The relationship between female participation and economic institutions: An OECD country analysis

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The relationship between female participation and economic institutions: An OECD country analysis

Abstract

This paper investigates the relationship between the impact of economic institutional factors on female and male labour force participation rates (LFPR) in the 38 member countries of the Organisation for Economic Cooperation and Development (OECD) from the period 2005 to 2021. The study utilises the Common Correlated Effects Mean Group (CCE-MG) estimator to account for cross-sectional dependence between the variables. The outcome of this model showed that physical property rights index and political stability index is both significant and positively related to female and male labour force participation rates. However, there are two other economic institutional variables that affect the male labour force participation rate model, namely the intellectual property rights index and the government effectiveness index. This research aims to contribute to the field of Gender Economics at a macroeconomic level and paves the way for future studies.

Introduction

Women around the world still face significant disadvantages concerning their income opportunities in the labour market. It has been recorded that the labour force participation rate of women around the world is approximately 50% which is lower than the 80% of men (World Bank, 2022). Studies show that investing in women can help lift economic growth and improve the quality of life for all women (Bloom, et al., 2017; OECD DAC, 2010). Despite the returns, there are still many barriers that prevent women from fully participating in the development of their communities (World Bank, 1994).

Gender equality is an important factor in achieving economic growth. Women add to the labour force and can earn enough to live a balanced life and therefore contribute to the economy and the well-being of their families. For example, if women receive the same remuneration as their male counterparts, education and health care for their children can be attended to (Corray, et al., 2017; Baradasi, et al., 2007). The future generations will increase their wealth and standard of living and will later become part of the skilled labour force.

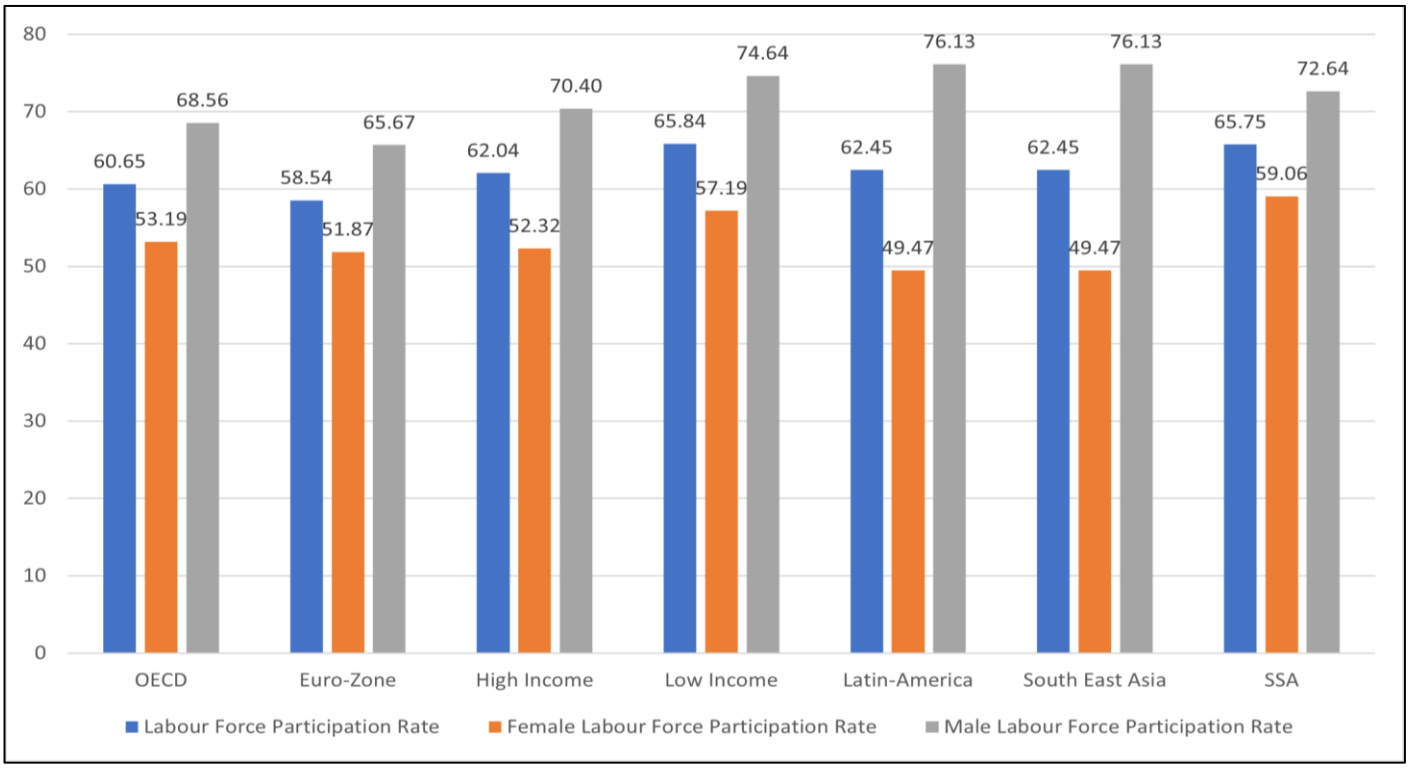
To ensure this progress of uplifting female participation in the labour force, economic institutions should be efficient, credible, and cater to all genders equally. Creating a good working environment and well-established institutions can influence women to enter the labour market.

