

# Impact of Peace on Gender Equality: The Case of European Union Member States

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## Abstract

*This study investigates the impact of peacefulness on gender equality by employing panel data analysis. The study uses the Gender Inequality Index (GII) as a dependent variable and Global Peace Index (GPI) as an independent variable. The sample of the study covers the 25 European Union Member States for the period of 2010-2019. The study found that increasing levels of peace have an impact on decreasing levels of gender inequality. The result suggests that peace is a determining variable in gender equality and complements the literature that reveals the positive impact of gender equality on peace levels of countries. This result points out the transformative relationship between peace and gender equality.*

**Keywords:** European Union, Gender equality, Global Peace Index, Gender Inequality Index

## Original Research Article

**Submission Date:** 18.08.2021

**Acceptance Date:** 16.01.2022

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Adviye Damla Ünlü, "Impact of Peace on Gender Equality: The Case of European Union Member States,"  
*Üsküdar University Journal of Social Sciences*, sayı: 14, (Mayıs 2022):90-107  
DOI : <http://doi.org/10.32739/uskudarsbd.8.14.103>



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# Barışın Toplumsal Cinsiyet Eşitliği Üzerindeki Etkisi: Avrupa Birliği Üye Devletleri Örneği

Adviye Damla ÜNLÜ (\*)

## Öz

Bu çalışma ülkelerin barışçılık seviyelerinin toplumsal cinsiyet eşitliği üzerindeki etkisini panel veri analiziyle incelemektedir. Çalışmanın bağımlı değişkeni Toplumsal Cinsiyet Eşitsizliği Endeksi (GII), bağımsız değişkeni Küresel Barış Endeksidir (GPI). Çalışmanın örnekleme, 2010-2019 dönemi için 25 Avrupa Birliği Üye Devletinden oluşmaktadır. Çalışma, ülkelerin yükselen barış seviyelerinin toplumsal cinsiyet eşitsizliğinin azalması yönünde bir etkisi olduğunu ortaya koymaktadır. Bu sonuç, barışın toplumsal cinsiyet eşitliğinde belirleyici bir değişken olduğunu ve toplumsal cinsiyet eşitliğinin ülkelerin barışçılık seviyeleri üzerindeki olumlu etkisini ortaya koyan literatürü tamamlar niteliktedir. Bu doğrultuda çalışma, barış ve toplumsal cinsiyet arasındaki dönüştürücü ilişkiye işaret etmektedir.

**Anahtar Kelimeler:** Avrupa Birliği, Toplumsal Cinsiyet Eşitliği, Küresel Barış Endeksi, Toplumsal Cinsiyet Eşitsizliği Endeksi

## Özgün Araştırma Makalesi

**Geliş Tarihi:** 18.08.2021

**Kabul Tarihi:** 16.01.2022

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Adviye Damla Ünlü, "Impact of Peace on Gender Equality: The Case of European Union Member States,"  
Üsküdar Üniversitesi Sosyal Bilimler Dergisi, sayı: 14, (Mayıs 2022): 90-107  
DOI : <http://doi.org/10.32739/uskudarsbd.8.14.103>



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## Introduction

Gender equality has been on the agenda of states and institutions, especially since the early 2000s, particularly as a result of the achievements of the women's movement and the communities that transcend the borders of the nation-state. Since the Beijing Action Plan, which was adopted to combat gender inequality in 1995, early marriages have decreased, girls' participation in education, the proportion of women serving in parliaments and leading positions, and the number of legal arrangements aiming at gender equality have increased. However, increasing gender sensitivity, strengthening legal regulations, and proving the social, economic, and political gains of reducing inequality could not achieve full equality in any country today. The World Economic Forum's (WEF) 2020 Gender Gap Index Report states that the regions with the lowest gender gaps are Western Europe (76.7%) and North America (72.9%), respectively; shows that the region with the highest rate is North Africa and the Middle East (61.2%). Under the assumption that the progress towards gender equality continues at the same pace, the gap is expected to close in 54 years in Western Europe and approximately in 140 years in North Africa and the Middle East.<sup>1</sup> This prediction shows that the steps taken so far are not enough to eliminate gender inequality. Considering that the report also portrays the gender gap differences among regions, international strategies, policies, and practices are as important as national policies in achieving gender equality.

National and international actors have developed various strategies aiming to achieve gender equality. The United Nations (UN) is the leading actor that frames these strategies. Gender equality (Goal 5) is among the UN Sustainable Development Goals (SDGs) to be achieved by 2030.<sup>2</sup> Targets of this goal present a roadmap that includes empowering women to ensure gender equality, mainstreaming gender, making legal arrangements to ensure equality, and actively supporting international cooperation that supports gender equality. In addition, the SDGs provide a framework for linking gender equality and peace by including gender equality and Goal 16 peace, justice, and strong institutions. Currently, 53 of the 230 indicators that make up the 17 targets directly refer to women, girls, or gender. From a critical perspective, SDGs should engage gender perspective into Goal 16 through gender-sensitive indicators, and efforts should be strengthened to implement the 2030 Agenda in a gender-sensitive way to establish a strong relationship between peace and security.<sup>3</sup> The argument that gender equality is a precondition for implementing all goals should be the driving force behind this effort.

