Impact of Society 5.0 on Women's Employment: A Conceptual Framework and Systematic Review

El impacto de la sociedad 5.0 en el empleo de las mujeres: marco conceptual y revisión sistemática

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Abstract: This paper explores the impact of Society 5.0 on women's employment, developing a conceptual framework to understand both the challenges and opportunities presented by this super-smart society. Society 5.0 aims to integrate advanced technologies such as artificial intelligence (AI) and the Internet of Things (IoT) into daily life, promising a more inclusive and sustainable future. However, this digital transformation also poses significant risks, particularly for women employed in sectors vulnerable to automation. The systematic review of the literature reveals that while women face challenges such as job displacement and the reinforcement of gender inequalities, Society 5.0 also offers new opportunities in STEM fields and more flexible work environments. The conceptual framework highlights the importance of mediating factors such as access to education, workplace inclusion, and policy interventions in determining women's outcomes in the digital economy. The paper concludes with policy recommendations and identifies key areas for future research, including sector-specific impacts and the effectiveness of gender-sensitive interventions. This study contributes to the growing discourse on gender and technology by providing a roadmap for achieving gender equality in the context of Society 5.0.

Keywords: Society 5.0, women's employment, gender equality, digital transformation, STEM.

Resumen: Este trabajo explora el impacto de la Sociedad 5.0 sobre el empleo de las mujeres, desarrollando un marco conceptual para entender tanto los desafíos como las oportunidades que presenta esta sociedad súperinteligente. La Sociedad 5.0 apunta a integrar tecnologías avanzadas tales como la Inteligencia Artificial y la Internet de Cosas en la vida cotidiana, prometiendo un futuro más inclusivo y sustentable. Sin embargo, esta transformación digital también presenta riesgos significativos, particularmente para las mujeres empleadas en sectores

vulnerables a la automatización. La revisión sistemática de la literatura revela que, mientras que las mujeres enfrentan desafíos tales como el del desplazo laboral y el refuerzo de las desigualdades de género, la Sociedad 5.0 también ofrece novedosas oportunidades en campos STEM y otros ambientes laborales más flexibles. El marco conceptual resalta la importancia de factores mediadores tales como el acceso a la educación, la inclusión en el ambiente de trabajo y las intervenciones de política pública, en la determinación de los resultados laborales generados por mujeres en el contexto de la economía digital. El trabajo concluye con recomendaciones en términos de políticas públicas e identifica áreas claves para la investigación futura, incluyendo impactos en sectores específicos y la efectividad de las intervenciones atentas a las cuestiones de género. Este estudio contribuye al creciente discurso de género y tecnología al ofrecer un mapa de ruta con el que arribar a la equidad de género en la Sociedad 5.0.

Palabras clave: Sociedad 5.0, empleo femenino, equidad de género, transformación digital, STEM.

I. Introduction

A. Background to Society 5.0

Society 5.0 is an innovative concept developed as part of Japan's national strategy as part of its 5th Science and Technology Basic Plan, aiming to create a 'super-smart' society where advanced digital technologies are integrated into all aspects of life. This society represents a shift from Society 4.0, which focused primarily on the information age, to a human-centered approach where artificial intelligence (AI), the Internet of Things (IoT), robotics, and big data are harnessed to address social challenges and improve overall quality of life (Fukuyama, 2018; Holroyd, 2020). Unlike previous societal models that prioritized economic growth, Society 5.0 emphasizes inclusivity and sustainability, intending to enhance the well-being of all citizens by merging physical and digital spaces (Fukuda, 2020). This approach seeks to leverage technology to solve key issues such as healthcare accessibility, environmental sustainability, and economic disparity (Narvaez Rojas et al., 2021).

The core principle of Society 5.0 is to create a more equitable society by ensuring that technological advancements benefit everyone, not just a select few. This vision of inclusivity means that traditionally marginalized groups, including women, are given opportunities to participate fully in the workforce and society at large (Holroyd, 2022).

B. Gender Focus

Despite its potential for inclusivity, the impact of Society 5.0 on women's employment is an area that remains under-researched. As technological advancements accelerate, women, particularly those in service and administrative roles, may be at a higher risk of job displacement due to automation (Frey, 2017). However, Society 5.0 also presents new opportunities for women in emerging fields such as AI, data science, and robotics, provided that barriers to entry are addressed and policies are implemented to promote gender equality (Pereira, Lima, & Charrua-Santos, 2020).