Agent's economic behaviour differs according to their gender. Haddad, et al. (1997) showed that consumption behaviour differs between men and women. It was observed that women spend a greater proportion of their income on goods and services that enriches the welfare and the potential of their children compared to men. Seguino and Floro (2003) found that there are also differences in other characteristics of economic behaviour between men and women, such as savings, investments, risk adversity and levels of altruism. If gender inequalities are ignored at a microeconomic level, it affects macroeconomic outcomes. These effects impact men and women differently. It is therefore important to analyse economic institutions and their policy implications on a gender spectrum (Çağatay & Ertürk, 2004). Macro-level policies impact the power dynamics within the household which stems from gender differences (Seguino, 2013). Women face a higher wage elasticity of labour, which means that women have to consider how their share of unpaid labour will be replaced and the cost to outsource the unpaid labour if they take up paid work. Under the traditional gender division of labour, women hold more responsibility for children and housework (Blau & Winkler, 2017). For example, a policy that

reduces spending on public child and elderly care services will result in women leaving the labour force to carry out unpaid work and women being less motivated to join the labour force (Himmelweit, 2002). This can also result in power struggles within a household in considering which partner should do unpaid work. Households are generally cooperative, but they also experience conflict and competition which affects the power relations within a household. It is important to understand the different effects of policies and institutions on women and men. This is to ensure the creation of policies that will promote female labour force participation.

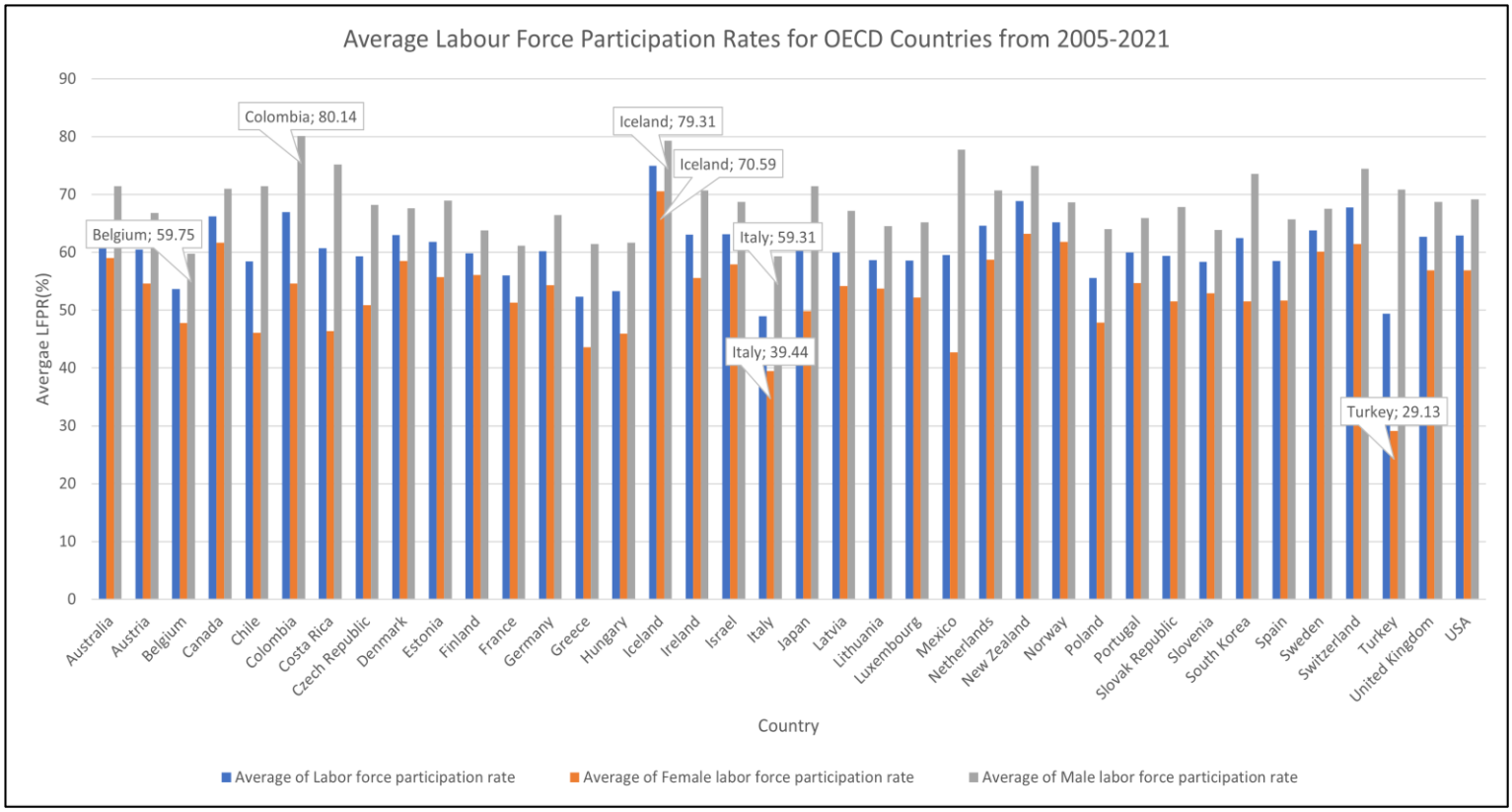
Figure 1 shows the average labour force participation rate (LFPR) for different regions over the sample period 2005 to 2021. The highest labour force participation rate is in the low-income region. The highest male labour force participation rate is in the Latin-American and South East Asian region with an average of approximately 76% while the highest female labour force participation rate is in the Sub-Saharan Africa (SSA) region with an average of roughly 59%. The mean labour force participation rate of men and women for the different regions does not show significant differences. Examining Figure 2 displays the average labour force participation rates for all the country members in the Organisation for Economic Cooperation and Development (OECD). The highest and lowest female labour force participation rate is Iceland and Turkey respectively while the high and lowest male labour force participation rate is Columbia and Italy. None of the OECD members has higher or equal female LFPR than male LFPR. There is instead a large gap between male and female LFPR in the OECD countries.

