Measuring the effect of empowering women on Alleviating poverty in Egypt

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Abstract

This study measures the effect of empowering women on alleviating poverty in Egypt through a statistical structure model with liner regression equations to test this effect using panel data analysis. The data were collected from the World Bank and human development reports through the period from 2000 to 2019 across 33 middle-income class countries. This study focuses mainly on 3 dimensions of women`s empowerment: economic, social, and political empowerment. The findings illustrate that there is a relationship between women`s empowerment (economically, socially, and politically), and poverty in Egypt. Women`s empowerment economically, socially, and politically has a positive impact on alleviating poverty in Egypt. Additionally, a rise in the poverty rate weakens women `s empowerment in Egypt.

Keywords: women`s empowerment, poverty, Economic empowerment, Social empowerment, Political empowerment.

Introduction:

Achieving a comprehensive sustainable development is a target for most of countries around the world, which reflects the economic strength of each country and its planning ability. Since, the sustainable development has no negative impact on the future generations & their abilities to achieve a comprehensive development. In this context, United Nations had approved 17 goals to achieve sustainable comprehensive development. Ending poverty is the first one of these goals, which facilitates achieving

some other goals of sustainable development like ending hanger, having a good health status… and so on.

Egypt is one of those countries which take sustainable development into consideration. Therefore, in February 2016, Egypt had launched a national agenda that reflected the country's long-term strategic plan to achieve the principles and goals of sustainable development in all fields, and involving them in the various Egyptian institutions. Since, Egypt vision 2030 focuses on 8 main goals. The top one of these goals is to improve the quality of life of the Egyptian citizens and improve their standards of living in various aspects of life by reducing poverty in all its forms[1].

Especially, poverty is not just about the lack of income, resources, or a sustainable livelihood. It is also about hunger, malnourishment, lack of access to education and basic services, as well as social discrimination, exclusion from society, and lack of opportunities to participate in decision-making[2].

In Egypt's Vision 2030, the goal of improving the standard of living in various aspects of life, goes with the goal of ending poverty. And it is followed by another goal which is about merging of the principles of justice & social integration, and the participation of all citizens in political and social life without discrimination or exclusion. This goal is achieved through

[1] https://www.presidency.eg/ar/%D9%85%D8%B5%D8%B1/%D8%B1%D8%A4%D9%8A%D8%A9-%D9%85%D8%B5%D8%B1-2030/.Access on 1/9/2021.

[2] https://www.un.org/ar/global-issues/ending-poverty.Access on 1/9/2021.

achieving equality in rights and opportunities, providing resources in all geographical areas, promoting financial inclusion, and empowering women[1]. And this goal is consistent with gender equality, the fifth goal of the 17 sustainable development goals (SDGs), in order to end all kinds of discrimination against women and girls such as inequalities in the labor market that denied equal

access to jobs, and preventing women from holding any commanding posts. Since, the elimination of all forms of discrimination against women and girls is not only a fundamental woman's right, but it is also a critical factor in accelerating sustainable development. Since, it is pointed that empowering women and girls has a positive effect on economic growth and development in all areas. Therefore, since 2000, gender equality has the focus of work in the United Nations Development Program because of its importance and its impact on achieving sustainable development.

So, the fifth goal of the 17 SDGs cannot be achieved without ensuring equal right to access to economic resources such as land and all kinds of property rights or even without ensuring access to good quality health services & educational services. And, despite the fact that the number of women in commanding posts became greater than ever before, it will not be possible to achieve more gender equality without strengthening policies and legislation that encourage women to hold leadership positions.

So, it is concluded that the goal of ending poverty & improving living standards, and the goal of social, political, and economic integration for women, or in other words, empowering women, are the main axes of Egypt's vision 2030 in accordance with the goals of sustainable development. Therefore, it was necessary to study whether women`s empowerment is one of the means of reducing poverty or not.

The problem of the study: According to the latest available statistics the poverty rate in 2019, a large percentage of Egyptians lived below US$3.20[2] daily (around 29.9%[3] of the population raised from 26.8%[4] in 2000). And at the same time the rank of Egypt regarding the gender parity gap among 156 countries is 129th[5] according to the latest world economic forum report in 2021 (which raised from 109th in the first world economic forum report in 2006[6]), and that rank refers to the status of women in

Egypt that still need more empowerment that in turn may enable Egypt to alleviate poverty rate & achieve the sustainable development goals. And in order to explain the point of this research, the data of the 3 main dimensions of women`s empowerment in Egypt will be illustrated as follows:

1https://www.presidency.eg/ar/%D9%85%D8%B5%D8%B1/%D8%B1%D8%A4%D9%8A%D8%A9-%D9%85%D8%B5%D8%B1-2030/.Access on 1/9/2021.

2 US$3.20 is a World Bank standard for lower intermediate income economies.

3https://ourworldindata.org/grapher/share-living-with-less-than-320-int--perday? country=EST~TTO~CAN.Access on 1/9/2020.

4https://ourworldindata.org/grapher/share-living-with-less-than-320-int--perday? country=EST~TTO~CAN.Access on 1/9/2020.

5World Economic Forum. (2021). Global Gender Gap Report. World Economic Forum.Switzerland.p36.
Available online on http://www3.weforum.org/docs/WEF_GGGR_2021.pdf.

6World Economic Forum. (2006). Global Gender Gap Report. World Economic Forum.Switzerland.p9.
Available online on https://www.weforum.org/reports?year=2006#filter.

 In terms of social empowerment, the illiteracy rate of women in Egypt was 34.5% of adult females (% of females ages 15 & above). Although this rate is high, it indicates good progress, as it was on average between 50% in 2000, and it decreased to less than 35% in 2019[1]. In general, the rank of educational attainment in Egypt is the 105th globally among 156 nations[2] in 2021, which raised from the 90th among 115 nations in 2006[3].

Additionally, regarding health & survival, some progress has been accomplished, but the rank is still 102th among countries[4], which raised from the 66th among 113 nations in 2006[5].

 In terms of economic empowerment, women face some barriers to enter the labor market, and they are at much higher risk of unemployment than men. Although the unemployment rate among women had witnessed a slow decline over the past years from 22.9% in 2000 down to 21.3% in 2019. It is still a high rate, and the situation is very similar in the Arab nations, where the

rate on average is around 22%[6] over the same period. And comparing to men, it is found that the unemployment rate among women is almost 3 folds higher than its rate among men in Egypt & in the Arab countries, which was 6.7% in 2019 (up from 5.11% in 2000[7]).

Since the labor force includes a small percentage of women, forming a 73.4[8] percent gap & that ranked Egypt 150th among countries. The updated data according to the Global Gender Gap Report 2021 show almost the same statistics such as the participation rate on average for the whole region, which is 31%, and Egypt is one of 7 countries (Iraq, Algeria, Syria, Jordan, Iran, and Yemen) among the nations in this region, which represents 20% or fewer regarding women participating, and that represents the lowest rates among countries[9].

As well as women are not strongly existed among technical & professional labors (33.4 percent[10]), and among managers & seniors (about 7.3 percent[11]). On average, in the entire region, the participation of women in managerial positions is lower than 8%[12]. Since, Egypt is one of 20 countries all over the world that still have large gaps between genders in managerial positions.

Since, the low level of participation in the labor market is a basic driver for the absence of economic participation. If participation rate is already low, equivalent managerial positions or leadership are rare[13]. So, it is not strange that Egypt is in the rank of 146[14] among 156 countries regarding economic participation & opportunity.

1https://data.worldbank.org/indicator/SE.ADT.1524.LT.ZS?locations=EG&view=chart. Access on 1/9/2021.
2World Economic Forum.op.cit.p18.
3World Economic Forum.op.cit.p10.
4World Economic Forum.op.cit.p18.
5World Economic Forum.op.cit.p9.
6https://data.worldbank.org/indicator/SL.UEM.TOTL.FE.ZS?locations=EG&view=chart.
7https://data.worldbank.org/indicator/SL.UEM.TOTL.MA.ZS?locations=EG&view=chart.

[8]World Economic Forum.op.cit.p36.
[9]World Economic Forum.Ibid.p26.
[10]World Economic Forum.Ibid.p14.
[11]World Economic Forum.Ibid.p14.
[12]World Economic Forum.Ibid.p26.
[13]World Economic Forum.Ibid.p26
[14]World Economic Forum.Ibid.p179.

These disparities are also reflected in income & wage gaps: since a woman can gain income which is 22 percent of a man`s income[1]. And that rate can be improved in order to transfer women from a financial position to a higher one, which in turn may decrease the poverty rate, and that is exactly what the study will examine not only regarding the wages of women but also regarding the entire economic, social, and political empowerment.

Above all of that, women suffer from the unequal burden of unpaid family care work and discrimination in commanding posts, which remain considerable barriers to achieve gender equality. Additionally, women still experience incomplete rights in obtaining an inheritance, and getting & using lands or even non-land assets. If these indicators are improved in favor of women, women will be empowered in a way that may decrease the poverty rate as mentioned above.

 Despite all of the low rates regarding women`s economical & social empowerment, Egypt has already made progress regarding the gap of political empowerment in 2021, with a raise of 6.3% comparing to the previous year. Since around 27 percent of parliamentarians are women, and 24.2 percent of ministers are also women[2]. This indicator should be kept at its high rate in order to empower more women in Egypt.

Obstacles face women`s empowerment:

1- Social obstacles[3]:

A- Inequality in education: The percentage of educated women is less than the percentage of men, especially in rural areas.

B- Violence against women: most probably the violence is performed by family members, relatives or even the spouse, which in many cases prevents women from asking for their simple rights.

