Prentice, C., Dominique Lopes, S., & Wang, X. (2020). Emotional intelligence or artificial intelligence–an employee perspective. *Journal of Hospitality Marketing & Management*, *29*(4), 377 403.

SEO.AI. (2024, April 24). *AI Replacing Jobs Statistics: The Impact on Employment in 2023*. Seo.ai. https://seo.ai/blog/ai replacing jobs statistics

Stories, M. (2023, June 1). *Microsoft Work Trend Index 2023 releases new insights on how AI will change the way we work in India*. Microsoft Stories India. https://news.microsoft.com/en in/microsoft work trend index 2023 releases new insights on how ai will change the way we work in india/

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Communal Prejudice of Undergraduate Students in Relation to their Gender and Locality in the Bareilly District

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Abstract

Communal prejudice is bias or discrimination based on religious or ethnic group identity. It fosters division, mistrust, and hostility between communities, often fuelled by stereotypes, misinformation, or historical conflict. This prejudice undermines social harmony, promotes inequality, and can escalate into violence, making peaceful coexistence and unity difficult within diverse societies. The present study was conducted to learn the Communal Prejudice of male and female undergraduate students studying in various urban and rural degree colleges of Bareilly City. The descriptive survey approach was employed to achieve this goal. A sample of 60 female and 60 male undergraduate students was chosen using a random sampling method. The data was collected using the Communal Prejudice scale constructed and standardised by Dr R. L. Bharadwaj and Dr H. Sharma (Revised in 2006). The data were analysed by applying means, standard deviations (SD), and t-tests. The data analysis explained no significant differences in communal prejudice between male and female students. The findings reveal a significant difference in communal prejudice between urban and rural undergraduate students in Bareilly District.

Keywords: *Communal Prejudice, Undergraduate Students, Gender and Locality.*

Communal prejudice is a bias that involves having negative stereotypes in the form of conservative or bigoted behaviour towards people of other religions, ethnicities, or cultural origins. It arises from stereotypes, rumours, misconceptions, and sometimes civil, social, or political rivalry. In a country like India that comprises people belonging to different communities, prejudices based on such a foundation are as much a manifestation of social unrest as they provoke it. Students, particularly in universities and colleges, display a high level of change in their attitudes and behaviour, and this is because they spend most of their time in these institutions. Because of the above reasons, prejudices monopolise undergraduate students' formative intellectual and social stages. They offer views that reflect the cultures in which they are raised. This implies that the current range of undergraduate attitudes towards different communities may be influenced by gender and locality. Gender can also be described as strongly influencing the type and amount of socialisation involved. For this reason, gender should be considered because male and female students may have different ways of regarding communal identification and prejudice. For instance, the culture may require men to be more aggressive in the expression of prejudice as compared to women, who may keep such sentiments to themselves or deny them. Also, the experiences of different genders in communal

environments influence their perception and the degree of latitude or lack thereof. Thus, the type of living environment is one of the significant determinants of the citizens' attitudes in communal matters. Students in urban schools are exposed to multiculturalism daily, so there is a high likelihood that they will be more open-minded in their outlook. On the other hand, poor or semi-urban students may spend their childhood and adolescence in neighbourhoods where they rarely, if ever, come across other people of different religions or colours. This occurrence can also lead to the continuation of negative gender-related stereotyping and the intensification of existing communalism. In addition, socio-political factors, media, and education also play essential roles in influencing the communal attitudes of communities. This study examines the nature and extent of communal prejudice among undergraduate students, with a focus on how gender and locality influence these attitudes. By understanding these relationships, educators and policymakers can develop more effective strategies to foster communal harmony, promote inclusivity, and create a more accepting and empathetic academic environment for students from all backgrounds.

Review of Literature

Gender has been examined as a determinant in developing communal attitudes, with mixed findings. Some studies suggest that males tend to exhibit higher levels of overt prejudice compared to females due to sociocultural conditioning that normalises dominance and intergroup competition **(Allport, 1954).** Conversely, female students often report lower levels of communal prejudice, possibly due to higher empathy and prosocial orientation **(Enaytullah, 1980).** However, other studies, such as **Gough (1951),** have found no significant gender-based differences, highlighting the need for further localised investigations.

Locality, specifically the urban-rural divide, has also significantly influenced communal attitudes. Rural populations often experience limited intergroup interaction and exposure to diverse cultural settings, which may foster more substantial in-group bias and negative stereotyping of out-groups **(Adinarayan, 1935).** In contrast, urban settings typically offer greater opportunities for intercultural engagement, promoting more liberal attitudes and reduced prejudice **(Radloff & Evans, 2002).** A study by **Engstrom and Sedlacek (1991)** demonstrated that university students from urban backgrounds scored lower on prejudice scales, suggesting a correlation between exposure to diversity and lower communal bias. Furthermore, **Jahan, Bharadwaj, and Zafar (1987)** developed a Prejudice Scale that is widely used in Indian contexts to measure the level of communal bias among students. Their findings support the argument that sociocultural context, education, and peer influence are critical in shaping attitudes toward religious communities. **Qamar Jahan (1986)** examined the

relationship between communal prejudice and self-disclosure among Hindu and Muslim youth. However, it is noteworthy to admit that there were certain severe prejudices. The study found that higher self-disclosure was associated with greater communal prejudice compared to lower self-disclosure. This supported the author's hypothesis that there is a positive relationship between the level of self-disclosure and the level of communal bias. However, it is noteworthy to reluctantly admit that some participants in the high self-disclosure group exhibited severe prejudices; thus, it is possible to regard additional personality factors as crucial to developing a communal orientation. Jahan's findings align with **Cozby's (1973)** assertion that extreme levels of self-disclosure are linked to psychological maladjustment, which may, in turn, foster rigid and biased thinking.

Kuppuswamy and Kumar (1982) examined communal attitudes among students and noted that education moderates' prejudice. Their research suggested that higher levels of education and socio-economic awareness often correlate with more inclusive and tolerant views, though exceptions persist due to ideological and social conditioning. Gender has also emerged as an influential factor in communal attitudes. According to **Verma (2001),** male students are often more vocal or expressive about their communal biases, possibly due to traditional gender norms that encourage assertiveness. Female students, while not immune to prejudice, may internalise their biases, which makes their attitudes less overt but equally impactful.

Although the literature provides a foundational understanding, there is a limited amount of empirical research that focuses specifically on the Bareilly district or the Rohilkhand region. Given its unique socio-religious composition and a mix of urban and rural populations, examining communal prejudice in this localised context offers valuable insights. Such research can help identify context-specific variables influencing student attitudes and inform targeted educational interventions.

Objectives of the Study

The objectives of the present study were as follows-

(1) To study the Communal Prejudice of undergraduate students in relation to their Gender.

(2) To study the Communal Prejudice of undergraduate students in relation to their Locality.

Hypotheses

The present study is based on the following hypotheses-

(1) There is no significant difference between the Communal Prejudice of undergraduate students based on Gender.

(2) There is no significant difference between the Communal Prejudice of undergraduate students based on their Locality.

Methodology

Research Model- A descriptive survey model was used in this study.

Participants: A random sampling technique was adopted to select the sample. The sample consisted of 120 final-year college students, 60 male and 60 female, belonging to urban and Rural degree colleges in the Bareilly District.

Tool Used

In the present investigation, the researcher employed the Prejudice Scale (Pr Scale) developed by Dr R. L. Bharadwaj and Dr H. Sharma to assess prejudiced behaviour among college students. The scale construction involved applying correlation analysis and the critical ratio technique for item selection, with a significance level of 0.01. The final version of the scale comprises 36 items that address various dimensions of prejudice, each designed to capture participants' responses effectively. Two methods were utilised to establish the instrument's reliability. The test-retest method was applied with 100 students to assess temporal consistency, yielding a correlation coefficient of 0.69 between the initial and follow-up administrations. The split-half reliability was also calculated using the Guttman formula, yielding a high-reliability coefficient of 0.94 (N = 100).

The validity of the scale was also verified through two approaches. Theoretical validity was computed based on the square root of the reliability coefficient, which was 0.83. For construct validity, the scale was correlated with the Prejudice Scale developed by Q. Jahan et al. (1988), producing a validity coefficient of 0.66. These results confirm the appropriateness of the scale for measuring prejudice among undergraduate students.

Statistics Used

Mean, standard deviation, and "t" test were used to analyse the data. Administration of the Tool and Data Collection: This is a self-administered scale suitable for both individual and group administration. It should also be stated that all items should be answered based on any of the five choices provided for that item. For this specific test, it is also desirable that the tester provide explicit instructions to the test regarding their community, caste, or religion, to which they are being asked to respond. The prejudice scale is relatively easy to score, with a scoring of a quantitative nature. Each item on the scale has five response options, but the examined person has only checked one among the five response options. For each item, consider five options, with a score of five on the left side of the scale as the most agreeable and the first option at the rightmost as the least agreeable.

Delimitation of the Study

The study is limited to the Bareilly District of Uttar Pradesh (UP) and measures the Communal Prejudice of final-year undergraduate male and female students. It involves no more than five colleges in urban areas and five in rural areas, and is limited to a sample of 120 college-going students.

Result and Discussion

H01: There is no significant difference between the Communal Prejudice of undergraduate students based on Gender.

Table 1 Comparison of Communal Prejudice Between Male and Female Undergraduate Students Using t-Test Analysis

S.N.	GROUP	N	M	S.D.	"t"	Remark
1	Male	60	86.13	19.44	0.348	Insignificant
2	Female	60	84.63	27.20		

An independent samples t-test was used to examine gender-based differences in communal prejudice among undergraduate students. The sample included 60 male and 60 female students. The results showed that male students had a slightly higher mean score (M = 86.13, SD = 19.44) than female students (M = 84.63, SD = 27.20). However, the calculated t-value of 0.348 did not reach statistical significance ($p > 0.05$). This finding indicates that the observed difference in communal prejudice between male and female students is not statistically meaningful. Therefore, the null hypothesis (H01) is accepted, suggesting that gender does not significantly influence communal prejudice among the sampled undergraduates.

Ho2: There is no significant difference between the Communal Prejudice of undergraduate students based on their Locality.

Table 2 Comparison of Communal Prejudice Between Urban and Rural Undergraduate Students Using t-Test Analysis

S.N.	GROUP	N	M	S.D.	"t"	Remark
1	Urban	60	81.23	17.01	1.990	Significant
2	Rural	60	87.98	20.03		**=0.05

An independent samples t-test was conducted to examine whether the locality of undergraduate students influences their level of communal prejudice. The results revealed that rural students (M = 87.98, SD = 20.03) reported significantly higher levels of communal prejudice than their urban counterparts (M = 81.23, SD = 17.01). The difference between the two groups was statistically significant, with a t-value of 1.990 at $p < 0.05$, suggesting that the students' geographical background plays a meaningful role in shaping communal attitudes.

Accordingly, the null hypothesis (H02) is rejected, and it is concluded that locality significantly influences the level of communal prejudice among undergraduate students.

Major Findings

A significant difference was found in locality-based Communal Prejudice. However, the researcher found no significant difference in students' communal prejudiced behaviour concerning gender at a 0.05 significance level.

Conclusion

The above study led the researcher to conclude that “Prejudice” is an opinion or judgment formed without due examination. The study's findings highlight communal prejudice among undergraduate students in the Bareilly district, with notable differences across localities. Educational institutions should incorporate programs that focus on value education, interfaith understanding, critical thinking, and exercises that foster empathy into their curricula. Moreover, exposure to culturally diverse environments and open dialogue should be encouraged, particularly in rural areas where students may lack such experiences. Addressing communal prejudice at the undergraduate level is essential for students' individual development and for fostering a more inclusive and socially cohesive society.

Implications of the Study

The findings of this study reveal that communal prejudice among undergraduate students in the Bareilly district is influenced more significantly by locality than by gender, with rural students demonstrating higher levels of prejudice. This highlights a critical need for educational policies and interventions that are responsive to the socio-cultural context of rural areas. Integrating value education, civic awareness, and interfaith dialogue into the curriculum can help nurture tolerance and mutual respect among students. Furthermore, while gender differences were statistically insignificant, it remains essential to ensure that both male and female students are equally engaged in efforts that promote social harmony. Colleges and universities should implement workshops, seminars, and inclusive student activities that challenge communal stereotypes and encourage critical thinking. The study also suggests broader implications for policymakers and educators to strengthen community engagement and awareness campaigns, particularly in areas where traditional and communal biases are more deeply ingrained.

Fostering an environment of inclusivity and cultural understanding within academic settings can significantly reduce communal prejudice and build a more cohesive and tolerant youth population.

Further Recommendations

This work, therefore, highlights several subjects that require further research. Some follow-up

Research areas include communal prejudiced behaviour at the primary, secondary, district, and state levels of education and research on other religions such as Jainism, Buddhism, Sickish, etc. Research may be conducted to investigate the impact of institutions on prejudiced behaviour. Research is needed regarding the effect of the attitude adopted by students towards other religions, except for the Hindu, Muslim, and Christian faiths. Future research could explore additional variables, such as educational background, parental influence, socioeconomic status, and exposure to diverse communities, which may also significantly contribute to the development of communal attitudes. A longitudinal study could help determine how these attitudes evolve and whether interventions such as diversity training or value education lead to lasting changes.

References

Adinarayan, S. P. (1935). *Before and after independence: A study of racial and communal attitudes in India*. *British Journal of Psychology, 44(2)*, [108].

Allport, G. W. (1954). *The nature of prejudice*. Cambridge, MA: Addison-Wesley.

Enaytullah. (1980). *Religious affiliation and attitude of students in an Indian university* (Doctoral dissertation, Ranchi University).

Engstrom, C. M., & Sedlacek, W. E. (1991). A study of prejudice towards university student-athletes. *Journal of Counseling & Development, 70*(1), 189–193.

Glaser, J., & Knowles, E. D. (2008). Implicit motivation to control prejudice. *Journal of Experimental Social Psychology, 44(1)*, 164–172.

Gough, H. C. (1951). Relationship of the Prejudice Scale to other variables. *Journal of Social Psychology, 33*, 257–262.

Jahan, Q., Bharadwaj, R. L., & Zafar, S. (1987). *Prejudice scale*. Aligarh: Aligarh Muslim University.

Lillis, J., & Hayes, S. C. (2007). Applying acceptance, mindfulness, and values to the reduction of prejudice: A pilot study. *Behavior modification*, *31*(4), 389-411.

Radloff, T. D., & Evans, N. (2003). The social construction of prejudice among Black and White college students. *Journal of Student Affairs Research and Practice*, *40*(2), 229-244.

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Women's Rights and Social Justice: A Review of Policies and Legal Reforms Across the Globe

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Abstract

This review analyses global policies and legal reforms for women's rights and social justice from 1995-2024. We examined international conventions, regional frameworks, and national legislation across 87 countries through systematic document review, meta-analysis of implementation studies, and comparative policy assessment. Formal legal protections expanded significantly worldwide: 75% of countries strengthened constitutional gender provisions, and 131 nations enacted gender-based violence legislation. Yet implementation gaps remain severe, with enforcement mechanisms lagging behind legislative reforms in 68% of contexts studied. Four factors drive effective reform: political commitment, institutional infrastructure, civil society engagement, and resource allocation. Regional patterns vary markedly, Northern Europe achieved comprehensive implementation, Latin America advanced political representation, and Sub-Saharan Africa improved educational access despite resource limits. Legal reform alone proves insufficient. Meaningful progress requires integrated approaches targeting normative, institutional, and resource barriers simultaneously. Future efforts must close implementation gaps, adopt intersectional frameworks, strengthen accountability, and develop context-specific strategies engaging both formal institutions and informal power structures to achieve substantive equality.

Keywords*: Women's Rights, Gender Equality, Legal Reforms, Social Justice, Policy Implementation, Global Perspective, Intersectionality, CEDAW.*

Introduction

The pursuit of women's rights and gender equality represents one of humanity's most profound and protracted struggles for justice. From the earliest suffragist movements to contemporary intersectional feminism, the evolution of women's rights advocacy reflects changing socio-political landscapes and emerging understandings of systemic inequality (Bunch, 2018). This review examines the complex interplay between legal reforms, policy initiatives, and social movements that have shaped women's rights across diverse global contexts. By analyzing both successes and shortcomings in various jurisdictions, this paper contributes to our understanding of effective approaches to gender justice while acknowledging the persistent challenges that remain.

Historical Foundations: From Suffrage to Intersectional Feminism

The modern conception of women's rights emerged from distinct historical trajectories across different regions, though with notable parallels in their development. In Western contexts, the "first wave" of feminism in the late 19th and early 20th centuries primarily focused on legal

and political rights, particularly suffrage (Walters, 2005). The 1848 Seneca Falls Convention in the United States marked a watershed moment with its Declaration of Sentiments explicitly modeling itself after the Declaration of Independence, thereby framing women's rights as fundamental human rights (McMillen, 2008). However, as scholars like hooks (2000) and Crenshaw (1991) have noted, these early movements often privileged the concerns of white, middle-class women while marginalizing the experiences of women facing multiple forms of oppression.

Internationalisation of the discourse on women's rights in the post-World War II period, leading to the United Nations Decade for Women (1976-1985) and the adoption of the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) in 1979 (Reilly, 2009). It was at this time that the "second wave" of feminism emerged, encompassing issues that went beyond just formal legal equality, such as reproductive rights, workplace discrimination, domestic violence, and sexuality (Freedman, 2002). At the same time, anti-colonial nationalism and capitalism shaped a particular feminist tradition in the Global South, countering past and ongoing colonial legacies, economic exploitation, and cultural specificities. Indeed, African feminisms were more often concerned with communal values rather than individual rights, and Latin American feminisms tended to combine class analysis with gender (Mama, 2011; Sternbach et al., 1992).

The "third wave" and then perhaps the "fourth wave" of the movement, from the 1990s onward, took increasing notice of this intersectionality, the manner in which those other axes of identity (e.g. race, class, sexuality, and disability) interact with gender (Mack Canty, 2004; Crenshaw, 1991). As nations gathered over the decades since the 1950s, these measured objectives began to be solidified into frameworks, such as the 1995 Beijing Platform for Action, where 189 nations signed on to provisions for full equity across 12 critical areas of concern (United Nations, 1995). Grounding the platform in the human rights of women and accountability of governments created a model we still see today in policy responses.

The impact of digital technologies on the organizing of feminism in today’s world is revolutionary and has made cross-cultural movements against gender-based violence, such as #MeToo, which Carta and Fernandes (2022) meticulously chart, able to quickly draw attention to the scale of a social problem that is often systemic. Nevertheless, the digital era is also characterized by a backlash against feminist progress; from political-level advances coming up all over the globe through organized anti-gender movements (Korolczuk & Graff, 2018). Navigating this territory calls for a closer look into how legal reforms are nuanced by societal values, economic realities, and political contexts.

Research Framework

The purpose of this review is to assess how well policies and legal reforms designed to promote gender equality function in diverse socio-political settings. Though formal legal equality has advanced considerably across many jurisdictions, there are still large divides separating normative frameworks from the lived experiences of women (World Economic Forum, 2021). This paper aims to approach the implementation and impact of different interventions so that they can identify both the approaches with promise but also the country bottlenecks remaining to achieve sustained and substantive equality.

How effectively have international and national legal frameworks translated into measurable improvements in women lived experiences?

1. What accounts for the varying success of similar reforms across different cultural and political contexts?
2. How do legal reforms interact with socioeconomic factors to either advance or impede progress toward gender equality?
3. Which implementation mechanisms have proven most effective in bridging the gap between formal equality and substantive rights?
4. How can intersectional approaches strengthen policy effectiveness for marginalized women?

These questions are particularly significant given the inclusion of gender equality as a standalone goal (SDG 5) in the UN Sustainable Development Agenda, recognizing its centrality to broad social and economic development (United Nations, 2015). Moreover, mounting evidence links women's rights advancement to improved outcomes in public health, economic growth, and conflict resolution (UN Women, 2018; World Bank, 2012). By identifying effective policy interventions and implementation strategies, this review contributes to the evidence base for future reform efforts.

Geographical Scope and Thematic Areas

This review adopts a comparative approach across North America, Europe, Latin America, Africa, the Middle East, Asia, and Oceania. While acknowledging differences in historical context, political systems, and cultural traditions, comparative analysis reveals patterns in how legal reforms interact with local conditions. This approach avoids universalist assumptions that ignore context while rejecting relativist positions that justify discrimination (Nussbaum, 2000).

The analysis encompasses six interconnected thematic areas:

Legal Frameworks examine international instruments like CEDAW and their domestic implementation, constitutional gender equality provisions, and statutory reforms addressing discrimination. Focus centers on enforcement mechanisms and judicial interpretation of equality provisions (Byrnes & Freeman, 2012).

Political Participation analyzes electoral systems, quotas, and measures increasing women's representation in governance, assessing both descriptive and substantive representation outcomes (Krook, 2009; Phillips, 1995).

Economic Rights evaluate policies addressing workplace discrimination, pay equity, property rights, inheritance, financial inclusion, and social protection systems affecting women's economic security (World Bank, 2020).

Violence Against Women reviews legislative frameworks addressing domestic violence, sexual assault, harassment, and harmful practices, including victim support services and justice access (Htun & Weldon, 2012; UN Women, 2011).

Reproductive Rights examine laws governing reproductive healthcare, contraception, abortion, and maternal health services, considering impacts on bodily autonomy and health outcomes (Yamin, 2019).

Education and Cultural Rights analyze initiatives promoting girls' education, addressing discriminatory cultural practices, and supporting women's participation in cultural production (UNESCO, 2020).

An intersectional lens permeates this analysis, recognizing that women's experiences vary by ethnicity, class, disability, sexual orientation, and gender identity (Collins & Bilge, 2020). This perspective acknowledges that uniform legal reforms may not equally benefit all women, requiring targeted approaches for specific barriers.

The following sections examine empirical evidence and theoretical perspectives within these domains to assess reform effectiveness and identify implementation barriers.

Legal Architecture of Gender Equality: International Standards to National Implementation

International Conventions and Standards

International legal frameworks have played a decisive role in advancing women's rights, and the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) is the pillar of this process. CEDAW was created in 1979 and set forth extensive obligations for states to act to eliminate public and private gender discrimination (Byrnes & Freeman, 2012). While one of the most ratified human rights treaties with 189 state parties, the implementation of CEDAW remains patchy owing to many reservations that defeat the

object and purpose of the Convention (Keller, 2014). Reservations which exempt whole areas from these basic obligations (about family law, inheritance, and personal status key areas for women) on religious or cultural grounds are particularly harmful (Yahyaoui Krivenko, 2009).

The monitoring mechanism through the CEDAW Committee's periodic review process has proven valuable for maintaining accountability, particularly through its Concluding Observations that highlight implementation gaps and recommend remedial actions (O'Rourke, 2019). The Optional Protocol to CEDAW, established in 2000, strengthened enforcement by creating individual complaint procedures, though only 114 states have ratified this mechanism (UN Women, 2020). The jurisprudence developed through these cases has clarified state obligations regarding domestic violence, reproductive rights, and intersectional discrimination (Cusack & Pusey, 2013).

The 1995 Beijing Platform for Action complemented CEDAW by establishing concrete policy directives across twelve critical areas of concern. Notable for its participatory development process involving unprecedented NGO engagement, the Platform articulated a comprehensive vision linking legal rights to material conditions and social power (Otto, 1996). However, subsequent five-year reviews have documented persistent implementation shortfalls, with political will often dissipating after initial commitments (UN Women, 2020). The 25-year review in 2020 revealed particular challenges in reproductive rights, violence against women, and economic inequality areas, where conservative political movements have actively resisted progressive reforms (Goetz, 2020).