Figure 1: *Average Labour Force Participation Rate for Different Regions over sample period (2005-2021)*



Data Source*: (World Bank, 2022)*

Figure 2: *Average Labour Force Participation Rate for OECD Countries over sample period (2005-2021)*



Data Source : *(World Bank, 2022)*

Policies and institutions are needed and are important to women in situations where social norms hamper women's participation in the labour market and can deter girls from receiving an education that will equip them to enter the labour market (Bandiera & Natraj, 2013). Institutions would need to investigate what is the main cause of low female participation in the labour market to fully understand what policies are needed and how to improve institutions to promote female participation in the labour force. Bandiera and Natraj's (2013) investigation finds that most literature does not focus on the effect of laws and institutions but rather on individual effects like education. The authors also note that various cross-country studies show that gender inequality is correlated with other factors such as trade liberalisation, savings, and good institutions.

The analysis will be conducted on the OECD countries because these countries have achieved economic growth and have promoted economic welfare. Most of the OECD countries are developed countries with a high-income economy so it is expected that the share of female participation is higher than in most countries in the world. It will be insightful to see the performance of the economic institutions in these countries and their effect on female participation rates in the labour force. It is the norm that developing countries tend to follow the practices of developed countries to reach higher growth. It is for this reason economic institutions will dictate the relevance of female participation and growth.

The purpose of this research is to determine which institutions affect female participation in the labour market. This research will be important because it can help policymakers further improve institutional conditions in a country to increase the participation of women in that particular country. The first section details the literature review on the economic institutions in relation to female participation in the labour force and female representation. The following section (Section 2) discusses the data and the methodology of the empirical analysis. Section 3 delves into the results. The final section is the conclusion.

1. Literature Review

Hodgson (2006, p. 13) termed Economic Institutions as essentially "durable systems of established and embedded social rules and conventions that structure social interactions". These institutions comprise of contracts, protection of property rights, the quality of justice and regulation, government authority, and financial markets to name a few (Ferrini, 2012). Economic institutions play a major part in the economic growth of a country. Female

contribution to labour also plays a role in the economy. The presence of strong economic institutions could affect female participation by motivating women to join the labour force.

1.1 Female Labour Force Participation Rate

Many studies focus their research on what influences or motivates women to join the labour force or become self-employed. These studies are mainly focused on two categories which include employment characteristics (work experiences, education, policies, compensation) and family characteristics (marital status, age, children, cultural expectations) (Taniguchi,2002; Thévenon, 2013). There are also various studies on why women are not able to pursue employment opportunities. Some women, given their culture and circumstances, might not be able to pursue employment since they have responsibilities to look after the household (unpaid work). Women can be considered contributors to economic activity, yet the share of women in entrepreneurship remains below 50% (Taniguchi, 2002).

Thévenon (2013) looks at other determinants of female labour force participation using 18 OECD countries. The study showed the effect of institutional and labour market characteristics on female labour force participation and showed that women's labour force participation is boosted by an increase in part-time opportunities and female educational attainment and the expansion of the service sector. A primary policy drive that has a positive effect on women's participation in the labour force is the provision of formal childcare services to working parents. Whereas there is no clear link between the rising public share of employment and female employment rates.

1.2 Trade Freedom and Competition

Neo-classical economists reasoned that in the global South, trade liberalization and the deregulation of the labour market have been beneficial to women through employment opportunities or reduced gender wage gaps. Some studies (Black & Brainerd, (2004), Black & Strahan, (2001), Weichselbaumer, et al., (2008)) are consistent with Becker's Theory of discrimination (1958) which supports the neo-classical economists' ideology and argues that trade would result in an increase in competition which will inevitably mean that firms cannot pay for discriminatory behaviour and hence gender wage gaps would reduce (Hirata & Soares, 2020). Reducing tariffs motivates competition by allowing new firms to enter the export market, benefit from technological progress, and employ more women in sectors that require manual labour (Juhn, et al., 2014). The authors imply that trade liberalisation reduces gender inequality. Corray, et al. (2017) investigated how trade openness influences the Labour Force

Participation Rates (LFPR) and found that the higher the level of institutions a country possesses, the greater the positive effects of trade openness on LPFR.