C- Early marriage: marriage at an early age is very common in many developing countries, especially in rural areas, which puts high burdens in the form of responsibilities on the woman`s shoulders towards their families that prevent her from achieving many goals in her lives.

D- Unsuitable nutrition: unsuitable nutrition in childhood impacts female in her later life, particularly women in poor households or even in the lower middle class.

E- Low level in the household: The female in many countries, including Egypt, still feels that she is in low status compared to the male in the same family.

2- Economic obstacles[4]:

A- **Limited access to the suitable training:** the suitable training enables women to have job opportunities in the labor markets, and the limited access to it reflects limited access to jobs and poor participation in the labor markets.

[1]World Economic Forum.Ibid.p26.

[2]World Economic Forum.Op.cit.p36.

[3]Afsana A. Sama1. (2017).Women Empowerment: Issues and Challenges. The International Journal of Indian
Psychology, ISSN 2348-5396 (e)| ISSN: 2349-3429 (p) | 151.

[4]https://arabstates.unwomen.org/ar/what-we-do/economic-empowerment.

B- **The care work that women do for their families:** that work of course is unpaid, and it takes a lot of efforts physically & mentally.

C- **Unstable work conditions:** unstable work conditions including low wages for women, which most probably goes without social security.

D- **Limited access to resources:** limited access to resources which includes land, funds, or other kinds of property that women need to run their businesses.

E- **Unavailability of jobs:** The labor market`s inability to create suitable jobs for women.

3- Legal & political obstacles: which can be illustrated in the form of the discrimination against women in the legal & regulatory frame work.

Hypotheses development

From all of the above theoretical frame work & literature review with the empirical studies, this study assumes the following hypothesis as follows:

- H_1: Empowering women economically has an effect on the poverty rate in Egypt.
- H_2: Social empowerment of women influences the poverty rate in Egypt.
- H_3: Political empowerment of women affects the poverty rate in Egypt.
- H_4: Empowering women economically, socially and politically has an impact on the poverty rate in Egypt.
- H_5: Poverty rate influences empowering women economically, socially and politically in Egypt.

Purpose –the purpose of the paper is to address the role of women`s empowerment, which is a purpose for itself, in alleviating poverty.

Originality/value – There are many studies on the women`s empowerment aspect. However, few attempted to find out & measure the effect of empowering women on alleviating poverty, especially in Egypt and other similar economies.

The scope of the study- The study is mainly based on Egypt, but it includes also another group of countries which are similar to Egypt in both of the poverty rate & empowering women in the model during the years of the study, which is 20 years from 2000 to 2019.

Study plan

1-The theoretical frame work & hypotheses development
2- The methodology/ approach

3-Results & Research limitations
4-Recommendation
References
Appendix

1-The theoretical frame work

**Women`s empowerment:** There is a growing awareness of the importance of decreasing the gender gap between men and women in the society & the significance of empowering women. Since empowering women refers to increasing woman`s ability in order to make considerable life choices, especially for women that had been deprived of this ability.[1]

As mentioned before, this study will concern the three main aspects of women empowering according to the national strategy for Egyptian empowering women 2030[2]. Since this study focuses mainly in the first place on the social empowerment, then economic empowerment, and finally political empowerment, as follows:

First, social empowerment refers to the sense of society consistency gained from an activity like the involvement of women in agricultural projects or tourism projects or any activity that can get members of the society together, as well as it supports their social relationships in order to increase their sense of society attachment. It is figured out that the most significant aspect of empowerment is social empowerment, and the evidence of that is political & economic empowerment have taken it as a base.

Since, the social empowerment through giving women the opportunity to have equivalent educational service & good health care gives women the confidence to participate in their society & compensate in the labor market, which in turn keeps a good living standards for them & still keeps improving until achieving political representation[3].

Second, women's economic empowerment, which refers to developing women's capabilities to expand employment options

for women to decrease the employment gap between genders by increasing their compensation in the labor work through having a job & entrepreneurship[4].

In other word, the economic empowerment of women means that the relative distribution of both men and women is equal in administrative, organizational and professional professions, and it is also equal in earned income & wages. So, there are some determinants that affect economic empowerment such as estimated income and income equality between men and women at work, and employment rate among women[5].

Finally, the third aspect of women`s empowering is political empowerment that refers to strengthening their leadership roles by stimulating women's political representation in all its forms, including parliamentary representation, and also by preventing discrimination against women in assuming leadership positions in executive institutions, & judiciary, as well as preparing women to succeed in these positions[6]. So there are some determinants that have an impact on women`s political empowerment such as political environment, awareness or availability of information, family support, legal environment, and inner motive or personal ambitions[7].

1Agnes R. Quisumbing a, Elena M. Martinez, Hazel Malapit, and Kathryn Sproule b. (2021). Do tradeoffs
among dimensions of women's empowerment and nutrition outcomes exist? Evidence from six countries in
Africa and Asia.Elsevier.Holand.p2.

2المجلس القومي للمرأه.) 2017 (. الاستراتيجية الوطنية لتمكين المرأة المصرية. 2030 الرؤية ومحاور العمل .المجلس القومي للمرأه.مصر.ص19

3 Ahmed Mohamed Elbaz, Maryam Taha Mannaa, and Mohamed A. Abou-Shouk.(2021). Women's empowerment and tourism development: A cross-country study.Elsevier.Holand.P3

4 .المجلس القومي للمرأه.مرجع سبق ذكره.ص20

5حنان عطا شملاوي، ونهيل إسماعيل سقف الحيط .(2018) .التمكين الاقتصادي للمرأة في الدول العربية .مجلة جامعة النجاح للأبحاث).العلوم . (11 .الأردن .ص) 2101 الإنسانية (المجلد32

6 .المجلس القومي للمرأه.مرجع سبق ذكره.ص19

7 Eliza Sharma. (2020). Women and politics: a case study of political empowerment of Indian women. Emerald Publishing Limited.UK.p607.

Advantages of women`s empowerment:

1- **Women`s empowerment is a target for itself:** empowering women is a goal for women not only because of the social & economic benefits of it, but it also gives women the confidence, the independence, the dignity that they always need. That opinion is similar to the finding of the work of Mirela Xheneti and Shova Thapa Karki, which shows how formalizing entrepreneurship for women empowers them & supports SDGs.

Their data were assembled through interviews for 30 business women involved in informal/ formal business activities in Nepal in 2015. The study illustrates the variant outcomes of empowering, for example informal business activities increase life aspirations & confidence of women. Formalizing businesses empowers women at their families and society level. Formalizing businesses does not only raise the understanding of women of their roles and capabilities, but it does also incorporate them in wider organized structures, which in turn should make changes to their societies[1].

2- **It achieves food security:** women`s empowerment has a positive impact on securing food for households. That is according to the study of A.Bogale, M.Mudhara, and S.Sharaunga in rural KwaZulu-Natal in South Africa to estimate the effect of empowering women on family food security. The study used the data of 300 women – headed families in 2016. The result is that families headed by empowered women were more secured[2].

3- **Women`s empowering supports the development of nations:** Women`s empowerment has a positive impact on development, especially the economic development & sustainability, as it is known, it is one of 17 SDGs. Furthermore, it is found that supporting women`s empowerment in real women`s lives, especially in the countries where their women suffer from disempowerment, will have a positive impact on human development through improving the state of health, the

educational level, and the income level, which in turn will achieve the development. This point of view is similar to the results of the study of Ainhoa Herrarte Sánchez, and Eva Medina Moral in 2020, which focuses on the evolution of empowering women across nations.

The study uses data about 17 gender indicators from the UN across 96 nations over the period from 1995 to 2015.And the findings showed that improvements in empowering women raise the nation`s development level[3].

So, the comprehensive development can be achieved through women`s empowerment through the following sectors:

A- Education: Women`s empowerment can achieve development through educational progress and health care improvements that are oriented for women. Since, education can enable women to be a part of the workforce that in turn let women be financially independent & participators in the national income. So, there is a connection between empowering women & economic growth. Education can also help women with their children`s education. On the other hand, education can help women to understand the problems of infanticide, which may decrease abortion of fetuses.

[1]Mirela Xheneti, and Shova Thapa Karki. (2018). Formalizing women entrepreneurs in Kathmandu, Nepal: Pathway towards empowerment. Emerald Publishing Limited. UK. P 526-p538.

[2]A. Bogale, M. Mudhara, and S. Sharaunga. Effects of 'women empowerment' on household food security in rural KwaZulu-Natal province. (2016). Development Policy Review. United States.34 (2).p 223.

[3]Ainhoa Herrarte Sánchez, and Eva Medina Moral. (2020). Recent Evidence on The Evolution of Women`s Empowerment Dimensions and Countries: A multidimensional Index of Women`s empowerment Across Countries. Emerald Publishing Limited.Holand.p13.

B- Health: Health has a positive influence on economic development. Hence, investment in women`s health will help in building a healthy society that leads to economic development

because of increasing the ability to produce and increasing the productivity. Additionally, empowered women are free to make a healthy choice for their health & their children. The following points illustrate the role of women`s empowerment in improving health status as follows:

 Women`s empowering improves nutrition: that's according to the work of Gianna Bonis Profumo, Natasha Stacey, and Julie Brimblecombe in 2021, which is about measuring the impact of empowering women in the agriculture sector on dietary diversity of the females & their children (aging from 12 to 59 months) in India. They analyzed the data of 156 dual-adult family in 2006 with a regression model. The study illustrated that the scores of dietary diversity for empowered women and for their kids compared to the disempowered were greater. The link between dietary diversity & several measures of empowerment were significant[1].