<sup>1</sup> World Economic Forum (WEF), *Global Gender Gap Report, 2020*, accessed June 02, 2021, [http://www3.weforum.org/docs/WEF\\_GGGR\\_2020.pdf](http://www3.weforum.org/docs/WEF_GGGR_2020.pdf), 20.

<sup>2</sup> United Nations Development Programme (UNDP), *Sustainable Development Goals, 2015*, accessed June 02, 2021, <https://www.tr.undp.org/content/turkey/en/home/sustainable-development-goals/goal-5-gender-equality.html>

<sup>3</sup> Anne Marie Goetz and Rob Jenkins, "Gender, Security, and Governance: The Case of Sustainable Development Goal 16", *Gender & Development*, 24(1), (2016): 127-137, accessed May 10, 2021, <https://doi.org/10.1080/13552074.2016.1144412>; Sr. Kempe Ronald Hope, "Peace, Justice and Inclusive Institutions: Overcoming Challenges to the Implementation of Sustainable Development Goal 16", *Global Change, Peace & Security*, 32(1), (2020): 57-77, accessed May 10, 2021, <https://doi.org/10.1080/14781158.2019.1667320>.

Feminist researchers investigating the relationship between gender and peace share the view of making an expanded definition of peace to include all forms of violence, accepting women as subjects in peace studies, and creating a vision of peace that includes women and all marginalized groups and gender.<sup>4</sup> With this view becoming widespread, peace and security discussions have started to include social justice and combating all forms of violence at the community level. All the UN World Conferences on Women, which contributed to the development of women, peace, and security (WPS) agenda, used the expanded definition of peace.<sup>5</sup>

The women's peace movement has created the framework in which gender equality is accepted as a precondition for peace. Following the Second World War, with the significant impact of civil society activism, gender equality has become a subject of discussion among states, especially within the UN's World Conferences on Women, which focused on gender equality, development, and peace. In the first conference held in Mexico in 1975, the World Action Plan for eliminating gender inequality was adopted. While this plan prioritized the transformation of economic structures and development, women's rights remained in a secondary position.<sup>6</sup> The second conference, held in Copenhagen in 1980, adopted an approach that preserves the priority position of development yet puts women at the centre.<sup>7</sup> The conference presented peace as a precondition for development and emphasized that it depends on eliminating inequality and discrimination at all levels. At the third conference held in Nairobi in 1985, it was emphasized that universal peace could not be achieved without the participation of women, especially in peace-related decision-making mechanisms.<sup>8</sup> The fourth conference, held in Beijing in 1995, resulted in the Beijing Declaration and the Platform for Action. The Platform for Action has identified 12 priority and critical areas for decision-making, including the impact of armed conflict on women and gender inequality.<sup>9</sup> The Beijing Declaration recognized women's rights as human rights and identified gender mainstreaming strategy. The UN Security Council's 18-point Resolution 1325, dated October 31, 2000, which is historically based on women's peace activism and the UN's World Women's Conferences,

<sup>4</sup> Catia Cecilia Confortini, "Feminist Contributions and Challenges to Peace Studies", (2010): 1, accessed May 10, 2021, <https://oxfordre.com/internationalstudies/view/10.1093/acrefore/9780190846626.001.0001/acrefore-9780190846626-e-47?print=pdf>

<sup>5</sup> J. Ann Tickner, "Peace and Security from a Feminist Perspective" in *The Oxford Handbook of Women, Peace and Security*, ed. Sara. E. Davies and Jacqui True, (New York: Oxford University Press, 2019), 15.

<sup>6</sup> Judith P. Zinsser, "From Mexico to Copenhagen to Nairobi: The United Nations Decade for Women, 1975- 1985", *Journal of World History*, 13(1), (2002): 147.

<sup>7</sup> United Nations, *Report of the World Conference of the United Nations Decade for Women: Equality, Development and Peace*, Copenhagen, 14 to 30 July 1980. accessed May 10, 2021, <https://www.un.org/womenwatch/daw/beijing/otherconferences/Copenhagen/Copenhagen%20Full%20Optimized.pdf>, 5.

<sup>8</sup> United Nations, *Report of the World Conference to Review and Appraise the Achievements of the United Nations Decade for Women: Equality, Development and Peace*, Nairobi, 15-26 July 1985. accessed May 10, 2021, <https://www.un.org/womenwatch/daw/beijing/otherconferences/Nairobi/Nairobi%20Full%20Optimized.pdf>, 8.