Adversely, some research argues, that trade would exploit unskilled and inexpensive labour to reduce costs so firms can be more competitive globally. Women make up the majority of this unskilled labour and as a result the gender-based wage gap increases (Çağatay & Ertürk, 2004). Seguino (2000) empirically investigates a dataset of middle-income semi-industrialised economies with different levels of export frontage. The objective of this study is to observe if gender inequality has macroeconomic effects, more specifically, if it affects the economic growth rate. The findings show that there is a positive relationship between growth and gender wage inequality. This could be due to low wages for women on exports. This is consistent and supported by Sauré & Zoabi (2014), which follow that female participation falls when trade integration expands in sectors that generally employ females. This broadens the gender wage gap resulting in a higher wage gap. When a country focuses on female-intensive sectors, these expanding sectors get an influx of male employees since the other male-intensive sectors shrink. Males are formally employed and receive remuneration that is greater than women in the female-intensive sectors. The result of this shifts the female labour force away from formal employment.

As we can see, there are inconclusive results and this could be due to studies that do not capture the variation of different structures between countries on production and trade (Wamboye & Seguino, 2015).

1.3 Rights

Baradasi, et al. (2007) noted that legal and regulatory conditions are essential for investment and competitiveness. These conditions may affect women and men differently; this implies that the potential of women to construct and grow their businesses, create employment opportunities, and enhance productivity is hindered. In Africa, many laws and customs hamper women more than men in receiving access to credit, education, information, and productive inputs to run a business. There are some laws and regulations that cater for gender-specific barriers but often it does not produce the expected gendered outcome. For example, registration procedures can become long and expensive, making it more difficult for women to afford them than men. This can be experienced in societies where the traditional gender division of labour is the norm (Baradasi, et al., 2007). There are some policies that reinforce gender inequalities

by giving incentives in the form of a transferable tax allowance for households to pursue the traditional division of labour (Himmelweit, 2002).

It was noted that the protection of property rights can influence women to make better decisions when it comes to their economic activities. This will affect a woman's importance and place in the household and results in the establishment of independent asset ownership or an increase in food and income security (Dekker, 2013) (Christian, et al., 2015) conducts an empirical analysis that looks at how income inequality affect the outcomes and opportunities of men and women. The study examines the different avenues that gender inequality and income inequality are connected. It finds that in advanced countries with narrow gender gaps in education and equal opportunities, income inequality emerges mostly through gender gaps in economic participation. Female labour participation grows when there are equal laws (Christian, et al., 2015). The findings show that limitations on women's rights to legal barriers to undertake economic activity and inheritance and property is highly linked to large gender gaps. Heath and Tan (2020) also find that better property rights for women is associated to an increase in female supply.

Bandiera and Natraj (2013) show that rights are directly connected to women's economic opportunities and other micro-level evidence shows that in some instances, inequality in property rights reduces economic effectiveness and performance. The importance of specifying which laws award men better rights than women or vice versa can affect how policies are created and implemented and its direct impact on gender inequality. Goldstein & Udry (2008) indicates that a reduction of output in Ghana stems from weak property rights for women. This can be due to power structures, where women are less likely to hold power and as a result the property or land, they do hold is less secure and land fertility is not financed.

Doepke and Tertilt (2009) use a model where women's legal rights are chosen by men. To maintain their ability to negotiate in the household, husbands grant few rights to their wives. The increase in the bargaining power of their wives negatively impacts husbands' utility. On the contrary, husbands favour the growth of other women's rights because they prefer the gains they receive when their daughters possess rights. Once the gains of education are high, a political regime of empowerment is voted for by men. The authors conclude that this explains the improvement of the economic and legal rights of married women before political rights (Cuberes & Teignier, 2014; Fernandez, 2010). However, Geddes and Luech (2002)show that when the property rights of women are relatively few, the outcome is reduced effort at work and this has a negative consequence on household income. The drawback of low effort on

women employees grows when there is an increase in their opportunities in the labour market. The link between educational attainment and equality breaks due to the possibility that although the schooling of females is acceptable, social norms and institutions exclude women's access to employment opportunities in economic and political fields (Bandiera & Natraj, 2013). 1.4 Governance

There is evidence that female economic participation is affected by economic integration(which implies the elimination of trade barriers through agreements) and that a combination of good governance and economic integration stimulates female economic participation further (Ofori, et al., 2021). A similar study that examined governance and gender inequality shows that strong governance and the involvement of women in the labour market contribute to the increase in welfare to those affected by poverty. It also noted that efficient governance complementing female participation in the labour market enhances welfare in areas stricken with poverty (Barkat, et al., 2022). Ofori, et al. (2021) supports Barkat (2022), where their findings reveal that economic integration is a necessary condition but inadequate for female economic involvement. Economic integration should be accompanied by good governance that would supplement female economic participation.