These findings are similar to the work of Geoffrey Muricho, Gracious Diiro, Menale Kassie, and Monica Fisher in 2021 when they used the survey data of 711 farm families in rural Kenya in 2016 to estimate the impact of empowering women on dietary diversity through the adoption of agricultural technology. They used a multiple regression frameworks to test that impact. The study figured out that empowering women has a significant positive impact on the score of dietary diversity for women regardless of the status of technology adoption. The impact of technology adoption is greater for families with empowered women compared to disempowered women. The dietary diversity scores raised by 3 percentage points compared to the scores of disempowered women with technology adoption[2].And the work of Elena M.
Martinez, Hazel Malapit, Kathryn Sproule, and Quisumbing in 2021, which tests the impact of empowering women on nutrition outcomes across 6 nations in Africa and Asia using the Women's Empowerment in Agriculture Index (WEAI) data & interviews of

families for a comparable methodology (from 2012 to 2016), found that there is a direct link between the nutritional outcomes & empowerment scores[3].

 Women`s empowering improves children`s general state of health & nutrition:

Women`s empowerment improves the state of health of their children according to the study of Michael Nnachebe Onah in 2021, that is about how empowering women improves children`s state of health in the area of South-Central Asia by analyzing the Demographic and Health Surveys (DHS) data for 62,015 females from 2008 to 2018 divided into phases across 5 nations in this area through OLS & regression model. The study showed that women`s empowerment by way of decision making & social independence seems to decrease the possibility of kids being wasted, underweight, or stunted.[1]

1 Gianna Bonis-Profumo, Julie Brimblecombe, and Natasha Stacey. (2021). Measuring women's empowerment in agriculture, food production, and child and maternal dietary diversity in Timor-Leste. Elsevier Ltd.Holand.p1.

2 Gracious Diiro, Geoffrey Muricho, Menale Kassie, Monica Fisher. (2020). Women's empowerment boosts the gains in dietary diversity from agricultural technology adoption in rural Kenya. Elsevier Ltd.Holand.p10.

3Agnes R. Quisumbing a, Elena M. Martinez a, Hazel Malapit, and Kathryn Sproule b.Op.cit.p1.

C- Women`s empowering improves economic growth rates as follows[2]:

 Economic growth rates of countries are estimated by using the value of gross domestic products, and this growth rate is influenced by savings that stem from the family savings, which are made by women.

 Income of women is mainly spent on their kids' health, education, and nutrition, which are considered as human capital investments. The human capital (health & education) positively affects economic growth & development indirectly through productivity. Additionally, according to work about Ghana that figured out that participation of women in agricultural activities is based on their health (human capital), since health status of

women is a part of their empowerment that leads to economic development.

 Finally, empowering women enhances the women`s power of decision-making that achieves economic development by making rational decisions, and it also reflects the participation of women in economic activities that enhances these activities. For example, women`s empowerment develops micro-businesses. This finding is assured by the work of Parijat Upadhyay, Sangita Dutta Gupta, and Susmita Chatterjee in 2017. Their study covered 11 years from 2006, which is about accelerating economic development through micro-businesses.

The link between micro businesses & women`s empowerment is investigated by creating an equation model, and data were collected by interviewing 906 persons. It illustrates how empowerment is able to help in micro-businesses development[3]. Additionally, the empowering of women helps in achieving development in different sectors & in different economic activities such as tourism.

According to the study that tested the impact of women`s empowerment on tourism by Mohamed A. Abou- Shouk, Maryam Taha Mannaa, and Ahmed Mohamed Elbaz in 2021. Data were collected by using a survey questionnaire from 784 university students across 3 Arab countries: the United Arab Emirates, Oman, and Egypt by using a squares equation model to analyze the opinions of students across countries. Additionally, the study illustrated considerably positive effects of empowering women on tourism development[4].

The same results were found through the work of Abu Elnasr Sobaih, Alaa M. S. Azazz, Ibrahim Elshaer, Mohamed Moustafa, and Meqbel Aliedan in 2021 that aims to exaimine the influence of empowering women on sustainable development of the tourism sector. Data were collected in 2019 by using questionnaires in KSA for 1400 women in the tourism sector using the equation model.

[1]Michael Nnachebe Onah. (2021). Women's empowerment and child nutrition in South-Central Asia; how important is socioeconomic status? .Elsevier Ltd.Holand.p1-7.

[2]Bincy George, Sudatta Banerjee, and Swati Alok. (2020). Determinants of women empowerment as measured by domestic decision-making: perspective from a developing economy. Emerald Publishing Limited.UK.p4.

[3] Parijat Upadhyay, Sangita Dutta Gupta, and Susmita Chatterjee. (2017). Empowering women and stimulating development at bottom of pyramid through micro-entrepreneurship. Emerlad. Holand. P 160-170.

[4]Ahmed Mohamed Elbaz c, Maryam Taha Mannaa a, and Mohamed A. Abou-Shouk a.op.cit.p 1-9.

The study shows that women's empowerment has a significant positive impact on the tourism sector[1] .All of the above determines the advantages of women`s empowerment by illustrating the literature review of many studies that measure the indicators of women`s empowerment and their effect on the aspects of development in general. Especially, some may think that it is logic that empowering women affects achieving development & decreasing poverty positively. And yes, it is logic, but not always, and not for all countries. Because, surprisingly, there are some studies that show that effect women`s empowerment has no effect on aspects of development.

For instance, the work of Ratna Patel, Shekhar Chauhan, and Sumit Kumar in 2020, which pointed out that the property of land & empowering women do not impact child health positively. This contradiction can be explained by the fact that in poor families, when women own land, spouses may own more resources, including the land, compared to women, which deprives women of decision-making because the process of decision-making is still in the hand of spouses[2]. And even when the indicators of women`s empowerment are used to measure the effect of them individually on achieving development (including decreasing the poverty rates), they may not affect women`s empowerment positively, which in turn cannot also affect the development positively. For instance, according to the work of Hanan

Shamlawy, and Naheel Elheet in 2018, unemployment among women has no effect on empowering women economically in the high income groups of countries.

Additionally, participation as a part of the work force has no effect on empowering women in the lower & upper middle income countries. And income equality also has no effect on empowering women economically among countries in the high income group[3].

So in this study, the main focus is about estimating the effect of the indicators of the women`s empowerment on reducing poverty in Egypt in order to know if they can help or not.

Hypotheses development

From all of the above theoretical frame work & literature review with the empirical studies, this study assumes the following hypothesis as follows:

- H1: Empowering women economically has an effect on the poverty rate in Egypt.
- H2: Social empowerment of women influences the poverty rate in Egypt.
- H3: Political empowerment of women affects the poverty rate in Egypt.
- H4: Empowering women economically, socially and politically has an impact on the poverty rate in Egypt.
- H5: Poverty rate influences empowering women economically, socially and politically in Egypt.

1Abu Elnasr Sobaih, Alaa M. S. Azazz, Ibrahim Elshaer, Meqbel Aliedan, and Mohamed Moustafa. (2021).The impact of women's empowerment on sustainable tourism development: Mediating role of tourism involvement. Elsevier. Holand. P 1-7.

2Ratna Patel b, Shekhar Chauhan c, and Sumit Kumar. Does land possession among working women empower them and improve their child health: A study based on National Family Health Survey-4.Elsevier.Holand.p7.

3حنان عطا شملاوي، ونهيل إسماعيل سقف الحيط.مرجع سبق ذكره .ص2

Design/methodology/approach–The study analyses the variables & indicators of women`s empowerment that may affect poverty in Egypt, beside and making a comparison between these variables according to their ability to affect poverty in order to get more reliable results to achieve the purpose of the study.

In order to do that the study uses the data of the variables such as (percentage of employed females (% of female employment), proportion of seats held by women in national parliaments), contraceptive use and reproductive health care (% of women age 15-49), and other indicators which are illustrated in the model to finally get the equations to determine the effect of these variables on the poverty rate in Egypt.

Due to the limited number of views about Egypt, the researcher cannot use Time Series Method because it requires at least 30 years of data in order to give accurate results. So Panel data will be used instead. This technique is known by allowing analysis of the data for N of the cross-sections & for T of time periods. This method increases the number of views for analysis. And the countries in the model are selected under some conditions such as they all are in the middle income group & their status of women`s empowerment & their poverty rates are similar to the state of Egypt in order to get same results which can be generalized on the state of Egypt.

Statistical analysis: The data were analyzed using some statistical methods and tests in order to measure the impact of women`s empowerment in poverty alleviation in Egypt. The study sample consisted of 33 countries during the period from 2000 to 2019. Table (1) gives a description of all the variables used in the statistical analyses as follows:

Table (1)
Description of the variables

Variables Nature	Variables		Symbol
Independent Variables	Economic Empowerment	Wage and salaried female workers (% of female employment)	WSW
		Unemployment among females	UNEMP
	Social Empowerment	Life expectancy at birth among females	LEB
		Maternal mortality ratio	MMR
		Primary completion rate among females	PCR
	Political Empowerment	Proportion of seats held by women in national parliaments	PSHW
Dependent Variable	poverty rate		PR

So, the statistical analysis will investigate the validation of the following study hypotheses:

1- Empowering women economically has an effect on the poverty rate in Egypt.

2- Social empowerment of women influences the poverty rate in Egypt.

3- Political empowerment of women affects the poverty rate in Egypt.

Empowering women economically, socially and politically has an impact on the poverty rate in Egypt. Poverty rate influences empowering women economically, socially and politically in Egypt.

The method has been used Panel Data (longitudinal data), which combines all of Cross Sectional Data (33 countries), and Time Series Data (20 years from 2000 to 2019) through applying the 3 following longitudinal data:

1-Pooled Regression Model.
2-Fixed Effect Model
3-Random Effect Model.

