JOURNAL OF FINANCE & ECONOMICS RESEARCH

Journal homepage:
https://journals.iqra.edu.pk/jfer

Impact of Foreign Aid and Development Assistance on Gender Inequality in Pakistan: An ARDL to Co-integration Approach

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ARTICLE INFO

Article history:
Submission Date: April 04, 2025
Reviews Completed: June 14, 2025
Acceptance Date: June 14, 2025
Publication Date: June 30, 2025

Keywords:
Official Development Assistance
Foreign Aid
Gender Equality
ARDL
Pakistan

ABSTRACT

The study examines the impact of foreign development assistance and foreign aid on gender equality in Pakistan. Despite the rising body of research on assistance and human development, there is a notable absence of studies examining the link between foreign aid and gender equality, particularly in Pakistan. The research problem addressed in this study is the lack of empirical evidence demonstrating how development aid and international assistance impact various aspects of gender equality in Pakistan. This study employed time series data from 1995 to 2022 to evaluate the impact of foreign assistance on gender equality. It considered the ARDL, a co-integration approach, to test the model using e-views. Official development assistance and foreign aid (OFAA) negatively impact gender equality regarding education and female labour participation. In contrast, there is a positive and significant impact on gender equality regarding female political participation. However, no significant effect of OFAA on gender equality has been found regarding health inequalities. The findings provide significant evidence on how foreign assistance and aid effectiveness should be targeted, considering various sectors to enhance gender equality in Pakistan and contribute to evidence-based policymaking for more inclusive and successful assistance Initiatives. This study contributes to the debate on exploring the relationship between foreign aid and assistance and gender equality in Pakistan's macro context.

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DOI: https://doi.org/10.20547/jfer2510103

Introduction

From 1975 to 1985, the U.N. declared the Decade for Women, giving gender a significant role in development talks. It highlights that social and economic progress does not always treat both genders similarly. Better gender-related outcomes matter greatly for families and the nation, especially regarding the chances of each generation thriving (Dietrich, Donno, Fleiner, & Iannantuoni, 2023; Duflo, 2012; Kabeer & Natali, 2013). The term gender equality, as defined by UNICEF, stresses that both women and men, girls and boys, should be treated equally, offered equal opportunities, and be allowed to participate in development and enjoy their human rights fully. It calls for eliminating barriers that divide and promoting structures that lead to equity everywhere. Gender equality is becoming more prominent in development aid due to its humanitarian and economic significance (Organisation for Economic Co-operation and Development (OECD), 2018)). Subsequently, achieving gender equality was deemed very important in development, so it became a central part of the Millennium Development Goals and the Sustainable Development Goals. Development aid organizations started to consider gender equality and women's empowerment central in foreign aid programs, which made foreign aid much more effective (Organisation for Economic Co-operation and Development, 1998). The importance of gender in economic policy was then noticeably agreed upon, which led to a move to include gender-sensitive changes in every project, program, and policy supported by aid (Dietrich et al., 2023).

Foreign aid is the movement of money, services, and goods from foreign governments or international organizations to benefit the receiver's nations. Foreign aid is provided in terms of both loans and grants. A loan must be repaid, while grants do not require such repayment. On the other hand, Official Development Assistance (ODA) is a special type of foreign aid backed by the government to aid developing countries' economies and social well-being . It is said that foreign aid and assistance must expressly seek to reduce "social, economic, or political inequalities while guaranteeing that females are getting the same benefits as males to be identified as gender equality assistance (Kyander, 2019; OECD, 2019; Zhang & Huang, 2023). Foreign assistance providers understand that increasing gender parity and women's empowerment in development collaboration may increase the overall efficacy of foreign aid and assistance (Su & Yang, 2023). In the 1970s, assisting programs aimed towards women, especially in education and health, was the primary strategy used by contributors; however, donors have adopted a dual-track strategy lately, supporting direct investment initiatives considering gender aspects in specific sectors. There are several aspects in which foreign aid is given; for instance, bilateral foreign aid is given for political and strategic goals in addition to economic growth (Alesina & Dollar, 2000). Dietrich et al. (2023) emphasized that it is worth noting that donors give more money to gender equality through their aid when the countries they are assisting are democracies. Even so, there is an increased sense of caution when discussing women's rights with authoritarian regimes. Bermeo (2010) stated that donor nations frequently help nations with more vital domestic institutions and strategic links. Women's accomplishments in the political, social, and economic spheres from a single donor were often

highlighted (Miedema, Haardörfer, Girard, & Yount, 2018); however, the attitude shift toward gender equality impacted by assistance programs across diverse providers was essentially unchanged (Beath, Christia, & Enikolopov, 2013).

Brouwers (2013) pointed out that policy mainstreaming has not been successful in integrating gender equality orientation into the institutional framework of the majority of development organizations. Moreover, with gender-targeted aid, it is important to note that central policies are included in all projects, even though most public aid goes through the state. In comparison, programs designed to promote gender equality usually go to civil society organizations, and they may use bypass aid since interacting closely with the government is not always necessary (Dietrich, Donno, Fleiner, & Iannantuoni, 2025; Hanmer, Ekhator-Mobayode, Al-Ahmadi, & Rawlings, 2024). Even political involvement among women increased when aid comprised gender equality as a primary objective (Baliamoune-Lutz, 2016; Márquez-Carriel, Márquez-Sánchez, Oña-Garcés, & Vergara-Romero, 2024). It is also stated that gender inequality is successfully reduced with increasing levels of gender mainstreaming into policies; however, gender-focused assistance needs more statistical significance to support its effectiveness (Grown, Addison, & Tarp, 2016; Su & Yang, 2023). Increasing aid inflows may assist in improving gender results, although there is currently scant empirical support for this claim. The evidence related to how aid affects development outcomes, including gender equality, is also very conflicting. Although there is a substantial body of research on the macro and micro levels considering aid efficacy (Bali, Garikipati, & Wallentin, 2020; Burnside & Dollar, 2000; Dietrich et al., 2025; Hansen & Tarp, 2000), there are minimal studies that specifically address the connection between foreign aid assistance and gender equality in the context of Pakistan. The specific objective is to:

- To explore the role of foreign aid and assistance in increasing gender equality in Pakistan.
- To investigate other factors, such as government spending on education and health, GDP per capita, government effectiveness, and foreign investment in gender equality in Pakistan.

Literature Review

Pakistan-Specific Stylized Facts

Despite global progress, gender inequality persists with various cultural norms (Akter et al., 2017). Pakistan is among those countries in the South Asian region where gender inequality is very high, with the highest score since 2006 and 142nd rank out of 146 countries. Even though this level of parity remains among the lowest in the world, Pakistan has made significant improvement across all variables in this sub-index, notably in the participation of women in technical jobs and salary equality for comparable work (World

Economic Forum, 2023).

Pakistan has managed to achieve modest results in bridging gender inequalities based on its values in the Gender Inequality Index (GII) of 0.536 and its Gender Development Index (GDI) of 0.838, which results in its placement of 145 out of a total of 172 countries in 2024 (United Nations Development Programme, 2025). Although Pakistan has achieved tremendous progress in several areas, including education and health, significant gender discrepancies in economic and political empowerment still need to be addressed. As per the OECD, Pakistan received the highest aid and assistance in 2016; however, there was a declining trend from 2016 till 2018. Furthermore, there is a slight increase in Pakistan's total receipts, reaching 1,099.81 million $U.S. in 2021. According to the OECD, 80.363 million $U.S. principal and 368.133 million U.S. $ significant foreign aid were given by Development Assistance Committee (DAC) members to Pakistan for women's empowerment. As per the monthly report of foreign economic assistance for August 2023, the country has received 335.87 million $U.S. from multilateral development partners, whereas 221.36 million U.S. $ has been received from bilateral development partners concerning foreign economic assistance, including grants and loans during fiscal years of 2023-24.

