A Research on Female Labour Force Participation in Malaysia

Low Choon Wei[1], Loh Yunn Cinn[2]
Corresponding author: cwlow@utar.edu.my
[1,2] Faculty of Accountancy and Management, Universiti Tunku Abdul Rahman, Kajang, Malaysia

Abstract
Human resource is one of the key determinants for development in terms of social, economic, political, and even technological. Despite the efforts Malaysia has made to narrow down gender inequality and to promote women's economic inclusion, the participation rate of women in the labour market remains low. Ordinary Least Square (OLS) regression were employed in this study for analysis purposes. Variables involved are the fertility rate, age dependency ratio, economic growth, women's education, and female labour participation rate in the context of Malaysia. The empirical study uses time-series data from 1982 to 2019. The empirical result of this paper concludes that all the selected explanatory variables have a substantial influence on female labour participation. Age dependency rate has a significant negative relationship, otherwise positive. The result of this paper has significant implications that would have the potential to address the issues faced by the female workforce.

Introduction
Gender equality has been a topic of discussion in our modern society and the fact that females are contributing more to the labour market than ever before. It remains a question of what are the factors that motivate females to take part in the labour force. This research paper is designed to investigate such matters with the support of econometrics. Stereotypes and traditional gender roles were strongly incorporated in all spheres of our society and women were expected to act in a feminine manner while men were expected to be more masculine (Powell, 2018). In this contemporary era, there are still cases where women are highly educated and qualified for decision making positions, but most positions of authority are occupied by men. The underlying obstacles that they confront are the invisible traditional biases, inflexible working options, and lack of societal support (Wyman, 2016).

Today, feminism is an ideology that has been manifested worldwide and it emphasized that women should be treated the same as men, especially work opportunities for the development of gender equality and further reduce gender stereotypes (Hoffman, 2001). Throughout recent decades, women are stepping it up in establishing leadership positions in

the political and financial world. In Malaysia, gender diversity is actively promoted by policymakers in recent years and even the regulating authorities have appointed women to participate in top echelons of the civil service. For example, the previous appointment of Datuk Seri Dr. Wan Azizah Wan Ismail, as Deputy Prime Minister was a breakthrough in economic status for all women in the country. Besides, it can also be observed that Malaysia stands at an average score of 60-70 percent in the female-to-male ratio of labour force participation rates. To reach the targets set out in the Sustainable Development Goals (SDGs) and Eleventh Malaysia Plan (RMK11), the Malaysian government has been putting efforts into improving gender equality and reducing discrimination against females. Based on The Sun Daily (2019), the Women, Family and Community Development Ministry of Malaysia announced more training courses will be organized to empower female directors. The government also created a "30% Club" where corporate leaders come together to offer more training programs to elevate women to hold decision-making positions to hit the 30 percent target (Yuen, 2019).

Figure 1 to Figure 5 show the trend of female labour force participation rate, fertility rate, women's education, age dependency ratio and economic growth respectively from 1982 to 2019. The sharp rise of female participation in the 2010s reflects the increased opportunities in education and training. Even though Malaysia is a developing country, the FLPR can be perceived as optimistic as compared to other developing countries in the Southeast Asia region. FER is closely analyzed with education as most researchers said that there is a negative relationship between both elements. Females with higher educational attainment are less likely to get married early and more likely to join the workforce. In Malaysia, females receive equal opportunities as males in terms of education thus the difference in literacy rate between both genders is only 0.7 percentage points (Department of Statistics Malaysia, 2019).

With age dependency on a decline, the possibility of women being encouraged to join the labour force is higher as there is lesser dependence in the household. However, the issue of the aging population has been on a rise and this would ultimately exert pressure on Malaysia's productivity and overall growth. The Ministry of Women, Family, and Community Development (LPPKN) (n.d.) stated that Malaysia is likely to be an aged country by the year 2035 with 15% of its total population aged 60 years and above. Hence, increasing female labour participation is one of the measures to alleviate the risk of becoming an aging population. In Malaysia's current economic condition, human capital is essential to work towards the development plans. DOSM (2017) reported that women-owned establishments have created RM85 billion worth of value of gross output which contributed 3.4 percent to Malaysia's overall economic sectors as of 2015.