According to the combined regression model, all observations are considered as one entity without taking into account both differences between countries of the study and differences over time. This model is estimated by Ordinary Least Square (OLS) So that the equation constant is ($\boldsymbol{\beta 0}$) and the regression coefficients are ($\boldsymbol{\beta}'$s), which are constant for all countries over time, as shown in Equation (1).

As for the fixed effects model, the regression model will be estimated by taking into account the differences between the countries of the study, which allows for each country to have its own equation constant is ($\boldsymbol{\beta 0}$). This is as a result of the different characteristics of each country, but this difference is constant over time, which means the regression coefficients ($\boldsymbol{\beta}$'s) are constant for all countries over time. Besides The fixed effects model is estimated by using Least Square Dummy Variables (LSDV) as illustrated in equation (2).And as for Random Effect Model, the regression model will be estimated by taking into accounts that all countries are different in their random error ($\boldsymbol{\varepsilon i}$).

Especially Random Effect Model deals with the differences between countries and differences over time as random variables, so these differences are added to the random error term as random components. So, the random effects model will be estimated by using Generalized Least Square (GLS) as shown in equation (3).

$$\mathbf{Y}_{it}=\boldsymbol{\beta}_0+\boldsymbol{\beta}_1\mathbf{X}_{1it}+\boldsymbol{\beta}_2\mathbf{X}_{2it}+\cdots+\boldsymbol{\beta}_k\mathbf{X}_{kit}+\boldsymbol{e}_{it}(\mathbf{1})$$

$$\mathbf{Y}_{it}=\boldsymbol{\beta}_{0i}+\boldsymbol{\beta}_1\mathbf{X}_{1it}+\boldsymbol{\beta}_2\mathbf{X}_{2it}+\cdots+\boldsymbol{\beta}_k\mathbf{X}_{kit}+\boldsymbol{e}_{it}(\mathbf{2})$$

$$\mathbf{Y}_{it}=\boldsymbol{\beta}_0+\boldsymbol{\beta}_1\mathbf{X}_{1it}+\boldsymbol{\beta}_2\mathbf{X}_{2it}+\cdots+\boldsymbol{\beta}_k\mathbf{X}_{kit}+\boldsymbol{\varepsilon}_i+\boldsymbol{e}_{it}(\mathbf{3})$$

Since:

$\mathbf{X}_{1i}$: is the first independent variable of country(i) during the time period (t).

$\mathbf{X}_{2i}$: is the second independent variable of country (i) during the time period (t).

$\mathbf{X}_{ki}$: is the last independent variable of country (i) during the time period (t).
$\mathbf{Y}_{it}$: the dependent variable of country (i) during the time period (t).
$\boldsymbol{ei}$: the random error that is resulted from regression model.
$\boldsymbol{\varepsilon i}$: Random error for each country.
In order to determine the best model to represent data from the previous three models, the three steps will be used as follows:
1-Wald test (Restricted F-test) will be applied to compare between the Pooled model and the fixed effects model. If the p-value of the test is greater than the value of the significance level ($\alpha = 0.05$), the Pooled Model is the best for representing data, but if the p-value is less than the value of the significance level ($\alpha = 0.05$), the fixed effects model is the best model is the best for representing data.

2- Breusch-Pagan LM (Lagrange Multiplier) will be applied to compare between the Pooled Model and the random effects model. If the p-value of the test is greater than the value of the significance level ($\alpha = 0.05$), the Pooled Model is the best for representing data, but if the pvalue is less than the value of the significance level ($\alpha = 0.05$), the random effects model is the best for representing data.

3- Hausman test will be applied to compare between the fixed effects model and the random effects model. That is in case the fixed effects model and the random effects model are better than the Pooled Model. If the p-value of the test is greater than the value of the significance level ($\alpha = 0.05$), the random effects model is the best for representing data, but if the p-value is less than the value of the significance level ($\alpha = 0.05$), the fixed effects model is the best model is the best for representing data.

The following are the statistical tests and analyzes used, and it should be mentioned that Eviews 10 is the statistical program used to analyze the data.

1- The following step is making descriptive statistics, and in order to make it, the minimum, the maximum, the mean, the median, and standard deviation for the variables of the study should be calculated as shown in table (2).

Table (2): Descriptive Statistics for the variables of the study

Variables	Sample Size	Descriptive Statistics			
		Minimum	Maximum	Mean	Std. Dev.
WSW	660	0.092250	94.20044	42.19934	31.01416
UNEMP	660	0.620000	97.70000	33.93323	27.64100
LEB	660	11.90000	81.52000	46.19839	18.43014
MMR	660	0	10.30000	0.577121	1.192493
PCR	660	0	16305982	466362.4	1447641.
PSHW	660	0	133.2296	73.05860	30.81398
PR	660	0	33.16498	10.73149	7.130518

2- Time Series Stationarity test: Unit Root Tests is used to in order to know the level of stationarity for the time Series. Time series are stationarity if there is a constant in the mean &the deviation value over time. Therefore, if the time series of the variables contain a unit root (that means the time series of the variables are non-stationary, and as the result of that problems of standard inference will be found.

Hence, this will lead to a false regression. Hence, unit root tests are a prerequisite for time series analysis to reach to logical results. So, if the variables of the study are stable in their original form, or in other word the variables of the study are not stable at (the level), the first difference will be taken, and if the time series of those variables are still unstable after taking the first difference the second difference will be taken, and so on until the time series of variables become stable. Then Levin, Lin & Chut, Phillips–Perron (PP), and Augmented Dicky-Fuller (ADF) will be applied.

Table (3) will illustrate the results of unit root tests for the non-binary study variables at (the level), and after taking the first difference.

Table (3): Time series stationarity test for study variables

Variables	Stationary	Levin, Lin & Chu t test		Augmented Dicky-Fuller test		PP - Fisher Chi-square test	
		Test value	*p-value*	Test value	*p-value*	Test value	*p-value*
WSW	Level	0.97043	0.8341	56.4035	0.7941	45.2144	0.9764
	1st Diff	-8.56021	0.0000	271.560	0.0000	332.296	0.0000
UNEMP	Level	-2.36087	0.0091	94.3800	0.0081	66.0124	0.4072
	1st Diff	-15.7506	0.0000	398.163	0.0000	407.021	0.0000
LEB	Level	-12.0653	0.0000	246.387	0.0000	1042.72	0.0000
	1st Diff	-6.85683	0.0000	156.184	0.0000	196.600	0.0000
MMR	Level	3.27643	0.9995	40.2686	0.9948	66.9058	0.4457
	1st Diff	-6.78760	0.0000	203.510	0.0000	263.487	0.0000
PCR	Level	-5.17278	0.0000	98.8921	0.0020	101.223	0.0012
	1st Diff	-21.0566	0.0000	517.504	0.0000	544.914	0.0000
PSHW	Level	-3.37509	0.0004	93.4617	0.0096	56.5733	0.7337
	1st Diff	-20.9379	0.0000	449.843	0.0000	475.082	0.0000
PR	Level	-6.14268	0.0000	160.274	0.0000	124.910	0.0000
	1st Diff	-16.2145	0.0000	290.483	0.0000	334.605	0.0000

It is clear from table (3) that the instability of the time series of the variables (MMR) at the Level that means it is unstable in its original form, as the probability value of all tests for those variables increases from the value of the significance level (p–value > $\alpha = 0.05$). So, the first difference for the time series was taken for all variables, especially unstable ones, in order to get rid of the unit roots. Therefore, all the variables became stable, as the

probability value of all tests has become less than the value of the significance level (p-value < α = 0.05). Since all the variables have become stable at the first difference, so the time series of the variables became integrated of the same degree that means, they are integrated series of first degree I(1).

So, it is suitable to apply a linear regression model to estimate the relationship between the independent variables and the dependent variable.

3- Correlation Matrix: Correlation coefficients were calculated among the variables, in order to know the degree of the relationship of the variables. Note that the correlation coefficient is denoted by the symbol (r), and its value is between (-1) and (+1). The closer the value of the correlation coefficient is to (1) (regardless of the sign), the stronger the relationship between the variables, and the farther the value of the correlation coefficient is from (1), the weaker the relationship between variables. On the other hand, the sign of the correlation coefficient describes whether the relationship is direct or adverse.

Negative sign means increasing in one of them leads to a decrease in the other, and if the sign is positive (+), this indicates that the relationship between the two variables is direct. An increase in one of them leads to an increase in the other (the two variables move in the same direction). Table (4) shows a matrix Correlation coefficients between study variables using Pearson's correlation coefficient.

Table (4): a matrix Correlation coefficients between variables

Variables	Corr.	WSW	UNEMP	LEB	MMR	PCR	PSHW	PR
WSW	Corr.	1						
	p-value							
UNEMP	Corr.	-0.820	1					
	p-value	0.000						
LEB	Corr.	0.678	-0.686	1				
	p-value	0.000	0.000					
MMR	Corr.	0.452	-0.227	0.405	1			
	p-value	0.000	0.000	0.000				
PCR	Corr.	0.274	-0.228	-0.026	-0.033	1		
	p-value	0.000	0.000	0.501	0.397			
PSHW	Corr.	-0.667	0.631	-0.420	-0.244	-0.043	1	
	p-value	0.000	0.000	0.000	0.000	0.266		
PR	Corr.	-0.189	0.181	-0.045	0.026	-0.077	0.215	1
	p-value	0.000	0.000	0.245	0.500	0.048	0.000	

It is clear from table (4) that: There is a low, direct, statistically significant correlation between (PR) and all WSW, UNEMP, PCR, PSHW with a significant level of 5%, where the value of the probability of the correlation coefficients of those variables is lower than the value of the significance level) p–value = < α = 0.05). Then, statistical analyzes will be made to test the hypothesis of the study (5 hypothesis) as follows:

Through this section, a statistical model was built to test the validity/correctness of the first hypothesis, which is "Empowering women economically has an effect on the poverty rate in Egypt" as shown in equation (4)

$$\mathbf{PR}_{it}=\boldsymbol{\beta}_0+\boldsymbol{\beta}_1\mathbf{WSW}_{it}+\boldsymbol{\beta}_2\mathbf{Unemp}_{it}+\boldsymbol{e}_{it}(\mathbf{4})$$

And table (5) illustrates the results of Panel Data Models (Pooled Model, Fixed Effects Model, Random Effects Model) including Regression Coefficients, Standard Error (S.E.), and the results of t-test to make sure of the significance of the independent variables of the models, in addition to the result of each of Determination of Coefficient of (R^2), ((Adjusted Coefficient of Determination) Adjusted R^2), and the result of F-test.