In terms of governance, from the literature, gender inequality can be minimized using good governance strategies that will enhance and encourage additional female contributions in the formal sector of the economy (Fosu, 2009; Fosu, 2015).

1.5 Rule of law

Pistor, et al. (2008) use country-level data to show that various Rule of Law indices is weakly associated with the status of women in society. This study does separate analysis for high and low -income countries and low-income countries. Furthermore, this study finds that there is a high correlation between rule of law indices and gender inequality in high-income countries whereas, there is no evidence of this correlation in lower-income countries. The authors reason that the status of women in society is due to how society perceives gender inequality and norms and that these norms are weakly influenced by legal institutions. Barajas-Sandova, et al. (2022) investigates rule of law as an important determinant of gender inequality. Like Pistor, et al. (2008), the study finds a link between the upholding of rule of law and gender inequality. Although the study may reflect causation, it does not allow inference. The feasible causal channels are that if core services are enforced by government through legal processes, the equality outcomes for women are more plausible to be achieved and that corruption and weak laws and their enforcement would hinder gender inequality. Goltz, et al. (2015) focuses on the

impact of institutional factors on women's entrepreneurship. Political representation in combination with how laws are enforced is positively related to women's opportunities in entrepreneurship. The study also shows that with significant levels of women with higher political standing, the effect of women's opportunities in entrepreneurship is more substantial in countries that have better levels of rule of law.

1.6 Political Stability

The impact of political stability on female labour participation rates is yet to be known in isolation. Sangha and Riegler (2020) find that alongside globalization, a politically sound environment can promote female participation in the labour force. Women's participation and political representation increase the probability of political stability. Studies argue that this can be due to more women feeling more involved in the decision-making process and therefore do not feel the need to engage in protests (Goetz, 2002; Johnson, et al., 2013; Stockemer, 2011). Other studies use micro-level data in different countries to examine the effect of political stability on growth, employment, female representation, and development. The countries are controlled by their individual policy and structural effects (Maškarinec, 2020; Ette & Akpan-Obong, 2020; Sakki & Salminen, 2015).

There are limited studies on environmental or economic attributes that influence women to pursue jobs and self-employment opportunities. Previous researchers use a single institutional variable to explain employment rates, growth, and various other fields, but few studies focused on gender inequality and female employment (Jaumotte, 2003).

Previous research focuses on gender inequality at a micro-level, but it is presumed that policy and changes at a macro-level that affect growth spills down to all members of the household equally (Çağatay & Ertürk, 2004). Research shows that household members do not reap equal rewards and gender inequality in the household is commonly ignored (Kanbur, 2002). The mass literature pays great attention to how individual factors such as education impact inequality rather than the influence of institutions and laws that create differences between the genders, such as laws that favour men over women (Bandiera & Natraj, 2013). This research differs in that it will have a macroeconomic focus, using macroeconomic variables that are predominantly used to measure safety, security, and investment opportunities. There is no previous research that includes the following institutions to determine the impact of female labour force participation rates.

The studies that do explore the effects of institutions on female employment or labour force participation experienced limitations with regards to data that are pertinent to understanding how the dynamics of business and economic climate affect men and women contrastingly were unavailable and required extensive analysis (Baradasi, et al., 2007).

OECD countries are generally considered to have higher female labour force participation rates due to fair and equal economic institutions. This study seeks to determine whether this is the case. The question arises whether the quality of institutions have an impact on female labour force participation. A comparison will be made to that of the impact of institutional quality on male labour force participation.

2. Data and Methodology

2.1. Data

This research will focus on the 38 member countries of the Organisation for Economic Cooperation and Development (OECD) from the period 2005 to 2021. The data to conduct this research comes from three references which are the World Development Indicators (The World Bank), International Property Rights Index (Property Rights Alliance) The Global Economy.com (The Global Economy.com) which sources its data from various official sources such as the World Bank, the World Economic Forum, International Monetary fund. The outcome variables are the female labour force participation rate and the male labour force participation rate. The labour force participation rates (LFPR) are expressed as the percentage of the population that is 15 years and older who still supply labour in the economy. The explanatory variables of interest are the institutional variables which are the intellectual property rights index, physical property rights index, rule of law index, government effectiveness index, political stability index, terms of trade and trade freedom index. The control variables that have been selected are economic growth rate, Human Development index and logarithmic population size and Gross Domestic Product (GDP) in dollars.

The property rights index comprises of sub-indices such as intellectual property rights, physical property rights and political and legal environment. The legal and political environment sub-index uses indicators such as rule of law, political stability, control of corruption, and judicial independence. This research aims to observe the effects of rule of law and political stability independently, it is for this reason the property rights index will only account for the intellectual

property rights index (IPRI) and physical property rights index (PPRI) (Property Rights Alliance). The Governance Indicators pose a similar issue since rule of law and political stability indicators are used in the construction of the Governance Indicators. This paper will therefore use the government effectiveness index as a proxy for governance.