Based on UNDP, females earn only 77 percent for every dollar that men get for the same work. Despite 39 percent of world employment were occupied by females but merely 27 percent of managerial positions in the world were women in 2018, indicating a minor increase from 26 percent in 2015 (United Nations, n.d.). In Malaysia, a lack of laws is implemented to protect women against workplace discrimination or sexual harassment. Although there is protection against domestic violence the only legal recourse in accordance with sexual harassment is inherited within the Employment Act 1955, which is severely limited in scope (Cheh, 2018).
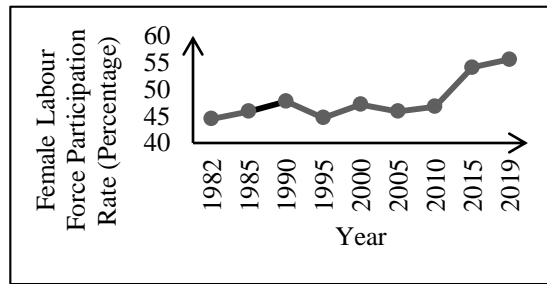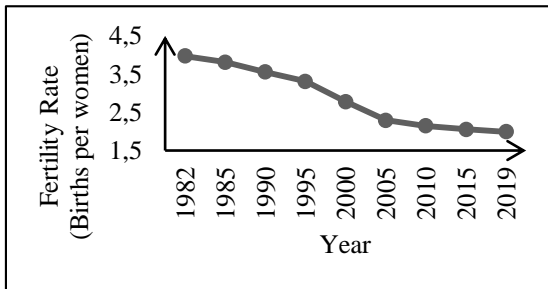
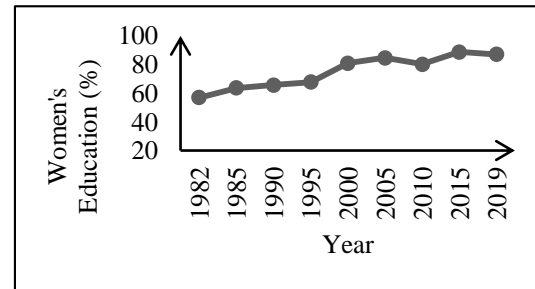**Figure 1. Female Labour Force Participation Rate**

Figure 2. Fertility Rate
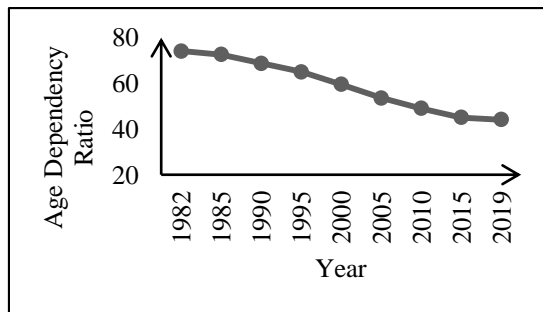

Figure 3. Women's Education
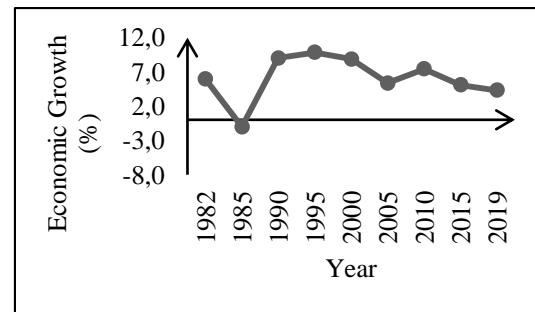

Figure 4. Age Dependency Ratio

Figure 5. Economic Growth

In development literature, a virtuous paradigm has been suggested wherein resources dedicated to enhancing the educational attainment of females provide benefits as it has the potential to surge labour market participation and offer better job opportunities and hence increases their income level. The social status of women needs to be enhanced as well. There are also positive externalities such as slowing down population growth, improving overall health and life expectancy of children. Some development economists argued that women can yield higher economic returns than men but the economic impact of the female labour market in developing countries has received little attention (Cameron, Dowling & Worswick, 2001). On the contrary, the determinants of female labour participation have been broadly investigated in developed countries. The process by which females enter the labour market is crucial to improve insight into how improvements in female income levels and social status in developing countries can be facilitated.

The key intention of this research is to investigate the possible factors that are influencing women's participation in the Malaysian labour force. The findings provide a greater understanding of the FLPR in Malaysia, considering that female labour is one of the essential elements that support the economy today. Besides, most studies researched health factors and economic growth affecting female labour respectively so it can be helpful to further investigate the direct relationship of the factors. The contribution of this study is to the Malaysian society

in terms of understanding the current demographic change in workforce pattern and the potential of female human capital in contributing to the nation's economic development. In essence, the effort to understand and increase women's participation in the workforce begins much earlier by first understanding women's equality in accessing high-quality health and education providers. Therefore, a comprehensive study of female labour participation in Malaysia will open a lot of opportunities to understand the different socioeconomic aspects and quality of living of women in Malaysia.