Regional Frameworks

Regional human rights systems have developed distinctive approaches to gender equality reflecting their particular historical and cultural contexts. The European system, operating through the European Convention on Human Rights and the European Social Charter, has produced influential jurisprudence through the European Court of Human Rights, particularly regarding domestic violence and reproductive rights (Radacic 2008). The European Union's equality directives have established detailed standards on workplace discrimination, equal pay, and work-life balance, creating harmonization pressures even in traditionally conservative member states (Kantola, 2010).

The Inter-American system has prioritized violence against women through the Convention of Belém do Pará (1994), developing significant jurisprudence on femicide, sexual violence as torture, and state responsibility for preventing violence (Bettinger López, 2008). Landmark cases like *Gonzalez et al. ("Cotton Field") v. Mexico* (2009) established governmental

obligations to prevent gender-based violence with due diligence and address its structural causes (Rubio-Marín & Sandoval, 2011).

The African system has addressed gender equality through the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (Maputo Protocol, 2003), which notably includes provisions on harmful practices, sexual and reproductive health, and economic rights tailored to African contexts (Banda, 2006). The protocol's recognition of women's land rights and prohibition of forced marriage represent significant regional advances, though implementation remains challenging in states with dual legal systems where customary law may contradict equality principles (Bond, 2010).

Despite their different emphases, these regional frameworks increasingly demonstrate cross-referencing and normative convergence, suggesting the emergence of a global consensus on core gender equality principles, albeit with contextual variations in implementation (Hellum & Aasen, 2013).

Constitutional Reforms and National Implementation

Constitutional reforms have been crucial vehicles for establishing gender equality principles in domestic legal systems. Three approaches predominate: general equality provisions prohibiting sex discrimination, specific provisions addressing women's rights, and transformative provisions recognizing substantive equality and affirmative measures (Irving, 2017). South Africa's post-apartheid constitution exemplifies the transformative approach, establishing an independent gender commission and explicitly permitting affirmative action (Andrews, 2001). Similarly, Colombia's 1991 constitution and subsequent Constitutional Court jurisprudence have advanced women's rights through recognition of reproductive autonomy and protection from violence (Lemaitre, 2016).

Constitutional reform processes themselves have become important sites for women's political participation. In Tunisia's 2014 constitutional process, women's organizations successfully advocated for Article 46, which guarantees equal opportunities in all domains and commits the state to eliminating violence against women (Charrad & Zarrugh, 2014). Kenya's 2010 constitution-making process similarly included significant women's movement input, resulting in provisions that invalidate customary laws contradicting equality principles and establish representation quotas (Domingo et al., 2016).

However, constitutional guarantees remain insufficient without implementing legislation, judicial enforcement, and resources for implementation. Rwanda's exemplary constitutional gender provisions have been reinforced by comprehensive legislation on inheritance, land rights, and violence against women, contributing to significant advances in women's status

(Burnet, 2011). In contrast, Zimbabwe's 2013 constitution contains progressive gender equality provisions that remain largely unrealized due to a lack of legislative reform and resource constraints (Ndlovu & Mutale, 2013).

The effectiveness of constitutional provisions ultimately depends on judicial interpretation and enforcement. India's Supreme Court has developed expansive gender equality jurisprudence based on constitutional guarantees, addressing sexual harassment, personal status laws, and reproductive rights (Kapur & Cossman, 1996). Conversely, even strong constitutional provisions can be undermined by conservative judicial interpretation, as demonstrated by the U.S. Supreme Court's narrow construction of equal protection in cases like *Geduldig v. Aiello* (1974), which excluded pregnancy discrimination from sex discrimination protections (Siegel, 2006).

Political Participation and Representation

Electoral Quotas and Reservation Policies

The most popular mechanism for increasing women's political representation continues to be electoral gender quotas, which over 130 countries have implemented in some form (Hughes et al., 2019). The diversity of these interventions in terms of design is huge; reserved seats secure a predetermined number of women legislators, legal candidate quotas necessitate parties to nominate minimum percentages of women, and voluntary party quotas are adopted without legal requirements (Dahlerup & Freidenvall, 2005).

This has been especially effective in societies with stubborn opposition to women. Rwanda now has the highest proportion of women in parliament in the world at 61.3% (Inter-Parliamentary Union, 2021), due to a constitutional provision setting aside 30% of parliamentary seats for women, in addition to women winning numerous open seats. In Uganda, for example, women politicians, despite facing hostility from political actors, have maintained their positions in parliament through the reserved constituency system (Wang, 2013).

Legal candidate quotas vary significantly in effectiveness depending on enforcement mechanisms and electoral system compatibility. Argentina's pioneering Ley de Cupos (1991) succeeded through strict enforcement provisions rejecting non-compliant party lists, placement mandates ensuring women candidates appeared in winnable positions, and compatibility with the list proportional representation system (Schwindt-Bayer, 2009). In contrast, France's parity law initially achieved limited results in single-member districts despite financial penalties for non-compliance, demonstrating the importance of system compatibility (Murray, 2012).

Research indicates that quotas are most effective when they include placement mandates (preventing marginalization of women candidates to unwinnable positions), strong enforcement mechanisms, and cultural change initiatives addressing underlying biases (Krook, 2009). Critics have raised concerns about the qualifications of quota-elected women and potential backlash, but longitudinal studies indicate these concerns are largely unfounded, with quota-elected women often outperforming male counterparts on educational qualifications and legislative activity (O'Brien & Rickne, 2016).

Women in Governance and Decision-Making

Beyond legislatures, women remain significantly underrepresented in executive positions, the judiciary, and administrative leadership. Only 22 countries currently have women as heads of state or government, representing just 11% of leadership positions globally (UN Women, 2021). Executive branch representation matters particularly for policy agendas, resource allocation, and symbolic representation (Jalalzai, 2013).

Judicial representation has received increasing attention, with countries like Canada implementing appointment processes that prioritize gender diversity. Canada's reformed judicial appointment process contributed to gender parity on its Supreme Court, with documented impacts on jurisprudence in areas like sexual assault law (Baines, 2013). International and regional courts have also implemented more intentional nomination processes, though progress remains uneven (Grossman, 2016).

Local governance presents both challenges and opportunities for women's representation. While local positions may be more accessible due to reduced resource requirements and compatibility with family responsibilities, they often feature more limited authority and intense gender bias (Beall, 2007). Targeted interventions like India's panchayat reservation system, which reserves one-third of local council seats and leadership positions for women, have demonstrated transformative potential, with longitudinal studies showing lasting increases in women's political participation and changing attitudes about women's leadership capabilities (Chattopadhyay & Duflo, 2004; Bhavnani, 2009).

Impact Assessment of Women's Political Representation

The substantive impact of increased women's representation on policy outcomes shows complex patterns across contexts. Research consistently demonstrates that women legislators prioritize different policy issues than their male counterparts, particularly emphasizing education, healthcare, social welfare, and gender-based violence (Schwindt-Bayer & Mishler, 2005). In Argentina, increased women's representation directly contributed to legislation addressing violence against women, reproductive rights, and family law reform (Htun et al.,

2013). Similarly, Rwanda's female-majority parliament prioritized gender-based violence legislation and gender-responsive budgeting (Burnet, 2011).

However, the translation of descriptive representation (numerical presence) into substantive representation (policy change) depends critically on institutional factors, including party discipline, executive power, and political ideology (Celis, 2009). In strong party systems, party affiliation often outweighs gender identity in determining voting patterns, though women legislators frequently work across party lines on gender equality issues (Beckwith, 2007). Moreover, research indicates that a "critical mass" of approximately 30% women's representation may be necessary before significant policy changes emerge, as smaller numbers of women may adopt masculine institutional norms to succeed (Dahlerup, 2006).

Women's political effectiveness also depends on connections with women's movements outside formal politics, which provide agenda-setting, constituency pressure, and implementation monitoring (Weldon, 2002). The most significant policy advances typically occur when women legislators work in strategic alliance with civil society organizations, as demonstrated in successful gender-based violence legislation across multiple regions (Htun & Weldon, 2012).

Economic Rights and Empowerment

Labor Market Policies

Labor market discrimination remains a persistent barrier to women's economic equality, with the global gender pay gap averaging 20% despite decades of equal pay legislation (ILO, 2018). The effectiveness of equal pay laws varies significantly depending on implementation mechanisms, with most successful models shifting from individual complaint processes to proactive employer obligations (Chicha, 2006). Iceland's Equal Pay Certification model, requiring companies with 25+ employees to document equal pay for work of equal value, represents a promising approach with demonstrable impact on reducing wage disparities (Wagner, 2018).

Anti-discrimination frameworks have gradually expanded beyond direct discrimination to recognize indirect discrimination and structural barriers. The European Union's conceptualization of indirect discrimination, addressing facially neutral practices with discriminatory effects, has been particularly influential (Fredman, 2011). However, enforcement remains challenging, with individualized complaint mechanisms proving inadequate for addressing systemic discrimination (Barnard & Hepple, 2000).

Work-family reconciliation policies significantly impact women's labor market participation and advancement. Paid parental leave schemes demonstrate widely varying effects depending

on design, with gender-neutral, non-transferable leave producing the most equitable outcomes (Castro-García & Pazos-Moran, 2016). Sweden's "daddy quota," reserving portions of parental leave exclusively for fathers, has increased men's caregiving participation while reducing "motherhood penalties" in employment (Duvander & Johansson, 2012). Similarly, affordable childcare access strongly predicts women's employment rates, with universal programs in Nordic countries supporting high maternal employment rates (Olivetti & Petrongolo, 2017).

Property and Inheritance Rights

Property rights fundamentally determine women's economic security and autonomy, yet discriminatory laws and practices persist globally. An estimated 40% of economies restrict women's property rights, with constraints particularly severe in parts of Sub-Saharan Africa, the Middle East, and South Asia (World Bank, 2021). Reform efforts have taken various approaches, including constitutional guarantees, statutory reforms, and customary law engagement.

Constitutional property guarantees provide important foundations but require implementation through statutory reform and judicial enforcement. Kenya's 2010 constitution explicitly prohibited gender discrimination in land access and ownership, but implementation has been constrained by conflicting customary practices and administrative obstacles (Nyamu-Musembi, 2013). Rwanda's post-genocide inheritance law reform provides a more successful model, with daughters granted equal inheritance rights and married women receiving joint ownership of household property (Cooper, 2010). Implementation included systematic land registration programs and community awareness campaigns, resulting in documented increases in women's land ownership (Ali et al., 2014).

Strategic engagement with traditional authorities has been vital in contexts with plural legal systems rooted in customary law over property relations. A case involving Botswana's Ngwaketse Land Board is illustrative of how custom can change as a result of the application of constitutional principles of equality, but only if traditional authorities are treated as stakeholders rather than as adversaries (Kalabamu, 2006).

Social Security and Welfare Policies

Social protection systems frequently disadvantage women due to their design around formal employment models that fail to account for women's unpaid care work and interruptions in employment histories. Contributory pension schemes typically produce significant gender gaps in retirement income due to women's lower wages, career interruptions, and predominance in informal and part-time work (Arza, 2015). Reform approaches include care

credits recognizing unpaid childcare periods in benefit calculations, as implemented in Germany and France, and universal basic pensions supplementing contributory systems, as in Bolivia and South Africa (Razavi et al., 2012).

Cash transfer programs have emerged as significant social protection mechanisms with important gender implications. Conditional cash transfers in Latin America typically target mothers as recipients based on assumptions about women's responsible spending patterns and role in fulfilling conditions related to children's health and education (Molyneux, 2006). While this approach increases women's access to resources, critics argue it reinforces traditional gender roles and adds to women's unpaid care burdens without challenging structural inequalities (Cookson, 2018). Unconditional cash transfers may offer greater transformation potential, as demonstrated by South Africa's Child Support Grant, which provides resources without reinforcing gendered expectations (Patel, 2012).

Violence Against Women

Domestic Violence Legislation

The past three decades have witnessed a global transformation in domestic violence laws, with 155 countries now having specific legislation addressing this previously "private" issue (World Bank, 2020). Legal approaches have evolved from narrow criminal provisions to comprehensive frameworks addressing prevention, protection, and support services. Spain's Organic Law on Integrated Protection Measures against Gender Violence (2004) represents a comprehensive model integrating criminal sanctions with protection orders, specialized courts, economic support for survivors, and prevention programs (Valiente, 2008).

Protection orders have become a central legal mechanism, though their effectiveness varies with implementation resources and enforcement commitment. Austria's pioneering protection order system, allowing police to immediately remove perpetrators from the home without requiring victim initiation, has demonstrated significant protective effects and has been widely replicated (Logar, 2008). However, research indicates protection orders often fail when inadequately enforced, particularly in resource-constrained settings where police may lack training or transportation to respond to violations (UN Women, 2011).

Despite legislative advances, implementation gaps remain substantial in most contexts. Common obstacles include inadequate funding for support services; insufficient training for police and judiciary, societal attitudes blaming victims, and practical barriers to accessing justice, such as costs and distance (Htun & Weldon, 2012). Successful implementation models emphasize coordinated community responses involving multiple stakeholders and

adequate resource allocation, as demonstrated in Duluth, Minnesota's influential model (Shepard & Pence, 1999).

Sexual Harassment Laws and Workplace Protections

Legal recognition of sexual harassment evolved significantly following feminist theorization of the issue in the 1970s and 1980s, with varying regulatory approaches across jurisdictions (MacKinnon, 1979). The United States developed sexual harassment law through judicial interpretation of sex discrimination provisions, establishing the influential "hostile environment" concept (Zippel, 2006). The European Union adopted specific directives defining harassment as discrimination and requiring preventive measures by employers (Numhauser-Henning & Laulom, 2012).

The #MeToo movement, beginning in 2017, catalyzed significant legal reforms across multiple jurisdictions, including expanded definitions of harassment, extended statutes of limitations, restricted use of non-disclosure agreements, and mandatory prevention training (Johnson et al., 2019). France's comprehensive 2018 law against sexual and gender-based violence exemplifies this new generation of reforms, establishing street harassment as an offense, extending prescription periods for child sexual abuse, and presuming non-consent in cases involving minors (Hennette-Vauchez, 2018).

Workplace harassment policies demonstrate varying effectiveness depending on design and implementation. Research indicates the most successful approaches combine clear prohibition, confidential reporting channels, protection from retaliation, regular training, and visible commitment from leadership (McDonald et al., 2015). However, power imbalances and fear of retaliation continue to deter reporting, particularly in hierarchical organizations and precarious employment contexts (McLaughlin et al., 2017).

Access to Justice for Survivors

Access to justice remains a critical challenge for survivors of gender-based violence, with global conviction rates for reported sexual violence often below 10% (UN Women, 2011). Specialized justice mechanisms have emerged as promising innovations, including dedicated domestic violence courts with trained personnel, simplified procedures, and integrated services. Spain's specialized gender violence courts, handling both criminal and family law aspects of cases, have demonstrated improved conviction rates and victim satisfaction (Buzawa & Buzawa, 2017).

Evidentiary and procedural reforms have addressed barriers facing gender-based violence survivors in legal systems. South Africa's Sexual Offences Act (2007) eliminated cautionary rules treating survivor testimony with special scepticism and restricted the use of sexual

history evidence (Artz & Smythe, 2007). However, implementation has been undermined by resource constraints and discriminatory attitudes among legal professionals (Machisa et al., 2017).

Restorative justice approaches have emerged as alternatives or complement to conventional criminal justice, though their application to gender-based violence remains controversial. New Zealand's family group conferencing model shows promise when implemented with careful safeguards, victim consent, facilitator training, and post-conference monitoring (Ptacek, 2010). However, significant concerns remain about power imbalances, revictimization risks, and potential for community pressure on survivors (Stubbs, 2007).

Indigenous justice systems present both challenges and opportunities for addressing gender-based violence. In Canada, First Nations communities have developed hybrid approaches integrating traditional values with contemporary gender equality principles, emphasizing healing, community accountability, and victim support (Cameron, 2006). However, tensions remain between respecting cultural autonomy and ensuring women's rights protection, requiring careful negotiation and safeguards (UN Women, 2011).

Comparative Findings

Country	Political Participation	Economic Rights	Violence Against Women	Legal Frameworks	Women's Situation	Justice Access	Outcomes
South Africa	Post-apartheid constitution with gender commission; Affirmative action provisions	Progressive property rights; Economic inequality persists	High violence rates; Constitutional protections strong	Transformative constitution (1996); Independent gender commission	Constitutional transformation; Implementation challenges	Sexual Offences Act (2007); Evidentiary reforms	Constitutional model; Resource constraints limit impact
Rwanda	Highest women's representation globally (61.3%); 30% reserved seats plus open competition	Land rights reform success; Joint property ownership laws	Comprehensive GBV legislation; Post-genocide legal framework	Progressive constitution; Comprehensive gender legislation	Exemplary constitutional provisions with strong implementation	Gender-based violence courts; Community engagement	Post-genocide transformation model; Sustained political will
Argentina	Pioneering Ley de Cupos (1991); 30% candidate quota with placement mandates	Mixed economic progress; Workplace discrimination ongoing	Comprehensive violence legislation; Femicide laws	Legal candidate quotas with enforcement; List PR system compatibility	Political representation breakthrough; Economic gaps remain	Violence legislation progress; Family law reforms	Quota system pioneer; Enforcement mechanisms crucial
Spain	Gender parity law	Workplace harassment	Comprehensive Gender	Organic Law on	Comprehensive legal	Specialized gender	Comprehensive approach

	with financial penalties; Limited single-member district success	reforms; #MeToo impact significant	Violence Law (2004); Specialized courts	Integrated Protection; Specialized gender courts	framework; Strong implementation commitment	violence courts; Integrated services	model; High conviction rates
Sweden	High women's representation; Gender-neutral parental leave policies	"Daddy quota" parental leave; Strong work-family reconciliation	Low violence rates; Effective prevention programs	Strong constitutional equality provisions; EU directive implementation	Highest global gender equality rankings; Sustained progress	Excellent access; Victim-centered approaches	Nordic model success; Male engagement strategies
Iceland	High political representation; Gender equality leadership	Equal Pay Certification (25+ employees); Proactive employer obligations	Low violence rates; Strong prevention focus	Constitutional equality provisions; Innovative policy approaches	Leading global gender equality; Comprehensive approach	Strong legal framework; Prevention-focused	Equal pay certification pioneer; Measurable impact
India	Reserved seats system; Supreme Court gender equality jurisprudence	Property rights progress; Workplace harassment reforms post-Vishaka	Mixed progress; Cultural barriers are significant	Constitutional equality provisions; Expansive Supreme Court interpretation	Large population; Significant regional variations	Vishaka guidelines; Supreme Court activism	Constitutional interpretation advances; Implementation gaps
Uganda	Reserved constituency system; Women maintain parliamentary presence despite hostility	Land rights challenges; Customary law conflicts	High violence rates; Traditional authority engagement needed	Constitutional provisions; Dual legal system challenges	Reserved seat success; Cultural resistance persists	Limited by customary law conflicts, Capacity constraints	Reserved seat model; Traditional authority tensions
Colombia	Constitutional reforms (1991); Constitutional Court gender jurisprudence	Mixed economic progress; Formal sector advances	High violence rates; Constitutional Court reproductive rights	Progressive 1991 constitution; Strong Constitutional Court	Constitutional transformation; Violence challenges persist	Constitutional Court leadership; Reproductive autonomy recognition	Constitutional Court activism; Violence implementation gaps
Tunisia	Women's organizations' constitutional input; Article 46, equal opportunities guarantee	Economic participation progress; Legal framework improvements	Violence legislation progress; State commitment to elimination	2014 constitution Article 46; Women's movement influence	Constitutional process success; Implementation beginning	Improving framework; State commitment increasing	Constitutional process model; Women's movement impact
Kenya	2010 constitution quotas;	Land rights constitutional provisions;	Constitutional provisions;	2010 constitution gender	Progressive constitutional provisions;	Constitutional framework	Constitutional reform success;

	Women's movement constitutional input	Implementation obstacles persist	Customary law invalidation	provisions; Customary law conflicts	Implementation challenges	is strong; Customary conflicts remain	Implementation capacity needs
Canada	Supreme Court gender parity; Reformed judicial appointment process	Strong workplace equality framework; Pay equity advances	Violence legislation framework: Provincial variations	Charter of Rights equality provisions; Federal-provincial dynamics	High gender equality rankings; Regional variations	Supreme Court gender parity impact; Specialized approaches	Judicial diversity model; Federal system complexities
France	Parity law limited single-member success; Financial penalties are insufficient	EU directive implementation; Workplace harassment reforms	Comprehensive 2018 violence law; Street harassment provisions	Constitutional parity provisions; EU framework implementation	Strong legal framework; Implementation variations	2018 comprehensive law; Extended prescription periods	Parity law lessons: System compatibility importance
United States	No constitutional equality amendment; Supreme Court narrow interpretation case (Geduldig v. Aiello)	Title VII framework: Sexual harassment judicial development	Violence Against Women Act; State-level variations	Constitutional equal protection; Judicial interpretation variations	Federal system complexities; State-level variations	Supreme Court sexual harassment jurisprudence; State variations	Judicial development model; Constitutional amendment failure
Germany	EU directive implementation; Care credits pension system	Care credits for childcare periods; EU framework compliance	EU framework implementation; Federal-state coordination	Basic Law equality provisions; EU directive implementation	Strong EU framework compliance; Federal system coordination	Federal system approach; EU standard implementation	Care credits innovation; Federal-EU coordination
Bolivia	Constitutional reforms; Indigenous women's rights recognition	Universal basic pension supplement; Indigenous rights integration	Violence legislation; Indigenous justice system integration	Plurinational constitution; Indigenous rights recognition	Indigenous rights constitutional integration; Implementation challenges	Hybrid justice approaches; Indigenous-modern integration	Indigenous rights model; Plurinational approach
Zimbabwe	Progressive 2013 constitution; Legislative reform lacking	Constitutional provisions; Resource constraints severe	Constitutional violence provisions; Implementation limited	2013 constitution progressive provisions; Implementation absent	Progressive constitutional provisions; Economic constraints prevent realization	Constitutional framework; Resource limitations severe	Constitutional progress; Economic implementation barriers
New Zealand	High women's representation; Family group conferencing innovation	Strong equality framework; Work-family balance focus	Family group conferencing model; Restorative justice innovation	Human rights framework; Indigenous rights integration	High gender equality; Indigenous integration challenges	Restorative justice innovation; Victim safeguards essential	Restorative justice model; Cultural integration approaches

Conclusion

Assessment of Global Progress and Regional Variations

Our comprehensive review reveals uneven but significant progress in women's rights advancements globally. While substantial legal reforms have been enacted across regions, implementation effectiveness varies dramatically. High-income countries, particularly in Northern Europe, have achieved greater gender parity across most indicators, though persistent wage gaps and underrepresentation in leadership positions remain. Middle-income countries demonstrate mixed results, with legislative frameworks often outpacing implementation capacity. Low-income regions face the most significant challenges, with progress limited by resource constraints, conflicting customary practices, and socio-political instability.

Regional variations highlight distinct patterns: Latin America leads in political representation through quota systems but struggles with gender-based violence enforcement; Sub-Saharan Africa demonstrates progress in constitutional gender provisions but faces implementation challenges; East Asia shows economic advancement without commensurate political representation; and the MENA region displays the widest gap between policy adoption and practical implementation. Post-conflict societies present both unique challenges and opportunities, with several having leveraged rebuilding phases to integrate stronger gender provisions in new governance structures.