Research has highlighted the persistence of gender biases in technology development, particularly in AI and robotics, where the underrepresentation of women in these fields can lead to systems that perpetuate existing inequalities (West, Kraut, & Chew, 2019). Therefore, addressing gendered implications in the development and implementation of Society 5.0 technologies is critical to ensuring that women are not left behind in this transformation (Gündoğdu & Kahraman, 2019). This requires a focus on both removing biases from technology and creating educational and training opportunities that enable women to thrive in the digital economy (Narvaez Rojas et al., 2021).

C. Objectives and Research Questions

This paper aims to develop a conceptual framework that illustrates the impact of Society 5.0 on women's employment, drawing on a systematic review of the existing literature. The primary objective is to explore the dual nature of Society 5.0—its challenges and opportunities for women in the workforce. Key research questions guiding this study include:

- How does Society 5.0 impact women's employment across different sectors?
- What opportunities does Society 5.0 create for women in STEM and other emerging fields?
- How can gender biases in technological development and implementation be mitigated to ensure equitable outcomes?
- What policy interventions are necessary to support women's integration into the workforce in a Society 5.0 environment?

By addressing these questions, the paper seeks to contribute to the growing body of knowledge at the intersection of gender and technology, offering insights that can inform both academic research and policy-making.

II. Literature review

A. Theoretical Foundations of Society 5.0

Society 5.0, first introduced by Japan, represents a vision of a super-smart society where digital transformation and advanced technologies are deeply integrated into daily life and the economy. Unlike Society 4.0, which focused on digitization and the information society, Society 5.0 aims to address social challenges by leveraging cutting-edge technologies like artificial intelligence (AI), robotics, and the Internet of Things (IoT) (Fukuyama, 2018). The theoretical foundations of Society 5.0 emphasize a human-centered approach to technological innovation, aiming to balance economic growth with solutions to societal issues such as aging populations, environmental challenges, and inequality (Narvaez Rojas et al., 2021).

A key concept in Society 5.0 is the integration of the physical and digital worlds to create smart systems that can improve efficiency and productivity across various sectors, including healthcare, education, and manufacturing (Holroyd, 2020). This integration has the potential to transform employment by automating routine tasks and enabling more flexible and creative work. However, it also raises concerns about job displacement, particularly in sectors where automation could replace human labor (Frey, 2017).

As Society 5.0 advances, there is a growing emphasis on ensuring that the benefits of these technologies are accessible to all members of society, including traditionally marginalized groups. This human-centric approach is crucial in ensuring that the technological advancements do not exacerbate existing inequalities but rather contribute to a more inclusive and sustainable society (Fukuda, 2020).

B. Impact of Technology on Women's Employment

The integration of AI, robotics, and automation into the workforce has profound implications for women's employment. On one hand, technological advancements offer new opportunities for women, particularly in emerging fields such as STEM (Science,

Technology, Engineering, and Mathematics). With the right education and training, women can transition into roles that are increasingly in demand in a digital economy, such as data scientists, AI developers, and cybersecurity experts (Pereira, Lima, & Charrua-Santos, 2020).

On the other hand, there is growing concern that automation could disproportionately affect jobs traditionally held by women, especially in sectors such as administration, retail, and service industries. These roles are at high risk of being automated, which could lead to significant job displacement for women if they are not equipped with the skills needed for new opportunities (Frey, 2017; Mavrodieva & Shaw, 2020).

Additionally, studies show that while technology has the potential to create new job opportunities, the benefits are not equally distributed. Women often face barriers such as limited access to education and training in emerging fields, as well as workplace cultures that are not always conducive to their success (Grybauskas, Stefanini, & Ghobakhloo, 2022). Therefore, addressing these disparities is crucial to ensuring that women can fully participate in and benefit from the digital transformation brought about by Society 5.0.

C. Gender Bias in Technology Development

One of the key challenges in ensuring that Society 5.0 is inclusive is the presence of gender biases in technology development, particularly in AI and robotics. Research has shown that AI systems can perpetuate existing gender biases when they are trained on biased data or developed by teams that lack diversity (West, Kraut, & Chew, 2019). For example, facial recognition systems have been found to be less accurate in identifying women and people of color, leading to concerns about the fairness and equity of these technologies.