Literature Review

Human capital can be expressed as productive investments possessed by individuals which include skills, capabilities, knowledge, behaviors, and personality attributes. The productivity of an individual is often determined by one's expenditures on schooling, on-the-job training, and healthcare as these factors lead to potential labour participation. It is proven that the labour force acts as a supporting role in shaping economic development and GDP growth whereas FLPR stimulates productivity and equality thus female participation is one of the crucial factors in improving a country's socioeconomic status (Fatima & Sultana, 2009; Mujahid, 2014). In general, there are two indications for the high rate of female participation; equality in terms of social status and women empowerment which maximize the human potential to have a higher capacity for economic growth and poverty eradication. Higher FLPR could lessen the financial burden associated with providing welfare and social support to mothers and families. Therefore, a lower FLPR implies that there is an unexploited opportunity to boost a nation's economic welfare and growth. Based on Kapsos, Bourmpoula, and Silberman (2014), FLPR serves as the main indicator of female social status and benchmark of female empowerment in society.

Cazzola, Pasquini, and Angeli (2016) stated that the employment rate may have both direct and indirect effects from FER. This may be since when the employment rate is declining, most of the couples will postpone their idea of getting a child to secure their financial well-being and prepare themselves to cooperate with the reduced family income. Sobotka, Skirbekk, and Philipov (2010) have mentioned that the FER is often cyclical and being affected by the cycle of businesses. It stated that GDP has a clear effect on FER, there is a short-term decrease in FER during an economic recession or financial crisis. This is often related to career instability and sentiments during financial crises. FLPR is affected by living area as well, as married women living in urban areas has lower FER compared to non-working women living in rural areas. Besides, the occupational flexibility and working hours also affect the FER of women in urban areas (Tsegaye, 2011). The fertility rate tends to be higher in rural areas where females are not actively participating in a higher level of education (Van den Broeck & Maertens, 2015). In developed countries, most females are highly literate, so the opportunity cost of quitting the workforce for childcare is high; FLPR reacts conversely with FER (Bloom et al., 2009).

Dependency ratio also plays a role in affecting FLPR as it reflects the changes in population age structure (Kelley, 1973; Vicens-Feliberty & Reyes, 2015). The young dependents and elderly dependents give contrasting results as the children have an adverse impact while elderlies have a positive impact on female participation in the labour force. This is explained that children often require more care and time while elderlies can help in the household and provide support which encourages female economic activity. Brusentsev (2006) explained that the education system has been improved considerably throughout the last few decades which resulted in a rise in the labour participation of women. The presence of young kids in the household acts as one of the factors that motivate females to enter the labour force for

additional earnings. The study concluded that the mixed results show that the number of youngsters is fairly a determinant of the rising labour force participation rates. The diverse age structures, demographic transitions, and preconceived female roles have changed the focus of study to the pressures exerted on public services, infrastructure, and other supply-side variables. All of which add to the prominence of defining the relationships between FLPR and dependency ratios. Individuals who are 50 to 64 years old have a positive effect on GDP growth while older individuals have a negative effect. As for the younger population, it somewhat has an ambiguous effect. The study also suggested that age structure could be accounted for in a human capital-augmented Solow model. The population dependency ratio is also researched with aggregate savings (Li, Zhang & Zhang, 2007).

There are most studies like Shastri (2015), Hilgeman and Butts (2009), and Zhang (2017) which demonstrated that GDP per capita has a positive relationship with female employment but FER has a negative relationship with female employment. Another study by Njimanted and Mukete (2006), adopted a GMM Technique and Vector Correlation Model to observe that the elements of the female labour force in Cameroon include dependency ratio, fertility rate, male labour force, and personal income level. Results revealed that its impact on economic growth varies from male rates. Boserup (2013) claimed that most females are employed for nonmarket activities in developing countries. The reasons why women are participating more in the labour force is due to the rural-urban migration for work purposes and working serves as a return on investment in higher education as well as the decreasing household purchasing power which encourages more women to work.

Four explanatory variables identified with the reliant variable are fertility rate, age dependency ratio, economic growth, and women's education.