Table (5): summary of the regression model of the relationship between women`s economic empowerment & poverty rate

Variables	*Pooled Model*				*Fixed Effect Model*				*Random Effect Model*			
	Regression Coefficients		*t*-test		Regression Coefficients		*t*-test		Regression Coefficients		*t*-test	
	Value	S.E.	*t*	*p*-value	Value	S.E.	*T*	*p*-value	Value	S.E.	*t*	*p*-value
Constant	73.486	1.144	64.225	0.000	76.830	3.270	23.432	0.000	74.901	3.681	20.349	0.000
WSW	-0.917	0.053	-27.319	0.000	-1.130	0.088	-12.813	0.000	-1.069	0.069	-15.506	0.000
UNEMP	-0.021	0.133	-0.156	0.876	0.459	0.204	2.248	0.025	0.450	0.189	2.371	0.024
R^2	0.673				0.914				0.271			
Adjusted R^2	0.672				0.910				0.269			
S.E.	17.762				9.323				9.323			
test*F*	676.150				196.113				122.259			
p-value	0.000				0.000				0.000			

It is clear from table (5) that a decreasing in unemployment rate among women by 1% decreases poverty rate in Egypt by 0.45%. As well as increasing in the percentage of wage & salaried females workers by 1% decreases poverty rate in Egypt by 1.13%.

But it is clear from table (5) that that the results are different from the 3 models regarding R^2, the significance& the effects of the independent variable. Whereas, in order to determine the best model to represent data first: Wald test (Restricted F-test) should be done to compare between the Pooled Model & the Fixed Effects Model, Second: Breusch-Pagan LM (Lagrange Multiplier)) should be done to compare between the Pooled Model & The Random Effects Model, third: Hausman test should

be done to compare between the Fixed Effects Model & The Random Effects Model as shown in table (6).

Table (6): Tests of determination the best regression model of the relationship between women`s economic empowerment & poverty rate

Wald test		LM test		Hausman test	
F	*p-value*	Breusch-Pagan	*p-value*	χ^2	*p-value*
54.9879	0.0000	3296.091	0.0000	1.985724	0.3705

It is illustrated from table (6) the following:

1- The value of F-test resulting from Wald test is lower than the value of the significance level (p–value = 0.0000 < α = 0.05), which indicates that the Fixed Effect Model is better than the Pooled Model with the significance level 5%.

2- The probability value of Breusch-Pagan test that resulting from Lagrange Multiplier test is lower than the significance level (p–value = 0.0000 < α = 0.05), which indicates that the Random Effects Model is better than the Pooled Model with the significance level 5%.

3- The probability value of $\chi 2$ which resulting from Hausman test is lower than the significance level *(p–value* = **0.003705** < α = 0.05)which indicates that Random Effect Model is better than the Fixed Effects Model with the significance level 5%.

According to the above findings, the Statistical analysis will be based on the Random Effects Model in presenting the relationship between variables. Getting back to table (5), it is found that there is a statistically significant adverse impact for the variable (WSW) on the variable (PR) significance level 5%.And there is also a positive impact statistically significant of (UNEMP) on (PR) with the significance level 5%. Since the probability value

of t-test for those variables is lower than significance level (*p–value* <α = 0.05).It is clear that the regression model is statistically significant with the significance level 5%, especially the probability value of F- test is lower than the significance level (*p–value* = **0.000** <α = 0.05).

Additionally, the variables forming the model can explain (27.1%) of the changes of (PR), and the left (72.9%) is because of the random error or other influences that may affect (PR) and that influences are not studied in this research.

Finally, women's economic empowerment has a statistically significant effect on the poverty rate in Egypt.so the first hypothesis is accepted. Then, statistical analyzes will be made to test the hypothesis H2. Through this section, a statistical model was built to test the validity/correctness of the second hypothesis which is "Social empowerment of women influences the poverty rate in Egypt", which is illustrated through equation (5)

$$\mathbf{PR}_{it} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}_1\mathbf{LEB}_{it} + \boldsymbol{\beta}_2\mathbf{MMR}_{it} + \boldsymbol{\beta}_3\mathbf{PCR}_{it} + \boldsymbol{e}_{it} \quad (\mathbf{5})$$

And table (7) illustrates the results of Panel Data Models (Pooled Model, Fixed Effects Model, Random Effects Model) including Regression Coefficients, Standard Error (S.E.), and the results of t-test to make sure of the significance of the independent variables of the models, in addition to the result of each of Determination of Coefficient of (R_2), ((Adjusted Coefficient of Determination) Adjusted R_2), and the result of F-test.

Table (7): summary of the regression model of the relationship between women`s social empowerment & poverty rate

Variables	*Pooled Model*				*Fixed Effect Model*				*Random Effect Model*			
	Regression Coefficients		*t*-test		Regression Coefficients		*t*-test		Regression Coefficients		*t*-test	
	Value	S.E.	*T*	*p*-value	Value	S.E.	*T*	*p*-value	Value	S.E.	*t*	*p*-value
Constant	30.149	4.343	6.942	0.000	118.98	11.995	9.920	0.000	88.719	10.150	8.741	0.000
LEB	-0.154	0.064	-2.416	0.016	-1.487	0.157	-9.494	0.000	-1.072	0.129	-8.291	0.000
MMR	0.953	0.036	26.840	0.000	0.598	0.087	6.895	0.000	0.715	0.074	9.612	0.000
PCR	-0.256	0.029	-8.777	0.000	-0.090	0.036	-2.501	0.013	-0.110	0.034	-3.214	0.001
R^2	0.762				0.940				0.471			
Adjusted R^2	0.761				0.937				0.469			
S.E.	15.175				7.806				7.923			
test*F*	698.881				279.381				195.067			
p-value	0.000				0.000				0.000			

It is clear from table (7) that an increasing in the variable (life expectancy at birth) among women by 1 year decreases poverty rate in Egypt by 1.4 %. As well as an increasing in the percentage of maternal mortality rate by 1% decreases poverty rate in Egypt by 0.59%. Additionally, once primary completion rate increases by 1% poverty rate in Egypt will decrease by 0.09%.

But it is clear from table (7) that the results are different from the 3 models regarding R_2, the significance & the effects of the independent variable. Whereas, in order to determine the best model to represent data first: Wald test (Restricted F-test) should be done to compare between the Pooled Model &the Fixed Effects Model, Second: Breusch-Pagan LM (Lagrange Multiplier)) should be done to compare between the Pooled Model & The Random Effects Model, third: Hausman test should be done to compare between the Fixed Effects Model & The Random Effects Model as shown in table (8).

Table (8): Tests of determination the best regression model of the relationship between women`s social empowerment & poverty rate

Wald test		LM test		Hausman test	
F	*p-value*	Breusch-Pagan	*p-value*	χ^2	*p-value*
57.9703	0.0000	3094.720	0.0000	22.70644	0.0000

It is clear from table (8) the following:

1- The value of F-test resulting from Wald test is lower than the value of the significance level (p–value = 0.0000 < α = 0.05), which indicates that the Fixed Effect Model is better than the Pooled Model with the significance level 5%.

2- The probability value of Breusch-Pagan test that resulting from Lagrange Multiplier test is lower than the significance level (p–value = 0.0000 < α = 0.05), which indicates that the Random Effects Model is better than the Pooled Model with the significance level 5%.

3- The probability value of $\chi 2$ which resulting from Hausman test is lower than the significance level (p–value = 0.0000 < α = 0.05)which indicates that Fixed Effect Model is better than the Random Effects Model with the significance level 5%.

According to the above findings, the Statistical analysis will be based on the Fixed Effects Model in presenting the relationship between variables. Getting back to table (7), it is found that there is a statistically significant adverse impact of both (LEB), and (PCR) on the variable (PR) with significance level 5%.And there is a statistically significant positive impact of (MMR) on (PR) with the significance level 5%. Since the probability value of t-test for those variables is lower than significance level (*p–value* <α = 0.05).

It is clear that the regression model is statistically significant with the significance level 5%, especially the probability value of F-test is lower than the significance level (*p–value* = **0.000** < α = 0.05).Additionally, the variables forming the model can explain

(94%) of the changes of (PR), and the left (6%) is because of the random error or other influences that may affect (PR) and that influences are not studied in this research.

Finally, women's social empowerment has a statistically significant effect on the poverty rate in Egypt, especially most of the social indicators have an impact on poverty rate in Egypt. So the second hypothesis is accepted.