Moreover, the underrepresentation of women in technology fields exacerbates the issue, as it limits the diversity of perspectives that go into developing these systems (Gündoğdu & Kahraman, 2019). When women are not involved in the design and development of AI, there is a risk that the resulting technologies will reflect the biases and assumptions of a predominantly male workforce.

To mitigate these biases, it is essential to increase the representation of women in AI and technology development, as well as to implement strategies that ensure that AI systems are trained on diverse datasets. This will help create more equitable technologies that do not perpetuate existing inequalities but instead contribute to a more inclusive Society 5.0 (Holroyd, 2020).

D. Current Policy Interventions

Recognizing the gendered impact of technological transformation, several policy interventions have been introduced to mitigate the risks and promote gender equality in the workforce. These initiatives focus on increasing women's access to education and training in STEM fields, promoting workplace diversity, and ensuring that women are not left behind in the digital economy.

For example, the European Union has launched initiatives to address the gender gap in technology by funding programs that encourage women to pursue careers in STEM and by promoting gender diversity in tech companies (European Commission, 2021). Similarly, Japan's Society 5.0 vision includes policies aimed at creating more inclusive work environments and supporting women's participation in the digital workforce (Narvaez Rojas et al., 2021).

At the same time, non-governmental organizations and advocacy groups are working to ensure that gender equality remains a priority as societies transition to more technologically advanced economies. These efforts include providing women with the skills and resources they need to thrive in the digital age, as well as advocating for policies that address the specific challenges faced by women in the workforce (Grybauskas et al., 2022).

However, despite these efforts, there is still much work to be done. To fully realize the potential of Society 5.0 to promote gender equality, governments, businesses, and educational institutions must continue to prioritize gender-sensitive policies and interventions that support women's participation in the digital economy (Pereira et al., 2020).

III. Development of a Conceptual Framework

A. Core Concepts and Relationships

Based on the literature reviewed, several core concepts emerge that are essential for understanding the impact of Society 5.0 on women's employment. These core concepts include Society 5.0, women's employment, and gender biases in technology development. The relationships between these concepts are shaped by key dimensions, such as skill development, workplace inclusion, and policy interventions.

- 1. **Society 5.0**: As a super-smart society, Society 5.0 emphasizes the integration of digital and physical spaces through advanced technologies like AI and IoT. This societal model seeks to solve social challenges and improve quality of life while fostering inclusivity and sustainability (Fukuyama, 2018; Narvaez Rojas et al., 2021).
- 2. **Women's Employment**: Society 5.0 offers both opportunities and challenges for women in the workforce. On one hand, automation and digital transformation present new roles in STEM fields, particularly for those with advanced digital skills. On the other hand, many traditionally female-dominated sectors, such as administration and retail, are vulnerable to automation, leading to potential job displacement (Frey, 2017; Pereira, Lima, & Charrua-Santos, 2020).
- 3. **Gender Biases in Technology Development**: Gender biases in AI, robotics, and other technologies are critical issues that can perpetuate existing inequalities in the workforce. These biases often result from the underrepresentation of women in technology development roles and from biased datasets used in AI training (West, Kraut, & Chew, 2019). The presence of gender biases can limit the benefits women derive from technological advancements in Society 5.0 (Gündoğdu & Kahraman, 2019).
- 4. **Skill Development**: One of the key dimensions influencing women's ability to thrive in Society 5.0 is skill development. Access to education and training in emerging digital fields is crucial for women to transition into new roles created by technological advancements (Pereira et al., 2020).
- 5. Workplace Inclusion: Creating inclusive workplace environments that support gender diversity is another critical factor. Policies that promote flexible work arrangements, equal pay, and non-discriminatory practices are essential for ensuring that women can fully participate in the digital economy (Grybauskas, Stefanini, & Ghobakhloo, 2022).
- 6. **Policy Interventions**: Effective policy interventions are necessary to support women's participation in the workforce in a Society 5.0

context. These interventions may include government-led initiatives to promote STEM education for women, regulations to address gender biases in technology, and support for gender-sensitive workplace reforms (European Commission, 2021).

These core concepts and dimensions are interconnected, influencing the overall impact of Society 5.0 on women's employment. For example, skill development and access to education are necessary for women to enter new roles in STEM fields, while workplace inclusion and policy interventions help ensure that these roles are accessible and supportive of women's career progression.