Methodology

As the variables involved in this research are quantifiable, the statistics of the variables are retrieved from credible sources including the World Bank Open Database and Department of Statistics Malaysia (DOSM), and Macrotrends. These sources are widely known for producing reliable statistical data that researchers can easily access. With the available secondary data, it is manageable to research this explanatory study through a quantitative approach. The sample scope of this study includes 38 observations in total from 1982 to 2019 yearly for the data estimation period.

Ordinary Least Square (OLS) is used to estimate the multivariate regression model. The general multivariate model with K explanatory variables is shown in equation [1]. In this case, there are four independent variables with one dependent variable. The regression of the model is then estimated with the use of OLS, as shown in equation [2].

$$Y_t = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_K X_{Ki} + e_i \ (i = 1, 2, \ldots, N) \quad\quad [1]$$
$$FLPR_t = \beta_0 + \beta_1 FER_{t-1} + \beta_2 ADR_{t-1} + \beta_3 GDP_{t-1} + \beta_4 EDU_{t-1} + e_i \quad\quad [2]$$

This research uses Ordinary Least Square (OLS) and multiple linear regression models to measure the time series data. It shows the relationship between the dependent variable (FLPR) and the explanatory variables (FER, ADR, GDP, and EDU). The constant, C, is a proper apparatus. The model states that female labour force participation (FLPR) consists of fertility rate (FER), age dependency ratio (ADR), economic growth (GDP), and women's education (EDU) represented by:

$$FLPR_t = f(FER, ADR, GDP, EDU) \qquad [3]$$

The econometric model is shown in equation [4] below:
$$FLPR_t = \beta_0 + \beta_1 FER_{t-1} + \beta_2 ADR_{t-1} + \beta_3 GDP_{t-1} + \beta_4 EDU_{t-1} + e_i \qquad [4]$$

Whereby,
FLPR = Female labour force participation rate (Percentage)
FER = Fertility rate, total (Births per woman)
ADR = Age dependency ratio (Percentage)
GDP = Economic growth (Percentage)
EDU = Women's education (Percentage)
t = Time trend, annual data range from 1982 to 2019
e = error term

Results and Discussion

Table 1. Descriptive Analysis of the Variables

	FLPR	FER	ADR	GDP	EDU
Mean	47.958	2.837	58.731	5.738	76.274
Median	46.800	2.721	59.014	5.878	80.267
Maximum	55.600	3.974	74.014	10.003	89.252
Minimum	44.400	1.993	44.126	-7.359	57.030
Std. Dev.	3.256	0.702	10.182	3.581	9.595
Skewness	1.3079	0.211	-0.0230	-1.574	-0.259
Jarque-Bera	11.032	4.168	3.236	33.230	3.3492

Table 1 displays the descriptive statistics of the raw data. The average value of FLPR is 47.96 percent, implying that only 47.96 percent of Malaysian females are in the labour force while the range of FLPR is between 44.40 percent and 55.60 percent. ADR has the highest standard deviation with 10.18, which means the values of ADR are widely spread around the true value. FER has the lowest standard deviation with 0.70, indicating that the values of FER are very close to the true mean. FLPR and FER are positively skewed which indicates that the right tail of the distribution is longer than the left tail whereas ADR, GDP, and EDU are negatively skewed which indicates the distribution is the size of the left-handed tail is larger than the right-handed tail.

Table 2. Ordinary Least Square Regression Results of the Fertility Rate, Age-Dependency Ratio, and Other Variables on Female Labour Force Participation Rate

Variable	Coefficient	Std. Error	t-Statistic
FER	19.836	2.459	8.067***
ADR	-1.359	0.144	-9.436***
GDP	0.127	0.069	1.828**
EDU	0.253	0.073	3.451***
C	51.462	8.206	6.271***

R-squared: 0.828
Durbin-Watson Stat: 0.866
Prob (F-statistics): 0.000

Note: Dependent variable = Female labour force participation rate, N = 38, *** indicates significant at 1 percent level, ** indicates significant at 5 percent level.

Based on the OLS model's equation, about 82.8 percent of the variation in the FLPR equation was able to be explained by the independent variables. FER, ADR, and EDU are the main explanatory variables that are significant at the alpha level 0.01 while GDP is at the level 0.1 respectively. However, the most important variables are FER, ADR, and EDU in the FLPR equation. FER, ADR, GDP, and EDU can impact the FLPR together as shown by the F-statistic value at zero.