Gender Mainstreaming and Gender Equality Concept

Gender mainstreaming has been acknowledged by academic experts, political leaders, and policy-makers as a significant factor in achieving gender equality (Verloo, 2001). It is considered a strategic response toward gender equality while recognizing the failure of previous efforts; hence, it considers a more integrated and organized approach to policies (Paterson & Scala, 2024). Researchers pointed out that gender equality policy can revise how things are done and help build different approaches to institutional policy and leadership (Dietrich et al., 2025; Hafner-Burton & Pollack, 2009). This strategic transformation shows a valedictory from an addictive approach and integrates gender-targeted aspects into policy goals.

For gender equality in development strategies and initiatives, gender mainstreaming is essential. Vyas-Doorgapersad (2015) emphasized how all facets of society are impacted by gender inequity. However, these injustices are intended to be eliminated. The consequences of gender mainstreaming are affected by gender roles, norms, and links, according to gender analysis. Institutions and organizations must commit to gender mainstreaming to advance gender equality and equitable allocation of resources. In order to ensure that marginalized groups' goals are heard, organizations that represent women and civil society these groups are included in the decision-making process (Caglar, 2013; Dietrich et al., 2025; Vida, 2021). Coe (2008) stated that promoting women's empowerment through particular women-targeted activities is combined with mainstreaming as part of a twin-track approach that includes gender mainstreaming. Since it is understood that these approaches are distinct yet interconnected, gender mainstreaming seeks to enhance rather than replace efforts that concentrate on women. (Caglar, 2013; Hannan, 2004). It has

also been highlighted by several authors, such as Su and Yang (2023) and Hargrove and Sommer (2022), that to ensure that institutions and organizations support gender equality, gender mainstreaming focuses on openness and transparency in decision-making.

On the other hand, Dietrich et al. (2025) highlighted that western aid providers mostly integrate fair treatment of gender equality in every aspect of development programs. Still, advocating for equality between genders is a sensitive subject in states where women do not have a strong position in every walk of life in society. Moreover, gender-specific aid by donors is mainly needs-based in democratic countries. It is designed to support autocrats' interests in autocratic countries, showing it matters to adjust gender aid to the situation.

Principal-Agent Theory, Donor Priorities and Strategies

According to Paul (2006), since developing nations are usually inclined to display significant information imbalances, the principal-agent theory may appear especially pertinent to them. The principal-agent theory has been used to distribute foreign aid in various ways. Azam and Laffont (2003) established a mechanism for distributing foreign assistance and aid between the "rich North" and the "poor South." According to the authors, the principals in this predicament are the assistance donors in the North, while the agents are the receiving governments in the South. This model also assumes that the donor in the North is uninformed of the nature of the preference associated with the government in the South (the agent) and that the government is biased toward assisting certain groups of people experiencing poverty. As a result, there is unequal information in the relationship between a donor and an agent, influencing how practical support is.

Bashevkin (2014) observed that decision-makers more frequently used pro-feminist rhetoric. This supports the argument that countries that have more vigorously safeguarded women's rights domestically can raise their voices for women's rights via their development assistance organizations. On the other hand, Niyonkuru (2016) has also argued that it is reasonable to expect assistance agencies from nations with more substantial local demands for women's rights to be more vocal and successful in promoting the progress of women's rights globally, as demonstrated by an increase in recipients' women's rights. This argument remains true whether foreign aid actively promotes women's rights or donors provide incentives to governments that do so. However, this contrasts with donor nations that lack strong domestic protections for women's rights; thus, less focus is placed on advancing women's rights in these nations. Since it is not a local demand, these nations are unlikely to contribute the resources required to develop such a standard outside their borders. As a result, it cannot be anticipated that donors or assistance providers will make any effort to advocate for women's rights or for recipients' levels to rise to the same extent as those of donors with more incredible women's rights (Donno, Fox, & Kaasik, 2022; Edgell, 2017; Musawir, 2025).

It has also been argued by Koester, Esplen, Robinson, Castillejo, and O'Neil (2016) that plans for gender equality are influenced by the aims, attitudes, and policies of donors and the requirements of the countries they support. The performance of gender-focused programs must be continuously monitored and re-evaluated to identify areas for development. They support vocational training to assist women in entering the labor market. Montinola and Prince (2018) also discussed that various donor nations and organizations might incorporate gender equality considerations while providing foreign aid. Many donors employ the same strategies to address gender inequality and empower women and girls. Different donor countries fund initiatives for female education and reproductive and maternal health through NGOs and organizations. Programs that prevent gender violence and family planning may receive assistance (Murhsad, 2020). Funded initiatives promote female entrepreneurship, increase access to credit and financial services, and assist in getting women prepared to enter the job market. Donors support training programs to advance women in political leadership positions, advocate for political procedures that consider women's demands, etc. According to Ozaki and Otis (2017), donors contribute to activities like shelters, counseling, legal assistance, and awareness campaigns against gender-based violence.

Donors provide organizations and governments with technical assistance to build capacity and carry out gender-responsive activities. Plans for gender equality are influenced by donors' aims, attitudes, and policies and the requirements of the countries they support. Haque and Mehmood (2024) explained that Pakistan has benefited from more than $155 billion in foreign aid since it was created. However, its effectiveness is still doubtful. All in all, foreign aid has failed to play a significant role in boosting Pakistan's economy. Ullah (2024) asserts that they use foreign aid given by donors to impact Pakistan's governance and economic situation. The main reasons for countries, including the U.S. and China, and multilateral groups to use foreign aid are geopolitical and economic factors. As such, it is advised that Pakistan try to reduce the importance of conditionality in aid and concentrate more on trade, diversification, and self-sufficiency for further development (Gul, Naseem, Khan, & Zaman, 2025).

ODA, Foreign Aid, and Gender Inequality

According to Yadav and Lal (2018), several nations and organizations provide foreign aid to promote economic growth, combat poverty, raise living standards, and address various development issues. Occasionally, the objective of international aid is to fight poverty. Improvement initiatives in economically deprived areas are supported. International help is required in armed conflict, disease epidemics, and natural disasters (Wellalage & Locke, 2017). Most aid initiatives concentrate on developing institutions for governance, bolstering the rule of law, and promoting accountability and openness. This makes the government more trustworthy and devoid of corruption. Foreign Aid frequently supports efforts that increase the economic and political participation of women and other disadvantaged groups. Women's education, minority protection, and financial participation are exam-

ples of such programs (Azcona et al., 2020; Zulfiqar, 2016). Donors frequently provide capacity-building and technical assistance to developing nations to help them become self-sufficient.

It has also been highlighted by Edwards (2015) that foreign aid has the potential to strengthen human rights, democracy, and peaceful coexistence while encouraging alliances and collaboration between states, institutions, and non-governmental organizations (NGOs) working on global development issues from suppliers to receivers. Governance, recipient nation competency, donor aims, and stakeholder involvement may significantly impact foreign aid's efficacy (Grown et al., 2016; Nowak, 2014).