<sup>9</sup> United Nations, *Report of the Fourth World Conference on Women*, Beijing, 4-15 September 1995. Accessed May 10, 2021, <https://www.un.org/womenwatch/daw/beijing/pdf/Beijing%20full%20report%20E.pdf>, 16-17.

constitutes the basis of today's practices regarding gender, women, peace, and security. The difference of Resolution 1325 from other peace initiatives such as human security, responsibility to protect, and disarmament is that it included the necessity of gender perspective and balance in all policies related to conflict prevention and post-conflict reconstruction.<sup>10</sup> With Resolution 1325, reached as a result of women's action towards peace, the role of women in conflicts, in ending conflicts, and in the post-conflict peace-building process was acknowledged for the first time. However, the resolution met with criticism within the women's peace movement since it does not prohibit the institution of war, does not explain and criticize the gendered structure of the war system.<sup>11</sup> It was also criticized for its selective feature because it foresees the implementation of the WPS agenda to some conflict zones. Beyond that, it presents women primarily as victims rather than autonomous subjects who will shape the peace and security process and struggle with the war system.<sup>12</sup> Despite these criticisms, implementing Resolution 1325 has been at the centre of the women's peace movement since 2000.

As a result of the long-lasting struggle of the national and transnational women's movements on the relationship between gender and peace, and the increasing interest and regulations of the international community in this direction, academic studies on this relationship have increased. Studies investigating the impact of gender equality on the peace levels of states have revealed that gender equality increases the level of peacefulness. In a different direction from these studies, this study examines the impact of the peace levels of the European Union (EU) Member States, which constitute the sample of the study, on gender equality. In other words, it investigates whether a country's peacefulness level affects gender equality and, if so, to what extent peacefulness decreases gender inequality.

## Literature Review

The literature, which comprises studies that focus on the relationship between gender and peace, can be examined with a binary classification in terms of the methods used. These studies, most of which are based on feminist methodology, use qualitative and quantitative methods. This distinction is based on a significant discussion of how to conduct feminist research. Sandra Harding, one of the prominent figures in feminist theory, defines methodology as "a theory and analysis of how research does or should proceed".<sup>13</sup> According to this definition, feminist principles are guiding principles in the process of research. Research method, in contrast, "is a technique for (or way of proceeding in) gathering evidence".<sup>14</sup> Therefore, the key feature of

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<sup>10</sup> Christine Chinkin, "Adoption of 1325 Resolution" in *The Oxford Handbook of Women, Peace and Security*, ed. Sara E. Davies and Jacqui True, (New York: Oxford University Press, 2019), 34.

<sup>11</sup> Cynthia Cockburn, *From Where We Stand: War, Women's Activism and Feminist Analysis* (London: Zed Books, 2007), 147-148.

<sup>12</sup> Fionnuala Ní Aoláin and Nahla Valji, "Scholarly Debates and Contested Meanings of WPS" in *The Oxford Handbook of Women, Peace and Security*, ed. Sara E. Davies and Jacqui True, (New York: Oxford University Press, 2019), 54.

<sup>13</sup> Sandra Harding, "Introduction: Is There a Feminist Method?" in *Feminism and Methodology*, ed. Sandra Harding, (Bloomington, IN: Indiana University Press, 1987), 3.

<sup>14</sup> Harding, *Introduction*, 2.

feminist research is the “motivation and application of the method... rather than the method itself”.<sup>15</sup> Since all feminist researchers do not accept this distinction between methodology and method, studies of feminist researchers using qualitative and quantitative methods continue to be evaluated in separate categories.

Feminism is “a critical perspective on social and political life” and draws attention to “how social, political and economic norms, practices, and structures create injustices that are experienced differently, or uniquely, by women and people who are challenging the gender binary.”<sup>16</sup> Feminist research is deeply concerned with understanding the structures that oppress and harm women and questioning the factors that constitute these structures. Researchers use gender as a socially constructed and an analysis category to investigate gender hierarchies. In this investigation, while the researchers do not reject the use of quantitative data in principle, they point out that state-generated indicators use data that do not properly reflect the women’s lives and unequal structures in society. As a result, they draw attention to how public opinion is formed in biased, gender-based ways. Thus, while some researchers employ quantitative methods,<sup>17</sup> others question their assumptions and hence their utility for feminist research.<sup>18</sup> The researchers who made the aforementioned questioning point out that no method can be value-independent. A significant portion of feminist researchers criticizes quantitative methods which are associated with research, which is independent of the values and prejudices of the researcher, and the positivist research tradition that emphasizes objectivity. However, other feminist scholars argue that the use of quantitative methods does not mean that the researcher agrees with the assumptions and foundations of a positivist epistemology. According to this argument, many feminists use quantitative methods in their research while refusing the idea of universal truth and acknowledging that scientific research can never be objective and unbiased.<sup>19</sup> On the other hand, statistical measurements of gender equality, based on critical analysis and carried out with feminist sensitivity, make significant contributions to feminist research.<sup>20</sup>

<sup>15</sup> Katelyn E. Stauffer and Diana Z. O’Brien, *Quantitative Methods and Feminist Political Science*, 2018. accessed May 10, 2021, <https://oxfordre.com/politics/view/10.1093/acrefore/9780190228637.001.0001/acrefore-9780190228637-e-210>, 3.