In most studies, FLPR is expected to react negatively with FER as the more children a woman has, she will be less likely to have time to contribute to the workforce (Bloom et al., 2009). The data result contradicts the expected relationship. Nevertheless, some studies prove that there is a possibility of a positive association between FER and FLPR. The presence of positive association is most probably due to the existence of neglected country-specific factors and country-heterogeneity in the magnitude of the negative relationship. Yet, in Oshio's (2019) study, the fixed-effects regression model is used to estimate the recent data of FER and FLPR which is up to 2017. Results showed that both FER and FLPR are positively related even after controlling for country-specific heterogeneity. This study expects that ADR to have adverse effects as it is assumed that both children and elderlies require care which in most cases, women have the responsibility to stay at home and look after the household. According to World Economic Forum's Global Gender Gap Report in 2017, Malaysia ranked 104th which is almost twice as much as a neighboring country, Singapore who ranked 54th out of the 144 countries. As an assumption, the concept of gender equality is not fully practiced by Malaysian households, the traditional thinking of women staying at home to take care of their family members still applies.

On the other hand, previous studies showed that a U-shaped relationship exists between GDP and FLPR (Cavalcanti & Tavares, 2011; Tam, 2011; Kaur & Tao, 2014). They argued that the U-shaped is due to the changes in stages of economic development. Malaysian economy started to shift its focus from the agriculture sector to the industrial sector than to the services sector. Based on the latest employment statistics from DOSM (2020), around 51.6 percent of jobs were concentrated in the services sector followed by the manufacturing sector with 26.4 percent and the construction sector with 15.4 percent in the fourth quarter of 2019. 92.7 percent of 187,265 women-owned establishments were recorded in the services sector in 2015. Results also showed that there is a positive effect of EDU on FLPR. This is consistent with the human capital theory by Becker (1964) which specified that education is an essential aspect that promotes females to take part in the labour market. There are significant studies that found a positive relationship between female education and FLPR (Sackey, 2005; Fatima & Sultana, 2009; Yakubo, 2010; Khadim & Akram, 2013, Tsani et al., 2013). Education serves as a foundation for individuals to gain knowledge and the capabilities to contribute to productive activities. The positive association depicts that improving the quality of education tends to sustain the increasing rate of female labour participation (Shittu & Abdullah, 2018). Additionally, a higher level of education attainment accelerates a country's human capital development. More females will be qualified for semi-skilled or skilled jobs thus more job opportunities will be offered to females.

Overall, the results indicate that educational attainment, age dependency ratio, gross domestic production, and fertility rate are important to influence the female labour force participation rate in Malaysia.

Conclusion

Female participation barriers in the working station should be reduced to increase the female labour force participation. Also, Policymakers should consider initiatives that would modernize social norms and the common-law principles. Traditional mindset (women staying at home to take care of children) should be discouraged. Instead, equality of men and women in terms of household responsibility should be emphasized. Equality in the workplace should not be ignored as well because unconscious bias still exists in terms of women participating in leadership positions. Government can also provide incentives to the companies that are willing to offer more benefits to pregnant women.

References

Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis with special reference to education.* New York: University of Chicago Press.

Bloom, D., Canning, D., Fink, G., & Finlay, J. (2009). Fertility, female labour force participation, and the demographic dividend. *Journal Of Economic Growth*, *14*(2), 79-101. DOI: https://doi.org/10.1007/s10887-009-9039-9

Boserup, E., Tan, S., & Toulmin, C. (2013). Woman's role in economic development. *Woman's Role in Economic Development*, 1-272. DOI: https://doi.org/10.4324/9781315065892

Brusentsev, V. (2006). Evolution of female labour force participation in the United States: 1967 to 2003. *International Advances in Economic Research*, *12*(3), 358-373. DOI: https://doi.org/10.1007/s11294-006-9023-5

Cameron, L. A., Dowling, J. M., & Worswick, C. (2001). Education and labour market participation of women in Asia: evidence from five countries. *Economic Development and Cultural Change*, *49*(3), 459-477. DOI: https://doi.org/10.1086/452511

Cavalcanti, T. V., & Tavares, J. (2011). Women prefer larger governments: Growth, structural transformation, and government size. *Economic Inquiry*, *49*(1), 155-171. DOI: https://doi.org/10.1111/j.1465-7295.2010.00315.x

Cazzola, A., Pasquini, L., & Angeli, A. (2016). The relationship between unemployment and fertility in Italy. *Demographic Research, 34*, 1-38. DOI: https://dx.doi.org/10.4054/DemRes.2016.34.1

Department of Statistics Malaysia. (2017). *The participation of women in business is growing in 2015 with an annual growth rate of 8.0 percent.* Malaysia: Putrajaya.