Numerous researchers have also focused on the connection between gender and the geography of aid to determine if aid is given to incentivize different nations for their adherence to gender equality goals (Dietrich et al., 2025; Dreher, Gehring, & Klasen, 2015; Hicks & Maldonado, 2020; Okundaye & Breuning, 2021). Furthermore, it is argued that aid-dependent nations introduce policies to improve women's engagement and want to maintain the funding stream. This supports the idea that when countries decrease these gender inequalities, donors offer them more funding (Edgell, 2017).

In this contribution, the authors undertake additional analyses on sectors of aid unpredictability by breaking down aid effectiveness into categories such as education, health, and trade, among others, as noted by Jones and Tarp (2016). Mishra and Newhouse (2009) also explored the effects and directionality of foreign aid by sector. Along the same line, Temple and Van de Sijpe (2017) and Doucouliagos, Hennessy, and Mallick (2021) studied how aid varies by industry, focusing on education and health sectors. In synthesizing the literature, Riddell and Niño-Zarazúa (2016) found that foreign aid improved education in developing countries by increasing primary school enrolment.

Nevertheless, Maïga (2014) revealed that aid for education had meager effects on STA for the secondary and tertiary enrolment levels and observed no impact on the funding distribution on the gender parity of enrolment. Baliamoune-Lutz (2016) conducted a study to examine the relationship between aid for organizations working towards gender equality and women, and the findings showed that aid facilitated women's political participation. Still, the sound effects were reduced in autocratic nations of the Middle East and North Africa. This aligns with the notion that donors incentivize countries that reduce gender inequalities with additional support (Edgell, 2017). Jones and Tarp (2016) conducted sectoral analyses of aid effectiveness, focusing on education, health, and trade. Mishra and Newhouse (2009) also examined the relationship between foreign aid and its impact across various sectors. Similarly, Temple and Van de Sijpe (2017) and Doucouliagos et al. (2021) analyzed the sector-specific effects of aid, particularly in education and health. Riddell and Niño-Zarazúa (2016) reviewed the literature and concluded that foreign aid has positively influenced education in developing countries, notably by increasing primary school attendance. However, Maïga (2014) found that aid to the education sector had minimal impact on gender parity at the secondary and tertiary levels, with funding

distribution showing little effect on enrollment disparities. Baliamoune-Lutz (2016) investigated the impact of aid toward organizations promoting gender equality on women's empowerment in the Middle East and North Africa and found that such aid increases women's political engagement. However, its effects are diminished in countries governed by authoritarian regimes.

In the context of Sub-Saharan Africa, Kyander (2019) discovered that the impact of gender equality aid depends on the gender disparity indicators. The number of children enrolled in school and the proportion of women in politics were expected to rise as gender disparities were reduced. According to Bali et al. (2020), foreign aid does not significantly affect a country's ability to improve gender performance at the macro level. Given the limited nature and quality of foreign assistance targeted at women, this outcome is not unexpected. Minasyan and Montinola (2022) observed that foreign aid that targets gender advances women's legal status and economic freedoms. Any assistance empowers women with knowledge and relevant tools to participate in the formal economy or venture into micro-entrepreneurship, thus improving their social status and economic self-sufficiency, gaining greater confidence, and demanding their rights. Zhang and Huang (2023) noted that World Bank funding enhances the local support for gender equality, especially where funding targets sectors and issues sensitive to gender, more often than not impacting women's equal access to attitudes.

Furthermore, Park (2024) observed that the "Women, Peace, and Security (WPS)" agenda is now recognized worldwide as more donors align development aid support to support its goals. Sielker (2024) further explains that these types of policies were developed to deal with the problems that women, girls, and marginalized individuals face because of patriarchal beliefs. For this reason, donors consider it vital to ensure their assistance helps improve gender equality and women's empowerment to maintain peace and stability in developing nations.

Hypothesis Development

According to the literature and the research objectives, the following hypotheses have been developed to explore how foreign aid and macroeconomic governance impact gender equality in Pakistan.

Foreign Aid and ODA and Gender Equality

Numerous studies have pointed out that foreign aid makes a big difference in gender development for recipient countries. For instance, gender-targeted foreign aid may help women improve their educational, health, and work opportunities (Kharas, 2010; Brech & Potrafke, 2014; Mansab, 2023). Gender mainstreaming strategies and programs set up with the help of local groups are generally more successful in tackling the gender gap between men and women (Jones & Tarp, 2016). Hence, foreign aid related to gender is

usually allocated to education and maternal health sectors. The program's effectiveness is limited due to poor implementation and weakness within the institutions (Khan, Naqvi, & Soomro, 2024; Nazneen & Mahmud, 2012). The assistance will succeed more if tailored to the recipient country's governance structures and socio-cultural.

- H1: Gender-targeted foreign aid and assistance significantly impact improving gender equality indicators (Education, Health, female labor participation, and political participation of females) in Pakistan.

Gender Equality and Other Variables

Government spending on health and education is important in cutting down gender inequality. Several studies indicate that educating girls helps society by cutting fertility, increasing children's health, and boosting employment (Aslam & Kingdon, 2012; Emara & Hegazy, 2019; Rahman & Alam, 2021). Despite this, it has been found that the government's spending on education and health is more accommodating to boys and urban residents, limiting its impacts on female growth (Kousar, Ahmed, Afzal, & Trinidad Segovia, 2023). Gender equality is commonly linked to GDP per capita, which shows that a higher GDP per capita means people tend to have more employment, girls in school, and better health (Duflo, 2012). It has also been proved that gender parity in areas such as education, healthcare, employment, and political representation is linked to higher GDP per capita of the country (Duflo, 2012; Seguino, 2000).

Reducing the difference between men's and women's employment in Pakistan may raise the country's GDP by as much as 30%, according to the International Labour Organization (2021). However, gender inequality can be eliminated only if supportive policies are implemented with growing GDP per capita. It is said that how government functions can lessen the impact of international aid and development. It has been found that strong institutional foundations are important for aid to work correctly (Burnside & Dollar, 2000; Kosack, 2003). However, the weakness of institutions in Pakistan makes it difficult for gender projects to see positive results, so aid is not used effectively (Nazneen & Mahmud, 2012). Foreign direct investment (FDI) can influence gender equality while providing more employment opportunities and technology transfer. Tejani and Milberg (2010) pointed out that FDI in labour-intensive industries may cause an increase in female employment in the manufacturing sector. Sharma (2020) notes that FDI has brought new job opportunities for unskilled workers, particularly females in developing countries, due to the high demand for cheap labor. Since unskilled female workers earn lower wages, they are mostly preferred resources for cost-driven FDI.

Nevertheless, females do not earn higher wages despite employment due to an excessive labor supply and weak bargaining power. FDI can increase women's employment in Pakistan if it is accompanied by training opportunities and safeguards against discrimination at work (Klasen & Pieters, 2015). Based on the above discussion, the following four important hypotheses have been developed.

- H2: Government spending supports gender equality outcomes in Pakistan.
- H3: GDP per capita supports gender equality in Pakistan.
- H4: Government effectiveness supports gender equality outcomes in Pakistan.
- H5: FDI supports gender equality outcomes in Pakistan.

Literature Gap

Using foreign aid and development assistance significantly contributes to resolving many economic and social issues in developing countries, like gender inequality. Since there are significant differences between men and women in Pakistan's education, health sector, and women's power, the need for greater help prompted the government to direct more aid to these areas. Dollar and Gatti (1999) highlight that giving foreign aid to reduce gender inequality in the development process may be successful. However, its influence is unreliable in Pakistan because patriarchal values can block the success of these efforts (Naila, 2002). Even though some incentive programs have helped girls go to school more and receive healthcare, they have not enhanced females' economic role (Alesina & Dollar, 2000). Moreover, poor performance is worsened by institutional weaknesses, wrongly aimed policies, and missing funds (Ahmed & Wahab, 2011; Moyo, 2009). Burnside and Dollar (2000) pointed out that with a lack of sound governance and coherent policy framework, the distribution of aid can become.