Our findings confirm that legal reform alone proves insufficient for transformative change. Countries demonstrating the most substantial progress share key characteristics: sustained political will, dedicated funding mechanisms, strong civil society engagement, and meaningful accountability frameworks.

Impact of Legal and Policy Reforms on Women's Lived Experiences

The study exposes the ambivalent implications of reform endeavours on the realities of women's lives. Comprehensive legal and policy reforms have proven to be effective where women have benefited significantly in terms of safety, economic security, and socio-political agency. Yet, at least in the on-the-ground sense, this gap between formal rights and substantive equality is greater in most contexts. The following findings particularly deserve attention:

Second, the interlinkages between economic empowerment and other dimensions of rights for women are two-way and synergistic in nature. Women need political autonomy to be able to exercise other rights, and for their political representation to prioritize economic policies that will benefit them all. Second, despite regulations ensuring women's rights in all areas,

the violence against women continues to act as a cross-cutting hindrance to the exercise of those rights. Third, the most marginalised women intersect with the most vulnerability due to the nature of implementation gaps.

The most effective reform initiatives show that effectiveness is not simply about legal change, but rather requires efforts that address social norms, institutional practices, and resource allocation simultaneously. This draws attention to the need for context-specific strategies to engage both formal institutions and informal power dynamics. Based on our analysis, we argue that real change is not short-term: it demands sustained commitment across generations, not years.

Recommendations

Based on our findings, we propose the following recommendations:

For policy reform:

a. Prioritize closing implementation gaps through dedicated funding, capacity building, and accountability mechanisms
b. Develop comprehensive approaches that address legal, social, and economic dimensions simultaneously
c. Strengthen enforcement mechanisms for existing legislation, particularly regarding violence against women
d. Adopt intersectional approaches that recognize and address multiple, overlapping vulnerabilities
e. Integrate gender equality objectives across all policy domains rather than treating them as isolated issues

For implementation strategies:

a. Establish dedicated institutional mechanisms with adequate authority and resources
b. Engage men and boys as partners and agents of change in gender equality initiatives
c. Strengthen data collection systems to enable evidence-based policy development and monitoring
d. Support civil society organizations as essential partners in advocacy, service delivery, and accountability
e. Develop context-specific approaches that address local power dynamics and cultural specificities

For research priorities:

a. Investigate effective strategies for changing social norms that perpetuate gender inequality

b. Expand research on intersectionality to better understand how different factors interact to shape women's experiences
c. Develop more nuanced metrics that capture substantive equality beyond formal legal provisions
d. Study successful implementation models that bridge the gap between policy adoption and practical outcomes
e. Examine the impact of emerging challenges, including climate change, technological transformation, and demographic shifts, on gender equality objectives

References

Ali, D. A., Deininger, K., & Goldstein, M. (2014). Environmental and gender impacts of land tenure regularization in Africa: Pilot evidence from Rwanda. *Journal of Development Economics, 110*, 262-275. https://doi.org/10.1016/j.jdeveco.2013.12.009

Andrews, P. (2001). The South African constitutional court and social justice. *Columbia Human Rights Law Review, 32*, 425-456.

Artz, L., & Smythe, D. (2007). Losing ground? Making sense of attrition in rape cases. *South African Crime Quarterly, 22*, 13-20. https://doi.org/10.17159/2413-3108/2007/v0i22a986

Arza, C. (2015). The gender dimensions of pension systems: Policies and constraints for the protection of older women. UN Women Discussion Paper. https://www.unwomen.org/en/digital-library/publications/2015/7/gender-dimensions-of-pension-systems

Baines, B. (2013). Must feminist judges self-identify as feminists? In U. Schultz & G. Shaw (Eds.), *Gender and judging* (pp. 379-398). Hart Publishing.

Banda, F. (2006). Blazing a trail: The African Protocol on Women's Rights comes into force. *Journal of African Law, 50*(1), 72-84. https://doi.org/10.1017/S0021855306000076

Barnard, C., & Hepple, B. (2000). Substantive equality. *Cambridge Law Journal, 59*(3), 562-585. https://doi.org/10.1017/S0008197300000246

Beall, J. (2007). Decentralisation, women's rights and development. *Development, 50*(1), 149-157. https://doi.org/10.1057/palgrave.development.1100357

Beckwith, K. (2007). Numbers and newness: The descriptive and substantive representation of women. *Canadian Journal of Political Science, 40*(1), 27-49. https://doi.org/10.1017/S0008423907070059

Bettinger-López, C. (2008). Jessica Gonzales v. United States: An emerging model for domestic violence & human rights advocacy in the United States. *Harvard Human Rights Journal, 21*, 183-195.

Bhavnani, R. R. (2009). Do electoral quotas work after they are withdrawn? Evidence from a natural experiment in India.

American Political Science Review, 103(1), 23-35. https://doi.org/10.1017/S0003055409090029

Bond, J. E. (2010). Gender, discourse, and customary law in Africa. *Southern California Law Review, 83*, 509-574.

Bunch, C. (2018). Transforming human rights from a feminist perspective. In J. Peters & A. Wolper (Eds.), *Women's rights, human rights* (pp. 11-17). Routledge. https://doi.org/10.4324/9781315656571

Burnet, J. E. (2011). Women have found respect: Gender quotas, symbolic representation, and female empowerment in Rwanda. *Politics & Gender, 7*(3), 303-334. https://doi.org/10.1017/S1743923X11000250

Buzawa, E. S., & Buzawa, C. G. (2017). *Global responses to domestic violence*. Springer. https://doi.org/10.1007/978-3-319-56721-1

Byrnes, A., & Freeman, M. (2012). The impact of the CEDAW convention: Paths to equality. UNSW Law Research Paper, (2012-7). https://ssrn.com/abstract=2011655

Cameron, A. (2006). Stopping the violence: Canadian feminist debates on restorative justice and intimate violence. *Theoretical Criminology, 10*(1), 49-66. https://doi.org/10.1177/1362480606059982

Castro-García, C., & Pazos-Moran, M. (2016). Parental leave policy and gender equality in Europe. *Feminist Economics, 22*(3), 51-73. https://doi.org/10.1080/13545701.2015.1082033

Celis, K. (2009). Substantive representation of women (and improving it): What it is and should be about? *Comparative European Politics, 7*(1), 95-113. https://doi.org/10.1057/cep.2008.35

Charrad, M. M., & Zarrugh, A. (2014). Equal or complementary? Women in the new Tunisian Constitution after the Arab Spring. *The Journal of North African Studies, 19*(2), 230-243. https://doi.org/10.1080/13629387.2013.857276

Chattopadhyay, R., & Duflo, E. (2004). Women as policy makers: Evidence from a randomized policy experiment in India. *Econometrica, 72*(5), 1409-1443. https://doi.org/10.1111/j.1468-0262.2004.00539.x

Chicha, M. T. (2006). A comparative analysis of promoting pay equity: Models and impacts. International Labour Organization. https://www.ilo.org/travail/whatwedo/publications/WCMS_TRAVAIL_PUB_13/lang--en/index.htm

Collins, P. H., & Bilge, S. (2020). *Intersectionality* (2nd ed.). Polity Press.

Cookson, T. P. (2018). *Unjust conditions: Women's work and the hidden cost of cash transfer programs*. University of California Press. https://doi.org/10.1525/luminos.49

Cooper, E. (2010). Inheritance and the intergenerational transmission of poverty in Sub-Saharan Africa: Policy considerations. Chronic

Poverty Research Centre Working Paper No. 159. https://ssrn.com/abstract=1719673

Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review, 43*(6), 1241-1299. https://doi.org/10.2307/1229039

Cusack, S., & Pusey, L. (2013). CEDAW and the rights to non-discrimination and equality. *Melbourne Journal of International Law, 14*, 54-92.

Dahlerup, D. (2006). The story of the theory of critical mass. *Politics & Gender, 2*(4), 511-522. https://doi.org/10.1017/S1743923X0600042X

Dahlerup, D., & Freidenvall, L. (2005). Quotas as a 'fast track' to equal representation for women. *International Feminist Journal of Politics, 7*(1), 26-48. https://doi.org/10.1080/1461674042000324673

Domingo, P., McCullough, A., Simbiri, F., & Wanjala, B. (2016). Women and power: Shaping the development of Kenya's 2010 Constitution. Overseas Development Institute. https://odi.org/en/publications/women-and-power-shaping-the-development-of-kenyas-2010-constitution/

Duvander, A. Z., & Johansson, M. (2012). What are the effects of reforms promoting fathers' parental leave use? *Journal of European Social Policy, 22*(3), 319-330. https://doi.org/10.1177/0958928712440201

Fredman, S. (2011). *Discrimination law* (2nd ed.). Oxford University PressFreedman, E. B. (2002). *No turning back: The history of feminism and the future of women*. Ballantine Books.

Goetz, A. M. (2020). The new competition in multilateral norm-setting: Transnational feminists & the illiberal backlash. *Daedalus, 149*(1), 160-179. https://doi.org/10.1162/daed_a_01780

Grossman, N. (2016). Achieving sex-representative international court benches. *American Journal of International Law, 110*(1), 82-95. https://doi.org/10.5305/amerjintelaw.110.1.0082

Hellum, A., & Aasen, H. S. (2013). *Women's human rights: CEDAW in international, regional and national law*. Cambridge University Press. https://doi.org/10.1017/CBO9781139540841

Hennette-Vauchez, S. (2018). The #MeToo movement in France: Legal frame vs. social movement. International Society of Public Law Blog. https://blog-iacl-aidc.org/blog/2018/6/8/the-metoo-movement-in-france-legal-frame-vs-social-movement

hooks, b. (2000). *Feminist theory: From margin to center* (2nd ed.). Pluto Press.

Htun, M., & Weldon, S. L. (2012). The civic origins of progressive policy change: Combating violence against women in global perspective, 1975–2005. *American Political Science Review, 106*(3), 548-569. https://doi.org/10.1017/S0003055412000226

Htun, M., Lacalle, M., & Micozzi, J. P. (2013). Does women's presence change legislative behavior? Evidence from Argentina, 1983–

2007. *Journal of Politics in Latin America, 5*(1), 95-125. https://doi.org/10.1177/1866802X1300500104

Hughes, M. M., Paxton, P., Clayton, A. B., & Zetterberg, P. (2019). Global gender quota adoption, implementation, and reform. *Comparative Politics, 51*(2), 219-238. https://doi.org/10.5129/001041519X15647434969795

ILO. (2018). *Global wage report 2018/19: What lies behind gender pay gaps*. International Labour Organization. https://www.ilo.org/global/publications/books/WCMS_650553/lang--en/index.htm

Inter-Parliamentary Union. (2021). Women in national parliaments. Retrieved from https://data.ipu.org/women-ranking

Irving, H. (2017). *Gender and the constitution: Equity and agency in comparative constitutional design*. Cambridge University Press. https://doi.org/10.1017/9781139167536

Jalalzai, F. (2013). *Shattered, cracked, or firmly intact? Women and the executive glass ceiling worldwide*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199943531.001.0001

Johnson, P. A., Widnall, S. E., & Benya, F. F. (Eds.). (2019). *Sexual harassment of women: Climate, culture, and consequences in academic sciences, engineering, and medicine*. National Academies Press. https://doi.org/10.17226/24994

Kalabamu, F. T. (2006). Patriarchy and women's land rights in Botswana. *Land Use Policy, 23*(3), 237-246. https://doi.org/10.1016/j.landusepol.2004.11.001

Kantola, J. (2010). *Gender and the European Union*. Palgrave Macmillan. https://doi.org/10.1007/978-1-137-03745-9

Kapur, R., & Cossman, B. (1996). *Subversive sites: Feminist engagements with law in India*. Sage Publications.

Keller, L. M. (2014). The impact of states parties' reservations to the Convention on the Elimination of All Forms of Discrimination Against Women. *Michigan State Law Review*, 309-326.

Korolczuk, E., & Graff, A. (2018). Gender as "ebola from Brussels": The anticolonial frame and the rise of illiberal populism. *Signs: Journal of Women in Culture and Society, 43*(4), 797-821. https://doi.org/10.1086/696691

Krook, M. L. (2009). *Quotas for women in politics: Gender and candidate selection reform worldwide*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195375671.001.0001

Lemaitre, J. (2016). After the war: Displaced women, ordinary ethics, and grassroots reconstruction in Colombia. *Social & Legal Studies, 25*(5), 545-565. https://doi.org/10.1177/0964663916636585

Logar, R. (2008). The Austrian model of intervention in domestic violence cases. United Nations Expert Group Meeting on good practices in legislation on violence against women.

https://www.un.org/womenwatch/daw/egm/vaw_legislation_2008/experts/Logar.austrianmodel.pdf

Machisa, M., Jina, R., Labuschagne, G., Vetten, L., Loots, L., Swemmer, S., Meyersfeld, B., & Jewkes, R. (2017). *Rape justice in South Africa: A retrospective study of the investigation, prosecution and adjudication of reported rape cases from 2012*. Gender and Health Research Unit, South African Medical Research Council. https://www.samrc.ac.za/reports/rape-justice-south-africa-retrospective-study-investigation-prosecution-and-adjudication-reported

Mack-Canty, C. (2004). Third-wave feminism and the need to reweave the nature/culture duality. *NWSA Journal, 16*(3), 154-179. https://doi.org/10.2979/NWS.2004.16.3.154

MacKinnon, C. A. (1979). *Sexual harassment of working women: A case of sex discrimination*. Yale University Press.

Mama, A. (2011). What does it mean to do feminist research in African contexts? *Feminist Review, 98*(1), 4-20. https://doi.org/10.1057/fr.2011.22

McDonald, P., Charlesworth, S., & Graham, T. (2015). Developing a framework of effective prevention and response strategies in workplace sexual harassment. *Asia Pacific Journal of Human Resources, 53*(1), 41-58. https://doi.org/10.1111/1744-7941.12046

McLaughlin, H., Uggen, C., & Blackstone, A. (2017). The economic and career effects of sexual harassment on working women. *Gender & Society, 31*(3), 333-358. https://doi.org/10.1177/0891243217704631

McMillen, S. G. (2008). *Seneca Falls and the origins of the women's rights movement*. Oxford University Press.

Mendes, K., Ringrose, J., & Keller, J. (2018). #MeToo and the promise and pitfalls of challenging rape culture through digital feminist activism. *European Journal of Women's Studies, 25*(2), 236-246. https://doi.org/10.1177/1350506818765318

Molyneux, M. (2006). Mothers at the service of the new poverty agenda: Progresa/Oportunidades, Mexico's conditional transfer programme. *Social Policy & Administration, 40*(4), 425-449. https://doi.org/10.1111/j.1467-9515.2006.00497.x

Murray, R. (2012). Parity and legislative competence in France. In S. Franceschet, M. L. Krook, & J. M. Piscopo (Eds.), *The impact of gender quotas* (pp. 27-42). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199830091.003.0002

Ndlovu, S., & Mutale, S. B. (2013). Emerging trends in women's participation in politics in Africa. *American International Journal of Contemporary Research, 3*(11), 72-79.

Numhauser-Henning, A., & Laulom, S. (2012). *Harassment related to sex and sexual harassment law in 33 European countries*. European Commission. https://op.europa.eu/en/publicatio

n-detail/-/publication/e06dcc86-b7bf-459e-8241-47502ef379c4

Nussbaum, M. C. (2000). *Women and human development: The capabilities approach*. Cambridge University Press. https://doi.org/10.1017/CBO9780511841286

Nyamu-Musembi, C. (2013). Pulling apart? Treatment of pluralism in the CEDAW and the Maputo Protocol. In A. Hellum & H. S. Aasen (Eds.), *Women's human rights: CEDAW in international, regional and national law* (pp. 183-213). Cambridge University Press. https://doi.org/10.1017/CBO9781139540841.010

O'Brien, D. Z., & Rickne, J. (2016). Gender quotas and women's political leadership. *American Political Science Review, 110*(1), 112-126. https://doi.org/10.1017/S0003055415000611

Phillips, A. (1995). *The politics of presence*. Oxford University Press.

Reilly, N. (2009). *Women's human rights: Seeking gender justice in a globalizing age*. Polity.

Sternbach, N. S., Navarro-Aranguren, M., Chuchryk, P., & Alvarez, S. E. (1992). Feminisms in Latin America: From Bogotá to San Bernardo. *Signs: Journal of Women in Culture and Society, 17*(2), 393-434. https://doi.org/10.1086/494738

UN Women. (2011). *Progress of the world's women: In pursuit of justice*. UN Women. https://www.unwomen.org/en/digital-library/publications/2011/7/progress-of-the-world-s-women-in-pursuit-of-justice

UN Women. (2018). *Turning promises into action: Gender equality in the 2030 agenda for sustainable development*. UN Women. https://www.unwomen.org/en/digital-library/publications/2018/2/gender-equality-in-the-2030-agenda-for-sustainable-development-2018

UNESCO. (2020). *Global education monitoring report 2020: Gender report, A new generation: 25 years of efforts for gender equality in education*. UNESCO. https://en.unesco.org/gem-report/2020genderreport

United Nations. (1995). *Beijing Declaration and Platform for Action*. Retrieved from https://www.un.org/en/events/pastevents/pdfs/Beijing_Declaration_and_Platform_for_Action.pdf

Walters, M. (2005). *Feminism: A very short introduction*. Oxford University Press. https://doi.org/10.1093/actrade/9780192805102.001.0001

World Bank. (2020). *Women, business and the law 2020*. World Bank. https://openknowledge.worldbank.org/handle/10986/32639

World Economic Forum. (2021). *Global gender gap report 2021*. World Economic Forum. https://www.weforum.org/reports/global-gender-gap-report-2021

Yamin, A. E. (2019). *Power, suffering, and the struggle for dignity: Human rights frameworks for health and why they matter*. University of Pennsylvania Press. https://doi.org/10.9783/9780812291957

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Policy Reforms and their Impact on Inclusive Governance in India

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Abstract

Reform policies in India have begun to be a relevant aspect of an inclusive governance approach, whereby shared growth and development are aimed at by all strata of society. There have been innumerable reforms also in the economic, political and social arenas since independence, all of which try to address inequality, increase participation and ensure justice. Several historic movements, such as the 73rd and 74th Constitutional Amendments on decentralisation, the advent of the Right to Information Act, affirmative action, and welfare schemes for certain groups, have all improved accountability and democratic processes. Moreover, some recent policy reforms signal an increase in digital governance as well as improving the financial inclusion of marginalised groups through JAM (Jan Dhan-Aadhaar-Mobile) and mechanisms such as Direct Benefit Transfers (DBT), which would improve greater accountability, efficiency and access for the poor and marginalised groups. While there has been some very positive reforms that have been evident in changing some of the barriers, the reform process has many significant shortcomings, such as regional imbalance, red-tapism, corruption, digital divides, and little awareness of the benefits of these groups. The unequal relations of women, Scheduled Castes, Scheduled Tribes, and multiple vulnerable populations still create a reason for further policy frameworks and surveillance. This paper investigates India's policy reforms and their contribution to inclusive governance to push forward as well as gaps in implementation. We argue that we will continue to need reforms to respond to changing socio-economic realities and that being participatory will create an engagement to achieve equitable development. Overall, while policy reforms will take us along the road to inclusivity in governance, there is a need for innovative thought, continued surveillance, and responsive institutions to actualize, not leave to assumptions, the vision of inclusive growth and participatory democracy in India.

Keywords*: Policy Reforms, Inclusive Governance, Decentralization, Equity and Participation, Democratic Development.*

Introduction

Policy reforms are systematized and reconstructed government policies, laws, and regulations responding to a socio-economic problem, governance arrangement and development benefit for all parts of society. Policy reforms relate to administrative change, reform, and serious transformational changes that change the way institutions operate; the allocation of resources, and the means through which citizens interact with the state. Inclusive governance is a participatory, people-centered model of governance where governance decision-making and benefits are extended to a broad range of groups that are marginalized and vulnerable, and represent minorities who were, therefore, not represented or who did not participate in the

process. It provides representation of elections in the sense of collective political action while also transitioning into governance that includes strong dimensions of governance, such as equity, transparency, accountability, and civic engagement in the public sphere. Inclusiveness is a central dimension of governance in a large, heterogeneous country such as India. The plurality of India's democracy shapes the frame of inclusion. Inclusiveness is plural, and includes religious, linguistic, regional, and cultural practices and identities. Yet, socio-economic differences, differences at the sub-national level, and socio-political differences based on caste or gender all hinder equal forms of governance participation for all citizens. The significance of policy reforms is to help alleviate such barriers and to also create governance that is responsive to all citizens' requirements. Policy reform is very important in the case of India, where it is undergoing rapid and profound changes in its economy, polity, and governance. While globalization and liberalization have contributed to the increased growth of the economy, such advancements have increased inequalities. Meanwhile, although decentralization reforms have opened up spaces for community participation, the challenge of capacity and accountability persists. Thus, while examining the role of reforms in promoting inclusive governance can shed light on the achievements and failures of reforms. This study not only highlights the successes but also the gaps that need to be improved to develop a more equitable and sustainable governance in the long run in India.

Objectives of the Study

The study aims to critically examine the relationship between policy reforms and inclusive governance in India. Policy reforms are usually declared with the objective of bringing about a more just, equitable, and citizen-centric governance arrangement. Whether they can do so very much rests upon how they are designed, implemented and monitored. The research identifies three objectives. First, the research will investigate significant comprehensive policy reforms toward inclusiveness. This entails identifying major constitutional, economic, and social policy reforms that have been enacted in India in the past thirty years, and, more particularly, those policy reforms focused on empowering the most marginal communities and giving these communities opportunities for participation and transparency. Second, the research will assess the impact of policies on governance and service delivery. Reforms like the Right to Information Act (RTI) or MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) or laws on decentralisation seek to ensure that governance can be more accountable. In the case of the Right to Information Act, we wish to determine if this means more access to resources and employment opportunities, education, or improved decision-making over their own livelihoods for the marginalised. Third, the research will

identify barriers and gaps to get to the reality of implementing inclusive policies. Even in the existence of inclusive policies, inertia, bureaucratic inefficiency and corruption, poor community awareness, and digital barriers represent structural constraints that limit the effectiveness of these policies. It is important to understand the limitations of these constraints to assess the actual success of reforms. Finally, the Study aims to suggest recommendations for enhancing inclusive governance. This includes drawing on better practices and lessons from successful reforms, and poorly performing reforms to guide how governance can be made more participatory, accountable, and sustainable. Overall, the objectives are framed to provide a holistic view of how policy reforms contribute to inclusive governance in India.

Historical Context of Policy Reforms in India

The nature and landscape of policy reforms in India has changed substantially, shaped by India's socio-political development, ensuring the balance of growth and equity. A watershed moment was the economic reforms of 1991 that allowed India to move from a closed, state-directed economy to a liberalized economy with more market orientation. This involved de-licensing, opening trade and investment, and liberalizing industries, which significantly diminished government regulation over the economy. While launching India's economic growth trajectory and accelerating the integration of the economy to globalization, it also raised questions over increasing inequality and disproportionality in the degree a segment of the population benefited, highlighting the need for affiliated social policies in order to focus on inclusiveness. In addition to economic reforms, constitutional reforms in the form of the 73rd and 74th constitutional amendments (1992) also initiated the transition towards democratizing governance. These amendments, after democratically establishing Panchayati Raj Institutions (PRIs) and ULBs, created that layer of governance, which led to benefits that marginalized groups were able to obtain and to participation from the local grassroots level in governance. While this devolution is a step to inclusiveness in governance, now citizens have more of a voice at the local level, through inclusion at the local government level. Finally, the rights-based policies generated in the early 2000s further contributed to inclusiveness. The Right to Information Act (2005), for example, gives citizens the opportunity to demand transparency and accountability in governance as much as possible. The Mahatma Gandhi National Rural Employment Guarantee Act (2005) also formally established a legal right to work, particularly to the benefit of rural households and women in the transition towards inclusion of the notion of work in citizenship. The Right of Children to Free and Compulsory Education Act (2009) attempted to universalise education, with a strong rhetoric around inclusivity and equity in education and literacy rights. To summarise, these reforms indicate India's path towards a

model of governance which embraces economic growth, democratic involvement, and social justice. However, the extent to which these reforms have led to more inclusive governance has varied enormously in place and time and there remain many exclusionary acts that persist. If we consider whether reform is a route towards more inclusive governance, it is important to know the historical context of such developments.