Department of Statistics Malaysia. (2019). *Principal statistics of labour force, Malaysia, Third Quarter (Q3) 2019.* Malaysia: Putrajaya.

Department of Statistics Malaysia. (2020). *Employment statistics fourth quarter 2019.* Malaysia: Putrajaya.

Fatima, A., & Sultana, H. (2009). Tracing out the U-shape relationship between female labour force participation rate and economic development for Pakistan. *International Journal of Social Economics*, *36*(1/2), 182-198. DOI: https://doi.org/10.1108/03068290910921253

Hoffman, J. (2001). Defining feminism. *Politics*, *21*(3), 193-199. DOI: https://doi.org/10.1111/1467-9256.00151

Kapsos, S., Bourmpoula, E., & Silberman, A. (2014). *Why is female labour force participation declining so sharply in India?* ILO Research Paper No.10, International Labour Organization.

Kelley, A. C. (1973). Population growth, the dependency rate, and the pace of economic development. *Population Studies*, *27*(3), 405-414. DOI: https://doi.org/10.1080/00324728.1973.10405489

Khadim, Z. & Akram, W. (2013). Female labour force participation in the formal sector: An empirical analysis from PSLM (2007-2008). *Middle East Journal of Scientific Research*, *14*(11), 1480- 1488. DOI: http://10.5829/idosi.mejsr.2013.14.11.2337

Li, H., Zhang, J., & Zhang, J. (2007). Effects of longevity and dependency rates on saving and growth: Evidence from a panel of cross countries. *Journal Of Development Economics*, *84*(1), 138-154. DOI: https://doi.org/10.1016/j.jdeveco.2006.10.002

Njimanted, G. F., & Mukete, E. M. (2016). The implication of female labour participation on economic growth in Cameroon. *International Journal of Development and Sustainability*, *4*(1), 34-47.

Oshio, T. (2019). Is a positive association between female employment and fertility still spurious in developed countries? *Demographic Research*, *41*, 1277-1288. DOI: https://www.jstor.org/stable/26850685

Powell, G. N. (2018). *Women and men in management* (5th ed.). Thousand Oaks: SAGE Publications, Inc.

Sackey, H. A. (2005). *Female labour force participation in Ghana: The effects of education*. Retrieved January 5, 2021, from http://publication.aercafricalibrary.org/handle/123456789/1214

Shastri, V. (2015). *The changing relationship between fertility and female employment*. Retrieved January 3, 2021, from https://scholarship.claremont.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=2231&context=cmc_theses

Shittu, W. O., & Abdullah, N. (2018). Fertility, education, and female labour participation: Dynamic panel analysis of ASEAN-7 countries. *International Journal of Social Economics*, *46*(1), 66-82. DOI: https://doi.org/10.1108/IJSE-11-2017-0559

Sobotka, T., Skirbekk, V., & Philipov, D. (2011). Economic recession and fertility in the developed world. *Population And Development Review, 37*(2), 267-306. DOI: https://doi.org/10.1111/j.1728-4457.2011.00411.x

Tsani, S., Paroussos, L., Fragiadakis, C., Charalambidis, I., & Capros, P. (2013). Female labour force participation and economic growth in the South Mediterranean countries. *Economics Letters*, *120*(2), 323-328. DOI: https://doi.org/10.1016/j.econlet.2013.04.043

Tsegaye, T. (2011). *Cross-sectional study of women employment and fertility in Ethiopia*. Retrieved January 13, 2021, from http://lup.lub.lu.se/luur/download?func=downloadFile&recordOId=1981265&fileOId=1981267

United Nations. (n.d.). *United Nations: Gender equality and women's empowerment*. Retrieved January 10, 2021, from https://www.un.org/sustainabledevelopment/gender-equality/

Wyman, O. (2016). *Women in financial services 2016*. Retrieved January 18, 2021, from https://www.oliverwyman.com/our-expertise/insights/2016/jun/women-in-financial-services-2016.html

Yakubo, A.Y. (2010). Factors influencing female labour force participation in South Africa in 2008. *The African Statistics Journal, 11*, 85-104.

Yuen, M. K. (2019). *Women powering on.* Retrieved December 15, 2020, from https://www.thestar.com.my/news/nation/2019/03/10/women-powering-on-the-gender-gap-is-still-here-with-women-being-outnumbered-in-top-decisionmaking-po