Therefore, gender equality in Pakistan has not been significantly aided in the long term by foreign aid. Moreover, choosing the option of conditional loans for aid means there is now less flexibility with a higher risk of economic pressure for development strategies (Khalid, Nawab, & Dawar, 2022). These limitations are compounded by the fact that many development agencies and NGOs consider gender aspects as the leading players and women as separate additions to the program, which limits what aid can achieve. Despite growing literature, studies on foreign aid and development assistance are limited in Pakistan, which shows a critical gap in research on the connections between foreign aid and gender equality in Pakistan.

Methodology

Variable Description and Data Source

This study has employed a quantitative research method, which allows for precise measurement and quantification of variables, enabling researchers to obtain accurate and objective data. Quantitative research relies on statistical analysis techniques, which provide robust tools for identifying relationships in data (Balog, 2020). Table 1 shows the variable descriptions that were considered in this study. Time series analysis has been considered to investigate relationships between variables by examining lagged effects and relationships, which is vital in fields like economics (Pesaran, 2015; Shrestha & Bhatta, 2018).

Databases include the World Bank Indicator, Economic Survey of Pakistan, and Fred Economic Data from 1995 to 2022. Using data from 1995 to 2022 enables us to analyze changes in foreign aid and gender equality in Pakistan because these years captured several important economic, political, and policy changes. After 9/11, new gender-related developments appeared in initiative policies, changed how foreign aid was delivered, and the launching of the MDGs and SDGs highlighted gender equality. Hence, this timeline provides comprehensive insights into long-term trends and gendered outcomes.

Table 1: Variable Descriptions, Definitions, and Measurements

Variable	**Definition (Based on World Bank or Scholarly Sources)**	**Symbol**	**Measurement**
Female-to-male life expectancy ratio (Health)	The ratio of female to male life expectancy at birth indicates gender disparities in health outcomes.	LE	Ratio
Female seats held in parliament (Political)	Percentage of parliamentary seats occupied by females, reflecting women's political representation.	SEAT	Percentage
Female-to-male literacy ratio (Education)	The ratio of females' adult literacy rates to males (ages 15 and above) represents gender equality in education access.	LR	Ratio
Female-to-male labor force participation ratio	The ratio of the female labour force participation rate to that of males (ages 15+) captures women's economic participation.	LFPR	Ratio
Net official development assistance and official aid	International donors provide financial aid to Pakistan to promote economic development and welfare, including gender projects.	OFAA	Constant (2020) US$
GDP per capita	Gross domestic product divided by midyear population, adjusted for purchasing power parity. Represents average income per person.	GDP	Constant 2017 international $
Net inflows of foreign direct investment	Value of inward direct investment made by nonresident investors in the reporting economy relative to GDP.	FDI	% of GDP
Government effectiveness	This measure reflects perceptions of the quality of public services, civil service, and policy implementation, measured from -2.5 (weak) to +2.5 (strong).	GEF	Score (-2.5 to +2.5)
Government expenditure on health	Total public health spending is expressed as a percentage of GDP, indicating national prioritization of healthcare.	GEH	% of GDP
Government expenditure on education	Total public education spending as a share of total government expenditure, reflecting investment in human capital and gender parity.	GEE	% of government expenditure

Source: Author

Model Description and Framework

This study has followed the approach of Pickbourn and Ndikumana (2016) and Kyander (2019) for two reasons. First, these two studies are among the few limited studies mainly focused on exploring the relationship between gender equality and foreign aid and assis-

tance. Second, the framework of Pickbourn and Ndikumana (2016) and Kyander (2019) adds governance effectiveness to measure controlling for governance quality to capture the function of government and asymmetrical information, thus making it critical.

$$GE = f(OFAA, GDP, FDI, GEF, GEH, GEE) \tag{1}$$

There are several gender equality indicators, and a country may have made progress in certain areas while trailing behind in others, requiring investigation into various facets of gender equality (Dollar & Gatti, 1999). The array of variables specified in Dollar and Gatti (1999) have been considered in this study to examine the impact of foreign assistance and foreign aid on gender equality. Four indicators of gender inequality as a dependent variable are the number of female seats in the national parliament, the female-to-male life expectancy at birth, the percentage of the female population working, and the female-to-male literacy ratio.

$$LE = f(OFAA, GDP, FDI, GEF, GEH, GEE) \tag{1a}$$

$$SEAT = f(OFAA, GDP, FDI, GEF, GEH, GEE) \tag{1b}$$

$$LR = f(OFAA, GDP, FDI, GEF, GEH, GEE) \tag{1c}$$

$$FLPF = f(OFAA, GDP, FDI, GEF, GEH, GEE) \tag{1d}$$

GDP per capita, FDI, government expenditure on health and education, and government effectiveness have been taken as control variables that have also been supported by various studies, anticipating that these selected control variables might impact gender equality (Begam & Mujahid, 2019; Kyander, 2019; Maqsood, 2014; Olsson, 2014; Pickbourn & Ndikumana, 2016). In order to estimate the model, all gender equality measures, net official development assistance, and foreign aid have been converted into a log form and incorporated into the estimated model; however, the rest of the variables have been added without any transformation.

Model Estimation Technique

In the first step, unit root tests such as Augmented Dickey-Fuller (ADF) and Philips-Perron (P.P.) were employed for checking stationary properties that determine whether the time-series data of the selected study variables are stationary at level, first difference, or both (Dickey & Fuller, 1979; Phillips & Perron, 1988). As per the null hypothesis, a non-stationary unit root is at the level for ADF and P.P. unit root tests. In contrast, the alternative hypothesis states that there is no unit root of stationary, and it will be tested using equations 2 and 3.

$$ADFUnitRoot : \Delta U_t = \vartheta_0 + \vartheta_1 U_{t-1} + \sum j = kldj \Delta U_{t-j} + Q_i \tag{2}$$

$$PPUnitRoot : \Delta U_t = \vartheta + 1 * U_{t-1} + Q_i \tag{3}$$

Moreover, the Autoregressive Distributed Lag (ARDL) model is used to estimate defined models using the general to specific Error Correction Model (ECM), which incorporates lags while maintaining the long-term association (Laurenceson & Chai, 2003). It derives a dynamic ECM through a "simple linear transformation" (Akram & Afzal, 2015). Pesaran and Shin (1996); Pesaran, Shin, and Smith (2001) stated that the Bound testing technique method is proper when the explanatory variables are trend or difference stationary in which two sets of "asymptotic critical values" are defined while considering one assuming that regressors are I(1) or difference stationary. The other presumes that regressors are I(0) or trend stationary. If the obtained f-statistic is higher than the critical values, the variables are co-integrated in the long run. The formulation of the ARDL model of the study is as follows.

$$\begin{aligned}\Delta \ln GE_t = {} & \vartheta_1 + \vartheta_2 T + \vartheta_3 \ln OFAA_{t-1} + \vartheta_4 GDP_{t-1} + \vartheta_5 \Delta FDI_{t-1} + \vartheta_6 \Delta GEE_{t-1} \\ & + \vartheta_7 GEH_{t-1} + \vartheta_8 GEF_{t-1} + \sum_{l=1}^{a} \vartheta_1 \Delta \ln GE_{t-l} + \sum_{m=0}^{b} \vartheta_{2_1} \Delta \ln OFAA_{t-m} \\ & + \sum_{n=0}^{c} \vartheta_{2_1} \Delta GDP_{t-n} + \sum_{o=0}^{d} \vartheta_{2_1} \Delta FDI_{t-o} + \sum_{p=0}^{e} \vartheta_3 \Delta GEE_{t-p} \\ & + \sum_{q=0}^{f} \vartheta_4 \Delta GEH_{t-q} + \sum_{r=0}^{g} \vartheta_3 \Delta GEF_{t-r} + e_i \end{aligned} \tag{4}$$

In model (4), T is considered the trend variable, e is the error term, and Δ the difference operator. The study's null and alternative hypotheses have been examined to demonstrate whether there is an interaction between the dependent and independent variables.