<sup>16</sup> Brooke A. Ackerly and Jacqui True, *Doing Feminist Research in Political and Social Science* (London: Red Globe Press, 2019), 1.

<sup>17</sup> Mary Caprioli, “Gendered Conflict”, *Journal of Peace Research*, 37 (1), (2000): 53–68, doi: 10.1177/0022343300037001003; Mary Caprioli and Mark A. Boyer, “Gender, Violence, and International Crisis”, *Journal of Conflict Resolution*, 45(4), (2001): 503-518, doi:10.1177/0022002701045004005; Patrick M. Regan and Aida Paskeviciute, “Women’s Access to Politics and Peaceful States”, *Journal of Peace Research*, 40(3), (2003): 287-302, doi:10.1177/0022343303040003003.

<sup>18</sup> V. Spike Peterson, *Gendered States: Feminist (Re)Visions of International Relations Theory* (Colorado: Lynne Rienner, 1992); Christine Sylvester, *Feminist International Relations: An Unfinished Journey* (Cambridge: Cambridge University Press, 2002).

<sup>19</sup> Stauffer and O’Brien, *Quantitative Methods*, 5.

<sup>20</sup> J. Ann Tickner, “Feminism Meets International Relations: Some Methodological Issues” in *Feminist Methodologies for International Relations*, ed. Brooke A. Ackerly, Maria Stern and Jacqui True, (Cambridge: Cambridge University Press, 2006), 40.

The above-summarized distinction regarding the method used in feminist research is also reflected in studies based on the relationship between gender, women, peace, and security. With the international relations discipline gaining a pluralistic character since the 1980s, feminist researchers have focused on addressing peace and security issues from a gender perspective. From this time on, extensive theoretical literature has developed that establishes the link between gender, the status of women in society, and international relations.<sup>21</sup> In the meantime, the number of studies that examine the relationship between gender equality and war and peace with quantitative methods has been increasing since the early 2000s.

Mary Caprioli is among the leading researchers who examine the relationship between gender inequality and the state of conflict and war with quantitative methods. Following the studies of Caprioli, the basis of this literature has been the impact of gender equality on the peacefulness of the countries. Caprioli has shown that countries with higher levels of gender equality rely less on military power to resolve conflicts.<sup>22</sup> Caprioli and Boyer's study covering 175 countries (1960-2001) revealed that states with higher levels of gender equality are less likely to resort to violence during international conflicts.<sup>23</sup> Caprioli extended this analysis to include inter-state military conflicts and came to a similar conclusion that states with high gender equality showed less aggression in military conflicts and were not the first to use predominantly force.<sup>24</sup> Caprioli and Trumbore found that states with high gender and ethnic inequality and high human rights violations are more involved in interstate military conflicts where violence is used, and these states tend to use high levels of aggression and force.<sup>25</sup> Regan and Paskeviciute revealed the relationship between the active participation of women in politics and the use of force by countries.<sup>26</sup> Melander revealed the relationship between the high representation of women in parliament, the high rate of women in higher education, and the low rate of engagement in armed conflict.<sup>27</sup> Koch and Fulton focused on the relation

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<sup>21</sup> Jean B. Elshtain, *Women and War* (New York: Basic Books, 1987); Cynthia H. Enloe, *Bananas, Beaches, and Bases: Making Feminist Sense of International Politics* (Berkeley: University of California Press, 1989); J. Ann Tickner, "Hans Morgenthau's Principles of Political Realism: A Feminist Reformulation," *Millennium: Journal of International Studies*, 17(3), (1988): 429-440, Accessed May 10, 2021, doi:10.1177/03058298880170030801; J. Ann Tickner, *Gender in International Relations: Feminist Perspectives on Achieving Global Security* (New York: Columbia University Press, 1992); Peterson, *Gendered States*; Christine Sylvester, *Feminist Theory and International Relations in a Postmodern Era* (Cambridge: Cambridge University Press, 1994); Sylvester, *Feminist International Relations*.

<sup>22</sup> Caprioli, *Gendered Conflict*.

<sup>23</sup> Caprioli and Boyer, *Gender, Violence, and International Crisis*.

<sup>24</sup> Mary Caprioli, "Primed For Violence: The Role of Gender Inequality in Predicting Internal Conflict", *International Studies Quarterly*, 49(2), (2005): 161-178. doi: 10.1111/j.0020-8833.2005.00340\_

<sup>25</sup> Mary Caprioli and Peter F. Trumbore, "Ethnic Discrimination and Interstate Violence: Testing the International Impact of Domestic Behavior", *Journal of Peace Research*, 40(1), (2003): 5-23. <https://doi.org/10.1177/02F0022343303040001842>

<sup>26</sup> Regan and Paskeviciute, *Women's Access to Politics and Peaceful States*.