Significant Policy Reforms for Inclusiveness

A host of policy reforms have been made to increase inclusiveness and improve the health of a democratic form of governance in India. Within this suite of reforms are political reforms, as reservation policies and the decentralisation reforms, which reshaped the landscape completely. Reservation for Scheduled Castes, Scheduled Tribes, and Other Backward Classes for elected offices, educational institutions, and public sector jobs has enabled representation for what has been historically cached population of about one million individuals. The 73rd and 74th Constitutional Amendments in 1992 brought together Panchayati Raj Institutions and Urban Local Bodies within the Constitution, institutionalised local self-government, and reserved one-third of seats for women in all local bodies, allowing local pluralism to emerge as a new democratic space. Social reform processes have also made significant contributions. Policy reforms such as the Right to Education Act (2009), and initiatives like Sarva Shiksha Abhiyan (Education for All) designed to close literacy gaps, and health care programs such as the National Health Mission and Ayushman Bharat seek to deliver health services to populations that are marginalised. The National Food Security Act (2013) is an example of this framework, as it provided subsidized food grains to millions of Indians, in an attempt to eliminate hunger and malnutrition from a structural perspective. In terms of updating services, digital reforms such as Digital India and Aadhaar-enabled Direct Benefit Transfers have taken advantage of the digital world in the delivery of welfare since they have increased digital connections, updated information, and identified gaps that needed to be filled to help provide access, which would normally impede beneficiaries. Digital delivery via the use of technological mediation has raised standards for accountability and transparency in governance, while also scaling up and scaling out governance. However, there remain access issues duly observed for endangered populations, be it in terms of the exclusionary access to be able to access digital, access to services, rebuilding capacity within the public provisioning of welfare in regards to equity and associated welfare dimensions: equity amount not quite rational approximations of access to welfare. Even the economic reforms including Startup India, MGNREGA that tended to focus on rural employment and valiant attempts at poverty alleviation fostered inclusion, and access to entrepreneurship, financial inclusion, and

livelihood security perhaps, to help bolster access to social productivity where economic reform is not only interchangeable with social empowerment and together these programs afford resource and access to opportunities of capability for impaired or at least marginalised groups of people collectively. As such, these reforms demonstrate an effort to expand the state´s governance functions of state control and institutional capture of communities. Although, in the wake of - as some claim - the imposition of governance, from coercive state actors, and other state effects, the Indian state was making an effort to expand governance efforts, trying not to be obtrusive without recreating relations of imperative social interaction, while also limiting access in encumbering relations of accountability and regulation. In line as development is cultural evolution, often very complex, over time and tied to salient histories. Essentially, if the result of greater development and governance reforms produces a better life for the people of India, then continuing to evaluate in all policies and programs people's roles in how they can participate in each element of its design, implementation, access and scaling, and perhaps even initiating and anchoring authentic human development is considered.

Impact of Policy Reforms on Inclusive Governance

In India, policy reforms have, in effect, altered the character of governance and produced an increase in measurable inclusiveness and citizen participation. Perhaps the most meaningful result has been the increase in grassroots participation and empowerment. Through decentralising and reservations, erstwhile marginalized communities are now part of the political administrative process in legitimate ways. The increase of women's leadership in the Panchayati Raj Institutions has not only increased representation in municipal government, it has also affected local development priorities to take into account women, and often the focus has been simply on social welfare and education being the most pressing concerns, often more than leadership acknowledgment and assessment. A further major impact has been seen with respect to enhanced transparency and accountability. Reforms such as the Right to Information Act (2005) have allowed the public to question authorities where there was no oversight, as well as allowed the people who were entrusted with public money not to have free rein over it. From a similarly planned approach, digital reforms such as having tax and direct benefit transfers (DBT) linked through the identity of Aadhaar, has simplified delivery of welfare and benefit as they demonstrate spending, using digital trails, allowing for better and more accurate understanding of whether the system is delivering to intended beneficiaries. The aggregate impact of policy reforms have been to increase access to education, employment and welfare services - policies such as MGNREGA have allowed rural households to protect and secure wage employment; law and policies such as the Right to Education Act (2009) legally mandate

free and compulsory schooling in the 6-14 age range. Policies regulating health issues and food security, coupled with welfare policies, have also contributed to real change in basic living standards for the poorest in India. Furthermore, reforms have helped to reduce poverty and inequality in key areas. Targeted poverty alleviation programmes and social security schemes, for example, have provided some support for segments of the population that would otherwise have been marginalized. While the political, economic, and social landscape varies from state to state and implementation is not uniform, there is evidence that inclusive policy positions have helped to reduce socio-economic inequalities, at least in those states where they were particularly well-applied. Overall, reforms have had a positive but partial impact on policy in relation to inclusive governance. Where there has been policy reform that increases broader participation and access among relevant stakeholders, systemic failures outside of the reforms (e.g., social and structural power relations) make it easier for certain populations in India to benefit from public policies than others. This shows that there is still a long way to go - relaxation and/or expansion will be needed; and that there is a need for improving existing and/or developing new enforcement mechanisms.

Existing Challenges and Limitations

Despite some noteworthy evidence on measurable performance (in terms of policies aimed at inclusion), India's policy reforms continue to face significant challenges related to inclusiveness. One significant challenge is the degree of unevenness in the implementation of reforms by geographic area; for example, federalism means that states will differ in their capacity for governance, available resources, and level of political willingness or buy-in, which will all affect the manner and success of policy reforms once in place. While one state might be systematically putting MGNREGA to good use as a tool for rural employment, a neighbouring state might be substantially under-utilising the scheme via poorly suitable monitoring efforts at scale. Another challenge and limitation on inclusion in public policy practice is the digital divide and the exclusion of disadvantaged groups. Although digital reforms have better organized welfare delivery, smartphones, internet service, and digital literacy remain limited for demographic categories such as women, the elderly, and rural populations. When these groups are excluded from the benefits of technology, technology fails to show itself to be a tool of inclusiveness. Bureaucratic inefficiencies and corruption fail to bolster the efficacy of reforms. Delays, leakages, and accountability in administrative systems are common in implementations. There have been instances where beneficiaries of programs have encountered barriers affecting access to entitled services due to red tape and/or corruption at the local level; similar barriers reduce trust in governance, especially when the system offers

little recourse for injustice. Alternatively, there are policy gaps when it comes to addressing inequities related to the intersectionality of gender, caste, and the rural-urban divide. While affirmative reservation policies and welfare programs have promoted representation, entrenched social structures still limit genuine empowerment. While women in governance have gained an opportunity, they continue to be present tokens, and there remain marginalised groups accessing quality education, healthcare, and occupational opportunities, even after reforms. In addition, a plethora of policies have been considered using a one-size-fits-all approach, which does not consider diversity arising from regions. This decision inevitably limits the efficacy of reforms to address particular socio-economic issues. In sum, although reforms have taken steps in pursuing an inclusivity agenda, the success remains blocked by structural barriers. Addressing digital divides, strengthening institutional capacity, along with intersectional inequities continue to be important measures to substantive inclusivity.

Case Studies

The greatest way to understand the real impact of policy reform in inclusive governance is through case studies, which demonstrate both positives and negatives. The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is a classic case study, since it provided a legal right to work for rural households. MGNREGA increased wage earnings for rural households, increasing income security and reducing rural to urban migration, while facilitating wage-earning opportunities for rural women. In addition, it has achieved some increase in local governance in some states, namely, allowing local communities to track the implementation of welfare programs through social audits in the states of Midwestern India, such as Kerala and Rajasthan. Another example is women's empowerment through the Panchayati Raj Institutions (PRIs). The PRIs reserved one-third of seats for women and since the 1990s, millions of women have been involved in local governance through the PRIs. This has radically changed the landscape of local governance and decision-making, and many women leaders focus on addressing social issues such as sanitation, education, and health before traditional political concerns. The participatory aspect of reforms in the PRIs demonstrated how political reforms can create meaningful participation in governance and is evidenced by the number of women who have become leaders in local governance. In contrast to the success of the reforms and the participatory aspects of the MGNREGA and women's empowerment through PRIs, the challenges associated with digital inclusion from the Digital India initiative illustrate the limits of reforms. It is indeed true that the initiatives has bill that are linked to Aadhaar have reduced leakages in its distribution, there are still many barriers (e.g., infrastructure, digital literacy, mobile access, etc.), and many rural households are still

not able to take advantage of the opportunity presented by the Digital India initiative. Instances of exclusion due to the precarious promises of either biometric authentication failures or inaccessibility due to lack of internet access serve to show how without the right culture, digital reforms bestowed upon us may unintentionally further create gaps in inclusion. These cases will demonstrate the contradictory nature of policy reforms in India; for example, although policies such as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) and women's reservations provide disempowered people with opportunities to overcome marginalisation, it is clear that we still do not know where exclusion can occur without environmental enablers accompanying the digital reforms. The enactment of all of these experiences in the documentation of India's digital reforms reminds us that enacting reforms is very much about understanding the contextualised enactment of the reforms, oversight, and iterative adaptations as minimum conditions for reforms to be inclusive in the end.

Recommendations

A well-designed set of recommendations are necessary to maintain the impact of policy reforms on inclusive governance in India. First, it is vital to support local governance institutions. Panchayati Raj Institutions and Urban Local Bodies will only be able to respond to their citizens if they have financial freedom, administrative support and decision-making authority. Holding regular elections, transparency, and accountability will make this even easier. Second, it is important that capacity building and training is reinforced. Many policies fail in the implementation phase because local administrators and elected officials were not adequately trained. Structured programs around digital literacy, participatory planning, and accommodating marginalized groups will help officials enact reform more easily. Thirdly, we need to work to close the digital divide (or call it the digital divide) so that inclusion is meaningful. Digital interventions like Aadhaar and DBT will only work if all citizens share in equal space in regard to either one and/or all access to connectivity, affordable digital devices and digital literacy. We need to put communities in rural, women and marginalized communities first, so that they are not marginalised from digital citizenship. Fourthly, we can make policy inclusive by thinking of policy as participatory (there's citizen feedback) policy-making. It is important to think of citizens playing a direct role in framing the policy, being part of the monitoring process, and role in evaluating it after it has been implemented. Public hearings/consultations, digital grievances redress mechanisms, and consultation with communities will strengthen bonds between the state and society. Finally, we should consider policy evaluation and revision from time to time to ensure policies stay alive. The Independent

Monitoring Body, in the context of the NNM, will conduct ongoing assessments of and facilitate the effectiveness of the NNM to institutionalize ongoing examination of the policy for gaps and suggest changes to the policy in a timely and well-designed way to make the policy responsive and reflective of changing socio-economic conditions. In this respect, the above recommendations have the potential to transform policy changes from symbolic endings to practical policy levers to realize an inclusive and sustainable model of governance in India.

Conclusion

The reform of policy in India has increased the representational possibilities of inclusiveness in the act of governance. Many of the recent policy reforms, such as MGNREGA, RTI, Right to Education Act, have made advances toward enabling marginalized people to govern themselves through access to resources or greater transparency through policy. However, the commitment to implementing policies is incomplete with the impediments of bureaucracies and injustices of social and economic inequality means that reforms will not set the course for inclusiveness without complementary strong institutions or citizens' participation. The experience of India shows us that citizens' participation in governance includes ongoing reform of policy to address new challenges. Rapid technological change, urbanization, and globalization mean reforms which are overly prescriptive or rigid must first reflect the reality of real public issues from numerous perspectives and ultimately design abilities, also rigid policies are less likely to reflect issues in dynamic contexts, such as the digital divide, gender issues, and regional disparities, must offer sufficient flexibility to take account of a complexities of what a change actually takes, consolidation of reform processes using a mechanism of continuous monitoring, evaluation and redesigning when needed, have the ability and capability to deliver change without having a break away from current reality and retracing the proposed first steps for change. In order to sustain India's democratic future, there must be a greater accountability to narrow the gap on collective participation and realize that future and expanded access to opportunities based on race, socio-economic status currently have more gaps than access, but ultimately, equitable rights must be universal. For a policy reform must engage through the lens of inclusive governance support, to advance social justice, but to understand that equal economic opportunity must remain sufficiently inclusive to account for equality, as indigenous and marginalised groups participate in governing processes, which in turn strengthens the legitimacy of the democratic process by legitimacy and provides a pathway for long-term support to a more democratic future, instead of basing our action on a short-term opportunist model through a undemocratic process. In terms of the previous discussion, India has made positive connections together with support needed to align with

inclusive governance. India has made things more responsive and purposefully aligned through iterative changes in governance policy, but there is much work to be done still. Moving forward, the collective political will and effectively mobilised existing and emerging institutional reforms and citizen participation, demand for this, and your right to participate are vital enablers that will ensure equitable development and inclusive opportunities are realised in India's democracy through inclusive governance, not just for a privileged minority.

References

Ahluwalia, M. S. (2002). *Economic reforms in India since 1991: Has gradualism worked?* Journal of Economic Perspectives, 16(3), 67–88. https://doi.org/10.1257/089533002760278721

Bardhan, P. (2011). *Decentralization in India: Challenges and opportunities.* Indian Journal of Federal Studies, 22(1), 1–14.

Basu, K. (2009). *The Economics of Foodgrain Subsidy: A Theoretical and Empirical Inquiry.* Economic and Political Weekly, 44(52), 92–99.

Chakraborty, P. (2016). *Economic reforms, growth, and regional inequality in India.* Journal of Asian Economics, 47, 1–16. https://doi.org/10.1016/j.asieco.2016.10.001

Dreze, J., & Sen, A. (2013). *An uncertain glory: India and its contradictions.* Princeton University Press.

Government of India. (2005). *Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).* Ministry of Rural Development. https://nrega.nic.in

Government of India. (2005). *The Right to Information Act, 2005.* Ministry of Law and Justice. https://rti.gov.in

Government of India. (2009). *The Right of Children to Free and Compulsory Education Act, 2009.* Ministry of Human Resource Development.

Government of India. (2013). *National Food Security Act, 2013.* Ministry of Consumer Affairs, Food and Public Distribution.

Government of India. (2014). *Digital India Programme.* Ministry of Electronics and Information Technology. https://www.digitalindia.gov.in

Government of India. (2015). *Startup India Action Plan.* Department for Promotion of Industry and Internal Trade. https://www.startupindia.gov.in

Jain, A. K., & Gupta, M. (2017). *Inclusive governance and public service delivery in India.* Journal of Governance & Public Policy, 7(2), 42–55.

Joshi, V. (2017). *India's long road: The search for prosperity.* Oxford University Press.

Khera, R. (2011). *India's public distribution system: Utilisation and impact.* Journal of Development Studies, 47(7), 1038–1060. https://doi.org/10.1080/00220388.2011.563298

Mehta, B., & Kapoor, S. (2015). *Women in local governance: A study of Panchayati Raj Institutions in India.* Social Change, 45(2), 321–335. https://doi.org/10.1177/0049085715574583

Mohanty, B. B. (2012). *Panchayati Raj, rural development and*

decentralization in India. Rawat Publications.

Planning Commission of India. (2002). *Tenth Five Year Plan (2002–2007).* Government of India.

Planning Commission of India. (2013). *Twelfth Five Year Plan (2012–2017): Faster, more inclusive and sustainable growth.* Sage Publications.

Sharma, A. N. (2010). *Social protection and the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA).* Indian Journal of Labour Economics, 53(3), 475–500.

World Bank. (2020). *India: Policy reforms for inclusive growth.* World Bank Report. https://www.worldbank.org

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The Study of AI Anxiety on Teacher Trainees' Technological Self-Efficacy

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Abstract

This study investigates the relationship between AI anxiety and technological self-efficacy among teacher trainees. The research aims to understand how concerns and uncertainties about AI influence their confidence in using technology for teaching and learning. A quantitative research design was employed, involving the administration of validated scales to measure AI anxiety and technological self-efficacy. The study found a significant negative correlation between AI anxiety and technological self-efficacy, indicating that higher levels of AI anxiety are associated with lower levels of self-efficacy in technology integration. Furthermore, demographic factors such as age, gender, and prior technology experience were found to influence both AI anxiety and technological self-efficacy. The findings highlight the need for targeted interventions to address AI anxiety and enhance technological self-efficacy among teacher trainees, thereby fostering their effective integration of AI into educational practices.

Keywords*: AI Anxiety, Technological Self-Efficacy, Teacher Trainees, AI in Education, Teacher Education.*

Introduction

Artificial Intelligence (AI) has the potential to revolutionize education by offering innovative tools and personalized learning experiences. However, the rapid advancement of AI technologies can also induce anxiety and uncertainty among educators, particularly those in the early stages of their professional development. As future educators, teacher trainees play a crucial role in shaping the future of education. Understanding their attitudes, beliefs, and anxieties towards AI is essential for preparing them to effectively integrate AI into their teaching practices.

Previous research has highlighted the importance of technological self-efficacy in promoting effective technology integration in education (Bandura, 1997). Self-efficacy refers to an individual's belief in their ability to successfully perform a specific task. In the context of technology integration, technological self-efficacy involves teachers' confidence in their ability to use technology effectively to enhance teaching and learning.

However, the emergence of AI technologies has introduced a new dimension to technological self-efficacy. As AI becomes increasingly integrated into educational settings, teacher trainees may experience anxiety about their ability to understand and utilize AI tools. This AI anxiety

can hinder their development of technological self-efficacy, ultimately impacting their preparedness to embrace AI-powered educational practices.

Therefore, it is crucial to investigate the relationship between AI anxiety and technological self-efficacy among teacher trainees. By understanding the factors influencing AI anxiety and its impact on technological self-efficacy, we can develop strategies to support teacher trainees in overcoming their anxieties and building the necessary skills to effectively integrate AI into their future classrooms.

Reviews of Related Literature

The literature on the impact of AI anxiety on teacher trainees' technological self-efficacy reveals a complex interplay between anxiety, self-efficacy, and the integration of AI in educational settings. This synthesis highlights how AI anxiety can hinder the confidence of teacher trainees in utilizing technology effectively, ultimately affecting their teaching practices.

AI Anxiety and Technological Self-Efficacy

- AI anxiety, particularly related to generative AI (GenAI), significantly influences pre-service teachers' self-efficacy. Studies indicate that higher levels of GenAI anxiety correlate with lower intentions to design GenAI-assisted teaching methods (Wang et al., 2024).
- The perception of AI as a complex tool can lead to technostress, which further diminishes educators' confidence in their technological capabilities (Kohnke, 2024).

Implications for Teacher Training

- Comprehensive training programs are essential to alleviate AI anxiety and enhance technological self-efficacy among teacher trainees. Such programs should focus on practical applications of AI in the classroom (Kohnke, 2024) ("Correlation between artificial intelligence in education and teacher self-efficacy beliefs: a review", 2023).
- Policymakers are encouraged to implement both pre-service and in-service training to foster a supportive learning environment that builds self-efficacy in using AI tools ("Correlation between artificial intelligence in education and teacher self-efficacy beliefs: a review", 2023).

Conversely, while AI anxiety poses challenges, it also presents an opportunity for educational institutions to innovate training approaches, potentially transforming anxiety into a catalyst for growth in technological self-efficacy.

Research Questions

1. Is there a significant correlation between AI anxiety and technological self-efficacy among teacher trainees?

2. Do specific demographic factors (e.g., streams, gender, prior tech experience) influence AI anxiety and technological self-efficacy?

Research Objectives

1. To study the effect of gender (male and female) on AI anxiety among teacher trainees.
2. To study the effect of gender (male and female) on technological self-efficacy among teacher trainees.
3. To study the effect of streams (Arts, Science and Commerce) on AI anxiety and technological self-efficacy among teacher trainees.
4. To study the correlation between AI anxiety and technological self-efficacy among teacher trainees.

Research Hypotheses

1. There is no significant effect of gender on technological self-efficacy among teacher trainees.
2. There is no significant effect of gender on AI anxiety among teacher trainees.
3. There is no significant effect of different streams (Art, Science and Commerce) on AI anxiety and technological self-efficacy among teacher trainees.
4. There is no significant difference between AI anxiety and technological self-efficacy among teacher trainees.

Research Procedure

A descriptive survey method was employed to find out the correlation between AI anxiety and technological self-efficacy among teacher trainees. The study involved 103 B.Ed. teacher trainees (53 male and 50 female teacher trainees) of the second year as the sample. They were selected from MJP Rohilkhand University, Bareilly. A validated scale to measure beliefs in one's ability to use technology effectively in teaching and learning. Technology Self-Efficacy. Five items (α = 0.80) were included to assess participants' technology self-efficacy scale developed by Kass (2014). A validated scale to measure anxiety related to AI technologies and their use in education was used. This Artificial Intelligence Anxiety Scale was developed by Yu-in Wang and Yi-shun Wang. The collected data were analysed by using Correlation and ANOVA and accordingly interpretation was made.

Data Analysis and Interpretation

Testing of 1st hypotheses

1. There is no significant effect of gender on AI anxiety among teacher trainees.

Table 1

Gender	N	Mean	SD	Mean Difference
Male	50	135.6	42.85	8.30
Female	52	143.90	43.67	

t-Value = 1.37

Significant at the 0.05 level

From the calculation of t-value, we can see that t- t-value is 1.37, which is less than from table value of 2.58 at a 0.05 level of significance, so our null hypothesis is not accepted. Researcher suggests that there is no significant difference in AI anxiety levels between male and female teacher trainees. A low t-ratio indicates that the difference between the mean AI anxiety levels of male and female trainees is not substantial enough to be considered statistically significant.

Testing of 2nd hypotheses

2. There is no significant effect of gender on technological self-efficacy among teacher trainees.

Table 2

Groups	N	Mean	SD	Mean Difference
Male	51	24.72	7.99	2.45
Female	51	27.17	7.99	

t-Value = -2.19

From the calculation of the t-value, we can see that the t-value is which is -2.19 less than from table value of 2.58 at a 0.05 level of significance, so our null hypothesis is not accepted. Researcher suggests that there is no significant difference in technological self-efficacy between male and female teacher trainees. Male trainees have a mean score of 24.72, while female trainees have a mean score of 27.17. This indicates that female trainees, on average, exhibit moderate levels of technological self-efficacy. The t-ratio of -2.19 suggests a statistically nonsignificant difference between the two groups.

Testing of 3rd hypotheses

3. To study the effect of streams (Arts, Science and Commerce) on AI anxiety among teacher trainees.

Table 3: Showing different streams of AI anxiety and their mean, SD and F value.

Streams/ AI Anxiety	N	Mean	SD	F value
Arts	40	145.22	31.71	2.05
Science	34	142.11	33.02	
Commerce	26	130.15	23.59	

Testing of 4th hypotheses

4. To study the effect of streams (Arts, Science and Commerce) on technological self-efficacy among teacher trainees.

Table 4

Show different streams of technological self-efficacy and their mean, SD and F value.