Null hypothesis:

$$H_0 : \theta_{GE} = \theta_{OFAA} = \theta_{GDP} = \theta_{FDI} = \theta_{GEE} = \theta_{GEH} = \theta_{GEF} = 0$$

Alternative hypothesis:

$$H_1 : \theta_{GE} \neq \theta_{OFAA} \neq \theta_{GDP} \neq \theta_{FDI} \neq \theta_{GEE} \neq \theta_{GEH} \neq \theta_{GEF} \neq 0$$

Moreover, "Upper Critical Bound (UCB)" and "Lower Critical Bound (LCB)" are generated while following the approach presented by Pesaran et al. (2001). Hence, the F-value must be above UCB to check the long-run association. Equation (5) is used to determine long-run coefficients.

$$\begin{aligned}\Delta \ln GE_t = \delta_1 &+ \sum_{i=1}^{a} \delta_{OFAA} \ln OFAA_{t-i} + \sum_{j=0}^{b} \delta_{GDP} GDP_{t-j} \\ &+ \sum_{l=0}^{d} \delta_{FDI} FDI_{t-l} + \sum_{m=0}^{e} \delta_{GEE} GEE_{t-m} \\ &+ \sum_{s=0}^{j} \delta_{GEH} GEH_{t-s} + \sum_{t=0}^{k} \delta_{GEF} \Delta GEF_{t-t}\end{aligned} \tag{5}$$

Once the long-run association is proved, the next step is to check the short-run relationship to examine the convergence of the variables towards the long-run if any short-run shift occurs. The "Error Correction Model" (ECM) is represented by equation (6).

$$\begin{aligned}\Delta \ln GE_t = \delta_1 &+ \sum_{i=1}^{a} \delta_{OFAA} \Delta \ln OFAA_{t-i} + \sum_{j=0}^{b} \delta_{GDP} \Delta GDP_{t-j} \\ &+ \sum_{l=0}^{d} \delta_{FDI} \Delta FDI_{t-l} + \sum_{m=0}^{e} \delta_{GEE} \Delta GEE_{t-m} \\ &+ \sum_{s=0}^{j} \delta_{GEH} \Delta GEH_{t-s} + \sum_{t=0}^{k} \delta_{GEF} \Delta GEF_{t-s} \\ &+ \vartheta ECM_{t-1} + \varepsilon_i\end{aligned} \tag{6}$$

Here, ECM (t-1) is a "lagged error term" that determines the speed of adjustment from short-run to long-run equilibrium. According to equation (6), gender equality is explained by the difference between the general linear effects of official foreign development assistance and foreign aid and the lagged effects of control variables, error terms, and stochastic terms. Furthermore, several diagnostic tests have been employed in this work to examine the issues with normality, serial correlation, model specification, and heteroskedasticity to check the robustness of the model. Lastly, the model's stability was also examined using the cumulative sum of recursive residuals (CUSUM) and cumulative sum of squares of recursive residuals (CUSUMsq) tests (Brown, Durbin, & Evans, 1975).

Finding and Analysis

To ensure that no variable is integrated at the second difference (II), it is essential to confirm that all variables are integrated at level (0) or first difference (1) using the unit root test, which is considered a prerequisite criterion before applying time-series data, because data is often de-trended to get valuable outcomes.

Table 2: Unit Root Tests (Trend and Intercepts)

ADF Test with Trend and Intercepts

Variable	T-Stat (Level)	p-value	T-Stat (1st Diff.)	p-value
FDI	-2.614580	0.277	-3.325939	0.277
GDP	-3.578950	0.0533	—	—
GEE	-2.405718	0.3682	-8.139667	0.0000
GEF	-2.030328	0.5593	-4.543916	0.0069
GEH	-1.918538	0.6173	-5.680496	0.0006
Log(OFAA)	-3.445437	0.0671	—	—
Log(SEAT)	-2.200377	0.4704	-5.460508	0.0008
Log(LE)	0.343566	0.9979	-3.788608	0.0353
Log(FLFP)	-1.453340	0.8206	-4.104524	0.0173
Log(LR)	-2.682544	0.2507	-6.027727	0.0002

Phillips–Perron Test with Trend and Intercepts

Variable	T-Stat (Level)	p-value	T-Stat (1st Diff.)	p-value
FDI	-2.040913	0.5537	-3.325939	0.0842
GDP	-1.581676	0.7735	-4.008950	0.0213
GEE	-2.206421	0.4673	-4.438384	0.0083
GEF	-2.030328	0.5593	-4.713230	0.0045
GEH	-1.984550	0.5832	-9.693958	0.0000
Log(OFAA)	-3.347565	0.0801	—	—
Log(SEAT)	-2.037766	0.5554	-5.656773	0.0005
Log(LE)	0.343566	0.9979	-4.365615	0.0102
Log(FLFP)	-1.534441	0.7918	-4.104524	0.0173
Log(LR)	-2.682544	0.2507	-7.558175	0.0000

Source: Estimated and tabulated by author.

Although there is no requirement for a pre-test of unit root tests in the ARDL method, two distinct tests have been applied to remove any doubt caused by the possibility of the integrated stochastic trend of I(2). Unit root test provides a credible basis for using time series data, particularly for using the ARDL bound testing method for dynamic analysis. The results of the testing unit root have been illustrated in Table 3. It has been found that only GDP and OFAA are stationary at level I(0) with trend and interest. In contrast, all remaining variables are integrated at the first difference I(1), considering 1%, 5%, and 10% significance levels.

On the other hand, OFAA is stationary at level I(0) with trend and interest. In contrast, all remaining variables are integrated at the first difference I(1), considering 1%, 5%, and 10% significance levels. Hence, it has been proved that ARDL-bound testing approaches

are now suitable for estimating the model.

Table 3: ARDL Co-integration Estimation

Model	**Model 1:** Ln(LE)	**Model 2:** Ln(LR)	**Model 3:** Ln(FLFP)	**Model 4:** Ln(SEAT)
Model Selection Criterion	AIC	AIC	AIC	AIC
Estimated Model	Ln(LE) = f(Ln(OFAA), FDI, GDP, GEF, GEH, GEE)	Ln(LR) = f(Ln(OFAA), FDI, GDP, GEF, GEH, GEE)	Ln(FLFP) = f(Ln(OFAA), FDI, GDP, GEF, GEH, GEE)	Ln(SEAT) = f(Ln(OFAA), FDI, GDP, GEF, GEH, GEE)
Selected Lag Structure	ARDL(1,1,2, 2,2,2,2)	ARDL(2,1,2, 2,2,2,2)	ARDL(1,2,2, 0,1,2,2)	ARDL(3,0,2, 2,2,2,1)
Null Hypothesis	No Long-run Relationship Exists			
F-statistic	9.956 (K=6)	8.649 (K=6)	5.632 (K=6)	6.584 (K=6)
Significance	**Critical Bounds (Narayan, 2005)**			
Significance Level	**I(0) LB**	**I(1) UB**	**I(0) LB**	**I(1) UB**
10%	2.53	3.59	2.53	3.59
5%	2.87	4.00	2.87	4.00
2.5%	3.19	4.38	3.19	4.38
1%	3.60	4.90	3.60	4.90
R-squared	0.998	0.990	0.998	0.986
Adjusted R-squared	0.994	0.952	0.993	0.935
F-statistic	151.76	25.98	241.99	19.17
p-value (F-stat)	0.000002	0.0000946	0.00000	0.0019
Durbin-Watson stat	3.09	3.10	3.20	3.30

Source: Estimated and tabulated by author.