<sup>27</sup> Erik Melander, "Gender Equality and Intrastate Armed Conflict", *International Studies Quarterly*, 49(4), (2005): 695-714. <https://doi.org/10.1111/j.1468-2478.2005.00384.x>

between the political leadership of women and conflict. They found that higher representation of women in parliament was associated with lower defence spending and conflict.<sup>28</sup>

Hudson, Ballif-Spanvill, Caprioli, and Emmett compared gender-based violence indicators with peace and stability indicators. This research revealed that the higher the level of violence against women, the higher the probability of a state not complying with international norms and agreements and being less peaceful in the international system. The same study concluded that the best indicator of a state's peacefulness is its gender dynamics, not its prosperity, level of democracy, or ethnic-religious identity. The study also argued that democracies with high rates of violence against women are as insecure and unstable as non-democratic countries.<sup>29</sup> Doğan, in her research examining the relationship between global peace and gender equality for 115 countries, revealed that gender equality improves the peacefulness of the countries.<sup>30</sup> 2019/2020 Women, Peace and Security Index report also demonstrated "higher levels of gender inequality in education, financial inclusion, and employment, as well as higher levels of intimate partner violence, are associated with a high level of violent conflict."<sup>31</sup> Besides these studies, there are studies in the literature examining the impacts of international aids, norms, conflicts, and international agreements on women's economic, social and political conditions. Gray, Kittilson, and Sandholtz examined the effect of globalization on women's conditions with the data of 180 countries between 1975 and 2000. This research concluded that factors such as international trade, foreign investments, membership of the UN and the World Bank, and the approval of the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) had a positive effect on the conditions of women.<sup>32</sup> Richards and Gelleny, in their analysis of 130 countries' data for the period 1982-2003, revealed that economic globalization is also related to women's conditions.<sup>33</sup>

A significant part of the studies in the literature examined the relationship between gender and peace in terms of the impact of gender equality on peacefulness. In general terms, these studies showed that higher gender equality increases the peacefulness of states, or higher levels of gender inequality increase the state of use of force, resort to violence, and wage war. As discussed above, qualitative and quantitative studies on gender and peace have revealed

<sup>28</sup> Michael T. Koch and Sarah A. Fulton, "In the Defense of Women: Gender, Office Holding, and National Security Policy in Established Democracies", *The Journal of Politics*, 73(1), (2011): 1-16. doi: 10.1017/S0022381610000824

<sup>29</sup> Valerie M. Hudson, Bonnie Ballif-Spanvill, Mary Caprioli, and Chad F. Emmett, *Sex & World Peace* (West Sussex: Columbia University Press, 2012).

<sup>30</sup> Nezahat Doğan, "Determinants of Global Peace and Gender Equality as an Invisible Hand: A Cross Country Analysis", *Kadın/Woman 2000*, 20(2), (2019): 13-28. <https://doi.org/10.33831/jws.v20i2.80>

<sup>31</sup> GIWPS (Georgetown Institute for Women, Peace and Security) and PRIO (Peace Research Institute Oslo), *Women, Peace and Security Index 2019/20: Tracking Sustainable Peace Through Inclusion, Justice, and Security for Women*. (Washington, DC, 2019).

<sup>32</sup> Mark M. Gray, Miki Caul Kittilson and Wayne Sandholtz, "Women and Globalization: A Study of 180 Countries, 1975-2000", *International Organization*, 60(2), (2006): 293-333. <https://doi.org/10.1017/S0020818306060176>

<sup>33</sup> David L. Richards and Ronald Gelleny, "Women's Status and Economic Globalization", *International Studies Quarterly*, 51(4), (2007): 855-876. <https://doi.org/10.1111/j.1468-2478.2007.00480.x>



the impact of gender equality on peace. The present study considers gender inequality as the dependent variable and explores the impact of peacefulness on gender inequality.

### Data

The data set of the study comprise the 2010-2019 data of the Global Peace Index (GPI) and the Gender Inequality Index (GII) for the 25 EU countries. The limitation of the study is that model does not include all the EU Member States. Because of the lack of data on peace levels, Luxembourg and Malta are not included.

In the GPI, the state of peace is “very high” in countries ranked 1-14 among 163 countries; it is “high” in the countries ranked between 15-60. Those countries are at the top of the list of 162 countries in the GII indicate the high level of gender equality. Table 1 shows that the peace level of the EU Member States is “very high” or “high” except for France and Cyprus. Countries such as Denmark, the Netherlands, Sweden, and Belgium rank “high” in the GII. Within the framework of index rankings, the EU Member States constitute a particular group in both indices. Besides, there are examples such as Germany, which has similar rankings in both indices, and countries such as France with a significant difference between the index rankings can be observed in this group.