B. Mediating Factors

Several mediating factors influence the relationship between Society 5.0 and women's employment. These include:

1. Access to Education and Training

Access to education, particularly in digital and STEM fields, is a key mediating factor that determines women's ability to participate in the new opportunities presented by Society 5.0. Programs that provide women with the necessary skills and knowledge to succeed in a digital economy are critical to ensuring equal participation (Pereira et al., 2020).

2. Social Norms and Gender Roles

Societal norms and perceptions of gender roles can either facilitate or hinder women's participation in the workforce. In societies where traditional gender roles prevail, women may face additional barriers to accessing education and employment opportunities in technology-driven fields (Grybauskas et al., 2022).

3. Technological Biases

The presence of gender biases in technology, particularly in AI and automation systems, can exacerbate inequalities. These biases can manifest in recruitment processes, workplace interactions, and even in the development of products and services that do not adequately consider the needs and perspectives of women (West et al., 2019).

4. Government and Organizational Policies

Government regulations and organizational policies that address gender disparities in the workforce are crucial mediators. Policies that promote gender equality in education, provide incentives for diversity in hiring, and ensure equal opportunities in the workplace can help mitigate the negative effects of automation and digital transformation on women's employment (European Commission, 2021).

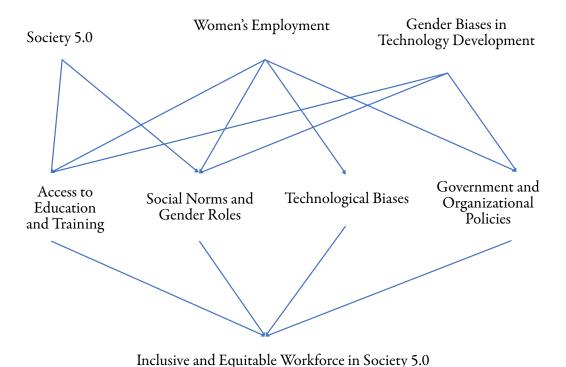


Figure 1. A visual representation of the conceptual framework

IV. Challenges And Opportunities In Society 5.0

A. Challenges

1. Job Displacement and Automation

One of the most significant challenges posed by Society 5.0 is the potential for job displacement due to automation and AI integration. Women, particularly those in traditionally female-dominated sectors such as administration, retail, and customer service, are at higher risk of job loss as routine tasks are increasingly automated (Frey, 2017). The digital transformation enabled by Society 5.0 is likely to disrupt these sectors, which have historically provided employment opportunities for women, especially those with lower levels of education and limited access to reskilling programs (Mavrodieva & Shaw, 2020).

2. Reinforcement of Gender Inequalities

Despite the promise of inclusivity, Society 5.0 could inadvertently reinforce existing gender inequalities if technological advancements are not implemented with a gender-sensitive approach. Gender biases embedded in AI and other technologies may perpetuate discriminatory practices, leading to inequitable outcomes for women in the workforce (West, Kraut, & Chew, 2019). For instance, recruitment algorithms that rely on biased historical data could disadvantage women in hiring processes, particularly in tech and leadership roles (Gündoğdu & Kahraman, 2019).

3. Barriers to Accessing Education and Training

Access to education and training is crucial for women to adapt to the changes brought about by Society 5.0. However, many women face significant barriers to acquiring the necessary skills for new and emerging roles in the digital economy. These barriers include gender stereotypes that discourage women from pursuing STEM education, lack of affordable childcare, and unequal access to resources such as digital tools and high-speed internet (Pereira, Lima, & Charrua-Santos, 2020). Without targeted interventions, these challenges could widen the gender gap in employment, leaving women underrepresented in high-paying, in-demand jobs in the tech sector (European Commission, 2021).

B. Opportunities

1. New Job Opportunities in STEM Fields

Despite the challenges, Society 5.0 also presents substantial opportunities for women, particularly in STEM fields. The growing demand for skills in AI, data science, robotics, and cybersecurity creates new career paths for women who are equipped with the necessary technical knowledge (Pereira et al., 2020). Programs aimed at increasing women's participation in STEM, coupled with initiatives to reskill women who may be displaced by automation, can help close the gender gap in these high-growth areas. In addition, the push for diversity and inclusion in tech has led to greater awareness and efforts to promote gender equality in STEM industries, providing women with opportunities for advancement and leadership (Grybauskas, Stefanini, & Ghobakhloo, 2022).