Table 4 shows the estimated models using the ARDL approach. It has been found that the F-statistics of all four models are above as compared to UCB at the 1% significance level. Thus, it proves the long-run co-integration between all four models' dependent and independent variables.

Table 4: ARDL Long Run and Short Run Estimation

	Model 1: Female to Male LE Ratio	Model 2: Female to Male Lit. Ratio	Model 3: Female LFP Rate	Model 4: % of Seats in Parliament Held by Female
LOG(OFAA)	-0.0052 (0.0027)	-0.0312** (0.0101)	-0.1044* (0.0446)	1.0229* (0.3067)
	[-1.91]	[-3.09]	[-2.34]	[3.34]
GEF	-0.0549** (0.0137)	-0.3501*** (0.0442)	-0.8434*** (0.1086)	16.6583* (4.8292)
	[-3.99]	[-7.91]	[-7.77]	[3.45]
GEE	0.0061** (0.0016)	0.0291*** (0.0052)	0.0361** (0.0091)	1.4179* (0.4949)
	[3.85]	[5.58]	[3.95]	[2.86]
GDP	-0.00004 (0.00002)	0.0002* (0.00006)	-0.0079 (0.0057)	-0.0174* (0.0060)
	[-1.81]	[3.37]	[-1.38]	[-2.88]
GEH	0.0199 (0.0166)	-0.1974* (0.0543)	-0.2114* (0.0668)	8.5365 (4.2296)
	[1.20]	[-3.64]	[-3.16]	[2.02]
FDI	0.0056 (0.0037)	-0.0665** (0.0121)	-0.0197 (0.0245)	-0.0072 (0.2689)
	[1.51]	[-5.48]	[-0.81]	[-0.03]
Constant (C)	0.1331 (0.0683)	-0.8860** (0.2118)	4.3336** (0.8877)	23.3139 (10.1291)
	[1.95]	[-4.18]	[4.88]	[2.30]
@TREND	0.0042* (0.0013)	-0.0069 (0.0038)	0.0266*** (0.0024)	1.1560* (0.3706)
	[3.24]	[-1.82]	[11.01]	[3.12]
ECM(-1)	-0.7477** (0.1720)	-2.4029*** (0.5434)	-0.7575** (0.2235)	-0.4890* (0.1432)
	[-4.35]	[-4.42]	[-3.39]	[-3.41]

Note: Standard errors are in parentheses. t-statistics are in square brackets.

* p<0.05, ** p<0.01, *** p<0.001.

Source: Estimated and tabulated by author.

Interpretation

In Model 1, it has been found that GEF has an adverse effect on the education LE ratio and GEE has a positive effect with statistical significance. The remaining variables, such as OFAA, GDP per capita, GEH, and FDI, have no statistically significant impact on the LE ratio.

Model 1: $LOG(LE) = -0.0052 * LOG(OFAA) - 0.0549 * GEF + 0.0061 * GEE - 0.0000 * GDP + 0.0199 * GEH + 0.0056 * FDI + 0.1331 + 0.0042 * @TREND$

Model 2 proved an inverse relationship between OFAA, GEF, GEH, FDI, and the female-male literacy ratio. In contrast, GEE and per capita GDP positively correlated with the literacy ratio. Based on these findings, education expenditure and higher government revenues are believed to enhance gender equality in education, whereas health expenditure, foreign aid, and FDI decrease the literacy ratio.

Model 2: $LOG(LR) = -0.0312 * LOG(OFAA) - 0.3501 * GEF + 0.0291 * GEE + 0.0002 * GDP - 0.1974 * GEH - 0.0665 * FDI - 0.8860 - 0.0069 * @TREND$

In Model 3, OFAA, GEF, and GEH are significantly negative, indicating that foreign aid and assistance, government effectiveness, and health expenditure will not increase the female labor force participation rate. On the other hand, the estimated effect of GEE is quite positive, proving that increased education spending may increase female labor force participation. No meaningful correlations were established between GDP per capita and FDI with female labor force participation.

Model 3: $LOG(LFPR) = -0.1044 * LOG(OFAA) - 0.8434 * GEF + 0.0361 * GEE - 0.0079 * GDPG - 0.2114 * GEH - 0.0197 * FDI + 4.3336 + 0.0266 * @TREND$

In Model 4, OFAA, GEF, and GEE have positive and statistically significant impacts on the percentage of women's seats in parliament. It proved that receiving foreign aid may increase female representation in decision-making at the national level. On the other hand, the representation of GDP per capita has a negative impact, while the GEH brought in a near-zero positive value.

Model 4: $LOG(SEAT) = 1.0229 * LOG(OFAA) + 16.6583 * GEF + 1.4179 * GEE - 0.0174 * GDP + 8.5365 * GEH - 0.0072 * FDI + 23.3139 + 1.1560 * @TREND$

Lastly, the values shown by the ECM (-1) in all models are negative and significant, showing a high speed of adjustment towards long-run equilibrium if any shocks occur in the short run.

Table 5: Diagnostic Tests

Test Statistic	Model 1: Female to Male LE Ratio	Model 2: Female to Male Lit. Ratio	Model 3: Female LFP	Model 4: Female Seats in Parliament
Chi-square Normality (c^2 Norm)	0.2423 [0.88]	0.2100 [0.89]	0.9870 [0.61]	0.9400 [0.62]
Chi-square Serial Correlation (c^2 Serial)	0.0100 [0.000]	0.0700 [0.000]	0.0300 [0.0001]	0.0200 [0.000]
Chi-square Heteroskedasticity (c^2 Hetero)	0.8720 [0.62]	1.2000 [0.45]	0.4000 [0.94]	1.8100 [0.24]
Chi-square RESET Test (c^2 Reset)	1.0400 [0.35]	0.3500 [0.58]	1.1500 [0.31]	96.7700 [0.00]

Note: Values are F-statistics with p-values in brackets.

Source: Estimated and tabulated by author.

Table 5 shows post-estimation diagnostic tests to determine the model's relevance. All diagnostic tests for functional form, normality, and heteroscedasticity have been found insignificant and show no issues. However, the issue of serial correlation has also been deducted from the models. Additionally, the CUSUM and CUSUMsq tests have also been applied. These tests demonstrate the consistency of a model's coefficients and verify the stability of the parameters. The blue line between key bounds indicates that all four models' predicted coefficients are well-described and reliable.

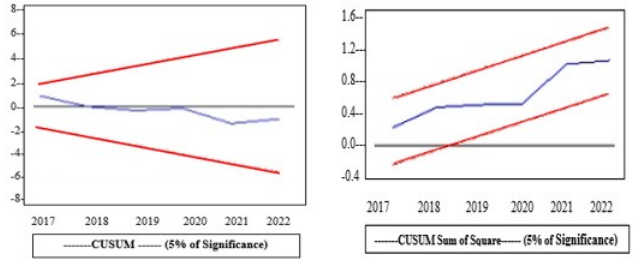
Discussion

Aid is nevertheless pouring in; however, entrenched gender disparities remain as the country grapples with deep historical and cultural networks of inequalities. Kabeer (2005) contends that women are not only excluded from access to economic resources; however, foreign assistance and aid can overcome this situation without a simultaneous struggle to challenge elements of the patriarchal status quo.