**Table 1: Ranking of the EU Member States in Global Peace and Gender Inequality Indices <sup>34</sup>**

	Global Peace Index Ranking (2020)	Gender Inequality Index Ranking (2019)		Global Peace Index Ranking (2020)	Gender Inequality Index Ranking (2019)
Germany	16	20	Sweden	15	3
Austria	4	14	Italy	31	14
Belgium	17	4	Cyprus	64	21
Bulgaria	28	48	Latvia	34	41
Czechia	8	36	Lithuania	36	34
Denmark	5	2	Hungary	24	51
Estonia	30	21	Poland	29	28
Finland	14	7	Portugal	3	17
France	66	8	Romania	22	61
Croatia	26	29	Slovakia	25	45
Netherlands	21	4	Slovenia	11	10

<sup>34</sup> Institute for Economics & Peace (IEP), *Global Peace Index 2020: Measuring Peace in a Complex World*, 2020, Accessed May 30, 2021, [https://www.visionofhumanity.org/wp-content/uploads/2020/10/GPI\\_2020\\_web.pdf](https://www.visionofhumanity.org/wp-content/uploads/2020/10/GPI_2020_web.pdf); United Nations Development Programme (UNDP), 2020a, Accessed May 30, 2021, <http://hdr.undp.org/en/faq-page/gender-inequality-index-gii#t294n2918>

Ireland	12	23	Greece	57	29
Spain	38	16			

The Institute of Economics and Peace (IEP), which analyzes peace and the economic benefits of peace, developed the first quantitative study to measure the peacefulness of states and the GPI. The index measures the level of negative peace which refers to the absence of war, violence and fear of violence on three domains.<sup>35</sup> The first domain, “ongoing domestic and international conflicts,” reveals whether states involve internal conflicts or part of external conflicts, the duration of the conflict, and the role of states in conflict. The second domain, “societal safety and security,” refers to the argument that harmonious relations, stable politics, the displacement of a small part of the population, and being a refugee are directly related to peacefulness. The “Militarization” level of a country is another domain concerning the peace level of that country. Indicators of the militarization domain include military spending, number of armed forces, import, and export volume of weapons, financial contribution to the UN missions. In this framework, the index comprises 23 indicators under three domains and covers 163 countries.<sup>36</sup>

The data that form the basis for policy recommendations are generally obtained through the use of quantitative methods.<sup>37</sup> Since the 1990s, especially after the Beijing Declaration and Platform for Action, the decisions on gender-based data formation have led to the formation of international indices.<sup>38</sup> The European Institute for Gender Equality (EIGE), established to collect gender-based data in the EU Member States that constitute the sample of this research, has a gender statistic database and gender equality index. The GII used in this study does not

<sup>35</sup> The concept of negative peace was introduced to the peace studies literature by the founder of peace studies, Johan Galtung. Galtung defined negative peace as the absence of organized collective violence and stated that positive peace, beyond the absence of violence between states, is the preservation of values within and between states and the absence of structural violence. Johan Galtung, “Violence, peace, and peace research”, *Journal of Peace Research*, 6(3), (1969): 183.

<sup>36</sup> “Ongoing Domestic and International Conflicts” domain’s indicators are “number and duration of internal conflicts, number of deaths from external organized conflict, number of deaths from internal organized conflict, number, duration, and role in external conflicts, the Intensity of organized internal conflict, relations with neighbouring countries”; “Societal Safety and Security” domain’s indicators are “level of perceived criminality in society, number of refugees and internally displaced people as a percentage of the population, political instability, political terror scale, impact of terrorism, number of homicides per 100,000 people, level of violent crime, likelihood of violent demonstrations, number of jailed population per 100,000 people, number of internal security officers and police per 100,000 people”; “Militarization” domain’s indicators are “military expenditure as a percentage of GDP, number of armed services personnel per 100,000 people, the volume of transfers of major conventional weapons as a recipient (imports) per 100,000 people, the volume of transfers of major conventional weapons as a supplier (exports) per 100,000 people, the volume of transfers of major conventional weapons as a supplier (exports) per 100,000 people, the volume of transfers of major conventional weapons as a supplier (exports) per 100,000 people”. Institute for Economics & Peace, Global Peace Index.

<sup>37</sup> Gülay Toksöz, “Sayıların Kadın Mücadelesindeki Yeri” in *Türkiye’de Feminist Yöntem*, ed. Emine Erdoğan, Nehir Gündoğdu, (İstanbul: Metis Yayınları. 2020), 123.

<sup>38</sup> Toksöz, *Sayıların Kadın Mücadelesindeki Yeri*, 124.

cover all dimensions of gender inequality. For example, GII uses the representation of women in national parliaments as an indicator, while it excludes representation at the local level. In addition, the index excludes cases such as unpaid work, child care support, and gender-based violence because of limited data.<sup>39</sup> EIGE's gender equality index is more comprehensive compared to GII. In this study, EIGE's index could not be used because it was not published annually and was published six times in total (2005, 2010, 2012, 2015, 2017, 2018, 2020). After all, it was not appropriate for the time dimension of the model.

