

Original Paper

The Gender Wage Gap within the Agricultural Sector: A Case from South Lebanon

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Abstract

Agriculture is considered an important energizer of a country's economic growth and poverty alleviation efforts. However, this sector is underperforming especially in developing countries in part because women, who are often a crucial human resource in agriculture and the rural economy, face difficulties that reduce their productivity and their effective involvement. This paper sheds light on the gender pay gap in Lebanon, in general, and the agriculture sector of South Lebanon, in particular. Exploratory quantitative analysis is applied using a convenient sample of 385 agricultural employees chosen from the Lebanese agricultural institutions in South Lebanon. The paper objectives include the assessment of the wage gap in the agricultural sector in South Lebanon, analyzing opinions towards the wage gap in South Lebanon, quantifying the impact of the gender pay gap on women, identifying the causes that lead to the existence of a wage gap, and the exploration of the existence of wage gap discrimination. Findings showed that the wage gap in the agricultural sector is affected by experience, age, family responsibilities, and physical ability which is a vital factor affecting the wage difference, while the nationality and the educational level had no effect on wage gap. Also, the study showed that there is a 40% wage gap, where the numbers of male and female employees with their average hourly wages were considered which is a significant difference in pay. The outcomes are important for NGOs, policy makers and rural authorities to plan innovatively and capitalize on the untapped female workforce in the agricultural sector of the country.

Keywords

Gender, wage gap, agricultural sector, Lebanon

1. Introduction

The most recent International Labor Office Global Wage Report starts with the statement “Gender pay gaps represent one of today’s greatest social injustices” (ILO, 2018). In fact, gender parity implies that both women and men have equal rights, opportunities, and treatment; moreover, they should have the liberty to develop their skills and make decisions without any limitations set by their gender roles or the characteristics of females and males. Occasions when women and men are not paid the same wages in exchange for the same work results in the so called “direct discrimination” indicating that women are simply treated less favorably than men.

Regrettably, among the developing countries, Lebanon ranks remarkably low 14 out of 19 in the region of the Middle East and North Africa and 145 out of 153 globally when it comes to gender equality in wage (World Economic Forum, 2020, p. 26). In the paid labor force, females find themselves earning less than males for the same types of business fields; it is a real fact facing women across the board (Schieder & Gould, 2016). Moreover, it is assumed that this gap is not evidence of discrimination, but is instead a sign of failing to adjust for factors that could impact earnings differences between men and women. However, according to Correll and Benard (2006), these factors are themselves influenced by gender bias.

Many reasons drive the wage gap in the Middle East region. The lower work experience has been stated as the main reason for the lower wages paid to women. During their career, they work part-time more often and drop out of the work more frequently due to family circumstances, this leads to fewer years of work experience and ultimately a lower salary. The allocation of women and men into different industries and business fields is also another reason for the wage gap. Many women prefer to work in lower-paying businesses such as education and care sectors while many men work in higher paying firms like the manufacturing sector (TWB, 2013).

The European Commission (2014) contended that the types of discrimination are prohibited under EU law, but are unfortunately still present in some workplaces and the gender pay gap exists although women do better at school and university than men. Moreover, the European Commission (2014) stated that in 2012, 83% of young women reached at least upper secondary school education in the EU, compared to 77.6% of men; also, women represent 60% of university graduates in the EU, but this progress did not affect the fact that 21.7% of women aged 65 and over were at risk of poverty, compared to 16.3% of men in EU. Similarly, Staszewska (2015) asserted that if women in developing countries were paid as much as men and participated in the workforce at the same rate as men, they could earn extra money. Thus, if women in developing countries were both paid as much as men and had the equal access to jobs as men, the gap would mitigate between them—this is because more women would be in employment at a higher rate of pay (Staszewska, 2015).