Streams/Technological Self-Efficacy	N	Mean	SD
Arts	40	25.30	5.92
Science	34	23.88	6.2
Commerce	26	26	6.02

Testing of 5th hypotheses

5. There is no significant correlation between AI anxiety and technological self-efficacy among teacher trainees.

Table 5

S. No.	Class	N	Correlation
1	AI Anxiety	102	.422
2	Technological Self-Efficacy	102	

Correlation Analysis

A positive correlation would indicate that higher AI anxiety is associated with lower technological self-efficacy. A negative correlation would suggest that higher AI anxiety is associated with higher technological self-efficacy.

The table shows the Pearson correlation coefficients between the variables AI anxiety and Technological self-efficacy. The Pearson correlation coefficient is a measure of the linear relationship between two variables. It can range from -1 to 1, where -1 indicates a perfect negative correlation, 0 indicates no correlation, and 1 indicates a perfect [1] positive correlation. This table shows a low level of correlation between the groups. So, it can be said that AI anxiety is not responsible for self-efficacy.

Supported Studies

Asio & Suero (2024) a study that college students' perception towards AI anxiety is lower and their self-efficacy is higher. supported these results that AI anxiety and technology self-efficacy have an adverse effect or a lower relationship.

Zhou (2024). This study is based on the impact of AI use and academic self-efficacy, that results show AI use positively impacts academic self-efficacy, not related to AI anxiety.

Chen et al. (2024). This study focused on the English language and the researcher found that AI learning self-efficacy had a lower correlation with anxiety. So, we can say that AI-related self-efficacy is not directly related to anxiety in educational settings.

Conclusion

In conclusion establishes a significant negative relationship between AI anxiety and technological self-efficacy among teacher trainees, underscoring the critical impact of psychological factors on technology adoption in education. Teacher trainees with higher levels of AI-related anxiety demonstrated lower confidence in integrating technology into their teaching practices, potentially limiting their preparedness for AI-driven educational environments. Additionally, demographic factors such as age, gender, and prior technological experience emerged as important variables influencing both AI anxiety and self-efficacy. These findings suggest that reducing AI-related fears through awareness programs, training workshops, and supportive learning environments can play a pivotal role in strengthening teacher trainees' technological confidence. By addressing AI anxiety and enhancing technological self-efficacy, teacher education programs can empower future educators to integrate AI tools effectively, thereby fostering innovative, inclusive, and future-ready teaching and learning practices.

References

Asio, J. M. R., & Suero, A. N. (2024). Artificial intelligence anxiety, self-efficacy, and self-competence among students: Implications to higher education institutions. *Education Policy and Development, 2*(2), 82–93. https://doi.org/10.31098/epd.v2i2.2541

Chen, D., Wang, X., & Liu, Y. (2024). Exploring the dynamics of artificial intelligence literacy on English as a foreign language learners' willingness to communicate: The critical mediating roles of artificial intelligence learning self-efficacy and classroom anxiety. *Behavioral Sciences, 15*(4), 523. https://doi.org/10.3390/bs15040523

García-Peñalvo, F. J., Llorens Largo, F., & Vidal, J. (2024). The new reality of education in the face of advances in generative artificial intelligence. *Revista Iberoamericana de Educación a Distancia*, *27*, 9–39.

Kass, K. D. (2014). Computer self-efficacy: Instructor and student perspectives in a university setting [Doctoral dissertation, Iowa State University]. Graduate Theses and Dissertations. https://doi.org/10.31274/ETD-180810-3731

Kirkpatrick, D. L. (1967). Evaluation of training. In R. L. Craig & L. R. Bittel (Eds.), *Training and development handbook* (pp. 87–112). New York: McGraw-Hill.

Kwak, Y., Ahn, J. W., & Seo, Y. H. (2022). Influence of AI ethics awareness, attitude, anxiety, and self-efficacy on nursing students' behavioral intentions. *BMC Nursing, 21*, 267. https://doi.org/10.1186/s12912-022-01048-0

Li, X., Zhang, Y., & Wang, L. (2025). AI anxiety and knowledge payment: The roles of perceived value and self-efficacy. *Journal of Consumer Behavior Studies, 58*(3), 112–125. https://doi.org/10.1016/j.jcbs.2025.03.004

Lucas, K. (2024). How GenAI impacts technostress among secondary school English teachers. [Chapter in Edited Book]. In *[Book Title]* (pp. 17-28). [Publisher]. doi: 10.29140/9780648184485-17

Michael, C., Guan, N., Kurnadi, G., Yuli, K., Dewi, S., Sunarno, S., Suryo, A., & Wibowo, A. (2024). Impact of AI anxiety on educators' attitudes towards AI integration. In *2024 International Conference on Computer, Communication, and Information Technology (ICCCIT)* (pp. 1070-1130). Institute of Electrical and Electronics Engineers (IEEE). doi: 10.1109/iccit62134.2024.10701130

Muhammad, H., Massaty, Slamet, K., Kurniawan, Fahrurozi., Cucuk, W., Budiyanto, & Sunarno, S. (2024). The role of AI in fostering computational thinking and self-efficacy in educational settings: A systematic review. *Indonesian Journal of Informatics Education (IJIE)*, *8*(1), 89596. doi: 10.20961/ijie.v8i1.89596

Peres, R., Schreier, M., Schweidel, D., & Sorescu, A. (2023). On ChatGPT and beyond: How generative artificial intelligence may affect research, teaching, and practice. *International Journal of Research in Marketing*, *40*, 269–275. doi: 10.1016/j.ijrm.2022.12.015

Saville, J. D., & Foster, L. L. (2021). Does technology self-efficacy influence the effect of training presentation mode on training self-efficacy? *Computers in Human Behavior Reports*, *4*, 100124. https://doi.org/10.1016/j.chbr.2021.100124

Ting, C., Hsu, Y., & Lin, T. (2023). The artificial intelligence learning anxiety and self-efficacy of in-service teachers taking AI training courses. In *2023 6th International Conference on Artificial Intelligence and Education (ICAIE)* (pp. 34-39). Institute of Electrical and Electronics Engineers (IEEE). doi: 10.1109/ICAIE56796.2023.00034

Wang, K., Ruan, Q., Zhang, X., Fu, C., & Duan, B. (2024). Pre-Service Teachers' GenAI Anxiety, Technology Self-Efficacy, and TPACK: Their Structural Relations with Behavioral Intention to Design GenAI-Assisted Teaching. *Behavioral Sciences*, *14*(5), 373. doi: 10.3390/bs14050373

Yoo N, Jang SH(2023). Digital technology use, technological self-efficacy, and subjective well-being among North Korean migrants during the COVID-19 pandemic: Moderated moderation. *DIGITAL HEALTH*. 2023;9. doi:10.1177/20552076231171503

Zhou, J. (2024). The impact of AI use on college students' academic self-efficacy: Exploring the mediating role of anxiety. *Lecture Notes in Education Psychology and Public Media, 75*, 139–146. https://doi.org/10.54254/2753-7048/2024.17925

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Technological Pedagogical and Content Knowledge (TPACK) in School Education: Analysis of Research Trends

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Abstract

The objective of this systematic literature review was to classify and analyse the findings related to Technological Pedagogical Content Knowledge (TPACK) from 2015 to May 2024, following the PRISMA guidelines. The study focused on the analysis of ten years of empirical research, specifically emphasising TPACK by providing an in-depth understanding of technology integration in school education. Searches in Scopus, Google Scholar, ERIC, JSTOR, and Sage Journal databases resulted in 296 articles, out of which 50 were selected for final analysis. The findings revealed that school teachers demonstrated a high level of TPACK competence with a significant variation in teachers' TPACK level based on factors such as age, gender, and teaching experience. Moreover, a significant and positive relationship was found between teachers' TPACK and their computer self-efficacy, while a significant and negative correlation was identified between teachers' technostress and their integration of technology. Additionally, teachers demonstrated significant and positive attitudes towards the integration of technology in their teaching. This suggests that teachers with positive attitudes also had favourable perceptions of their perceived TPACK.

Keywords*: Technological Pedagogical and Content Knowledge (TPACK), TPACK Competence, Technology Integration, Computer Self-efficacy.*

Introduction

Since the 1990s, the rapid growth of information and communication technologies (ICT) has influenced all professions. The fourth industrial revolution, also known as the "4.0 era," is characterised by substantial advancement in technology that affects all aspects of human life. Education 4.0 is the implementation of technology into the educational process in the sphere of Education. (González-Pérez & Ramírez-Montoya, 2022). The primary feature of this era is the utilisation of technology to improve the teaching and learning of teachers and students (Haderer & Ciolacu, 2022). When learning takes place through technology, new opportunities arise, such as reducing time and effort and making the teaching-learning process easy-going. Digitalisation in the field of education reduces teacher workload and fosters collaboration among colleagues. However, the need for constant acquisition of knowledge and skills in new technologies creates challenges for teachers, including increased workload and time constraints. (Tarafdar et al., 2014). As an innovative tool, technology plays a crucial role in enhancing the teaching-learning process in light of global educational reforms (Kahveci, Sahin, & Genc, 2011). Technological advancements may have transformed the role of teachers from

designers of curriculum to content delivery facilitators, selecting appropriate technology and methodology (Kereluik et al., 2010). Teachers nowadays must be skilled at integrating technology into classroom activities, as it has been shown to enhance learning outcomes. This leads to improvements in teaching methodologies, classroom management, and interventions that utilise technology (Kazu & Erten, 2014). The advancement of ICT has made it essential for teachers to improve their skills and expertise in utilising technology in their instructional methods and to integrate technology into their teaching practices seamlessly (Graham, Tripp & Wentworth, 2009). Teachers in this era are expected to incorporate ICT in planning their teaching process, performing assessments, developing teaching-learning materials, and selecting appropriate technology. Using ICT effectively in the classroom enhances students' learning processes and their performance (Kim & Hannafin, 2011; Vandeyar, 2015). So, teachers must have both technological and pedagogical skills to design and develop instructional materials and activities for their students (Keeler, 2008; Moore, 2006).

The theory of technological pedagogical content knowledge (TPACK), first proposed by Mishra and Koehler (2006), is based on the work of Shulman (1986). It focuses on how educators incorporate various forms of technology, pedagogical approaches, and course content into their classroom instruction. Technological pedagogical content knowledge (TPACK) refers to the framework that combines technology, pedagogy, and content in education. Effective use of technology in education requires the integration of three distinct forms of teacher knowledge: content knowledge, pedagogy, and technology. The combination of various knowledge domains, encompassing both theoretical and practical aspects, generates the flexible knowledge required to successfully integrate technology in education. This framework aims to enhance the efficient integration of technology into instructional practices.

Conceptual Framework of TPACK

Technological Pedagogical and Content Knowledge (TPACK)

Mishra and Koehler (2006) proposed the concept of technological pedagogical and content knowledge (TPACK) in educational research as a theoretical framework for understanding the effective integration of technology into instruction. The TPACK framework is derived from Shulman's (1986) theoretical framework for Pedagogical Content Knowledge (PCK). Shulman (1986) defines pedagogical content knowledge (PCK) as comprising two essential components: Content knowledge (CK) and pedagogical knowledge (PK), which are fundamental domains of teacher knowledge. Additionally, PCK encompasses a specific domain that demonstrates the pedagogical knowledge that is specifically applicable to a particular content area. The TPACK framework incorporates technological knowledge (TK) as a third main domain of knowledge,

resulting in three additional connections between these knowledge domains: technological content knowledge (TCK), technological pedagogical knowledge (TPK), and technological pedagogical content knowledge (TPCK) (Koehler & Mishra, 2005; Mishra & Koehler, 2006). The term Technological Pedagogical Content Knowledge (TPCK), also abbreviated as 'TPACK', highlights the importance of a teacher's understanding of the interaction between technology, pedagogy, and content. This framework illustrates how teachers comprehend technologies for education and the way PCK interacts to offer effective technology-based teaching. It also demonstrates how specific pedagogies can help students use technology and learn more effectively.

Koehler and Mishra (2006, 2008) explained that TPACK is a framework that focuses on the interplay of content, pedagogy, and technology in the classroom. The TPACK framework's seven components resulted from the combination of three aspects of knowledge: technological, pedagogical, and content. Technological knowledge (TK), pedagogical knowledge (PK), content knowledge (CK), technological pedagogical knowledge (TPK), technological content knowledge (TCK), pedagogical content knowledge (PCK), and technological pedagogical content knowledge (TPACK) are specific terms used to refer to these different types of knowledge.

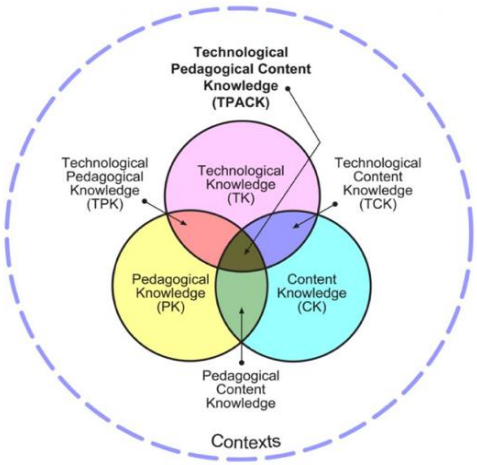


Figure 1: The TPACK Framework and its components
Source: Koehler and Mishra, 2009

Objective

1. To analyse the research findings of TPACK in school education

Research Questions

1. What trends have been identified in studies examining the TPACK of school teachers?
2. What are the research findings of TPACK in school education?

Method and Procedure

The current study focuses on TPACK research performed in school education until May 2024. The method for this research study was designed based on the structure along with suggestions of several studies suggested by Chai et al. (2013b), Bakar, Maat, and Rosli (2018), Greene and Jones (2020) and Joshi (2023) regarding search strategy, inclusion and exclusion criteria, coding, and analysis. This study examines TPACK research conducted in school education up to May 2024.

Search procedures

Information is retrieved via electronic media and hard copies during a literature review (Hart, 1998). The search process is carried out in two stages utilising Hart's (1999) framework:

a. Collect all relevant papers in the initial search;

b. Establish the literature review's inclusion and exclusion criteria.

Key terminology utilised in the literature, including synonyms and alternative spellings, was identified during the initial phase. The following search phrases were utilised to find suitable articles: (“Technological Pedagogical and Content Knowledge” or "TPACK"). The databases utilised for data collection in this study include Google Scholar, Educational Resources Information Centre (ERIC), JSTOR, Sage, and Scopus. These databases are widely used in the field of education (Bano et al., 2018). The search primarily focused on papers published from 2015 to 2024. This search was restricted to research papers published in the English language, excluding conference papers, book chapters, and review articles.

Selection Criteria

This literature review primarily covers research studies pertaining to TPACK and the integration of technology in school education. Subsequent to the initial step of article selection, the most pertinent papers related to the research were identified by applying inclusion criteria.

Inclusion and exclusion criteria

After obtaining all the research studies by utilising search strategy procedures, the following inclusion criteria were employed to assess each research study:

Table 1: Inclusion and Exclusion Criteria

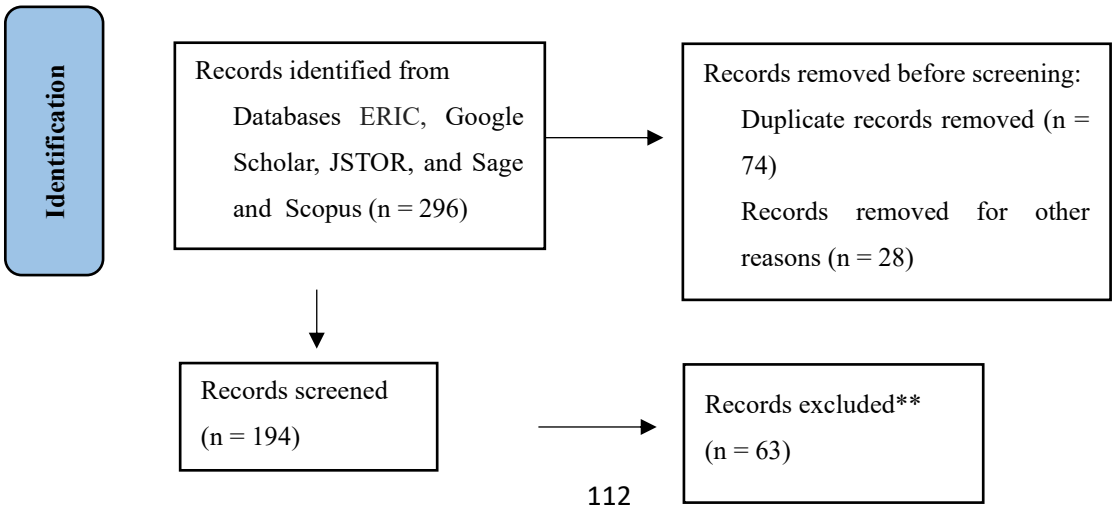
Inclusion criteria	*Exclusion criteria*
1. The research articles written in English 2. The studies related to technology integration in school education 3. The studies are empirically based (Quantitative methods and Mixed methods)	1. The studies which are purely theoretical, such as conceptual papers, meta-analyses, and systematic reviews, were excluded. 2. Research articles whose abstract is only available, not the full text was excluded

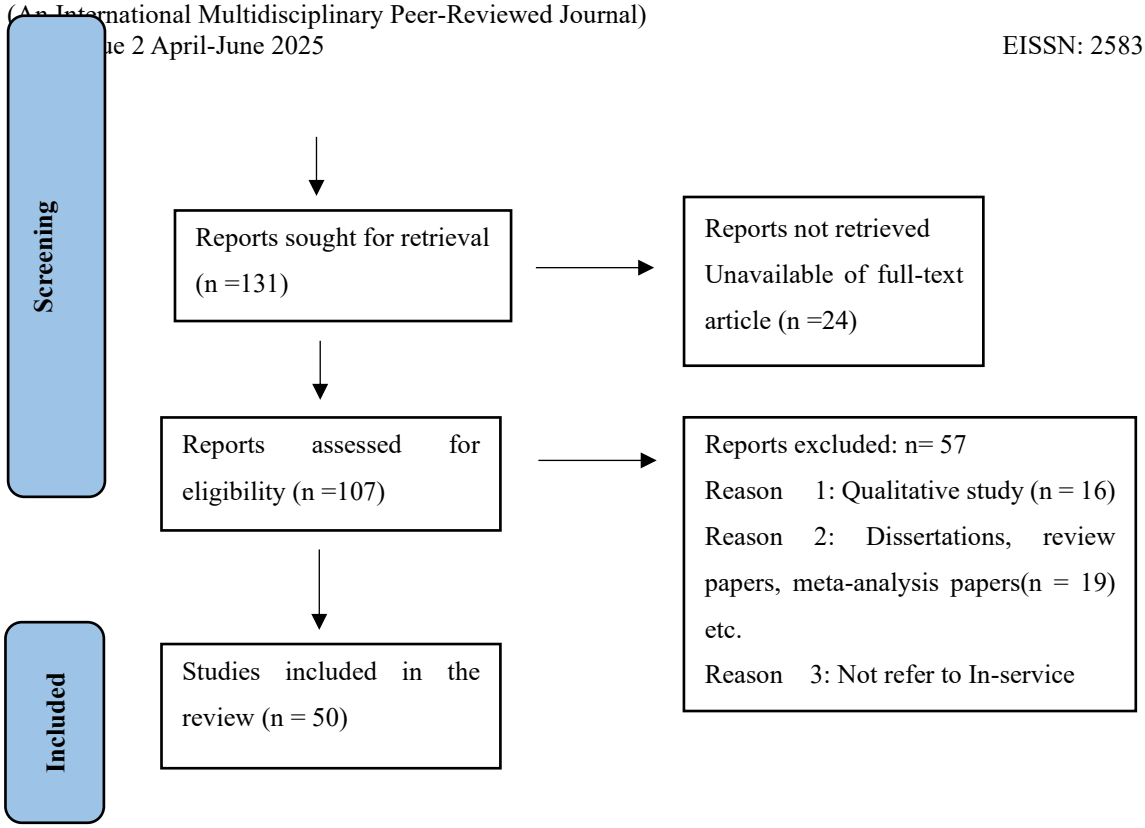
4. The research papers published between 2015–2024 5. Full texts of studies are included. 6. "Technology integration," and "Technological Pedagogical and Content knowledge," "TPACK" included in the title, search terms, or abstract 7. The studies focused on the context of technology integration in school education 8. The participants involved are in-service primary and secondary school teachers.	3. Research studies based on qualitative methods are excluded 4. Participants involved other than primary and secondary school teachers are excluded. 5. "Technology integration," and "TPACK" if not mentioned in the abstract, search terms, or title, studies are removed.

Study selection

Figure 2 presents the PRISMA flow diagram, highlighting the sequential data progression during the systematic review process. Articles were gathered in the initial stage using a search strategy. After getting the results, all duplicates were removed. The inclusion and exclusion criteria were used to evaluate all research papers. The screening procedure emphasises the evaluation of technological pedagogical and content knowledge (TPACK) as shown in the paper's title, keywords, or abstract. If the word was not explicitly defined, the research study was chosen for a thorough review in the subsequent screening phase. Research studies meeting the defined inclusion and exclusion criteria have been gathered into a comprehensive master list. A total of 296 articles were identified from searches conducted across multiple databases, including the Educational Resources Information Centre (ERIC), JSTOR, Google Scholar, Scopus, and Sage. These publications focused on technological pedagogical content knowledge (TPACK). Furthermore, 57 records were excluded from the review of titles and abstracts due to not meeting the inclusion criteria. Upon completion of the final evaluation, the aggregate number of studies that met the predetermined inclusion and exclusion criteria was 50.

Figure 2: The Diagram illustration of the Findings Article





Search results

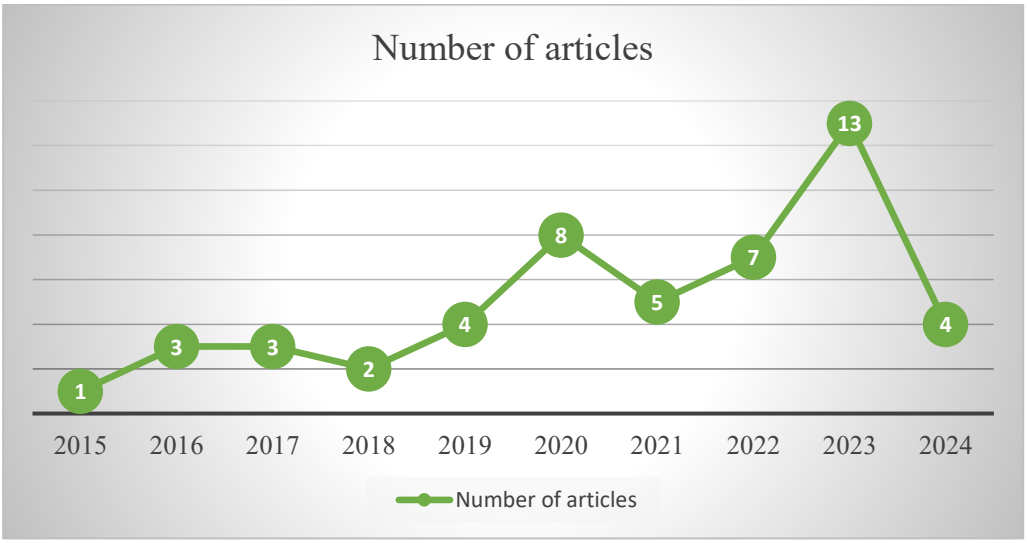
The results of the review are used to answer each research question. The descriptions of the review of studies are summarised, synthesised, and critiqued in the following manner.