Then, statistical analyzes will be made to test the hypothesis H_3. Through this section, a statistical model was built to test the validity/correctness of the third hypothesis which is "Political empowerment of women affects the poverty rate in Egypt", which is illustrated through equation (6)

$$\mathbf{PR}_{it} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}\ \mathbf{PSHW}_{it} + \boldsymbol{e}_{it}\ (\mathbf{6})$$

And table (9) illustrates the results of Panel Data Models (Pooled Model, Fixed Effects Model, Random Effects Model) including Regression Coefficients, Standard Error (S.E.), and the results of t-test to make sure of the significance of the independent variables of the models, in addition to the result of each of Determination of Coefficient of (R_2), ((Adjusted Coefficient of Determination) Adjusted R_2), and the result of F-test.

Table (9): summary of the regression model of the relationship between women`s political empowerment & poverty rate

Variables	Pooled Model				Fixed Effect Model				Random Effect Model			
	Regression Coefficients		t-test		Regression Coefficients		t-test		Regression Coefficients		t-test	
	Value	S.E.	T	p-value	Value	S.E.	T	p-value	Value	S.E.	t	p-value
Constant	51.031	2.145	23.794	0.000	51.879	0.924	56.164	0.000	51.869	5.273	9.838	0.000
PSHW	-0.823	0.166	-4.943	0.000	-0.902	0.079	-11.441	0.000	-0.901	0.079	-11.467	0.000
R^2	0.036				0.910				0.167			
Adjusted R^2	0.034				0.906				0.165			
S.E.	30.477				9.524				9.517			
test F	24.433				192.792				131.683			
p-value	0.000				0.000				0.000			

It is clear from table (9) that an increasing in the proportion of parliament seats held by women by 1% decreases poverty rate in Egypt by 0.9%.

It is clear from table (9) that the results are different from the 3 models regarding R2, the significance & the effects of the independent variable. Whereas, in order to determine the best model to represent data first: Wald test (Restricted F-test) should be done to compare between the Pooled Model &the Fixed Effects Model, Second: Breusch-Pagan LM (Lagrange Multiplier)) should be done to compare between the Pooled Model & The Random Effects Model, third: Hausman test should be done to compare between the Fixed Effects Model & The Random Effects Model as shown in table (10).

Table (10): Tests of determination the best regression model of the relationship between women`s political empowerment & poverty rate

Wald test		LM test		Hausman test	
F	*p-value*	Breusch-Pagan	*p-value*	χ^2	*p-value*
190.998	0.0000	5101.844	0.0000	0.020576	0.8859

It is clear from table (10) the following:

1- The value of F-test resulting from Wald test is lower than the value of the significance level (p–value = 0.0000 < α = 0.05), which indicates that the Fixed Effect Model is better than the Pooled Model with the significance level 5%.

2- The probability value of Breusch-Pagan test that resulting from Lagrange Multiplier test is lower than the significance level (p–value = 0.0000 < α = 0.05), which indicates that the Random Effects Model is better than the Pooled Model with the significance level 5%.

3- The probability value of $\chi 2$ which resulting from Hausman test is greater than the significance level (*p–value* = 0.8859 >*α* = 0.05)which indicates that Random Effect Model is better than the Fixed Effects Model with the significance level 5%.

According to the above findings, the statistical analysis will be based on the Random Effects Model in presenting the relationship between variables. Getting back to table (9), it is found that there is a statistically significant adverse impact of (PSHW)on the variable (PR) with significance level 5%.Since the probability value of t-test for those variables is lower than significance level (*p–value* <*α* = 0.05).It is clear that the regression model is statistically significant with the significance level 5%, especially the probability value of F- test is lower than the significance level (*p–value* = **0.000** <*α* = 0.05).

Additionally, the variables forming the model can explain (16.7%) of the changes of (PR), and the left (83.3%) is because

of the random error or other influences that may affect (PR) and that influences are not studied in this research. Finally, women's political empowerment has a statistically significant effect on the poverty rate in Egypt. So the third hypothesis is accepted.

Then, statistical analyzes will be made to test the hypothesis H_4. Through this section, a statistical model was built to test the validity/correctness of the fourth hypothesis which is "Empowering women economically, socially and politically has an impact on the poverty rate in Egypt", which is illustrated through equation (7)

$$\mathbf{PR}_{it} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}_1\mathbf{WSW}_{it} + \boldsymbol{\beta}_2\mathbf{Unemp}_{it} + \boldsymbol{\beta}_3\mathbf{LEB}_{it} + \boldsymbol{\beta}_4\mathbf{MMR}_{it} + \boldsymbol{\beta}_5\mathbf{PCR}_{it} + \boldsymbol{\beta}_6\mathbf{PSHW}_{it} + \boldsymbol{e}_{it} \quad (7)$$

And table (11) illustrates the results of Panel Data Models (Pooled Model, Fixed Effects Model, Random Effects Model) including Regression Coefficients, Standard Error (S.E.), and the results of t-test to make sure of the significance of the independent variables of the models, in addition to the result of each of Determination of Coefficient of (R_2), ((Adjusted Coefficient of Determination) Adjusted R_2), and the result of F-test.

Table (11): summary of the regression model of the relationship between women`s empowerment (economically, socially, and politically) & poverty rate

Variables	*Pooled Model*				*Fixed Effect Model*				*Random Effect Model*			
	Regression Coefficients		*t*-test		Regression Coefficients		*t*-test		Regression Coefficients		*t*-test	
	Value	S.E.	*T*	*p*-value	Value	S.E.	*T*	*p*-value	Value	S.E.	*t*	*p*-value
Constant	43.137	4.860	8.876	0.000	129.02	12.238	10.542	0.000	98.476	10.376	9.491	0.000
WSW	-0.336	0.042	-7.955	0.000	-0.529	0.083	-6.356	0.000	-0.448	0.070	-6.395	0.000
UNEMP	0.332	0.118	2.809	0.005	0.404	0.163	2.471	0.014	0.452	0.153	2.959	0.003
LEB	-0.150	0.064	-2.355	0.019	-1.202	0.155	-7.755	0.000	-0.843	0.130	-6.508	0.000
MMR	0.725	0.052	13.838	0.000	0.376	0.090	4.189	0.000	0.490	0.081	6.059	0.000
PCR	-0.172	0.030	-5.694	0.000	-0.111	0.036	-3.076	0.002	-0.110	0.034	-3.226	0.001
PSHW	-0.084	0.084	-1.123	0.262	-0.254	0.071	-3.557	0.000	-0.308	0.068	-4.507	0.000
R^2	0.784				0.946				0.518			
Adjusted R^2	0.782				0.942				0.514			
S.E.	14.494				7.447				7.538			
test*F*	394.047				284.411				117.090			
p-value	0.000				0.000				0.000			

It is clear from table (11) that an increase in poverty rate in Egypt by 1% makes the following.

1- A decrease in wage & salaried female workers by 0.5%

2- A decrease in unemployment rate among women by 0.4%

3- An increase in maternal mortality rate by 0.37%

4- A decrease in primary completion rate among females by 0.11%

5- A decrease in life expectancy at birth by 1.2 years.

6- A decrease in proportion of parliament seats held by women by 0.25%

It is clear from table (11) that the results are different from the 3 models regarding R_2, the significance & the effects of the independent variable. Whereas, in order to determine the best model to represent data first: Wald test (Restricted F-test) should be done to compare between the Pooled Model &the Fixed Effects Model, Second: Breusch-Pagan LM (Lagrange

Multiplier)) should be done to compare between the Pooled Model & The Random Effects Model, third: Hausman test should be done to compare between the Fixed Effects Model & The Random Effects Model as shown in table (12).

Table (12): Tests of determination the best regression model of the relationship between women`s empowerment (economically, socially, and politically) & poverty rate

Wald test		LM test		Hausman test	
F	*p-value*	Breusch-Pagan	*p-value*	χ^2	*p-value*
57.887	0.0000	3089.813	0.0000	22.05739	0.0012

It is clear from table (12) the following:

1- The value of F-test resulting from Wald test is lower than the value of the significance level (p–value = 0.0000 < α = 0.05), which indicates that the Fixed Effect Model is better than the Pooled Model with the significance level 5%.

2- The probability value of Breusch-Pagan test that resulting from Lagrange Multiplier test is lower than the significance level (p–value = 0.0000 < α = 0.05), which indicates that the Random Effects Model is better than the Pooled Model with the significance level 5%.

3- The probability value of $\chi 2$ which resulting from Hausman test is lower than the significance level (p–value = **0.0012**< α = 0.05)which indicates that Fixed Effect Model is better than the Random Effects Model with the significance level 5%.

According to the above findings, the statistical analysis will be based on the Fixed Effects Model in presenting the relationship between variables. Getting back to table (11), it is found that there is a statistically significant adverse impact for the variables (WSW, LEB, PCR, PSHW) on the variable (PR) with significance level 5%. And there is a statistically significant

positive impact for the variables (MMR, UNEMP) on the variable (PR) with significance level 5%.

Since the probability value of t-test for those variables is lower than significance level (p– value < α = 0.05).It is clear that the regression model is statistically significant with the significance level 5%, especially the probability value of F- test is lower than the significance level (p–value = 0.000 < α = 0.05).

Additionally, the variables forming the model can explain (95.6%) of the changes of (PR), and the left (4.4%) is because of the random error or other influences that may affect (PR) and that influences are not studied in this research. Finally, women's empowerment (economically, socially, and politically) has a statistically significant effect on the poverty rate in Egypt, especially most of the economic, social, and political indicators have an impact on poverty rate in Egypt. So the fourth hypothesis is accepted.