2. Flexible Work Environments

Society 5.0's emphasis on digitalization also supports more flexible work environments, which can empower women to balance work and family responsibilities more effectively. The rise of remote work, enabled by advanced communication technologies and cloud computing, allows women to participate in the workforce without being constrained by traditional office settings (Holroyd, 2020). Flexible work arrangements, such as part-time work, job sharing, and telecommuting, can help women remain in the workforce, particularly during life stages where caregiving responsibilities are more demanding (Narvaez Rojas et al., 2021).

3. Inclusive and Gender-Sensitive Policies

Governments and organizations are increasingly recognizing the need for policies that promote gender equality in the digital economy. Initiatives such as gender-sensitive reskilling programs, incentives for companies to hire women in tech roles, and support for women entrepreneurs in the digital space are all steps in the right direction (European Commission, 2021). Society 5.0's potential for inclusivity can be realized if these policies are implemented effectively, ensuring that women are not only participants in but also beneficiaries of the technological advancements shaping the future of work (Pereira et al., 2020).

V. Discussion

A. Critical Analysis of Findings

The systematic review of the literature reveals both alignment and divergence with the conceptual framework developed in this study. The review supports the conceptual framework's assertion that Society 5.0 holds both significant opportunities and challenges for women's employment. The literature consistently highlights the risks of job displacement due to automation and AI integration, particularly for women in traditionally female-dominated sectors like administration and retail (Frey, 2017; Mavrodieva & Shaw, 2020). This aligns with the framework's focus on gender biases in technology development and the potential for these biases to reinforce existing gender inequalities (West, Kraut, & Chew, 2019).

However, the findings also indicate that these negative impacts can be mitigated through targeted interventions, particularly in the areas of skill development and workplace inclusion. Studies show that providing women with access to education and training in STEM fields can significantly enhance their opportunities in the digital economy (Pereira, Lima, & Charrua-Santos, 2020). This supports the conceptual framework's emphasis on the importance of skill development as a mediating factor.

Where the literature diverges from the framework is in the extent of policy interventions currently in place. While the framework suggests that effective policies can create an inclusive and equitable workforce in Society 5.0, the review found that existing policies are often insufficient or poorly implemented. Many studies call for more robust, gender-sensitive policies that address the unique challenges women face in adapting to the digital economy (European Commission, 2021). This highlights a gap between the ideal outcomes envisioned in the framework and the current policy landscape.

B. Policy Implications

The findings underscore the critical need for policymakers, organizations, and educational institutions to develop and implement gender-sensitive policies that ensure women benefit from the technological advancements of Society 5.0. Policymakers must prioritize equitable access to education and training for women in STEM fields, recognizing that many women are currently underrepresented in these high-demand areas. This can be achieved through initiatives such as scholarships for women in tech, government-funded reskilling programs, and partnerships with the private sector to create apprenticeships and internships for women in digital roles (Pereira et al., 2020).

Additionally, policies that promote workplace flexibility and inclusion are essential. As Society 5.0 continues to drive the adoption of remote work and digital platforms, organizations must ensure that these opportunities are accessible to women, particularly those balancing work and caregiving responsibilities (Holroyd, 2020). This could involve regulations mandating flexible work arrangements, family-friendly policies, and equal pay for equal work, ensuring that women have the same opportunities as men to thrive in the digital workforce (Narvaez Rojas et al., 2021).

Moreover, there is an urgent need for policies that address gender biases in technology development. Governments and industry leaders should collaborate to establish guidelines and standards that ensure AI systems and other emerging technologies are developed in a way that promotes gender equality (West et al., 2019). This includes requiring diversity in tech development teams, conducting bias audits of AI systems, and encouraging the use of gender-neutral data in training algorithms (Gündoğdu & Kahraman, 2019).

C. Theoretical Contributions

The conceptual framework developed in this study contributes to the existing body of knowledge on gender and technology by providing a structured way to understand the complex interplay between Society 5.0, women's employment, and gender biases. By integrating these concepts into a unified framework, this study offers a new perspective on how the digital transformation can either exacerbate or alleviate gender inequalities in the workforce.

This framework emphasizes the importance of mediating factors such as access to education, social norms, and policy interventions in shaping outcomes for women in Society 5.0. It contributes to the theoretical discussion by highlighting the need for a holistic approach to addressing gender disparities, one that considers not just the direct impacts of technology on employment, but also the broader social and institutional context that influences women's participation in the digital economy (Pereira et al., 2020).