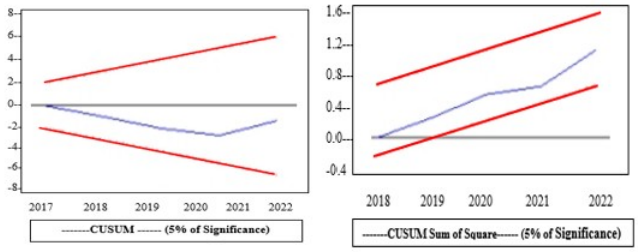
A negative and substantial association between foreign aid and assistance and gender equality in education and female labor participation is not in line with Pickbourn and Ndikumana (2016) and Kyander (2019), Bayraktar (2020) and Jaya, Jung, and Oh (2024), supports that education aid could improve the ratio of enrollment in the education of

Figure 1: CUSUM and CUSUM Square of All Four Models

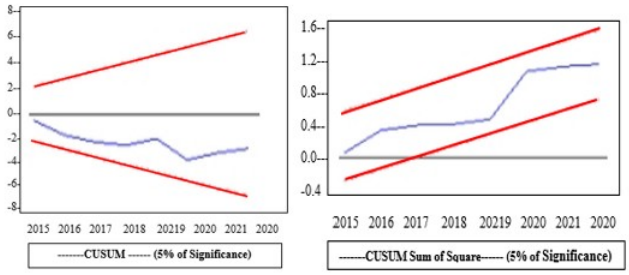
Model 1



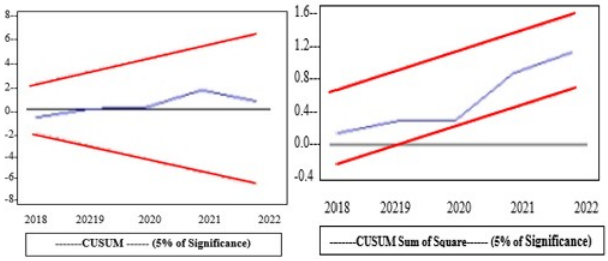
Model 2



Model 3



Model 4



(Source: Generated by Author Using EViews software)

females. However, these findings are consistent with the findings of Maïga (2014), who revealed that aggregate assistance disbursements to the education sector had a detrimental influence on "gender parity" in secondary and higher education enrolment but had no effect on gender parity in primary education. As stated in works such as Chatterjee, Giuliano, and Kaya (2012); Lu et al. (2010); Van de Sijpe (2010), aid can be used in a manner that is different from what was not planned by the donors. The negative and significant education assistance has been attributed to the fact that assistance to secondary education may be channeled to primary education in realizing the SDG for universal primary education by 2030. Moreover, the study's finding also implies that foreign aid could be ineffectively targeted instead of enhancing development in education sectors, mismanaged, or have short-term objectives that fail to curb the main course of the inequality. Foreign aid is being distributed in a way that does not account for the women's experience in gaining access to education.

In the case of female labor force participation, foreign aid or development assistance may obstruct gender equality by exacerbating existing inequities between men and women. In such a circumstance, this is another fundamental flaw in the foreign development assistant model. The drawbacks of foreign aid can be related to the involvement of the female workforce because it is most likely to be poorly aimed, and it is not oriented on structural limitations that women tend to face during the employment process, such as childcare problems, lack of training, and workplace discrimination. In most cases, aid initiatives focus either on basic needs or conservative roles, which validates the idea of women as caregivers rather than workers. Secondly, foreign aid can create dependency, whereby governments reduce their efforts to invest in inclusive labor policies, and the impacts of foreign aid on women's economic participation become useless or even counterproductive. This study's finding related to female labor force participation could also be supported by Ihayere (2022), who found that foreign aid has a considerable but unfavorable impact on both male and female employment; however, it could be rectified by implementing high-quality institutional frameworks for directing vulnerable jobs and reducing the detrimental effects of foreign aid.

On the other hand, findings by Kyander (2019) showed an inconclusive impact of aid on female labor force participation but a positive impact on reducing gender equality in political female involvement, which is also found in this study. Besides this, Ihayere (2022) found that foreign aid has a considerable but unfavorable impact on vulnerable male and female employment. Baliamoune-Lutz (2016) stressed that evaluating how effective this kind of international assistance is is crucial for the receiving country.

Nevertheless, this study has found no relationship between foreign aid and assistance and gender equality in terms of health because of the inconclusive effects of gender equality aid on the life expectancy ratio (Kyander, 2019; Pickbourn & Ndikumana, 2016). However, this contradicts Berlin, Bonnier, and Olofsgård (2024), who found that foreign aid significantly impacts female health and well-being. Bali et al. (2020) also highlighted that through aid and assistance, there is a lack of possibility to change systemic disparities,

mainly if it is intended to enhance gender outcomes directly; hence, these findings may also point to the need for more focused and gender-sensitive humanitarian efforts (Bali et al., 2020). The argument made by Dietrich et al. (2023) also reflected the point about foreign assistance and aid providers having a choice of gender outcomes when it comes to gender-focused aid; they can choose to direct investments or use the mainstreaming gender approach through policy-level integration of a gender perspective across all activities. Most international aid promoting gender adopts the form of mainstreaming because achieving a particular gender outcome is not the primary goal. Ndikumana (2012) emphasizes that structural problems in the current development aid framework focus on sector-level measures.

The study supports that foreign aid and assistance are important in increasing female participation in politics, which aligns with the study of Baliamoune-Lutz (2013) and Jaya et al. (2024). The association between foreign aid and gender equality in female political involvement may be favorable since assistance is directed toward programs that support women's political empowerment. For instance, aid may encourage gender-sensitive legislation, fund women's leadership initiatives, or give females the gear they need to participate in politics. Edgell (2017) explained that gender quotas are sometimes implemented in some countries as a tactical measure related to enhancing a better image in the international arena, usually to attract or retain foreign aid resources. It implies that they utilize gender quotas as an indicator to demonstrate that they are progressive, particularly when they rely so much on foreign aid. Second, in certain instances, foreign aid projects directly linking women's empowerment lead to the implementation of gender quotas and greater political involvement Edgell (2017). As has also been noted by Hicks, Hicks, and Maldonado (2016), the election of female legislators is also associated with the total rise in foreign aid, absolute and in proportion to the GDP of a particular country. Therefore, the more women influence national legislatures, the more aid will be channeled toward other areas, such as education and health. The increases occur via bilateral aid means, reflecting a change in the dispensation of aid in favor of developing countries.