Year-wise trends of TPACK

Research articles that focused on TPACK analysis were published periodically from 2015 to 2024, as shown in Figure 3. The majority of the publications used in this analysis were found in 2023, with 13 in total. Between 2015 and 2023, there was an ongoing increase in the quantity of articles. As 2024 is the current year, research on TPACK is ongoing. So, less number of studies, i.e., four, are considered in this paper.

Table 2: Year-wise Distribution of the Number of Articles

Sr. No.	Year	Number of articles	Percentage
1.	2015	01	2%
2.	2016	03	6%
3.	2017	03	6%
4.	2018	02	4%
5.	2019	04	8%
6.	2020	08	16%
7.	2021	05	10%
8.	2022	07	14%
9.	2023	13	26%
10	2024	04	8%
Total		50	100



Graph 1: Distribution of the Number of Articles by Year

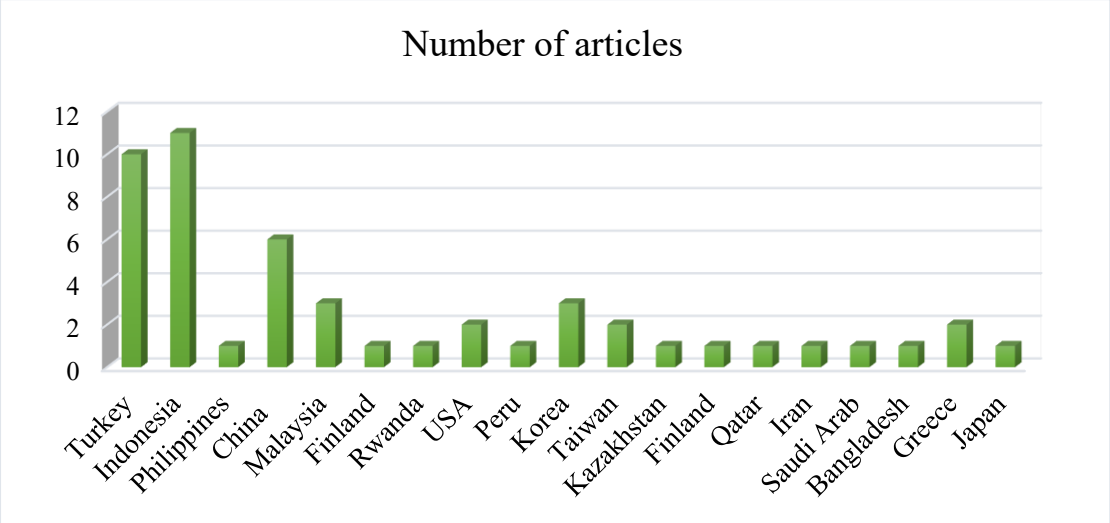
Locations that studied on TPACK

Articles indicate that the majority of the study was conducted in Asia, followed by Europe in second place. Out of the 50 papers, Asian studies comprised 74%, while European countries constituted 14%. Table 2 presents comprehensive statistics and discusses countries that have examined TPACK. Indonesia was the leading nation in Asia, followed by China. Concurrently, Turkey exerted dominance across Europe. All research in America was conducted within the United States. In Australia and Africa, there was a paucity of research articles pertaining to TPACK. Indonesia was the leading nation in TPACK research, followed by Turkey.

Table 3: Distribution of the Number of Articles by Country

Sr. No.	Country	Number of articles	Percentage
1.	Turkey	10	20%
2.	Indonesia	11	22%
3.	Philippines	01	2%
4.	China	06	12%
5.	Malaysia	03	6%
6.	Finland	01	2%
7.	Rwanda	01	2%
8.	USA	02	4%
9.	Peru	01	2%
10	Korea	03	6%
11.	Taiwan	02	4%
12.	Kazakhstan	01	2%
13.	Finland	01	2%
14.	Qatar	01	2%
15.	Iran	01	2%
16.	Saudi Arab	01	2%

17.	Bangladesh	01	2%
18.	Greece	02	4%
19.	Japan	01	2%
Total		**50**	**100**



Graph 2: Distribution of the Number of Articles by Country

Results and Discussion

Teachers' TPACK competence

One way to measure a teacher's TPACK is by investigating how efficiently and seamlessly they incorporate subject matter, pedagogy, and technology in the classroom. Teacher's TPACK level is not necessarily a separate scale but rather a range because teachers may have various levels of experience in each area. The level of language teachers' TPACK was studied, and it was found that language teachers had an average level of TPACK confidence, and CK, TK, and TPK were relatively low (Cheng 2017, 702). In similar studies, the primary school teachers' TPACK competencies were studied and found at a medium level (Zhakiyanova et al., 2023; Bingimlas, 2018). Further, in the majority of the studies, the TPACK competence of the school teachers was found at a high level (Naing & Wiedarti, 2023; Agustin, Aridah, & Iswari, 2023; COŞKUN & ZEYBEK, 2023; Azhar & Hashim, 2022; Destiani, Setyarini, & Rodliyah, 2022; Maknun, 2022; Li, Liu & Su 2022; Erdoğan & Akbaba, 2022; KAŞCI & Selçuk, 2021; Gökbulut, 2021; Giannakos et al., 2015).

Comparing the TPACK level of teachers according to gender, age, and experience, TPACK competencies varied considerably based on gender, age, and professional seniority characteristics and statistically significant differences were observed in the TPACK competencies when considering characteristics such as gender, age, and professional seniority.

Few studies revealed a significant difference existed among the teacher's TPACK competencies based on their gender, teaching subjects, and teaching experience (Gökbulut, 2021; Bingimlas, 2018). Male teachers demonstrated much greater technological knowledge abilities compared to their female teachers. Again, the teachers with high professional seniority demonstrated very low technology knowledge (TK) (Zhakiyanova et al., 2023; Mansour, Said & Abu-Tineh, 2024). In contrast, the male teachers who were older had a higher level of confidence in their content knowledge (CK), whereas the older female teachers tended to possess less confidence in their technology knowledge (TK). (Cheng, 2017, 701). However, some studies revealed no significant difference in TPACK mastery between male and female teachers (Naing & Wiedarti, 2023; Li, 2023; KAŞCI & Selçuk, 2021). Similarly, teaching experience and school level did not show any significant difference between science and mathematics teachers' self-efficacy in integrating technology (Mansour, Said & Abu-Tineh 2024). Personal characteristics, including teachers' value beliefs, also have a role in shaping their TPACK competencies. Among personal characteristics, the one predictor of TPACK is value beliefs (Cheng and Xie, 2018).

Constructs of TPACK

TPACK constructs such as content knowledge, pedagogical knowledge, and technological knowledge are strongly interconnected and significantly affect teachers' TPACK and their professional development (Hsu & Chen, 2023; Mailizar, Hidayat & Al-Manthari, 2021; Roussinos & Jimoyiannis, 2019). The majority of teachers exhibited a significant level of confidence in their content knowledge (CK), pedagogical knowledge (PK) and technological knowledge (TK). However, their expertise in technological pedagogical knowledge (TPK), technological content knowledge (TCK) and technological pedagogical content knowledge (TPACK) were found to be at moderate levels; as a result, it was hard for them to mingle technology into their teaching practices (Muslimin, Mukminatien & Ivone, 2023; Thy, Im & Iwayama, 2023; Haryati, Yuliasri, Nurkamto & Fitriati, 2022). Further, it was found that teachers' pedagogical knowledge (PK) has a significant positive effect on TPACK, whereas technological knowledge (TK) and content knowledge (CK) do not affect TPACK. Rather, TK and PK have significant positive effects on TPK, and TPK positively influences the TPACK of teachers (Absari, Priyanto & Muslikhin 2020). In a study, teachers' content knowledge was found to be at a high level, whereas technological knowledge was found to be at a low level (Maknun, 2022). Content Knowledge (CK), Pedagogical Knowledge (PK), Technological Pedagogical Knowledge (TPK), Technological Content Knowledge (TCK), and Technological Pedagogical Content Knowledge (TPACK) of teachers differ significantly at various

instructional stages (Li, Liu & Su, 2022). In a study, the majority of the teachers were found to have a very good knowledge of TPACK constructs, i.e., TK, PK and CK (Roussinos & Jimoyiannis, 2019). Moreover, it was found that Technological Pedagogical Content Knowledge (TPACK) has a significant and positive impact on the integration of technology (Agustin, Aridah & Iswari, 2023). So, teachers with good knowledge of technology, pedagogy and content can effectively integrate technology into their teaching practice (Sangka, Indriayu, Mackenzie & Santika, 2022; Roussinos & Jimoyiannis, 2019).

However, computer science teachers admit that there is room for improvement in their expertise in technology and the integration of their knowledge of content, pedagogy, and technology. Furthermore, teachers acknowledge the necessity for additional guidance in incorporating technology into their teaching methods and effectively explaining algorithms. These areas of focus are connected to their pedagogical content knowledge and Technological Pedagogical Content Knowledge (TPACK) (Giannakos et al., 2015). The variable representing the type of school revealed differences in the four categories of technology-related knowledge of TPACK. The correlation analysis revealed a negative association between both age and teaching experience, particularly with the four technology-related knowledge domains (Thy, Im & Iwayama, 2023).

TPACK as a Predictor of Computer Self-efficacy

Research has examined the correlation between Technological Pedagogical Content Knowledge (TPACK) and computer self-efficacy. Teachers who possess higher levels of Technological Pedagogical Content Knowledge (TPACK) are more likely to feel confident in using technology in the classroom, leading to an improvement in their computer self-efficacy. This association makes intuitive sense because TPACK emphasises integrating technology, pedagogy, and content knowledge that can enhance teachers' ability to use computers in educational contexts effectively. After examining the levels of computer self-efficacy among teachers, it was found that teachers had a high level of self-efficacy when it comes to utilising technology in their teaching (Zhakiyanova et al., 2023; COŞKUN & ZEYBEK, 2023; KAŞCI & Selçuk, 2021; Islam, 2020**)**. However, in a single study, a moderate level of computer self-efficacy among teachers was found in integrating technology into their teaching (Njiku, Mutarutinya & Maniraho, 2020). Based on the findings, it can be determined that teachers possess a high level of confidence in utilising technology in their teaching practices. The primary factors contributing to computer self-efficacy are prior experience in information and communication technology (ICT), technological pedagogical content knowledge (TPACK), capacity-building programmes, and support from educational institutions (Islam, 2020).

Additionally, while analysing the relationship between computer self-efficacy and TPACK, a significant and positive association was discovered between the computer self-efficacy and TPACK competence of teachers in schools (Zhakiyanova et al., 2023; Yildiz Durak, Atman Uslu, Canbazoğlu Bilici & Güler 2023; Njiku, Mutarutinya & Maniraho, 2020; Lopez-Vargas, Duarte-Suárez & Ibáñez-Ibáñez, 2017). It can be said that teachers have a positive belief in using computers and technology for their teaching (Helppolainen & Aksela, 2020). This finding is similar to some other findings, i.e., a positive and moderate level of correlation was found between teacher's technological, pedagogical and content knowledge and their perceived self-efficacy (COŞKUN & ZEYBEK, 2023) and mathematics teachers' technology integration self-efficacy was strongly associated with their self-efficacy beliefs (Bakar, Maat & Rosli, 2020). Teacher training in technology use has increased their technology self-efficacy beliefs (Helppolainen & Aksela, 2020). The teachers' self-efficacy in using technology has a chain-mediating impact on how their Technological Pedagogical Content Knowledge (TPACK) influences their intentions to utilise technology (Bai, Guo & Gu 2024).

Computer self-efficacy of teachers differs among different subjects. Comparing the TPACK self-efficacy of vocational and technical teachers with the science and mathematics teachers, it was found that compared to science and math teachers, vocational and technical teachers had substantially better TPACK self-efficacy (Şimşek and Sarsar 2019, 204). However, no significant difference was found among mathematics teachers' technology self-efficacy based on gender and teaching experience (KAŞCI & Selçuk, 2021; Bakar, Maat & Rosli, 2020). Still, the self-efficacy of classroom teachers varied significantly depending on their professional seniority as well as the duration they had been using computers and mobile devices. (KAŞCI & Selçuk, 2021).

TPACK and Technostress

Technostress refers to the unpleasant psychological and physiological responses that persons may have as a result of their involvement with technology. The TPACK framework can assist teachers in reducing technostress by integrating technology into their teaching practices. With the integration of TPACK into teachers' teaching practice, it was found that teachers had a moderate technostress level (Gökbulut, 2021). With the highest path coefficients (−.45), TPACK has a significant impact on teachers' technostress, which suggests that TPACK plays an important role in helping teachers cope with the psychological stress caused by technology (Dong, Xu, Chai & Zhai, 2020). The most significant factors that were shown to influence technostress strongly were ICT competency, the alignment of educational ICT use with the teaching style, support from the school, job satisfaction, and attitudes towards educational

ICT use (Erdoğan & Akbaba, 2022; Syvänen et al., 2016). A strong and negative relationship was found between the technostress level experienced by teachers and their Technological Pedagogical Content Knowledge (TPACK), digital literacy competency, job satisfaction, and school support (Muslimin, Mukminatien & Ivone, 2023; Erdoğan & Akbaba, 2022; Gökbulut, 2021). High level of TPACK, high level of educational support, high level of computer self-efficacy, and use of technology in teaching have had significant positive effects on technostress by suggesting some techniques for reducing teacher stress when using technology in the classroom (Dong, Xu, Chai & Zhai, 2020; Eom, Lee & Lee 2020; Joo, Lim & Kim, 2016; Syvänen et al., 2016).

Comparing the technostress level among the school teachers, it was found that teachers working in leading schools observed higher levels of technological overload and complexity than those in ordinary schools (Eom, Lee & Lee, 2020). The variables such as gender, age, and teaching experience in the classroom were associated with significantly different levels of technostress among teachers. More specifically, technostress was higher among the subject teachers compared to class teachers. Female teachers had higher technostress levels than male teachers. Additionally, teachers with 16-30 years of working experience had a higher level of technostress compared to those with 0-15 years of experience (Özgür, 2020; Syvänen et al., 2016). However, in a study, it was found no statistically significant difference in the levels of technostress experienced by male and female teachers (Gökbulut, 2021)

Teacher's Perception towards Integration of Technology

The majority of teachers expressed favourable opinions on the utilisation of the TPACK framework for teaching English at high school levels (Prasetya, Putra & Budasi 2019). Primary science teachers consider their technological knowledge to be lower than their non-technological knowledge, specifically in terms of pedagogical and subject knowledge. They perceive high confidence in pedagogical knowledge (Muhaimin et al., 2019; Mai & Hamzah, 2017). However, in some studies, the difference in the perceptions of school teachers towards using the TPACK framework was found among the teachers. There are no changes in science teachers' perceptions based on gender. Still, there are differences in their perceptions of pedagogical knowledge (PK), content knowledge (CK), and pedagogical content knowledge (PCK) based on age (Mai & Hamzah, 2017). Similarly, elementary school teachers' perceptions of TPACK, teacher efficacy, and school environment support differed depending on their career and school (Eom, Lee & Lee, 2020).

Attitudes of Teachers towards ICT Integration

There are several factors that influence teachers' attitudes towards integrating Information and Communication Technology (ICT) into their teaching. These factors encompass the teachers' level of comfort with technology, belief in their own capacity to incorporate technology, their perception of how technology is utilised in the classroom, the support they receive, and the resources available to them. The attitudes of teachers towards technology have a chain-mediated effect on the influence of their Technological Pedagogical Content Knowledge (TPACK) on how they intend to utilise technology (Bai, Guo & Gu, 2024). The reviews identified a strong and positive relationship between teachers' attitudes and the incorporation of technology in their teaching methods. This implies that teachers with favourable attitudes also had positive perceptions of their Technological Pedagogical Content Knowledge (TPACK) (Ramirez-Asis et al., 2024; Alhamid & Mohammad-Salehi, 2024; Wang & Zhao, 2023; Aridah & Iswari, 2023; Azhar & Hashim, 2022). Similarly, the attitudes of teachers towards the integration of technology, school support and support from peers have a positive influence on their TPACK (Agustin, Aridah & Iswari, 2023; Davaasuren, So & RYOO 2021**).** The majority of the teachers lacked technology-related knowledge, but after experiencing large-scale online education, they were willing to integrate technology into their teaching. (Li, 2023). Further, a significant difference was found among the teachers with respect to age. Compared to younger teachers, older teachers aged more than 45 have a negative attitude towards technology use and are affected by techno insecurity (Wang & Zhao, 2023).

Gender seems to play a role in determining perspectives on computer-assisted education (CAE). Competencies related to technological content knowledge (TCK) and technological knowledge (TK) have significant differences based on gender. A weak positive correlation exists between their attitudes towards computer-assisted education (CAE) and their TPACK competencies. The correlation between teachers' competence in Technological Knowledge (TK) and Technological Pedagogical Knowledge (TPK) and their attitude towards computer-assisted education (CAE) is significantly stronger compared to other abilities (Baturay, Gökçearslan & Sahin, 2017). Value beliefs are individual characteristics that have an impact on teachers' TPACK competencies. Only the variable of value beliefs had a significant positive effect on teacher's TPACK competencies (Cheng & Xie, 2018). Moreover, teachers' attitudes towards the incorporation of technology in the classroom are greatly influenced in a negative way by feelings of insecurity and the complexity associated with technology. Still, techno-invasion and overload have considerable positive effects on teachers' attitudes towards ICT (Wang & Zhao, 2023).

Conclusion

This study reviews the research carried out on Technological Pedagogical Content Knowledge (TPACK) in the field of school education. It especially focuses on studies published between 2015 to 2024. This study investigated the current research trends and findings in the domain of technological pedagogical and content knowledge (TPACK). The search revealed findings indicating that a total of 50 studies have been identified, with the highest number of publications in 2023. The majority of these studies were done in the continent of Asia. The 50 articles were categorised into six categories: (a) investigating TPACK competencies, (b) evaluating TPACK components, (c) examining the relationship between TPACK and computer self-efficacy, (d) exploring the association between TPACK and technostress, (e) analysing teachers' perception of technology integration, and (f) studying teachers' attitude towards TPACK. Research findings show that teachers have various levels of TPACK proficiency. The TPACK competence of school teachers was found to be at a high level. More specifically, research on TPACK competencies revealed that teachers exhibited varying levels of confidence in their TPACK competency. However, their TPACK mostly involved the utilisation of technology in the instructional process. While some teachers excel at pedagogy, others are proficient with technology. The levels of Technological Pedagogical Content Knowledge (TPACK) among teachers vary according to factors such as their status, gender, and training. Implementing technology into instruction considerably improves teachers' TPACK abilities. In the context of English language education, teachers display excellent TPACK competence, with gender and school status having no major impact on their ability. In addition, teachers' TPACK competency, pedagogical skills, and attitudes towards internet use all play a role in their preparedness for online instruction.

The computer self-efficacy of teachers is an essential factor in incorporating technology into instruction. Technological Pedagogical Content Knowledge (TPACK) is positively and significantly correlated with teachers' perceptions of their own ability to incorporate information technology (IT) into the classroom. Moreover, enhancing teachers' computer self-efficacy may improve their motivation to utilise technology efficiently within the classroom setting. In addition, research suggests that teachers have high self-efficacy in TPACK, especially in topic understanding, and a desire to improve their technology skills for future blended learning contexts. These findings highlight the necessity of improving teachers' TPACK and computer self-efficacy in order to promote effective technology integration in education. School and collegial support have been shown to predict teachers' TPACK and computer self-efficacy, hence reducing technostress among educators. Research on the

correlation between TPACK and technostress shows that TPACK (Technological Pedagogical Content Knowledge) significantly impacts technostress among teachers. Teachers with greater TPACK levels report lower levels of technostress because they are better suited to integrate technology into their teaching practices. Moreover, the levels of technostress experienced by teachers can be significantly predicted by factors such as organisational support, TPACK (Technological Pedagogical Content Knowledge), support from the school, and job satisfaction. As a result, increasing educators' TPACK and providing proper support can help reduce technostress and improve teaching performance in the digital age. It has been noticed that teachers may require further training and workshops to improve their TPACK comprehension and implementation, particularly in terms of lesson planning, teaching strategies, and assessment methodologies. In summary, it is crucial to implement professional development programmes that specifically target the integration of Technological Pedagogical Content Knowledge (TPACK) in order to improve teachers' preparedness to employ technology in the classroom effectively.

Limitations

This review has many shortcomings despite the fact that it highlights some significant trends and research findings for TPACK research in school education. Only articles published between 2015 and May 2024 were included in this research study, which was confined to some databases such as Scopus, Google Scholar, JSTOR and Eric. Research studies that were peer-reviewed and used quantitative methodologies were the only papers that were considered for this review. In order to enable researchers to get further into TPACK, future research should incorporate a broader range of resources, such as conference proceedings, editorials, dissertations, and doctoral theses.

Recommendation and Further Research

The study's conclusions highlighted the essential need for further investigations utilising innovative technological tools and techniques to support previous findings about TPACK. By extending the research with more variables, new TPACK dimensions might be investigated. Professional development programmes that focus on teacher proficiency, teaching strategies, and assessment techniques would help teachers achieve a better understanding of the TPACK domains. Different locations and methodologies used for qualitative and mixed methods research can allow participants and investigators to view the framework from a new perspective. Studies can be done employing both quantitative and qualitative research methods to provide a comprehensive analysis of TPACK. Validating the present findings at different schools, colleges, and higher educational institutions will be one of the main areas for future

investigation. More research can be done on the teacher's leadership in different educational institutions and how it affects the way the professional development process is carried out. Future research can investigate the long-term impact of TPACK on teachers' 21st-century competencies. The effect of various technology-based models on teachers' TPACK can be further investigated through experimental studies. Further studies can be done on students' perspectives.

References

Absari, N., Priyanto, P., & Muslikhin, M. (2020c). The Effectiveness of Technology, Pedagogy and Content Knowledge (TPACK) in learning. *Jurnal Pendidikan Teknologi Dan Kejuruan*, *26*(1), 43–51. https://doi.org/10.21831/jptk.v26i1.24012.

Adalar, H. (2021). Social Studies Teacher Candidates' Self-Efficacy Beliefs for Technological Pedagogical Content Knowledge (TPACK). *International Journal of Education and Literacy Studies*, *9*(3), 169. https://doi.org/10.7575/aiac.ijels.v.9n.3p.169.

Afari, E., Eksail, F. a. A., Khine, M. S., & Alaam, S. A. (2023). Computer self-efficacy and ICT integration in education: Structural relationship and mediating effects. *Education and Information Technologies*, *28*(9), 12021–12037. https://doi.org/10.1007/s10639-023-11679-8.

Agustin, K., Aridah, A., & Iswari, W. P. (2023). The Relationship among Attitudes toward ICT, Collegial Support and TPACK of EFL Teachers. *Journal of English as a Foreign Language Teaching and Research*, *3*(1), 71–86. https://doi.org/10.31098/jefltr.v3i1.1221.

Alhamid, I. S. G., & Mohammad-Salehi, B. (2024). Examining EFL Teachers' Technological Pedagogical Content Knowledge (TPACK) and Their Attitudes towards Online Teaching. *LEARN Journal: Language Education and Acquisition Research Network*, *17*(1), 715-33. https://so04.tci-thaijo.org/index.php/LEARN/index.

Auliya, V., Lukman H., & Khresna B. S. (2023). Influences of Technological Pedagogical Content Knowledge and Self-Efficacy on Technology Integration Practices of Economics Teachers. *International Journal of Multicultural and Multireligious Understanding,* 10 (1), 518-26. http://dx.doi.org/10.18415/ijmmu.v10i1.4382.