Additionally, this study provides a basis for future research that can empirically test the relationships identified in the framework. Researchers can build on this work by conducting case studies, surveys, and longitudinal analyses that examine how specific policies and interventions affect women's outcomes in different sectors and regions. By doing so, future studies can refine and expand the theoretical understanding of gender and technology in the context of Society 5.0.

VI. Conclusion

This study has explored the impact of Society 5.0 on women's employment through a developed conceptual framework. The systematic review highlighted both opportunities and challenges for women in this super-smart society. While Society 5.0 promises to create new job opportunities in STEM fields and promote flexible work environments, it also poses significant challenges, such as the risk of job displacement and the potential reinforcement of gender inequalities. The literature confirms that automation and AI are likely to disrupt traditionally female-dominated sectors, emphasizing the need for women to gain access to education and reskilling opportunities to remain competitive in the digital economy (Frey, 2017; Pereira, Lima, & Charrua-Santos, 2020).

The conceptual framework developed in this study provides a structured approach to understanding the relationships between Society 5.0, women's employment, and key mediating factors such as access to education, social norms, and technological biases. It highlights the importance of policy interventions and workplace inclusion in ensuring that women can fully benefit from the advancements of Society 5.0. This framework contributes to the broader discourse on gender and technology by offering a roadmap for research and policy development (European Commission, 2021; West, Kraut, & Chew, 2019).

Future research should focus on exploring sector-specific impacts of Society 5.0 on women's employment, particularly in industries like healthcare, education, and manufacturing. Additionally, there is a need to evaluate the effectiveness of specific policy interventions aimed at promoting gender equality in the digital economy (European Commission, 2021). Longitudinal studies that track women's workforce inclusion as Society 5.0 continues to evolve will provide valuable insights into the success of current strategies. Further exploration of social norms and cultural factors will also be crucial in understanding how these variables influence women's access to education, training, and employment in technology-driven fields (Grybauskas, Stefanini, & Ghobakhloo, 2022).

References

European Commission. (2021). *Gender equality strategy 2020-2025*. https://ec.europa.eu/info/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy-2020-2025 en

- Frey, C. B. (2017). The future of employment: How susceptible are jobs to computerization? *Technological Forecasting and Social Change*, 114, 254-280. https://doi.org/10.1016/j.techfore.2016.08.019
- Fukuda, K. (2020). Science, technology, and innovation ecosystem transformation toward society 5.0. *International Journal of Production Economics*, 220, 107460. https://doi.org/10.1016/j.ijpe.2019.07.033
- Fukuyama, M. (2018). Society 5.0: Aiming for a new human-centered society. *Japan Spotlight*, 27(5), 47-50.
- Grybauskas, A., Stefanini, A., & Ghobakhloo, M. (2022). Social sustainability in the age of digitalization: A systematic literature review on the social implications of Industry 4.0. *Technology in Society, 70*, 101997. https://doi.org/10.1016/j. techsoc.2022.101997
- Gündoğdu, F. K., & Kahraman, C. (2019). Spherical fuzzy sets and decision-making applications. In *International Conference on Intelligent and Fuzzy Systems* (pp. 979-987). Springer. https://doi.org/10.1007/978-3-030-23756-1_116
- Holroyd, C. (2020). Technological innovation and building a 'super-smart' society: Japan's vision of Society 5.0. *Journal of Asian Public Policy, 15*(1), 18-31. https://doi.org/10.1080/17516234.2020.1749340
- Mavrodieva, A. V., & Shaw, R. (2020). Disaster and climate change issues in Japan's Society 5.0—A discussion. *Sustainability*, 12(5), 1893. https://doi.org/10.3390/su12051893
- Narvaez Rojas, C., Alomia Peñafiel, G. A., Loaiza Buitrago, D. F., & Tavera Romero, C. A. (2021). Society 5.0: A Japanese concept for a super-intelligent society. *Sustainability*, 13(12), 6567. https://doi.org/10.3390/su13126567
- Pereira, A. G., Lima, T. M., & Charrua-Santos, F. (2020). Industry 4.0 and Society 5.0: Opportunities and threats. *International Journal of Recent Technology and Engineering*, 8(5), 3305-3308. https://doi.org/10.35940/ijrte.D8764.018520
- West, S. M., Kraut, R. E., & Chew, H. E. (2019). Discriminating systems: Gender, race, and power in AI. *AI Now Institute*.

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