The GII, created by the United Nations Development Program (UNDP), measures inequality in 162 countries on "three important aspects of human development: reproductive health, empowerment, and economic status."<sup>40</sup> The index evaluates countries' equality levels between 0 and 1. The fact that the index value approaches 1 indicates the high level of gender inequality.

## Data Analysis

In the study, panel data analysis is applied, which allows the establishment of comprehensive models in which time-series and cross-section data observations take place simultaneously. In general terms, the panel data equation is expressed with the following equation:

$$i=1,\dots,N; T=1,\dots,T$$

Here,  $Y$  is the dependent variable,  $x$  is the independent variable,  $\alpha$  is the constant parameter,  $\beta$  is the slope parameter, and  $u$  is the error term. Two fundamental dimensions of the panel data are represented by the subscripts  $i$  and  $t$ ;  $i$  denotes individuals (such as individual, firm, city, country), and  $t$  denotes time series (such as day, month, year).<sup>41</sup>

In panel data analysis, there is an unbalanced model when there is a lack of data for some individuals for some time, and a balanced panel model is in question when each individual is observed for all times. In this study, all individuals are observed throughout all time. For the 25 countries included in the panel data set, firstly diagnostic tests were employed to determine the appropriate model in the study to investigate the impact of countries' peacefulness on gender equality in the period 2010-2019.

First, the F tests were run to test whether data comprises an individual and/or time effect. The results of the F-tests are below shown in Table 4, Table 5, and Table 6.

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<sup>39</sup> United Nations Development Programme (UNDP), 2020a, accessed May 30, 2021, <http://hdr.undp.org/en/faq-page/gender-inequality-index-gii#t294n2918>

<sup>40</sup> "Health" dimension's indicators are "maternal mortality ratio and adolescent birth rate"; "empowerment" dimension's indicators are "female and male population with at least secondary education and female and male shares of parliamentary seats"; "labor market" dimension's indicator is "female and male labor force participation rates". United Nations Development Programme (UNDP), 2020b, Accessed May 30, 2021, <http://hdr.undp.org/en/content/gender-inequality-index-gii>

<sup>41</sup> Ferda Yerdelen Tatoglu, *Panel Veri Ekonometrisi* (Istanbul: Beta, 2020), 5.

**Table 4: Test for Individual and Time Effects**

Test Statistics	Probability Value
764.18	0.0000

Test results reject the null hypothesis, indicating that the individual and time effects are zero at a 99% level of significance. Thus, it was concluded that the individual and time effects should be tested separately to decide on the appropriate model.

**Table 5: Test for Individual Effect**

Test Statistics	Probability Value
581.81	0.0000

Test results reject the null hypothesis stating that the individual effect is zero at a 99% level of significance. Accordingly, it was concluded that there is an individual effect in the model, and therefore the classical model is not suitable.

**Table 6: Test for Time Effect**

Test Statistics	Probability Value
0.00	1.0000

According to the test results, the null hypothesis assumes that the time effect is zero at a 99% level of significance could not be rejected. Test results show that there is an individual effect, and there is no time effect. In the framework of these results, Hausman's specification test was applied to choose among the fixed-effects and the random-effects models. The null hypothesis in the Hausman specification test is that "the preferred model is random-effects"; the alternative hypothesis is that "the model is fixed-effects". The results of the Hausman specification test are below in Table 7.

**Table 7: Test for Random and Fixed Effect: Hausman Specification Test (1978)**

Test Statistics	Probability Value
9.20	0.0024

The probability value of the Hausman test statistics is 0.0024 (Table 7). Accordingly, at the 99% level of significance, the null hypothesis that assumes the random-effects model is appropriate was rejected. It was concluded that the alternative hypothesis that the fixed-effects model was valid.

Panel data models have assumptions that the error term is within the unit, and with equal variance (homoscedasticity), without autocorrelation, and cross-sectional dependence. However, in many studies conducted with panel data models, it is seen that deviations from these assumptions occur. Ignoring the problems causes standard errors to deviate, loss of

efficiency, and loss of accuracy of t-statistics and confidence intervals.<sup>42</sup> From this point of view, autocorrelation, heteroscedasticity, and cross-sectional dependence tests were employed to detect deviations from assumptions.

**Table 8: Tests for Heteroscedasticity, Autocorrelation and Cross-Sectional Dependence**

Diagnostic Tests	Test Statistics	Probability Value
<b>Modified Wald Test</b>	2244.80	0.0000
<b>Modified Bhargava et al. Durbin Watson Test (1982)</b>	0.322 0.783	- -
Pesaran Test (2004)	37.650	0.0000

As seen in Table 8, according to the result of the Modified Wald Test, the null hypothesis “there is no heteroscedasticity” was rejected at the 99% level of significance. According to the Durbin-Watson Test of Bhargava, Franzini, and Narendranithan, the basic hypothesis “there is no autocorrelation” was rejected because the test statistic was less than the critical value of 2. According to the Pesaran test, the null hypothesis of no cross-sectional dependence was rejected at the 99% level of significance. Test results conclude model is assumed to be heteroskedastic, auto-correlated, and possibly correlated between the units.