Regarding aid effectiveness, political instability, corruption, and misuse of funding all tend to diminish aid effectiveness (Easterly, 2006). Although health and education have primarily remained marginal for sectors, particularly in urban areas, rural communities, where gender inequality is most pronounced, have seen far less benefit. Evidence shows that gender-focused aid programs often miss their target population because of challenges with logistics and governance (Moser, 1993). Effective reductions need to be accompanied by challenging policy frameworks that promote women's rights and socio-economic inclusion, according to Sachs (2006). Additionally, the influence of aid on treating gender-specific health concerns may be limited by the current healthcare infrastructure and cultural considerations (Dreher et al., 2015). Most contributors continue to favor supporting particular industries, particularly healthcare and education (Grown et al., 2016). However, some donors give less consideration to gender equality when providing aid to vulnerable sectors like education and health (Dreher, Nunnenkamp, & Thiele, 2008). Koppell and Grown (2012) believed that aid effectiveness in promoting gender equality in the

workplace would likely provide the most long-lasting outcomes only when assistance is utilized to collaborate with companies to increase women's access to economic likelihoods (Grown et al., 2016). While foreign aid targeting gender equality in Pakistan often focuses on sectors directly impacting women's empowerment, such as education and health, gender programs play an appreciable role in donor support to this sector. Promoting literacy rates through the USAID-funded Pakistan Reading Project or participation of KfW Development Bank in maternal health initiative efforts to close the gender gap should be counted as an example (KfW Development Bank, 2021; USAID Pakistan, 2020). However, such initiatives have been constrained by cultural and structural challenges that make a difference in the effect of foreign aid on gender equality.

Theoretical and Practical Implications

This study contributes theoretically by attempting to fill the significant empirical gap in exploring how multidimensional foreign development assistance may affect gender equality in Pakistan, which has yet to be explored by carrying out the ARDL co-integration method with data from 1995 to 2022. This study analyzes the varied impacts of foreign aid on each sector: education, labor, politics, and health. Practically, this study offers important findings for policy-makers and international donors, recommending that assistance programs must be chosen based on sector-specific and evidence-based targeted initiatives. Foreign aid for Pakistan positively affects women participating in politics. However, it has an adverse or negligible impact on education, the labor market, and health equality, indicating that better and more inclusive foreign aid policies should be adopted to improve gender outcomes in Pakistan.

The outcome of the current study holds significant practical implications for policy-makers, development agencies, and stakeholders in enhancing gender equality in Pakistan via foreign aid and development assistance. First, the inconclusive or negative foreign aid relationship with gender equality outcomes, especially in education and female labor force participation, indicates that it is time to consider aid design and targeting reconsideration. Provided that education-oriented aid is shifted at the expense of secondary education to achieve global development goals, including SDG 4 (universal primary education), it can unintentionally weaken gender parity in tertiary education, where inequality is more significant. Second, the adverse effect of foreign aid on female labor force participation suggests that structural inefficiency in foreign aid delivery channels could serve to entrench existing gender labor market inequalities instead of reducing them. It makes the quality of institutions and governance structure important in mediating aid impacts. In such patriarchal societies with tightly integrated informal labor markets as in Pakistan, aid should be coupled with substantial institutional changes, including gender-sensitive labor legislation, social protection of female employees, and affirmative action to tackle labor market segregation. Third, the inexistence of the effects of foreign aid on gender equality in health highlights the little coverage of aid in rural and underserved communities where women

are the most vulnerable. It recommends insufficient assistance surmounting historical, cultural, and infrastructural impediments to fair health results. Based on this, development partners should combine funding with capacity building, community mobilization, and gender-transformative programs to address the structural inequalities and local constraints. It follows the argument by Kabeer (2005) that the transformative power of aid will be dutifully limited without the confrontation of patriarchal norms and political exclusion. Fourth, the overall positive correlation between aid and women's political empowerment indicates that specific aid programs, including those that support women in leadership, legislative advocacy, or civic engagement, are more effective than mainstreaming aid. It strengthens the point that there should be a balance between mainstreaming and direct investing in women-oriented initiatives. The strategies of aid allocation have to be refocused towards promoting grassroots women organizations, strengthening local women leaders, and establishing gender quotas wherever suitable.

Table 6: Summary of Key Findings

Variable	Model 1: Female-to-Male LE Ratio	Model 2: Female-to-Male Lit. Ratio	Model 3: Female LFP Rate	Model 4: % Seats in Parliament Held by Females
Log of OFAA	Not significant	Significant (negative)	Significant (negative)	Significant (positive)
GEF	Significant (negative)	Significant (negative)	Significant (negative)	Significant (positive)
GEE	Significant (positive)	Significant (positive)	Significant (positive)	Significant (positive)
GDP per capita	Not significant	Significant (positive)	Not significant	Significant (negative)
GEH	Not significant	Significant (negative)	Significant (negative)	Marginally insignificant (positive)
FDI	Not significant	Significant (negative)	Not significant	Not significant
ECM(-1)	Highly significant (adjustment speed)	Highly significant (adjustment speed)	Highly significant (adjustment speed)	Highly significant (adjustment speed)

Notes:

- Log of OFAA is significant in Models 2, 3, and 4 but not in Model 1.
- GEF shows significant effects in all models—negative in Models 1–3 and positive in Model 4.
- GEE has consistent positive and significant effects in all models.
- GDP per capita is significant in Models 2 (positive) and 4 (negative), and not significant in Models 1 and 3.
- GEH is significant with negative effects in Models 2 and 3, marginally insignificant in Model 4, and not significant in Model 1.
- FDI is only significant in Model 2 (negative effect).

Source: Estimated and tabulated by author.

Conclusion

It is evident from this study has demonstrated the effectiveness of foreign aid and assistance in lessening gender gaps that are constrained due to the enduring influence of patriarchy, well-entrenched traditions, and conservative beliefs. Such barriers often limit the potential of these gender-related funds and their intended results. Reforming foreign aid and assistance is challenging to make meaningful progress for females regarding matters such as education and female employment where negative or negligible impacts were

found. A different area where foreign aid has been found beneficial is women's involvement in politics, showing that targeted efforts sustain advocacy, encouraging outcomes.

Based on these findings, aid agencies, donor governments, and national policy-makers need to adopt more context-specific, culturally informed, and locally owned strategies to influence the structural and institutional factors prolonging gender-related imbalance directly. Foreign aid and assistance must be considered beyond conventional development financing tools to reduce gender disparities effectively. This requires a transformation in the mindset and practice from top-down policies to combined solutions that respect local narratives and cultural complexity. Instead of operating in isolation, foreign aid should be incorporated into the national's efforts to combat stereotypes, improve discriminatory laws, and encourage everyone to promote inclusive development. Since unfairness often appears in health, education, and economic sectors, future programs for foreign aid and assistance must be critically evaluated, which includes revisiting the methods of allocating aid, creating a better system for monitoring and evaluation, and embracing gender-related assessment from the beginning to the end of the process. This study also emphasized that foreign aid and assistance can be a strategic tool for policy impact while encouraging the Pakistan government to reinforce gender-related transformative policies and ensure their implementation at all administrative levels. It requires supporting reforms in institutions and improving civil society organizations, local groups, and advocacy teams responsible for keeping the state accountable. Ensuring the mobilization of resources helps achieve gender-related outcomes, so particular attention should be paid to gender-responsive budgets and data systems that will enable accurate progress tracking. Moreover, multi-sectoral interaction is compulsory to maximize the full potential of foreign aid and assistance. Even gender-related policies should be built by donors, government officials, NGOs, and community leaders by understanding the inimitable situations of females from various backgrounds, including marginalized and underserved communities. All action plans must be inclusive and adaptable to regional variables regarding gender norms and development needs.

Furthermore, the study has several limitations. This study has also not focused on foreign aid agencies and donor's perspectives related to gender equality concerns. Future research should consider mixed-method and intersectional approaches to get more in-depth insights and understand how foreign aid and assistance should be allocated and integrated with development policies. Longitudinal research should also be conducted to explore the long-term impact of aid-based gender programs because it will provide a more comprehensive understanding of its implementation process.

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