Azhar, I. N. K., & Hashim, H. (2022). Level of ESL Teachers' Technological Pedagogical Content Knowledge (TPACK) Skill and Attitude towards Technology. *Creative Education*, *13*(04), 1193–1210. https://doi.org/10.4236/ce.2022.134074

Bai, X., Guo, R., & Gu, X. (2023b). Effect of teachers' TPACK on their behavioral intention to use technology: chain mediating effect of technology self-efficacy and attitude toward use. *Education and Information Technologies*, *29*(1), 1013–1032. https://doi.org/10.1007/s10639-023-12343-x

Bakar, N. S. A., Maat, S. M., & Rosli, R. (2020). MATHEMATICS

TEACHER'S SELF-EFFICACY OF TECHNOLOGY INTEGRATION AND TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE. *Journal on Mathematics Education*, *11*(2), 259–276. https://doi.org/10.22342/jme.11.2.10818.259-276

Bakar, N. S. A., Maat, S. M., & Rosli, R. (2018). A systematic review of teacher's self-efficacy and technology integration. *International Journal of Academic Research in Business and Social Sciences*, *8*(8). https://doi.org/10.6007/ijarbss/v8-i8/4611

Baturay, M. H., Gökçearslan, Ş., & Şahin, Ş. (2017). Associations among Teachers' Attitudes towards Computer-Assisted Education and TPACK Competencies. *Informatics in Education*, *16*(1), 1–23. https://doi.org/10.15388/infedu.2017.01

Belisario, O. (2024). Digital Competence, Attitude, and Technology Utilization in Physical Education: Implication to instructional Strategy. *JPAIR Multidisciplinary Research*, *53*(1). https://doi.org/10.7719/jpair.v53i1.846

Bingimlas, K. (2018). Investigating the level of teachers' Knowledge in Technology, Pedagogy, and Content (TPACK) in Saudi Arabia. *South African Journal of Education*, *38*(3), 1–12. https://doi.org/10.15700/saje.v38n3a1496

Bano, M., Zowghi, D., Kearney, M., Schuck, S., & Aubusson, P. (2018). Mobile learning for science and mathematics school education: A systematic review of empirical evidence. *Computers & Education*, *121*, 30–58. https://doi.org/10.1016/j.compedu.2018.02.006

Bwalya, A., & Rutegwa, M. (2023). Technological pedagogical content knowledge self-efficacy of pre-service science and mathematics teachers: A comparative study between two Zambian universities. *Eurasia Journal of Mathematics Science and Technology Education*, *19*(2), em2222. https://doi.org/10.29333/ejmste/12845

Caner, M., & Aydin, S. (2021). SELF EFFICACY BELIEFS OF PRE-SERVICE TEACHERS ON TECHNOLOGY INTEGRATION. *Turkish Online Journal of Distance Education*, 79–94. https://doi.org/10.17718/tojde.961820

Chai, C. S., Koh, J. H. L., & Tsai, C. C. (2013). A review of technological pedagogical content knowledge. *Journal of Educational Technology & Society*, *16*(2), 31-51. https://www.jstor.org/stable/10.2307/jeductechsoci.16.2.31.

Cheng, S., & Xie, K. (2018b). The relations among teacher value beliefs, personal characteristics, and TPACK in intervention and non-intervention settings. *Teaching and Teacher Education*, *74*, 98–113. https://doi.org/10.1016/j.tate.2018.04.014

Cheng, K. (2017). A survey of native language teachers' technological pedagogical and content knowledge (TPACK) in Taiwan. *Computer Assisted Language Learning*, *30*(7), 692–708. https://doi.org/10.1080/09588221.2017.1349805

Coban, O., & Atasoy, R. (2019c). An examination of relationship between teachers' self-efficacy perception on ICT and their attitude towards ICT usage in the classroom. *Cypriot Journal of Educational Sciences*, *14*(1), 136–145. https://doi.org/10.18844/cjes.v14i1.3636

Coşkun, N., & Zeybek, G. (2023). High school teachers' technological pedagogical content knowledge and self-efficacy perceptions. *Research on Education and Psychology*, *7*(1), 164–181. https://doi.org/10.54535/rep.1277313

Davaasuren, B., So, H. J., & RYOO, D. (2021). Exploring the relationship between school support and technology use among Mongolian teachers: the mediating role of TPACK. *Educational Technology International*, *22*(1), 23-55. https://www.kset.or.kr/eti_ojs/index.php/instruction/article/download/195/pdf_68.

Destiani, I., Setyarini, S., & Rodliyah, R. S. (2022). English Teachers' TPACK level, factors, and the impacts in Vocational high school. *Issues in Applied Linguistics & Language Teaching*, *4*(1), 125–131. https://doi.org/10.37253/iallteach.v4i2.6725

Dong, Y., Xu, C., Chai, C. S., & Zhai, X. (2019). Exploring the structural relationship among teachers' technostress, Technological Pedagogical Content knowledge (TPACK), computer self-efficacy and school support. *The Asia-Pacific Education Researcher*, *29*(2), 147–157. https://doi.org/10.1007/s40299-019-00461-5

Durak, H. Y., Uslu, N. A., Bilici, S. C., & Güler, B. (2022). Examining the predictors of TPACK for integrated STEM: Science teaching self-efficacy, computational thinking, and design thinking. *Education and Information Technologies*, *28*(7), 7927–7954. https://doi.org/10.1007/s10639-022-11505-7

Durak, H. Y. (2019). Modeling of relations between K-12 teachers' TPACK levels and their technology integration self-efficacy, technology literacy levels, attitudes toward technology and usage objectives of social networks. *Interactive Learning Environments*, *29*(7), 1136–1162. https://doi.org/10.1080/10494820.2019.1619591

Eom, W., Heemyeong L., & Seonga L. (2020). Factors Related to Techno-stress Perceived by Elementary School Teachers in a Flipped Learning Environment. *Journal of the Korean Association of Information Education,* 24 (2), 177–88. https://doi.org/10.14352/jkaie.2020.24.2.177.

Erdoğan, E., & Akbaba, B. (2022). The role of gender, TPACK, school support and job satisfaction in predicting the technostress levels of social studies teachers. *TED EĞİTİM VE BİLİM*, *47*(210). https://doi.org/10.15390/eb.2022.11183.

Giannakos, M. N., Doukakis, S., Pappas, I. O., Adamopoulos, N., & Giannopoulou, P. (2014). Investigating teachers' confidence on technological pedagogical and content knowledge: an initial validation of TPACK scales in K-12 computing education context. *Journal of Computers in Education*, *2*(1), 43–59.

https://doi.org/10.1007/s40692-014-0024-8.

Gökbulut, B. (2021). Öğretmenlerin Teknostres ve Teknopedagojik Yeterlikleri Arasındaki İlişki. *KIRŞEHİR EĞİTİM FAKÜLTESİ DERGİSİ*, *22*(1), 472–496. https://doi.org/10.29299/kefad.929603

Gökbulut, B. (2021b). Öğretmenlerin Teknostres ve Teknopedagojik Yeterlikleri Arasındaki İlişki. *KIRŞEHİR EĞİTİM FAKÜLTESİ DERGİSİ*, *22*(1), 472–496. https://doi.org/10.29299/kefad.929603

González-Pérez, L. I., & Ramírez-Montoya, M. S. (2022). Components of Education 4.0 in 21st Century Skills Frameworks: Systematic review. *Sustainability*, *14*(3), 1493. https://doi.org/10.3390/su14031493

Graham, C. R., Tripp, T., & Wentworth, N. (2009). Assessing and improving technology integration skills for preservice teachers using the teacher work sample. *Journal of Educational Computing Research*, *41*(1), 39–62. https://doi.org/10.2190/ec.41.1.b

Greene, M. D., & Jones, W. M. (2020). Analyzing contextual levels and applications of technological pedagogical content knowledge (TPACK) in English as a second language subject area. *Educational technology & society*, *23*(4), 75-88. https://doaj.org/article/2ce6857c86ad49ffb4baeead6b47a2eb.

Guerrero, C. E. D. (2022). Computer self-efficacy, knowledge, and use of technological pedagogical and content knowledge among faculty post-graduate students. *Philippine Journal of Health Research and Development*, 26(3), 1-10.

Haderer, B., & Ciolacu, M. (2022). Education 4.0: Artificial Intelligence Assisted task- and time Planning system. *Procedia Computer Science*, *200*, 1328–1337. https://doi.org/10.1016/j.procs.2022.01.334

Harris, J. B., & Hofer, M. J. (2011). Technological Pedagogical Content Knowledge (TPACK) in action. *Journal of Research on Technology in Education*, *43*(3), 211–229. https://doi.org/10.1080/15391523.2011.10782570

Hart, C. (1998). *Doing a Literature Review: Releasing the Social Science Research Imagination.* SAGE: London (1). London: Thousand Oaks. http://ci.nii.ac.jp/ncid/BB14383612.

Hart, C. (1999). *Doing a literature review: Releasing the social science research imagination*. London: Sage

Haryati, S., Yuliasri, I., Nurkamto, J., & Fitriati, S. W. (2022). Discovering in-service teachers' perceived TPACK competence in EFL classroom: A self-assessment during emergency remote learning. In *Routledge eBooks* (pp. 166–171). https://doi.org/10.1201/9781003347798-23

Helppolainen, S., & Aksela, M. (2020). Science teachers' ICT use from a viewpoint of Technological Pedagogical Content Knowledge (TPCK). *Teknologia kemian opetuksessa*, *1*(1), 2-2. https://journals.helsinki.fi/chemedtech/article/download/1437/1399.

Hsu, L., & Chen, Y. (2021b). Hierarchical Linear Modeling to explore

contextual effects on EFL teachers' technology, pedagogy, and content knowledge (TPACK): the Taiwanese case. *The Asia-Pacific Education Researcher*, *32*(1), 1–13. https://doi.org/10.1007/s40299-021-00626-1

Ikwuka, O. I., Igbokwe, I. C., Okoye, C. A., Olonikawu, S. A., Udenwa, V. C., Okoye, C. C., Okeke-James, N. J. & Ude, C. J. (2021). Relationship between Economics teachers' self-efficacy and their ability to integrate technology in secondary schools in Anambra State, Nigeria. *IOSR Journal of Research & Method in Education (IOSR-JRME)*, *11*(4), 1-5. DOI: 10.9790/7388-1104040105

Islam, M. (2020). Exploring teachers' self-efficacy towards ICT integration in government primary schools in Bangladesh. *International Journal of Advance Research and Innovative Ideas in Education*, *6*(2), 1703-1714. http://ijariie.com/AdminUploadPdf/Exploring_Teachers'_self_efficacy_towards_ICT_integration_in_government_primary_schools_of_Bangladesh_ijariie11766.pdf.

Joo, Y. J., Lim, K. Y., & Kim, N. H. (2016). The effects of secondary teachers' technostress on the intention to use technology in South Korea. *Computers & Education*, *95*, 114-122. https://doi.org/10.1016/j.compedu.2015.12.004.

Joshi, S. (2023). TPACK and Teachers' Self-Efficacy: A Systematic review. *Canadian Journal of Learning and Technology*, *49*(2), 1–23. https://doi.org/10.21432/cjlt28280

Kahveci, A., Sahin, N., & Genc, S. (2011). Computer Perceptions of Secondary School Teachers and Impacting Demographics: A Turkish Perspective. *Turkish Online Journal of Educational Technology-TOJET*, *10*(1), 71-80. https://files.eric.ed.gov/fulltext/EJ926555.pdf.

Kaşci, T., & Selçuk, G. (2021). Examination of classroom teachers' technological pedagogical content knowledge and Teacher Self-Efficacy Beliefs. *Journal of Educational Technology and Online Learning*, *4*(4), 774–792. https://doi.org/10.31681/jetol.1018879

Kazu, I. Y., & Erten, P. (2014). Teachers' Technological Pedagogical Content Knowledge Self-Efficacies. *Journal of Education and Training Studies*, *2*(2). https://doi.org/10.11114/jets.v2i2.261

Keeler, C. G. (2008). When curriculum and technology meet: Technology integration in methods courses. *Journal of Computing in Teacher Education*, *25*(1), 23–30. https://doi.org/10.1080/10402454.2008.10784605

Kereluik, K., Mishra, P., & Koehler, M. (2010). Reconsidering the T and C in TPACK: Repurposing technologies for interdisciplinary knowledge. In *Society for Information Technology & Teacher Education International Conference* (pp. 3892-3899). Association for the Advancement of Computing in Education (AACE).

Kim, M. C., & Hannafin, M. J. (2011). Scaffolding problem solving in technology-enhanced learning environments (TELEs): Bridging research and theory with practice. *Computers & Education*, *56*(2), 403–417. https://doi.org/10.1016/j.compedu.2010.08.024

Kim, S. W., & Lee, Y.(2019). The Changes of Self-efficacy Beliefs of Pre-service Teachers for Technology Integration Through Programming-based TPACK Educational Program. *Journal of the Korea Society of Computer and Information,* 24 (4), 185–93. https://doi.org/10.9708/jksci.2019.24.04.185.

Kiyici, O. D., & Övez, F. D. (2021). Examination of Technology Acceptance and TPACK Competencies of Mathematics Teachers Who are Involved in Distance Education Practices During the Pandemic Process. *Journal of Educational Technology and Online Learning*, *4*(4), 805–821. https://doi.org/10.31681/jetol.1012204

Koehler, M., & Punya M. (2005). What Happens When Teachers Design Educational Technology? The Development of Technological Pedagogical Content Knowledge. *Journal of Educational Computing Research,* 32 (2), 131–52. https://doi.org/10.2190/0ew7-01wb-bkhl-qdyv.

Koehler, M., &.Punya M. (2009). What Is Technological Pedagogical Content Knowledge (TPACK). *Contemporary Issues in Technology and Teacher Education,* 9 (1), 60–70. https://www.learntechlib.org/primary/p/29544/article_29544.pdf.

Kul, U., Aksu, Z., & Birisci, S. (2019). The Relationship between Technological Pedagogical Content Knowledge and Web 2.0 Self-Efficacy Beliefs. *International Online Journal of Educational Sciences*, *11*(1). https://doi.org/10.15345/iojes.2019.01.014

López-Vargas, O., Duarte-Suárez, L., & Ibáñez-Ibáñez, J. (2017). Teacher's computer self-efficacy and its relationship with cognitive style and TPACK. *Improving Schools*, *20*(3), 264–277. https://doi.org/10.1177/1365480217704263

Li, M. (2023). Chinese mathematics teachers' TPACK and attitudes toward ICT integration in the post-pandemic era. *Eurasia Journal of Mathematics Science and Technology Education*, *19*(7), em2301. https://doi.org/10.29333/ejmste/13346

Li, S., Liu, Y., & Su, Y. (2022). Differential analysis of teachers' Technological Pedagogical Content Knowledge (TPACK) abilities according to teaching stages and educational levels. *Sustainability*, *14*(12), 7176. https://doi.org/10.3390/su14127176

Li, Y., Garza, V., Keicher, A., & Popov, V. (2018). Predicting high school teacher use of technology: pedagogical beliefs, technological beliefs and attitudes, and teacher training. *Technology Knowledge and Learning*, *24*(3), 501–518. https://doi.org/10.1007/s10758-018-9355-2

Mailizar, M., Hidayat, M., & Al-Manthari, A. (2021). Examining the impact of mathematics teachers' TPACK on their acceptance of online professional development. *Journal of Digital Learning in Teacher Education*, *37*(3), 196–212. https://doi.org/10.1080/21532974.2021.1934613

Mai, M. Y., & Hamzah, M. (2016). Primary Science Teachers' Perceptions of Technological Pedagogical and Content Knowledge (TPACK) in Malaysia. *European Journal of*

Social Sciences Education and Research, *6*(2), 167. https://doi.org/10.26417/ejser.v6i2.p167-179

Maknun, J. (2022). The Technological Pedagogical Content Knowledge (TPACK) competence of Vocational High school teacher. *Jurnal Pendidikan Teknologi Dan Kejuruan*, *28*(1), 63–75. https://doi.org/10.21831/jptk.v28i1.42624

Mansour, N., Said, Z., & Abu-Tineh, A. (2024). Factors impacting science and mathematics teachers' competencies and self-efficacy in TPACK for PBL and STEM. *Eurasia Journal of Mathematics Science and Technology Education*, *20*(5), em2442. https://doi.org/10.29333/ejmste/14467

Mercado, M. G. M., & Ibarra, F. P. (2019). ICT-Pedagogy integration in Elementary Classrooms: Unpacking the Pre-service Teachers' TPACK. *Indonesian Research Journal in Education |IRJE|*, 29–56. https://doi.org/10.22437/irje.v3i1.6506

Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: a framework for teacher knowledge. *Teachers College Record the Voice of Scholarship in Education*, *108*(6), 1017–1054. https://doi.org/10.1111/j.1467-9620.2006.00684.x

Moore, Z. (2006). Technology and teaching culture: What Spanish teachers do. *Foreign Language Annals*, *39*(4), 579–594. https://doi.org/10.1111/j.1944-9720.2006.tb02277.x

Muhaimin, M., Habibi, A., Mukminin, A., Saudagar, F., Pratama, R., Wahyuni, S., Sadikin, A., & Indrayana, B. (2019). A sequential explanatory investigation of TPACK: Indonesian science teachers' survey and perspective. *Journal of Technology and Science Education*, *9*(3), 269. https://doi.org/10.3926/jotse.662

Muslimin, A. I., Mukminatien, N., & Ivone, F. M. (2023). TPACK-SAMR digital literacy competence, technostress, and teaching performance: Correlational study among EFL lecturers. *Contemporary Educational Technology*, *15*(2), ep409. https://doi.org/10.30935/cedtech/12921

Mutluoğlu, A. & Ahmet, E. (2016). Examining Primary Mathematics Teachers' Technological Pedagogical Content Knowledge (TPACK) Levels According to Their Preferred Teaching Styles. *OPUS International Journal of Society Researches,* 6 (10), 102–26. https://dergipark.org.tr/en/download/article-file/210735

Naing, I. R., & Wiedarti, P. (2023). Scrutinizing EFL teachers' TPACK Mastery level in teaching English based on gender and schools status disparities. *AL-ISHLAH Jurnal Pendidikan*, *15*(2), 1859–1870. https://doi.org/10.35445/alishlah.v15i2.2630

Njiku, J., Mutarutinya, V., & Maniraho, J. F. (2020, January). Mathematics teachers' technology integration self-efficacy and technology use. In *International conference to review research in science, technology, and mathematics education* (pp. 283-289). Mumbai: Homi Bhabha Centre for Science Education.

Özgür, H. (2020). Relationships between teachers' technostress,

technological pedagogical content knowledge (TPACK), school support and demographic variables: A structural equation modeling. *Computers in Human Behavior*, *112*, 106468. https://doi.org/10.1016/j.chb.2020.106468

Prasetya, I. W. A. W., Putra, I. N. A. J., & Budasi, I. G. (2019). TEACHERS'PERCEPTION IN USING TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE IN TEACHING ENGLISH AT SENIOR HIGH SCHOOLS IN BULELENG SUB-DISTRICT. *Language and Education Journal Undiksha*, *2*(1), 60-68.

Ramirez-Asis, E., Huaranga-Toledo, H., Bullón-Miguel, Y., Rodriguez-Nomura, H., & Rodríguez-Orellana, H. M. (2024). Digital competencies and attitude toward the use of information technologies in secondary school teachers in a Peruvian public educational institution. In *Emerald Publishing Limited eBooks* (pp. 153–167). https://doi.org/10.1108/978-1-83753-106-620241011.

Roussinos, D., & Jimoyiannis, A. (2019). Examining primary education teachers' perceptions of TPACK and the related educational context factors. *Journal of Research on Technology in Education*, *51*(4), 377–397. https://doi.org/10.1080/15391523.2019.1666323.

Sangka, K. B., Indriayu, M., Mackenzie, C., & Santika, V. (2022). TPACK towards ICT integration: Does creativity have a moderating effect? *IJPTE International Journal of Pedagogy and Teacher Education*, *6*(2), 104. https://doi.org/10.20961/ijpte.v6i2.66748

Setiawan, H., & Phillipson, S. (2020). The correlation between social media usage in academic context and Self-Efficacy towards TPACK of prospective science Teachers in Indonesia. *Journal of Science Learning*, *3*(2), 106–116. https://doi.org/10.17509/jsl.v3i2.22242.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, *15*(2), 4–14. https://doi.org/10.3102/0013189x015002004.

Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard educational review,* 57(1), 1-23.

Şimşek, Ö., & Sarsar, F. (2019). Investigation of the self-efficacy of the teachers in technological pedagogical content knowledge and their use of information and communication technologies. *World Journal of Education*, *9*(1), 196. https://doi.org/10.5430/wje.v9n1p196.

Sun, J., Ma, H., Zeng, Y., Han, D., & Jin, Y. (2022). Promoting the AI teaching competency of K-12 computer science teachers: A TPACK-based professional development approach. *Education and Information Technologies*, *28*(2), 1509–1533. https://doi.org/10.1007/s10639-022-11256-5.

Syvänen, A., Mäkiniemi, J., Syrjä, S., Heikkilä-Tammi, K., & Viteli, J. (2016). When does the educational use of ICT become a source of technostress for Finnish teachers? *Seminar Net*, *12*(2).

https://doi.org/10.7577/seminar.2281.

Tafli, T. (2021). A Comparative Study on TPACK Self-efficacy of Prospective Biology Teachers From the Faculties of Education & Science: TPACK Self-efficacy of Prospective Biology Teachers. *International Journal of Curriculum and Instruction,* 13 (3), 2957–80. http://ijci.wcci-international.org/index.php/IJCI/article/view/787

Tarafdar, M., Gupta, A., & Turel, O. (2013). The dark side of information technology use. *Information Systems Journal*, *23*(3), 269–275. https://doi.org/10.1111/isj.12015.

Temur, A., Durukan, A., & Artun, H. (2022). The Relationship between the Pre-Service Science Teachers' Self-Efficacy towards Science Teaching and Tendency to Use Technology in Classes. *Mimbar Sekolah Dasar*, *9*(2), 367–380. https://doi.org/10.53400/mimbar-sd.v9i2.44846.

Thy, S., Im, R., & Iwayama, T. (2023). Examining Cambodian high school science teachers' perception of Technological Pedagogical Content Knowledge (TPACK). *Journal of Science and Education (JSE)*, *4*(1), 1–13. https://doi.org/10.56003/jse.v4i1.232.

Vandeyar, T. (2014). Policy intermediaries and the reform of e-Education in South Africa. *British Journal of Educational Technology*, *46*(2), 344–359. https://doi.org/10.1111/bjet.12130.

V Hafalla Jr, V. (2022). Investigating the Structural Relationship between TPACK, Technological Self-efficacy, and Constructivist Teaching Practice. *European Online Journal of Natural and Social Sciences: Proceedings,* 11(4), 250.

Wang, Q., & Zhao, G. (2023). Exploring the influence of technostress creators on in-service teachers' attitudes toward ICT and ICT adoption intentions. *British Journal of Educational Technology*, *54*(6), 1771–1789. https://doi.org/10.1111/bjet.13315.

Yildiz Durak, H. (2021). Modeling of relations between K-12 teachers' TPACK levels and their technology integration self-efficacy, technology literacy levels, attitudes toward technology and usage objectives of social networks. *Interactive Learning Environments,* 29(7), 1136-62. https://doi.org/10.1080/10494820.2019.1619591

Zahwa, I., Saptono, S., & Dewi, P. (2021). The interrelation among course mastery, technology integration self-efficacy, and Technological Pedagogical Content Knowledge (TPACK) of prospective science teachers. *Journal of Innovative Science Education*, *9*(3). https://doi.org/10.15294/jise.v9i2.40177.