On the other hand, as the gender gap is a key development concern worldwide, “the agriculture sector is underperforming in many developing countries, and one of the key reasons is that women do not have equal access to the resources and opportunities they need to be more productive” (Quisumbing et al., 2014, p. 1; FAO, 2011, p. vi; Meinzen-Dick et al., 2011). Lebanon is no exception, a fact that led international organizations to offer interventions to mitigate the gender gap. In fact, ILO (2020) intends by using the market systems development approach, “to improve livelihoods in the horticulture sector with the aim to increase economic opportunities and benefits for Lebanese farming households and, where possible, agriculture related sectors” (p. 6).

In South Lebanon, agriculture is a vital source of self- and wage-employment, especially for labors (women and men) who lack training or resources for employment in other sectors. Also, agriculture contributes to poverty alleviation; although agriculture becomes industrialized with globalization, and women stay concentrated in the labor-intensive parts of the agricultural value chains with low wages and limited benefits (FAO, Agricultural Value Chain Development, 2010). In effect, Hejase et al. (2013a) found that 26.6% of Lebanese respondents in a sample of 200 employees and managers in the banking sector claim that women are not paid as well as men when occupying the same position. Despite the fact that women represent half of the population in the country, Yaacoub and Badre (2011) stated that only 21% were economically active; this was in 2007 three times lower than men’s activity rate of 66%; indeed this rate increased slightly to 23% in 2009. Further, they concluded that on average

the monthly salary for working women is 660 thousand LBP while for working men, it is 702 thousand LBP. Thus, there is really a gender-based discrimination pay gap of around 6.0% that prevails within the Lebanese territory (Yaacoub & Badre, 2011). Moreover, Dah, Ben Sita, & Dah (2009) asserted that women in the Lebanese banking sector suffer more from intermediate discrimination while being in the average years of service. So, they concluded that both the “sticky floor” and the “glass ceiling”, although present, are not the dominant wage gap discrimination factors. This fact was investigated again in Hejase, Hejase, and Hejase (2015) where the study had shown that the principal significant gender discrimination occurs while climbing up the organizational ladder.

The main purpose of this paper is to present a fresh insight into the gender pay gap in Lebanon, in general, and South Lebanon, in particular, paying attention to the agriculture sector in specific. Exploratory analysis is applied to the data collected from a sample taken from the Lebanese agricultural institutions in South Lebanon in order to highlight issues related to:

- Detection of the wage gap in the agricultural sector in South Lebanon.
- Assessment of agricultural employees’ opinions towards the wage gap in South Lebanon.
- Quantifying the impact of the gender pay gap on women in the agricultural sector.
- Identifying the causes that lead to the existence of a wage gap.
- Showing that the wage gap discrimination does exist even against Lebanese labor laws.

This paper provides data and statistically supported evidence that may be relevant to the authorities and can help them develop new policies that may contribute to reducing gender gap discrimination.

2. Literature Review

2.1 Background

The domain of social economy has adopted “Legal Acts” oriented toward the prevention of the gender wage gap, however the same Act is considered an illegal act. For example, within the labor laws “The Equal Pay Act of 1963” in the USA aims at abolishing wage disparity based on sex (Wilkins, 2012). Definitely, according to Carson (2016), the gender wage gap is a serious worldwide issue. Although the modern life makes us believe that the wage gap is shrinking; however, “in practice, progress in reducing gender pay gaps has been too slow” (ILO, 2018, p. 98). It is still in existence due to the social believes that didn’t end it, and the many hidden factors that continue to foment the wage gap and help it to remain.