The physical property rights index comprises of the perception of the protection of physical property, access to financing and the registration process. The intellectual property rights index is made up of the perception of the protection of intellectual property, patent protection, copyright, and trademark protection (Property Rights Alliance). The physical property rights index and intellectual property rights index are scaled from 1 to 10 where 1 indicates poor property rights and 10 indicates liberal property rights. The government effectiveness index represents the condition of public and civil services and the reliability of government to construct and execute policy. The rule of law index represents the range that the citizens can depend on and obey the regulation of society and the standard of enforcement. The political stability index measures the likelihood that the government can be overthrown or decentralised unlawfully or violently (The Global Economy.com). The rule of law index, political stability index and government effectiveness index scale from 2.5 to 7.5. On this scale, 2.5 reflects weak perceptions and 7.5 reflects strong perceptions of the quality of the index. Terms of trade measure competition and is calculated "as the percentage ratio of the export unit value indices to the import value indices, measured relative to the base year 2000" (The Global Economy.com, 2022). Trade freedom index is constructed using two indicators, non-tariff barriers and the trade-weighted average tariff rate (The World Bank) and is scaled from 0 to 100 where 0 reflects no trade freedom and 100 reflects complete freedom.

The Human Development index is a consolidated measure the average aspects of a healthy life, being knowledgeable and standard of living. The health component consists of life expectancy at birth. The knowledge component is determined by the average of years of schooling for an adult that is 25 years and older and the expected years of schooling for children. The standard of living element if assessed by Gross National Income (GNI) per person and uses the logarithmic income to indicate the decreasing importance of income with growing GNI (United Nations Development Programme). This will be a good control variable because education and health will vary across OECD countries. This index is scaled from 0 to 1, where if the index is closer to 1, then it means that the country has high human development.

Table 1 shows the descriptive statistics of female and male LFPR along with the economic

institution variables. Among the OECD countries, the average female LFPR is 53.19% while male LFPR is averaged at 68.56%. Table 1 also shows that all the economic institutional variables average measures are greater than average (50%) on each respective scale. This shows that the OECD countries in this study are ones that perform better than other countries.

Table 1: Descriptive Statistics

Variable	Observation	Mean	Standard Deviation	Min	Max
Female Labour Force Participation Rate	646	53.19	7.54	23.18	73.18
Male Labour Force Participation Rate	646	68.56	5.29	57.59	82.33
Physical Property Rights Index	646	6.87	1.29	-5.928	10.002
Intellectual Property Rights Index	646	7.02	1.25	3.432	9.1
Government Effectiveness Index	646	6.2	0.59	4.69	7.35
Rule of Law	646	6.19	0.67	4.2	7.12
Political Stability Index	646	5.62	0.7	2.94	6.64
Terms of Trade	646	102.43	25.7	50.19	244.01
Trade Freedom	646	84.74	4.23	57	92
Log population	646	2.55	1.51	-1.2	5.81
Log Gross Domestic Product(GDP)	646	13.02	1.51	9.31	16.95
Economic growth rate	646	2.15	3.69	-14.84	25.18
Human Development Index	646	0.88	0.05	0.696	0.962

Data Sorurce: *(World Bank, 2022) , (The Global Economy.com) and (Property Rights Alliance).*

Table 2: Correlation Matrix

	Female LFPR	Male LFPR	Physical Property Rights Index	Intellectual Property Rights Index	Government Effectiveness Index	Rule of Law	Political Stability Index	Terms of Trade	Trade Freedom	Log population	Log Gross Domestic Product(GDP)	Economic growth rate	Human Development Index
Female LFPR	1												
Male LFPR	0,32***	1											
Physical Property Rights Index	0,53***	0,18***	1										
Intellectual Property Rights Index	0,49***	-0,12***	0,52***	1									
Government Effectiveness Index	0,68***	-0,04*	0,56***	0,81***	1								
Rule of Law	0,69***	-0,08**	0,55***	0,78***	0,96***	1							
Political Stability Index	0,48***	-0,16***	0,33***	0,46***	0,65***	0,73***	1						
Terms of Trade	0,08**	0,23***	0,11***	-0,09**	-0,05	-0,02	-0,09**	1					
Trade Freedom	0,29***	-0,31***	0,24***	0,30***	0,36***	0,41***	0,42***	0,06	1				
Log population	-0,38***	0,002	-0,03	0,14***	-0,21***	-0,27***	-0,45***	0,04	-0,29***	1			
Log Gross Domestic Product(GDP)	-0,23***	-0,06	0,1**	0,37***	0,01*	-0,05	-0,29***	-0,02	-0,16***	0,95***	1		
Economic growth rate	-0,03	0,17***	-0,11***	-0,2***	-0,08***	-0,09**	-0,07*	0,09**	-0,16***	-0,07*	-0,1**	1	
Human Development Index	0,62***	-0,23***	0,49***	0,78***	0,83***	0,84***	0,60***	-0,13***	0,45***	-0,17***	0,1**	-0,13***	1