 Then, statistical analyzes will be made to test the hypothesis H_5. Through this section, a statistical model was built to test the validity/correctness of the fifth hypothesis which is "Poverty rate influences empowering women economically, socially and politically in Egypt", and in order to test this hypothesis the impact of poverty rate will be tested on each variable individually through the following equations:

$$\mathbf{WSW}_{it} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}\ \mathbf{PR}_{it} + \boldsymbol{e}_{it}\ (\mathbf{8})$$

$$\mathbf{UNEMP}_{it} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}\ \mathbf{PR}_{it} + \boldsymbol{e}_{it}(\mathbf{9})$$

$$\mathbf{LEB}_{it} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}\ \mathbf{PR}_{it} + \boldsymbol{e}_{it}(\mathbf{10})$$

$$\mathbf{MMR}_{it} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}\ \mathbf{PR}_{it} + \boldsymbol{e}_{it}(\mathbf{11})$$

$$\mathbf{PCR}_{it} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}\ \mathbf{PR}_{it} + \boldsymbol{e}_{it}(\mathbf{12})$$

$$\mathbf{PSHW}_{it} = \boldsymbol{\beta}_0 + \boldsymbol{\beta}\ \mathbf{PR}_{it} + \boldsymbol{e}_{it}\ (\mathbf{13})$$

In order to determine the best model to represent data first: Wald test (Restricted F-test) should be done to compare between the Pooled Model &the Fixed Effects Model, Second: Breusch-Pagan LM (Lagrange Multiplier)) should be done to compare between the Pooled Model & The Random Effects Model, third: Hausman

test should be done to compare between the Fixed Effects Model & The Random Effects Model as shown in table (13).

Table (13): Tests of determination the best regression model of the relationship between poverty rate & women`s empowerment (economically, socially, and politically)

Variables	Wald test		LM test		Hausman test	
	F	*p-value*	Breusch-Pagan	*p-value*	χ^2	*p-value*
WSW	337.612	0.0000	4118.922	0.0000	48.72369	0.0000
UNEMP	187.008	0.0000	4510.025	0.0000	17.94869	0.0000
LEB	523.895	0.0000	5593.468	0.0000	5.86572	0.0154
MMR	159.564	0.0000	4113.248	0.0000	26.9895	0.0000
PCR	94.2070	0.0000	4152.424	0.0000	2.05754	0.1515
PSHW	32.7987	0.0000	2026.688	0.0000	20.6328	0.0000

It is clear from table (13) the following:

1- The value of F-test resulting from Wald test is lower than the value of the significance level (p–value = 0.0000 < α = 0.05), which indicates that the Fixed Effect Model is better than the Pooled Model with the significance level 5%.

2- The probability value of Breusch-Pagan test that resulting from Lagrange Multiplier test is lower than the significance level (p–value = 0.0000 < α = 0.05), which indicates that the Random Effects Model is better than the Pooled Model with the significance level 5%.

3- The probability value of $\boldsymbol{\chi 2}$ which resulting from Hausman test is lower than the significance level (p–value = = **0.0012**< α = 0.05) for all variables except PCR which indicates that Fixed Effect Model is better than the Random Effects Model with the significance level 5%, and regarding PCR the Random Effects Model will be applied. According to the above findings, the statistical analysis will be based on the Fixed Effects Model in presenting the relationship between variables.

And table (14) illustrates the results of suitable Models including Regression Coefficients, Standard Error (S.E.), and the results of

t-test to make sure of the significance of the independent variables of the models, in addition to the result of each of Determination of Coefficient of (R_2),((Adjusted Coefficient of Determination) Adjusted R_2), and the result of F-test.

Table (14): summary of the regression model of the relationship between poverty rate & women`s empowerment (economically, socially, and politically)

Variables		Model Summary								
		Regression Coefficients		t-test		R^2	Adjusted R^2	S.E.	F- test	p-value
		Value	S.E.	T	p-value					
WSW	Constant	41.636	0.629	66.211	0.000	0.982	0.981	3.795	1040.235	0.000
	PR	-0.183	0.014	-12.602	0.000					
UNEMP	Constant	7.879	0.304	25.916	0.000	0.933	0.929	1.835	265.616	0.000
	PR	0.005	0.007	0.764	0.4453					
LEB	Constant	71.301	0.358	198.939	0.000	0.979	0.978	2.163	896.952	0.000
	PR	-0.164	0.008	-19.827	0.000					
MMR	Constant	31.532	0.655	48.143	0.000	0.967	0.965	3.953	555.976	0.000
	PR	0.265	0.015	17.574	0.000					
PCR	Constant	94.497	4.027	23.466	0.000	0.234	0.233	9.772	201.399	0.000
	PR	-0.508	0.036	-14.203	0.000					
PSHW	Constant	18.822	0.728	25.871	0.000	0.639	0.621	4.391	33.690	0.000
	PR	-0.192	0.017	-11.441	0.000					

It is illustrated from table (14) the following:

1- It is found that there is a statistically significant adverse impact for (PR) on the variable (WSW) with significance level 5%. Since the probability value of t-test for those variables is lower than significance level (p–$value$ $<\alpha$ = 0.05). It is clear that the regression model is statistically significant with the significance level 5%, especially the probability value of F- test is lower than the significance level (p–$value$ = 0.000 $<\alpha$ = 0.05). Additionally, (PR) can explain about (98.2%) of the changes of (WSW), and the left (1.8%) is because of the random error or other influences that may affect (WSW) and that influences are not studied in this research.

2- It is found that there is no a statistically significant impact for (PR) on the variable (UNEMP) with significance level 5%. Since

the probability value of t-test for those variables is greater than significance level (*p–value* <*α* = 0.05).

3- It is found that there is a statistically significant adverse impact for (PR) on the variable (LEB) with significance level 5%. Since the probability value of t-test for those variables is less than significance level (*p–value= 0.000*<*α* = 0.05). It is clear that the regression model is statistically significant with the significance level 5%, especially the probability value of F- test is lower than the significance level (*p–value* = 0.000 >*α* = 0.05).

Additionally, (PR) can explain about (97.9%) of the changes of (LEB), and the left (2.1%) is because of the random error or other influences that may affect (LEB) and that influences are not studied in this research.

4- It is found that there is a statistically significant positive impact for (PR) on the variable (MMR) with significance level 5%. Since the probability value of t-test for those variables is less than significance level (*p–value= 0.000* <*α* = 0.05). It is clear that the regression model is statistically significant with the significance level 5%, especially the probability value of F- test is lower than the significance level (*p–value* = 0.000 >*α* = 0.05).

Additionally, (PR) can explain about (96.7%) of the changes of (MMR), and the left (3.3%) is because of the random error or other influences that may affect (MMR) and that influences are not studied in this research.

5- It is found that there is a statistically significant adverse impact for (PR) on the variable (PCR) with significance level 5%. Since the probability value of t-test for those variables is lower than significance level (*p–value* <*α* = 0.05). It is clear that the regression model is statistically significant with the significance level 5%, especially the probability value of F- test is lower than the significance level (*p–value* = 0.000 <*α* = 0.05). Additionally, (PR) can explain about (23.4%) of the changes of (PCR), and the left (76.6%) is because of the random error or other influences

that may affect (PCR) and that influences are not studied in this research.

6- It is found that there is a statistically significant adverse impact for (PR) on the variable (PSHW) with significance level 5%. Since the probability value of t-test for those variables is lower than significance level ($p–value < \alpha = 0.05$). It is clear that the regression model is statistically significant with the significance level 5%, especially the probability value of F- test is lower than the significance level ($p–value = 0.000 < \alpha = 0.05$). Additionally, (PR) can explain about (63.9%) of the changes of (PSHW), and the left (36.1%) is because of the random error or other influences that may affect (PSHW) and that influences are not studied in this research.

Finally, poverty rate has a statistically significant effect on women's empowerment economically, socially, politically in Egypt.so the fifth hypothesis is accepted.

Summary of the statistical analyses:

The method has been used Panel Data (longitudinal data), which combines all of Cross Sectional Data (33 countries), and Time Series Data (20 years from 2000 to 2019) through applying the 3 following longitudinal data: Pooled Regression Model, Fixed Effect Model (which is estimated by using Least Square Dummy Variables (LSDV)), and Random Effect Model. This model is estimated by Ordinary Least Square (OLS).Wald test (Restricted F-test) will be applied to compare between the Pooled model and the fixed effects model. Breusch- Pagan LM (Lagrange Multiplier) will be applied to compare between the Pooled Model and the random effects model. Hausman test will be applied to compare between the fixed effects model and the random effects model. Then Time Series Stationarity test: Unit Root Tests is used to in order to know the level of stationarity for the time series. Then, Correlation Matrix will be applied. Correlation coefficients were calculated among the variables, in order to know the degree

of the relationship of the variables. Additionally, it is found the following:

1- There is a statistically significant adverse impact of (WSW) on (PR) with significance level 5%.

2- There is a positive impact statistically significant of (UNEMP) on (PR) with the significance level 5%.

3- There is a statistically significant adverse impact of both (LEB), and (PCR) on the variable (PR) with significance level 5%.And there is a statistically significant positive impact of (MMR) on (PR) with the significance level 5%.

4- There is a statistically significant adverse impact of (PSHW) on the variable (PR) with significance level 5%.

5- There is a statistically significant adverse impact for the variables (WSW, LEB, PCR, and PSHW) on the variable (PR) with significance level 5%. And there is a statistically significant positive impact for the variables (MMR, UNEMP) on the variable (PR) with significance level 5%.

6- There is a statistically significant adverse impact for (PR) on the variable (WSW) with significance level 5%.

7- There is no a statistically significant impact for (PR) on the variable (UNEMP) with significance level 5%.

8- There is a statistically significant adverse impact for (PR) on the variable (LEB) with significance level 5%.