Zhakiyanova, Z., Zhaitapova, A., Orakova, A., Baizhekina, S., Shnaider, V., & Nametkulova, F. (2023). Investigation of primary school teachers' professional competencies and Technological Pedagogical Content Knowledge (TPACK) competencies. *International Journal of Education in Mathematics Science and Technology*, *11*(5), 1154–1172. https://doi.org/10.46328/ijemst.3604.

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मोबाइल अनुरक्ति मापनी का निर्माण एवं मानकीकरण

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सारांश

मनुष्य के लिए मोबाइल एक अत्यधिक महत्वपूर्ण वस्तु है। मनुष्य अपने विभिन्न कार्यों में मोबाइल का उपयोग विभिन्न प्रकार से करता है। विद्यार्थियों को आनलाइन शिक्षा ग्रहण करने में मोबाइल सहायता करता है। मोबाइल का अत्यधिक उपयोग करने से मोबाइल का व्यक्ति के साथ लगाव हो जाता है, जिसे मोबाइल अनुरक्ति कहते है। वर्तमान अध्ययन मोबाइल अनुरक्ति मापनी के निर्माण एवं मानकीकरण की प्रकिया पर प्रकाश डालता है। प्रारम्भिक चरण में मापनी के निर्माण हेतु 70 कथनों को शामिल किया गया। न्यादर्श के रुप में पीलीभीत जनपद में स्थित बीसलपुर तहसील के 10 माध्यमिक विद्यालयों के अध्ययनरत 200 किशोर विद्याार्थियों को सम्मलित किया गया। मापनी के पद विश्लेषण एवं मानकीकरण हेतु टी-परीक्षण, माध्य, मानक विचलन तथा सहसम्बन्ध का उपयोग किया गया। मापनी की वैधता एवं विश्वसनीयता ज्ञात करके मानकीकरण की प्रकिया को पूर्ण किया गया। इस प्रकार निर्मित मानकीकृत मापनी में अन्तिम रुप से 29 कथनों को अध्ययन के लिए चुना गया।

बीज शब्द: *मोबाइल अनुरक्ति मापनी, निर्माण एवं मानकीकरण।*

प्रस्तावना

वर्तमान समय में मोबाइल फोन हमारे दैनिक जीवन का एक अभिन्न अंग बन चुका है, इसके अभाव में हमारे अनेक महत्वपूर्ण कार्य रूक जाते हैं। जिसके कारण व्यक्ति अपने मोबाइल को अपने आप से दूर नही रख पाता है। प्रारम्भ में बालक को बहलाने के लिए, खेलने के लिए, खाना खाने के लिए, पढ़ने के लिए मोबाइल का प्रयोग किया जाता है, परन्तु धीरे-धीरे किशोरावस्था मे आते-आते मोबाइल उसकी दैनिकचर्या में आ जाता है। अर्थात हम कह सकते हैं कि मोबाइल के प्रति किशोरों की अनुरक्ति बढ़ जाती है।

आज का युग डिजिटल क्रान्ति का युग है। तकनीकी ने हमारे जीवन के हर पहलू को प्रभावित किया है, शिक्षा भी इससे अछूती नहीं है। किशोरो की शिक्षा में डिजिटल क्रान्ति के कारण क्रान्तिकारी परिवर्तन हुए हैं। पारंपरिक कक्षाओं के स्थान पर अब आनलाइन कक्षाएं, वीडियो ट्यूटोरियल, लर्निंग ऐप्स तथा इंटरैक्टिब ऐप्स ने किशोरों को सीखने के नए आयाम प्रदान किये हैं। किशोर शिक्षा में डिजिटल उपकरणों ने न केवल सूचना आदान-प्रदान का कार्य किया है, बल्कि सीखने को अधिक व्यक्तिगत, स्वतंत्र, मनोरंजक एवं रचानात्मक बना दिया हैं। डिजिटल प्लेटफार्म किशोरों को अपनी गति से सीखने और अपनी कमजोरियों पर ध्यान केन्द्रित करने में सहायता करते हैं। स्मार्ट फोन, मोबाइल एवं कम्प्यूटर जैसे डिजिटल संसाधन कोडिंग, डेटा विश्लेषण एवं डिजिटल मार्केटिंग जैसे 21 वीं सदी के कौशल

सीखने के लिए एक उत्कृष्ट मंच प्रदान करते हैं। इस प्रकार जहा डिजिटल क्रान्ति के अनेक लाभ हैं वहीं कुछ चुनौतिया भी सामने आती हैं जैसे-स्क्रीन समय, डिजिटल डिवाइस, मोबाइल अनुरक्ति, साइवर क्राइम आदि। इन चुनौतियों का समाधान करने के लिए शिक्षकों, विद्यार्थियों, अभिभावकों एवं विशेषज्ञयों को मिलकर कार्य करना होगा (हावर्ड, एस0 2011)।

उपकरण निर्माण एवं मानकीकरण की रूपरेखा

उपकरण का निर्माण एवं मानकीकरण निम्नलिखित सोपानों के अनुसार किया गया है-

पहला सोपान - उपकरण निर्माण योजना

दूसरा सोपान - सम्बन्धित साहित्य का सर्वेक्षण

तीसरा सोपान - विषय विशेषज्ञों की राय

चौथा सोपान - कथनों की रचना

पाँचवाँ सोपान - उपकरण की प्रारम्भिक जांच

छठवाँ सोपान - पद विश्लेषण

सातवाँ सोपान - उपकरण की वैधता

आठवाँ सोपान - उपकरण की विश्वसनीयता

नौवाँ सोपान - मानक निर्माण

दसवाँ सोपान - अंतिम प्रारूप निर्माण

पहला सोपान - उपकरण निर्माण योजना

शोधार्थी ने मापनी के निर्माण हेतु अपने विषय से सम्बन्धित विभिन्न प्रकार के स्रोत जैसे- शोध पत्र-पत्रिकाएं, पूर्व में किये गये अनुसंधान, दैनिक समाचार पत्रों में प्रकाशित लेख, सर्वेक्षण पर आधारित प्रतिवेदन, विद्यार्थियों एवं शिक्षकों से परामर्श, विषय विशेषज्ञों की राय और उपकरण से सम्वन्धित साहित्य के सर्वेक्षण के आधार पर एकत्रित किये गये हैं। उपकरण से सम्वन्धित साहित्य समीक्षा को तालिका के रूप में निम्न प्रकार प्रदर्शित किया गया है-

सम्बन्धित साहित्य का सर्वेक्षण

क्र. सं.	शोध कार्य	शोधार्थी
1	स्मार्टफोन की लत मापनी को तैयार करने के लिए न्यादर्श के रुप में जापानी व्यस्कों का चयन किया गया। मापनी की वैधता एवं विश्वसनीयता को ज्ञात करने के उपरान्त अन्तिम रुप से तैयार किया गया।	हमाहुरा, टी0 तथा अन्य (2023)

2	मोबाइल फोन एडिक्सन किशोरों और बच्चों की सीखने की क्षमता को प्रभावित करता है, जिससे वह शारीरिक तथा मानसिक रुप से परेशानी का सामना करते है।	जिया, वाई0 (2022)
3	विश्वविद्यालय के 720 विद्यार्थियों पर मात्रात्मक अध्ययन करने उपरान्त यह देखा गया कि स्मार्टफोन की लत विद्यार्थियों की पुस्तक पढ़नें की तीव्रता, उपलब्धि अभिप्रेरणा तथा शैक्षणिक उपलब्धि को प्रभावित करती है।	बुखोरी, बी0 तथा अन्य (2019)
4	स्मार्टफोन एडिक्सन मापनी को तैयार करने हेतु विश्वविद्यालय के विद्यार्थियों को न्यादर्श के लिए चयनित किया गया। मापनी की रुप वैद्यता तथा विश्वसनीयता ज्ञात करके अन्तिम रुप से विश्वविद्यालय स्तर के विद्यार्थियों के लिए 33 पदों वाली मापनी तैयार की गयी।	शर्मा तथा शर्मा (2019)
5	मोबाइल फोन एडिक्सन मापनी को विकसित करने के लिए 284 लोगों को अध्ययन में सम्मलित किया गया।	फिदान, एच0 (2016)
6	टेलीविजन एडिक्सन मापनी	स्मिथ (1986)
7	इंटरनेट एडिक्सन परीक्षण	किमवेरले यंग (1998)
8	मोबाइल फोन एडिक्सन परीक्षण	बिंची तथा फिलिप्स (2005)
9	गेम एडिक्सन मापनी	लेमेन्स (2009)
10	इंटरनेट एडिक्सन परीक्षण	किम तथा वोन (2013)
11	स्मार्टफोन एडिक्सन स्केल के अन्तर्गत प्रारम्भ में 45 पदों की मापनी तैयार की गयी। मानकीकरण के लिए न्यादर्श के रुप में 200 छात्रों पर मापनी को प्रशासित करने के उपरान्त अन्तिम रुप से 23 पदों की मापनी परीक्षण हेतु तैयार की गयी।	विजयश्री तथा अंसारी एम0 (2021)

तीसरा सोपान - विषय विशेषज्ञों की राय

शोधकर्ता ने पर्यवेक्षक तथा विशेषज्ञों के साथ मोबाइल अनुरक्ति से सम्बन्धित कौशलों, गुणों तथा आयामों के विषय में चर्चा की तथा उनसे बहुमूल्य सुक्षाव प्राप्त किए।

चौथा सोपान - पदों का निर्माण

उपर्युक्त स्रोतों के आधार पर शोधार्थी ने सर्वप्रथम मोबाइल अनुरक्ति से सम्बन्धित पाँच आयामों का निर्माण करके उनसे सम्बन्धित 70 कथनों का निर्माण किया। शोध निर्देशिका, सह-शोधकर्ताओं, भाषाविदों एवं अन्य विषय विशेषज्ञों से विचार विमर्श के आधार पर भाषा में त्रुटि एवं द्विअर्थी 32 कथनों को मापनी से हटा दिया गया। अन्तिम रूप से 38 कथनों को मापनी में चयनित किया गया इस प्रकार मापनी का संगठन लिकर्ट की पाँच बिन्दु मापनी के

आधार पर किया गया। मापनी में समाहित किये गये आयामों एवं कथनों को तालिका में निम्न प्रकार प्रदर्शित किया गया है-

मापनी निर्माण - आयाम एवं कथन

क्रम सं0	आयाम	कथन क्रमांक	कथनों की सं0
1	अवधान में बाधाएं	01 से 08	8
2	अध्ययन आदतों में परिवर्तन	09 से 13	5
3	सोशल मीडिया	14 से 21	8
4	शैक्षणिक कार्यों में उपयोग	22 से 28	7
5	जीवन कौशल पर प्रभाव	29 से 38	10
	कुल कथन		38

पाचवां सोपान - प्रारम्भिक जाँच

उपर्युक्त निर्मित 38 कथनों की मोबाइल अनुरक्ति मापनी को प्रारम्भिक जाँच हेतु 200 किशोर विद्यार्थियों (100 किशोर छात्रों एवं 100 किशोर छात्राओं) पर प्रशासित किया गया। मापनी में प्रत्येक कथन के सम्मुख 5 विकल्प दिये गये, पूर्ण सहमत, सहमत, अनिश्चित, असहमत एवं पूर्ण असहमत। विकल्पों के चयन के आधार पर किशोरों को तालिका के अनुसार अंक प्रदान किये गये-

मापनी का अंकन

प्रतिक्रिया	पूर्ण सहमत	सहमत	अनिश्चित	असहमत	पूर्ण असहमत
प्राप्तांक	5	4	3	2	1

छठवां सोपान - पद विश्लेषण

मापनी के पद विश्लेषण हेतु प्रत्येक कथन/पद का टी-मान ज्ञात किया गया। मापनी के पदों का टी-मान ज्ञात करने के लिए सर्वप्रथम सभी किशोरों को प्राप्तांकों के आधार पर आरोही क्रम में व्यवस्थित किया गया, प्राप्तांकों के अनुसार न्यूनतम अंक प्राप्त करने वाले 27 प्रतिशत अर्थात 54 किशोरों तथा उच्चतम अंक प्राप्त करने वाले 27 प्रतिशत अर्थात 54 किशोरों को दो अलग-अलग समूह में व्यवस्थित कर लिया गया। तत्पश्चात दोनों समूह के लिए प्रत्येक कथन का टी-मान ज्ञात किया गया। टी-परीक्षण के आधार पर सार्थक अन्तर रखने वाले 31 कथनों को मापनी में चयनित किया गया जबकि अर्थहीन अन्तर रखने वाले 7 कथनों को अस्वीकार कर दिया गया। इस प्रकार 31 कथनों वाली मोबाइल अनुरक्ति मापनी को वास्तविक जाँच के उपरान्त शोधकार्य में प्रयोग हेतु प्राप्त किया गया। पद विश्लेषण के आधार पर मापनी का विवरण निम्न तालिका द्वारा प्रदर्शित किया गया है-

स्वीकृत तथा अस्वीकृत पदों का विश्लेषण

क्रम सं0	आयाम	कथन क्रमांक	अस्वीकृत कथन क्रमांक	अस्वीकृत कथनों की संख्या	स्वीकृत कथनों की संख्या
1	अवधान में बाधाएं	01 से 08	6, 8	2	6
2	अध्ययन आदतों में परिवर्तन	09 से 13	12	1	4
3	सोशल मीडिया	14 से 21	14, 16	2	6
4	शैक्षणिक कार्यों में उपयोग	22 से 28	27	1	6
5	जीवन कौशल पर प्रभाव	29 से 38	37	1	9
	कुल कथन	38		07	31

मापनी का मानकीकरण

परीक्षण का मानकीकरण करने के लिए शोधकर्ता द्वारा मापनी की वैधता एवं विश्वसनीयता ज्ञात की गयी।

सातवां सोपान - मापनी की वैधता

मापनी की वैधता के अन्तर्गत विषयवस्तु वैधता को ज्ञात किया गया है। इसमें शोधार्थी ने 10 विषय विशेषज्ञों द्वारा व्यक्तिगत रूप से मापनी का अवलोकन कराया गया। विषय विशेषज्ञों द्वारा मापनी के कथनों का अवलोकन करने के उपरान्त उनके द्वारा प्राप्त स्कोर के आधार पर मापनी का एस - सीबीआई (विषय वस्तु वैधता सूचकांक) ज्ञात किया गया जिसका मान 0.874 प्राप्त हुआ 1 विषय वस्तु वैधता सूचकांक के आधार पर यह निश्चित किया गया कि विषय वस्तु से सम्बन्धित है, मापनी की भाषा सरल एवं अर्थपूर्ण है तथा मापनी शोध उद्देश्यों का मापन करने में समर्थ है। इस प्रकार यह निश्चित हो जाता है कि शोधकर्ता द्वारा निर्मित मोबाइल अनुरक्ति मापनी वैध है।

आठवां सोपान - मापनी की विश्वसनीयता

शोधार्थी ने मापनी की विश्वसनीयता ज्ञात करने के लिए परीक्षण-पुनर्परीक्षण विधि का प्रयोग किया। इस विधि के अन्तर्गत शोधकर्ता ने सर्वप्रथम परीक्षण को 100 किशोर विद्यार्थियों पर प्रशासित किया तथा उन्हे अंक प्रदान किये गये। एक माह पश्चात उसी परीक्षण को पुनः उन्हीं 100 किशोरों पर प्रशासित किया गया और उन्हे अंक प्रदान किये गये। दोनों बार किशोरों को प्रदत्त अंकों के मध्य कार्लपिर्यसन की प्रोडक्ट मोमेन्ट मैथड द्वारा सह-सम्बन्ध गुणांक की गणना की गयी। सह-सम्बन्ध गुणांक का मान +0.791 प्राप्त किया गया । गिलफोर्ड द्वारा दी गयी सह-सम्बन्ध गुणांक के मान की व्याख्या करने की व्यवहारिक विधि के अनुसार दो प्रदत्तों के मध्य उच्च धनात्मक सह-सम्बन्ध पाया गया। सह-सम्बन्ध उच्च धनात्मक होने की स्थिति में मापनी का विश्वसनीयता गुणांक भी उच्च होगा। इस प्रकार यह

निश्चित हो जाता है कि परिकलित सह-सम्बन्ध सार्थक है और शोधार्थी द्वारा निर्मित मोबाइल अनुरक्ति मापनी विश्वसनीय है। मापनी का विश्वसनीयता गुणांक 0.791 प्राप्त किया गया।

नौवां सोपान - मानक निर्माण

शोधकर्ता ने परीक्षण को प्रशासित करने हेतु न्यादर्श के रूप में चयनित माध्यमिक विद्यालयों में 13 से 16 वर्ष के किशोर विद्यार्थियों से सम्पर्क किया। किशोरों से वार्तालाप के माध्यम से सामंजस्य स्थापित करके कक्षा-कक्ष में किशोरों पर परीक्षण को प्रशासित किया गया। किशोरों को कहा गया कि मापनी में दिये गये निर्देशों को ध्यान पूर्वक पढ़ लें तथा सभी प्रश्नों के उत्तर देना अनिवार्य है। मापनी में कोई भी कथन सही अथवा गलत नही है। कथन के सम्बन्ध में आपको अपनी सहमति व्यक्त करनी है। प्रत्येक कथन के सम्मुख 5 विकल्प दिये गये हैं उनमें से जिस विकल्प से आप सहमत हैं उसके आगे सही (✓) का चिन्ह लगाकर उत्तर देना है आपके उत्तरों को गोपनीय रखा जायेगा तथा उनका प्रयोग केवल शोधकार्य में ही किया जायेगा। प्रश्नों के उत्तर देने की कोई समय सीमा निर्धारित नहीं की गयी फिर भी किशोरों को औसतन 30 मिनट का समय दिया गया। अंकन प्रक्रिया मापनी में वर्णित निर्देशों के आधार पर अंकन प्रक्रिया को शोधकर्ता द्वारा पूर्ण किया गया, जिसमें पूर्ण सहमत के लिए 5 अंक, सहमत के लिए 4 अंक, अनिश्चित हेतु 3 अंक, असहमत हेतु 2 अंक और पूर्ण असहमत हेतु 1 अंक प्रदान किया गया। अन्त में प्रत्येक किशोर विद्यार्थी द्वारा प्राप्त अंकों का योग किया गया। इस आधार पर न्यूनतम प्राप्तांक 29×1=29 तथा अधिकतम प्राप्तांक 29×5=145 हैं।

दसवां सोपान - मोबाइल अनुरक्ति मापनी का अन्तिम प्रारूप

मापनी के निर्माण एवं मानकीकरण के उपरान्त अन्ततः 29 कथनों वाली मोबाइल अनुरक्ति मापनी के प्रारुप को अन्तिम रुप से तैयार कर लिया गया। मापनी में आयाम के अनुसार कथनों का विवरण निम्न प्रकार है-

क्रम सं0	आयाम	कथन क्रमांक	कथनों की सं0
1	अवधान में बाधाएं	01 से 05	5
2	अध्ययन आदतों में परिवर्तन	06 से 09	4
3	सोशल मीडिया	10 से 15	6
4	शैक्षणिक कार्यों में उपयोग	16 से 21	6
5	जीवन कौशल पर प्रभाव	22 से 29	8
कुल कथन		29	29

निष्कर्ष

विद्यार्थियों में मोबाइल अनुरक्ति को रोकना एक कठिन कार्य है। आज के डिजिटल युग में जहां एक ओर मोबाइल विद्यार्थियों के सीखने में सहायता करता है, वहीं दूसरी ओर अनावश्यक चीजों की ओर ध्यान आकर्षित करता है। शोध कर्ता ने मोबाइल से सम्बन्धित लगभग सभी आयामों एवं क्षेत्रों को अपने अध्ययन में सम्मलित करने का प्रयास किया है। आशा है कि इस मोबाइल अनुरक्ति मापनी का उपयोग सभी प्रकार के विद्यार्थियों एवं व्यक्तियों के लिए सुविधाजनक रुप से किया जा सकता है, लेकिन विशेष रुप से किशोर विद्यार्थियों के लिए अधिक उपयुक्त रहेगा। भविष्य में यह मापनी शोधकर्ताओं तथा किशोर विद्यार्थियो के मूल्यांकन में अत्यन्त उपयोगी सिद्ध होगी।

सन्दर्भ

जिया, बाई0 तथा लू, एस0 (2022). ''किशारों की शैक्षणिक प्रदर्शन पर मोबाइल फोन की लत का प्रभाव'' सामाजिक विज्ञान, शिक्षा और मानविकी अनुसंधान में प्रगति, खण्ड 664, 2022.

डेवी, एस0 तथा डेवी, ए0 (2014). ''भारत के किशोरों में स्मार्टफोन की लत का आकलन: एक मिश्रित विधि अध्ययन'' Retrieved from https://www.ncbi.nlm.nihgov/pmc/articles/npc4336980.

फिदान,एच0 (2016). ''मोबाइल एडिक्सन मापनी का विकास और सत्यापन : घटक मॉडल दृष्टिकोण'' आई एस एस एन 2148-7286-3 ई आई एस एस एन 26-1305.

फिसर, एल0 तथा कोथगासनर, डी0 (2019). ''बच्चों और किशोरों में स्मार्टफोन के समस्याग्रस्त उपयोग के जोखिम कारक: मैजूदा साहित्य की समीक्षा'' न्यूरोसाइकियाट्री, 33, 179-190। Retrieved from https://doi.org/10.1007/s40211-019-00319-8

फील्ड टी0 (2020). ''किशोरों में सेलफोन एडिक्सन: एक कथात्मक समीक्षा'' आयरिस पब्लिशर्स, यूएसए. Retrieved from https://irispublishers.com.

बुखोरी, बी0 तथा अन्य (2019). ''स्मार्टफोन की लत, उपलब्धि अभिप्रेरणा और पाठ्य पुस्तक पढ़ने की तीव्रता का छात्रों की शैक्षणिक उपलब्धि पर प्रभाव'' http//doi.org/10.3991/ijim.v.13i09 ,9566.

विजयश्री तथा अन्सारी एम0 (2021). ''स्मार्टफोन एडिक्सन स्केल'' नेशनल साइकोलाजी कार्पोरेशन, आगरा. www.npcindia.com.

शर्मा, आर0 तथा शर्मा, पी0 (2019). ''भारतीय छात्रों हेतु स्मार्टफोन मापनी का विकास'' इन्डियन, जर्नल आफ साइकोलाजी एण्ड एजूकेशन, 9 (2), 45-53.

हमामुरा, टी0 तथा अन्य (2023). ''जापानी व्यस्कों के बीच स्मार्टफोन की लत मापनी-शार्ट वर्जन की वैधता, विश्वसनीयता और सहसम्बन्ध'' बी एम सी मनोविज्ञान 11, लेख संख्या: 78 (2023).

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M.Sc.

- Physics
- Chemistry
- Mathematics
- Animal Science (Zoology)
- Plant Science (Botany)
- Micro Biology

Professional PG Courses

- M. Pharma (Pharmaceutical Chemistry)
- M. Pharma (Pharmacology)
- Mathematics
- M. Pharma (Pharmaceutics)
- M.Ed.
- M.B.A. (General)
- M.B.A. (Marketing)
- M.B.A. (Part Time)
- M.C.A.
- L.L.M
- M.S.W.
- M.R.D.M (Master of Rural Development & Management)

U.G. Courses

- B.Ed.
- B.H.M.C.T.
- B. Pharma

P.G. Diploma

- Advance P.G.D.C.A
- Mass Communication & Electronic Journalism
- P.G. Diploma in Women Empowerment and Development
- P.G. Diploma in Entrepreneurship Development