In 2003, Yoo defined wage gap as a difference in pay between women and men who exert the same level of human capital doing the same job. Similarly, Blau and Kahn (2007) stated that although the tendency to discriminate against women is decreasing, women continue to encounter discrimination in the labor market as evidenced by the fact that women’s wages continue to be less than men’s salaries in the same job and same qualifications. Practical evidence for the wage gap has been reported in different parts of the world. In the European Union, women in general, earn around 16% less per hour than men according to the European Commission report (2014). In addition, the same report details that the gender pay gap is below 10% in Slovenia, Malta, Poland, Italy, Luxembourg, and Romania, but broader than 20% in Hungary, Slovakia, Czech Republic, Germany, Austria, and Estonia. Similarly, in Switzerland, a study conducted on a sample of 1100 professionals (85% females) resulted in that 79% of the women believed that their career advancement is affected by a determinant factor which is gender, as well as 73% of them acceded that there are barriers to women advancement in upper management, and even though a woman gets to the top managerial hierarchy she will still earn less than a man at the same level (Glynn & Powers, 2012). On the other hand, Yoo (2003) stated that women in

Korea were paid approximately 60% of male worker's earnings in 1999. Likewise, in Pakistan, Channar (2010) concluded that women get paid less than their peer male colleagues at the workplace. Furthermore, in Brazil Madalozzo (2010) contented that even when both genders have similar characteristics, men earn better payments than women. Also, in a study released by the American Association of University Women, it was found that among recent college graduates, fulltime working women's average earn amounted to 82.2% of what their male peers make (Coleman, 2012). Similarly, in Britain, according to Hejase et al. (2013a), a female working full-time earns just 82% of her colleague's salary, and a woman with average qualifications during her life suffers a pay gap of about £250,000. Moreover, in Australia, Vecchio, Scuffham, and Hilton (2013) stated that there is a wage gap of 16.7% that remains unexplained, even after adjusting endowments. Undeniably, women have a high level of dissatisfaction due to the unfair treatment at work which leads to a decrease in their efficiency at work (Adesina-Uthman, 2017). Moreover, the glass ceiling (invisible barrier that prevents more than a few women from reaching the top levels of management) impediment prevents women from developing their career path quickly and contributes to lowering their productivity and growth mainly due to the different barriers that oppose their advancement, including cultural norms, stereotypes, and employer policies and practices (Akpinar-Sposito, 2012).

A study realized in Canada by Vincent (2013) showed that in 2011, the average hourly wage of women working full-time was 87% that of men. Vincent stated four hypotheses that may explain the wage gap namely, the productive characteristics (education, number of working hours, experience ...), the educational and professional choices that women make, gender stereotypes and their impact on young people choices in educational paths and career, and family responsibilities and childbearing, called it "Family Gap" where it affects the productivity and human capital of mothers due to the temporary removal from the workforce. However, besides these four aforementioned factors, Vincent did emphasize that the more significant portion of the wage gap remains unexplained.

The European Commission (2014) made a study which focus more on the gender wage gap within the European Union and identified the factors that may cause the difference in wage. The study revealed that women are over represented in certain sectors, such as the health sector, where 80% of all workers are women, and when women are the majority, their skills and competencies are often under-valued, and the result is a low pay. In addition, the study highlighted the family responsibilities which force women to work fewer hours and make them prefer part-time jobs, which means less money to earn, difficult career development and fewer rewards; so, forcing women to remain as low-level workers. Furthermore, Falk and Voigt (2006) made a study in six countries (Australia, Austria, Philippines, Germany, Switzerland and the UK) which reveals that women's representation at the executive management level of organizations does not exceed 13% and that the "glass ceiling" is prevalent across all six countries but varies in thickness.

Various negative consequences may arise due to the disparity between men and women earnings; for example, when a woman earns a lower wage, this may increase her financial dependence on the male partner which may increase the possibility of domestic violence (Blau & Kahn, 2000). In general, Arab countries display a low level of achieving parity; the overall worldwide gender gap had been closed by 68.6%, while the Middle East and North Africa region has closed only 60.5% of the gender gap as the Global Index report recorded (World Economic Forum, 2020). Furthermore, "despite some advances in women's economic equality in Qatar, Algeria and the United Arab Emirates, at the present rate, the region's 39% gender gap (compared to 33% in South Asia and 32% in Sub-Saharan Africa) will take another 356 years to close" (Abirafeh, 2017). Moreover, the UAE ranks second in the Middle East for

wage equality for similar work, but ranked 120 out of 144 countries overall in 2017 in the Global Gender Gap Report (World Economic Forum, 2020, p. 26). A new law was approved to ensure women are paid an equal wage to their male colleagues by the UAE Cabinet in April 2018, which is an excellent step in the closing gap journey (Duncan, 2018).