Where there is at least one of the heteroscedasticity, autocorrelation, or cross-sectional dependence, resistive standard errors should be used, or estimates should be made with appropriate methods.<sup>43</sup> Since the existence of all three is detected in the model, the Driscoll-Kraay (DK) estimator was used for the model against deviations from assumptions to obtain the most robust predictions as the DK estimator provides “robust estimates in the presence of heteroscedasticity, cross-sectional and serial dependence”.<sup>44</sup> Table 9 shows the results.

**Table 9: Driscoll-Kraay (1998) Standard Errors**

	Coef.	Std. Err.	t	P> t
<b>GPI</b>	-0.040052	0.0106337	0.001	0.000
<b>Constant</b>	0.1884292	0.0151861	0.000	0.000
Number of Observations	F-test	Probability Value	R-squared	
250	14.19	0.0000	0.08	

<sup>42</sup> Tatoğlu, *Panel Veri*, 227-229.

<sup>43</sup> Tatoğlu, *Panel Veri*, 303.

<sup>44</sup> Samuel Asumadu Sarkodie and Vladimir Strezov, “Effect of Foreign Direct Investments, Economic Development and Energy Consumption on Greenhouse Gas Emissions in Developing Countries”, *Science of the Total Environment*, 646(1), (2019): 862-871. <https://doi.org/10.1016/j.scitotenv.2018.07.365>

The final model, in which the deviations from the assumptions were corrected using the DK estimator, reveals that F-test is statistically significant. In addition, when the effect of the independent variable on the dependent variable was tested in the model, statistically significant results were obtained (t-tests). Results indicate 8% of the change in the dependent variable is due to the change in the independent variable.

The findings for the 25 EU Member States addressed in the 2010-2019 period are as follows: The dependent variable coefficient of the GPI is negative and statistically significant. When the GPI increases by one point, the GII decreases by approximately 0.04 points. This result shows that increasing the peace level of countries has a positive impact on decreasing level of gender inequality.

## Conclusion

Gender equality is a significant target that has been integrated into the design of national and international policies, especially since the beginning of the 2000s. This target is on the agenda of many states and institutions. Despite the development of gender-sensitive policies and raising awareness, gender equality has not been achieved in any country today, and it is not expected to happen in a few decades. This raises the importance of the research agenda that examines the relationships between gender and different variables to link gender equality with other aspects of social life. Starting from this point of view, this study has aimed to investigate the relationship between gender and peace. Studies investigating the impact of gender equality on the peace levels of states have revealed that gender equality increases the level of peace. Apart from these studies, this study has examined the impact of countries' peace levels on gender equality on the EU Member States, revealed whether a country's level of peacefulness affects gender equality, and if so, to what extent peacefulness reduces gender inequality.

Using the annual data collected from the 25 EU Member States for the period 2010-2019, the relationship between peace and gender equality was analyzed using the panel data model. In this model, the study reveals that the level of peace impacts gender equality. Previous studies on peace and gender equality have considered this relationship in terms of the impact of gender equality on peace. The importance of this study is that it has developed a fresh perspective regarding the mentioned relationship. When considered together with the results of previous studies, it is possible to say that there is a transformative relationship between peace and gender equality. Just as gender equality has a positive impact on the peace levels of countries, peace is a determining variable in gender equality. The study also reveals that not only peaceful domestic policies of the countries but also policies towards peaceful foreign relations affect gender equality. This result is meaningful when it is considered that the external and internal peace indicators of the GPI are weighted as 40% and 60%.

When the findings of this study and other studies focusing on the impact of gender equality on peace are considered together, it can be stated that there is a significant relationship between gender equality and peace. The emphasis on this relationship was influential in the adoption of the UN Resolution 1325. Overcoming the problems encountered in the decision's implementation requires insistence on emphasizing this relationship. Transformation of

social and institutional structures into equal and fair structures will be possible with gender mainstreaming, which is accepted as a global strategy. Although research points to the transformative relationship between gender equality and peace, it should be emphasized that this issue should be addressed in all its aspects. For example, arms sales to states without democratic governments or plans to modernize nuclear weapons by countries at the top of gender equality indexes are eroding global peace. To explore this inconsistency in domestic and foreign policy practices in terms of gender equality and global peace, future research can be carried out from different perspectives and in different regions/countries. Examining the relationship between gender equality and positive peace based on IEP's Positive Peace Index (PPI) is another subject open to research. Studies using the PPI data will be carried out with the indicators of peace at the domestic level. This study was carried out on the negative peace definition of the GPI and determined the impact of peace level in this sense on gender equality.

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