Data Sorurce: *(World Bank, 2022) , (The Global Economy.com) and (Property Rights Alliance).*
Notes: *Level of significance of coefficients - *** p<0.01, ** p<0.05 and * p<0.1.*

Table 2 reports correlations between the 7 institutional economic variables. The importance of running a correlation matrix is to see if the independent variable is correlated with each other. If there is multicollinearity in the model it can be difficult to interpret the change of one independent variable on the dependent variable independently because other predictor variables will change as well. The strongest correlation that can be observed is between the rule of law index and the government effectiveness index. This can be expected because, from the literature, rule of law and government's ability to enforce laws compels a causal relationship (Barajas-Sandova, et al., 2022). Another strong correlation is between the government effectiveness index and the intellectual property rights index. Omitting the government effectiveness index from the regression does not make a significant difference to the coefficients, standard errors, instruments, and level of significance, and therefore it is included in the analysis.

Due to the initial statistics the hypothesis proposed is that OECD countries have higher female participation rates due to fair and equal economic institutions. As such, the economic institutions in this research will affect female labour force participation rates positively.

2.2. Methodology

Recent studies make use of the Generalised Methods of Moments (GMM) estimation approach when using panel data. The data in this study is characterised by a greater number of cross-sections(countries) than time periods. This study will conduct a -cross-sectional dependence test using the Pesaran (2015) CD test. Majority of the countries in this study are in Europe and may experience capital and labour mobility. As a result, there can be transferable labour force participation and economic and political institutions may merge. In addition to testing for cross-sectional dependence, checks for heterogenous slopes and structural break will be tested. If there is strong sectional dependence, heterogeneity, and structural breaks, then we need an estimator that will account for this. The Common Corelated Effects Mean Group (CCE-MG) estimator by Ditzen (2018) will be used for this reason. This method estimates dynamic common correlated effects. It allows for endogenous regressors and heterogeneous and homogeneous coefficients. This estimator also supports balanced and unbalanced panels and computes cross-sectional dependence test (CD–test).

The empirical specification is as follows:

$$LFPR_{it} = \beta_0 + +\beta_1 PPRI_{it} + \beta_2 IPRI_{it} + \beta_3 GEI_{it} + \beta_4 RLI_{it} + \beta_5 PSI_{it} + \beta_6 TT_{it} + \beta_7 TF_{it} + \beta_8 + \beta_9 \gamma_i + \epsilon_{it}$$

, where $PPRI$ represents the physical property rights index and $IPRI$ represents the intellectual property rights index, GEI is the government effectiveness index, RLI is the rule of law index, PSI represents political stability index, TT represent the terms of trade and TF represents trade freedom. X_{it} are the control variables such as logarithmic population and Gross Domestic Product (GDP), Human Development Index (HDI) and economic growth for country i in time t, γ_i is a vector with the cross-section averages of the dependent and independent variables and ε is the error term.

3. Results and Discussion

Table 3 shows the results for the Common Correlated Effects Mean Group (CCE-MG) estimator for both instances where female and male labour force participation rates are the independent variable. The initial diagnostic tests for cross-sectional dependence showed that there is strong cross-sectional dependence for both models with female and male LFPR.

CD Statistic with a p-value of 0.4882 and 0.5314 respectively for both female LFPR and Male LFPR fails to reject the null hypothesis of weak cross-sectional dependence. A second test for slope heterogeneity by Blomquist and Westerlund (2013)) was implemented. The null hypothesis for the test is that slope coefficients are homogenous. A second test for structural breaks was conducted and found that the model where female LFPR is the independent variable, there were 3 structural breaks at years 2009, 2014 and 2019. In the model where male LFPR is the independent variable, there were 4 structural breaks at years 2013, 2015, 2017 and 2019. Consequently, dummy variables for the listed years were created and included in the respective models.

Starting with the model where female LFPR is the independent variable. There are two significant economic institution variables, namely Physical Property Rights index and Political Stability index. The physical property rights index is positively related to female LFPR and is significant at the 5% level of significance therefore when the physical property rights index increases by 1, the Female LFPR increases by 1.89%. The political stability index is also positively related to female LFPR and is significant at the 10% level of significance. An increase in the political stability index by 1 implies that the female LFPR increases by 2.2%.

Table 3: Common Corelated Effects Mean Group (CCE-MG) estimator for Female and Male LFPR

Variables	Female LFPR	Male LFPR
Physical Property Rights Index	1.892** (0.873)	1.869*** (0.715)
Intellectual Property Rights Index	0.174 (1.094)	1.362* (0.748)
Government Effectiveness Index	-0.672 (1.335)	1.506** (0.638)
Rule of Law	0.392 (1.492)	0.0578 (0.237)
Political Stability Index	2.201* (1.304)	0.873* (0.510)
Terms of Trade	-0.00208 (0.0635)	0.0684 (0.0505)
Trade Freedom	0.100 (0.0677)	0.130 (0.0898)
Log population	0.207 (0.392)	0 (0)
Log Gross Domestic Product(GDP)	1.223*** (0.428)	0.324 (0.241)
Economic growth rate	-0.0212 (0.229)	-0.000115 (0.0950)
Human Development Index	0	0
Year2009	-0.564 (0.564)	-
Year2013	-	0.0479 (0.0335)
Year2014	-0.0910 (0.0910)	-
Year2015	-	-0.0415 (0.0768)
Year2017	-	0
Year2019	0	0
Slope Coefficient	1.391 (0.164)	11.303 (0.000)
CD Statistic	-0.69	0.63
Observations	532	532
Number of groups	38	38