9- There is a statistically significant positive impact for (PR) on the variable (MMR) with significance level 5%.

10- There is a statistically significant adverse impact for (PR) on the variable (PCR) with significance level 5%.

11- There is a statistically significant adverse impact for (PR) on the variable (PSHW) with significance level 5%.

3-Results & findings – Empirical examination supports the positive effect of women empowerment economically, socially, politically on alleviating poverty, and elevating poverty is positively influences the economic, social, and political women`s

empowerment in Egypt. Women's empowerment (economically, socially, and politically) has a statistically significant effect on poverty rate in Egypt, especially most of the economic, social, and political indicators have an impact on poverty rate in Egypt.

Since, there is a statistically significant adverse impact for the variables (percentage of wage and salaried workers, life expectancy at birth, primary completion rate, and proportion of seats held by women in national parliaments) on poverty rate in Egypt with significance level 5%.

And there is a statistically significant positive impact for the variables (maternal mortality ratio, and unemployment rate) on poverty rate in Egypt with significance level 5%.

Besides, the variables forming the model can explain (95.6%) of the changes of poverty rate in Egypt, and the left (4.4%) is because of the random error or other influences that may affect poverty rate in Egypt and that influences are not studied in this research.

To make the explanation short, a decreasing in unemployment rate among women by 1% decreases poverty rate in Egypt by 0.45%. As well as increasing in the percentage of wage & salaried females workers by 1% decreases poverty rate in Egypt by 1.13%.

And an increasing in life expectancy at birth among women by 1 year decreases poverty rate in Egypt by 1.4 %. As well as an increasing in the percentage of maternal mortality rate by 1% decreases poverty rate in Egypt by 0.59%.

Additionally, once primary completion rate increases by 1% poverty rate in Egypt will decrease by 0.09%. Besides an increasing in the proportion of parliament seats held by women by 1% decreases poverty rate in Egypt by 0.9%.

On the other hand a rise in poverty rate in Egypt has a negative effect on the economic empowerment through its negative effect on the percentage of wage & salaried workers.

Additionally, an increase in poverty rate in Egypt also affects social empowerment negatively through its negative effect on both life expectancy at birth &primary completion rate, and its positive effect on maternal mortality rate. Since, an increase in poverty rate in Egypt by 1% makes the following:

1- A decrease in wage & salaried female workers by 0.5%

2- A decrease in unemployment rate among women by 0.4%

3- An increase in maternal mortality rate by 0.37%

4- A decrease in primary completion rate among females by 0.11%

5- A decrease in life expectancy at birth by 1.2 years.

6- A decrease in proportion of parliament seats held by women by 0.25%

Finally, a rise in poverty rate in Egypt will affect the political empowerment negatively through its negative effect on proportion of seats held by women. And here is the findings with their explanation as follows:

1- Women's economic empowerment has a statistically significant effect on the poverty rate in Egypt. Since, there is a statistically significant adverse impact of wage and salaried workers on poverty rate in Egypt with significance level 5%. And there is a statistically significant positive impact of unemployment rate on poverty rate in Egypt with the significance level 5%. It is clear that having a salaried work & being employed will improve the economic position of women, which in turn will decrease

the poverty rate for sure, especially the economic variables forming the model can explain (72.9%) of the changes of poverty rate in Egypt.

2- Women's social empowerment has a statistically significant effect on the poverty rate in Egypt, especially most of the social indicators have an impact on poverty rate in Egypt. Since, there is a statistically significant adverse impact of both life expectancy at birth, and primary completion rate on poverty rate in Egypt with significance level 5%. This finding is intuitive because these

indicators are representing increasing in education level & improving in health status, which improve the productivity of the person, which may enable him to take more money that in turn may decrease poverty level.

And there is a statistically significant positive impact of maternal mortality ratio on poverty rate in Egypt with the significance level 5%. This finding reflects the poor state of health that women has during their pregnancy, which also indicates that women in this case cannot work well or even cannot work at all, which increases the poverty rate. The variables forming the model can explain (94%) of the changes of poverty rate in Egypt.

3- Women's political empowerment has a statistically significant effect on the poverty rate in Egypt. So the third hypothesis is accepted. Since, there is a statistically significant adverse impact of proportion of seats held by women in national parliaments on poverty rate in Egypt with significance level 5%. This result is very rational because being politically empowered & well represented in national parliaments may reflect that those women already have a good knowledge, skillful, very aware of their rights, and in a good state of health, which in turn enable them to be productive leaders. So they can call for women rights that may improves their financial situations.

The variables forming the model can explain (16.7%) of the changes of poverty rate in Egypt, and the left (83.3%) is because of the random error or other influences that may affect poverty rate in Egypt and that influences are not studied in this research.

4- Women's empowerment (economically, socially, and politically) has a statistically significant effect on poverty rate in Egypt, especially most of the economic, social, and political indicators have an impact on poverty rate in Egypt. Since, there is a statistically significant adverse impact for the variables (percentage of wage and salaried workers, life expectancy at birth, primary completion rate, and proportion of seats held by women in national parliaments) on poverty rate in Egypt with

significance level 5%. And there is a statistically significant positive impact for the variables (maternal mortality ratio, and unemployment rate) on poverty rate in Egypt with significance level 5%. Besides, the variables forming the model can explain (95.6%) of the changes of poverty rate in Egypt, and the left (4.4%) is because of the random error or other influences that may affect poverty rate in Egypt and that influences are not studied in this research.

5- Poverty rate has a statistically significant effect on women's empowerment economically, socially, politically in Egypt. Since, there is a statistically significant adverse impact of poverty rate in Egypt on percentage of wage and salaried workers with significance level 5%. This result may be logic because of the direct negative effect of poverty on inability of families to send their children to school & give them the health care that they need, and inability of the one to invest in himself/ herself physically& mentally, which in turn, keep them in the poverty level, as they cannot have well paid jobs because of their poor skills physically& mentally.

Additionally, poverty rate in Egypt can explain about (98.2%) of the changes of the percentage of wage and salaried workers, and the left (1.8%) is because of the random error or other influences that may affect percentage of wage and salaried workers and that influences are not studied in this research. As well as there is no a statistically significant impact of poverty rate in Egypt on unemployment rate with significance level 5% because of the indirect effect of poverty rate on unemployment though its negative impact on health state & education, which may not appear clearly through the statistical model.

Also, there is a statistically significant adverse impact of poverty rate in Egypt on life expectancy at birth with significance level 5%. This finding is intuitive because of the negative impact of poverty on the nutrition & health care the women have during their pregnancy & during the prenatal period which affect the

state of health for the babies, which in turn affects their life expectancy at their birth. As poor women cannot easily get good supplements or even nutritious food during their pregnancy.

Additionally, poverty rate in Egypt can explain about (97.9%) of the changes of life expectancy at birth, and the left (2.1%) is because of the random error or other influences that may affect life expectancy at birth and that influences are not studied in this research. In addition to, there is a statistically significant positive impact of poverty rate in Egypt on maternal mortality rate with significance level 5%. Additionally, poverty rate in Egypt can explain about (96.7%) of the changes of maternal mortality rate, and the left (3.3%) is because of the random error or other influences that may affect maternal mortality rate and that influences are not studied in this research.

This is because of poor women cannot take care of their state of health even during their pregnancy or even at the prenatal phase, and at the same time they cannot afford the fees of medical equipped team so intuitively they may die during birthing. So, poverty rate in Egypt affects maternal mortality ratio positively.

As well as there is a statistically significant adverse impact of poverty rate in Egypt on primary completion rate with significance level 5%. This is because if the poverty rate increase that means the family cannot afford their children completion at school.

Additionally, poverty rate in Egypt can explain about (23.4%) of the changes of primary completion rate, and the left (76.6%) is because of the random error or other influences that may affect primary completion rate and that influences are not studied in this research. And there is a statistically significant adverse impact of poverty rate in Egypt on proportion of seats held by women in national parliaments with significance level 5%.

Because of poor women cannot easily attain educational services, knowledge, awareness, and health care or even the skills that enable them to be eligible for political presenting. Additionally,

poverty rate in Egypt can explain about (63.9%) of the changes of parliament seats held by women, and the left (36.1%) is because of the random error or other influences that may affect proportion of seats held by women in national parliaments and that influences are not studied in this research.

Research limitations/implications –This study is not about Egypt only, despite of that the results can be used & generalized on the position of Egypt. So, the methodology of this study cannot focus only on Egypt unlike the methodology of the questionnaires. But the researcher does not use questionnaires in order to avoid the issues of them. For example, assuming prior knowledge or understanding, double-barreled or compound questions, question is ambiguous or unintelligible, unnecessary questions, and excessive open-ended questions, may affect the results of the study.

4-Recommendations:

1- It is recommended for government to empower women economically through many ways like for example creating attracting atmosphere for investment which can create well paid job vacancies that enable women to be financially independent, which in turn will decrease the poverty rate in Egypt as illustrated from this research.

2- It is recommended for government to empower women socially through many ways such as improving the state of health & the education level, which in turn will improve the state of women physically & mentally that may alleviate poverty rate in Egypt as shown from this research.

3- It is recommended for government to empower women politically through letting them have commanding posts, and through preparing them to be suitable for these kinds of jobs in the first place. Preparing women to be leaders can give them the opportunities to call for women`s rights for all women, and this may improve the poverty rate in Egypt as found from this research.

4- It is recommended for government to end poverty, as much as it can, as the top one goal of the 17 sustainable development goals, which reflects the significant importance of this goals for itself & for achieving the other 17 SDGs including women`s empowerment. This finding is matching with the results of this research, since decreasing poverty rate in Egypt can help in empowering women economically, socially, and politically.

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