In Lebanon, Hejase et al. (2013a) stated that “women in Lebanese institutions seem to be able to reach acceptable levels of seniority, but they are still way behind when it comes to top managerial positions which involve strategic planning and decision making”. Also, the authors concluded that the first reason for women to be still considered as less equal and less competent than men is that they are not allowed to participate in top managerial positions.

Furthermore, Yaacoub and Badre (2011) reported that women’s average salary in Lebanon was lower than men’s average salary and women’s median salary was 50 thousand LBP less than men’s median salary each month. Another study done in 2009 by the United Nations Economic and Social Commission for Western Asia (ESCWA, 2009) displayed a 35.2% of wage gap in the Arab countries and 31.5% in Lebanon.

A Spanish report done in 2015, shed light on the fact that the part of the wage gap between public and private sector workers that is not explained by differences in productive characteristics is higher for women than for men, a result that can be due to some form of gender inequality and translates into a higher gender wage gap among workers in the private sector (Rahona-López, Murillo-Huertas, & Salinas-Jiménez, 2016).

Kolesnikova and Liu (2011) concluded that the wage gap is steadily diminishing with time and they stated that it decreased to around 16.5% in 2011 after being 23.75% in 1999 and 30% in 1989. Likewise, in Lebanon, Hejase et al. (2013a) studied a sample of 200 employees and managers and informed that 73% of the respondents believed that managers of both genders are equally paid for the same managerial position.

In the USA the question of how large is the gap right now is frequently asked? Based on over 425,000 salaries of full-time U.S. employees, the Glassdoor Economic Research Company (Chamberlain, Zhao, & Stansell, 2019) concluded that men earn 21.4 percent higher base pay than women on average. In addition the company reported that on comparing workers of similar age, education and experience the gap shrinks to 19.1 percent. Furthermore, on comparing workers with the same job title, employer and location, the gender pay gap falls to 4.9 percent (this is 95.1 cents per dollar)

As for the gender wage gap within the agricultural sector; women cover about 43 percent of the global agricultural labour force in developing countries, thus they are essential contributors to the agricultural and rural economies. Moreover, evidence from a sample of 14 countries shows that on average women are paid 28 percent less than males in rural areas (Raney et al. & Doss, 2011).

The contribution of women to agriculture is unmistakably significant; however, most policy makers and practitioners consider females as less efficient crop producers (Quisumbing, 1995). Furthermore, different studies in countries like Nepal, Nigeria, and Uganda reported evidence for a gender gap in agricultural productivity. A study in Nepal inferred that male labor is more productive in agriculture than female labor (Thapa, 2008). Another done in Nigeria and Uganda concluded that persistent lower crop productivity is habitual on female-owned plots (Peterman, Quisumbing, Behrman, & Nkonya, July 2010). Garikipati (2008) reported that among other reasons women are obliged to take agricultural work because there are little non-agricultural opportunities available to them. Moreover, the everyday demands of women’s domestic activities may mean that off-farm job puts greater sacrifices for them than for men. Thus, they usually allocate more time to off-farm work causing their agricultural labor