Data Sorurce: *(World Bank, 2022) , (The Global Economy.com) and (Property Rights Alliance).*
Notes: *Robust standard errors in parentheses. Level of significance of coefficients - *** p<0.01, ** p<0.05 and * p<0.1*

The model where male LFPR is the independent variable. There are 4 significant economic institutions variables which are namely Physical Property Rights index, Intellectual Property Rights index, Government Effectiveness index and Political Stability index. Physical property rights index is highly significant at the 1% level of significance and is positively related to male LFPR. The interpretation is that when property rights index increases by 1, then male LFPR increases 1.87%. Comparing this to the effect of property index on female LFPR, the effect is relatively the same. Property rights index in this case affect both men and women equally.

Intellectual property rights index and government effective index are not significant for female labour force participation rate but is significant for male LFPR. The level of significance is 10% and 5% level of significance for intellectual property rights index and government effective index, respectively, for male LFPR. Both variables are positively related to male LFPR and an increase in each of the economic institutional variables will result in around 1% increase in male labour force participation rate. The political stability index is, however, 10% significant and it's positive related to male and female LFPR. The political stability index affects female labour force participation rates more than male LFPR, since when political stability index increases by one, the male participation rate increases by 0.8%.

This shows that are 2 more economic institutions in this model (intellectual property rights index and government effective index) that affect male LFPR positively and only 2 for female LFPR.

The improvement of namely physical property rights index and political stability index increases both male and female labour force participation rates. These variables are consistent and carries the expected relationship that influences labour force participation rates. The physical property rights index effects both male and female LFPR equally across OECD countries. This could stem from laws and policies that cater for gender differences and makes it accessible for men and women to have protected property rights. Majority of OECD countries are from then European region and one can expect similar property rights laws, although this research does control for pollination.

Political stability index however has a more positive effect for female labour force unemployment. The literature shows that political representation of women is likely to increase political stability (Goetz, (2002); Johnson, et al., (2013); Stockemer, (2011)). In OECD

countries, the average of parliamentary seats held by women has slowly increased over the years, with the latest statistic showing under 30% of parliamentary seats are held by women in 2016 (OECD, 2016).

This is insightful to observe since from this it implies that economic institutions do affect both female and male labour participation rates at different … and as a result economic institutions do not equally affect women and men the same. These findings are important for future studies in order to correct gender inequality effectively. Some policies do not affect the population the same way because men and women have difference preferences (Haddad, et al., 1997). These preferences can also affect the determinants or circumstances in that men and women enter the labour market. It is important to implement policies through a gendered lens (Çağatay & Ertürk, 2004).

Conclusion

This research investigated the influence of economic institutions on female participation in labour markets by analysing if there is a causal relationship between economic institutions in OECD countries and female participation. This research applied the Common Correlated Effects Mean Group (CCE-MG) estimator to account for cross sectional dependence between the variables. The outcome for this model showed that physical property rights index and political stability index is both significant and positively related to female and male labour force participation rates. However, there are two other economic institutional variables that affect the male labour force participation rate model, namely the intellectual property rights index and the government effectiveness index. The findings indicate the different contributing factors to the LFPR of women and men. Female LFPR is driven by physical property rights index and political stability index and male LFPR is driven by physical property rights index, political stability index, intellectual property rights index and the government effectiveness index.

The hypothesis proposed in this paper concurs with the outcomes of the study. The results also confirm that if economic institutions are improved and caters for gender in policies, law and regulation, then female labour force participation would improve. If there are policies that can uplift the property rights index in a country, then it could promote female labour force participation further, but more research should be done to see if there is a limit to when

economic institutions would affect female LFPR or if it will affect it negatively. Policies in this case should be made with a gendered lens in all aspects. Even though property rights benefits men and women, it is important that it is implemented at a micro level and that public and private sectors also implement their rules and regulations through a gendered lens.

Looking at OECD countries is a good start to bridge the gender gap and make it more socially acceptable for the rest of the world. Emerging countries with potential can grow and expand by utilising both genders in the work force.

Future studies should analyse the interaction between these variables with government effectiveness or another proxy for governance. Literature shows that if institutional variables are paired with "good" governance, then the effect on female labour force participation rates could improve (Barkat, et al., (2022); Ofori, et al., (2021)). Policy recommendations given the results of this paper would be for men and women to have equal rights in terms of property. Increasing the level of property rights increase will benefit both women and men and will give the population confidence in knowing that their physical property rights are protected. This could increase women's motivation to enter the labour market. More research should be done to investigate how rule of law, political stability and trade freedom interact with governance before policy recommendations are specified.

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