productivity to be lower than men's which indicates that family responsibilities are at large one of the causes of the gender wage gap. In general, Sneyers and Vandeplass (2015) stated that traditionally women are less productive in agriculture than men and the gender gap in agricultural fields is mostly not due to the fact that females are worse farmers than men, but rather due to gender-based differences in access to input and output markets, or lower bargaining power. The fact that women have less access to productive resources than men conveyed that within African households the plots controlled by women for all crops have lower yields than plots controlled by males (Udry, Hoddinot, Alderman, & Haddad, 1995). Likewise, in Korea, a study reported that although women are actively involved in most of the agricultural work, men still own the land, control women's labor, and make agricultural decisions (Hwang, Ellanie, Paris, & Choi, 2011). However, in their most recent policy brief, Rodgers and Akram-Lodhi (2019), based on original research in five countries (Ethiopia, Malawi, Rwanda, Uganda and United Republic of Tanzania), shows that "gender gaps in agricultural productivity do not arise because women are less efficient farmers but because they experience inequitable access to agricultural inputs, including family labor, high-yield crops, pesticides and fertilizer" (p. 1).

The calculated Gini coefficient places Lebanon at a rank of 129 from 141 countries in terms of income equality (Saliba, Sayegh, & Salman, February, 2017), adding to this the extremely low female labor participation makes the gap between the groups in general and the gender gap in particular wider. Here it is worth recalling that the Gini coefficient is often used to measure income inequality where, 0 corresponds to perfect income equality (i.e., everyone has the same income) and 1 corresponds to perfect income inequality (i.e., one person has all the income, while everyone else has zero income). According to the World Economic Forum report (2020), gender parity in pay is proving hard to achieve. The pay differentials between men and women are a persistent form of gender inequality in the workplace and the Global Gender Gap Index 2020 finds that the progress towards closing the gender gap on this aspect has stalled. Table 1 shows a sample of countries where Lebanon gender gap score is 0.599 ranking in position 145 among 153 countries. Furthermore, within the 19 MENA region countries, for gender gap, Lebanon ranks in position 14 (World Economic Forum, 2020).

Table 1. Gender Gap Ranks for Selected Countries

Country	Gender Gap Rank out of 153	Gender gap score	Wage equality score	Rank in wage equality score
Lebanon	145	0.599	0.619	90
Iceland	1	0.877	0.846	1
UAE	120	0.655	0.781	10
Yemen	153	0.494	0.691	54
Kuwait	122	0.650	0.638	79
KSA	146	0.599	0.680	60
Tunisia	85	0.623	0.644	124

Source: World Economic Forum, 2020.

2.2 Agricultural Sector Overview in Lebanon

Lebanon stands out in the Middle East as an ideal location for agricultural activity for its moderate climate, rich soil, and abundant water resources (IDAL, 2020a). Significant and central agricultural zones and regions for crops and meadows include the Bekaa area (east Lebanon) where more than 40% of the land is cultivated, the North particularly in Koura and Akkar, Marjaayoun and Nabatiyeh in the South as well as the coastal region where intensive agriculture is also present in greenhouses, and Mount Lebanon. The Agriculture sector generates around 4.7% of Lebanon's GDP mainly in the production of dairy products, food preserves and subsistence farming (FAO, 2018). The critical agricultural products include vegetables that rank first with 48% of total agricultural production and fruit comes second with 26% and 12% for dairy, livestock products, and wheat; and 7% for olive, eggs, and almonds (IDAL, 2015).

According to IDAL (2020a), "in 2019, agricultural exports reached USD 193.1 million, growing at a Compounded Annual Growth Rate (CAGR) of 2% during the 2010-2019 period, while the decline between 2014 and 2017 was due to the closure of the border areas with Syria" (p. 8). Furthermore, "Lebanon remains highly dependent on the import of agricultural products, with imports amounting to USD 1.47 billion in 2019, down from USD 1.64 billion in 2018" (p. 9). It is worth to mention that there are many challenges facing this sector in all of Lebanon's regions and the Lebanese farmers are struggling to contend with high production and transportation costs, cheap competition from abroad, lack of governmental support and modern technology, lack of skilled and specialized labor and uncontrolled wholesale markets (FAO, 2016).

Talking about the South Lebanon area, it is an important agricultural region, spreading from Sidon to Tyr where intensive agriculture is also present in greenhouses. Greenhouse agriculture in South Lebanon covers an area of 6,277,000 m², 78% of which is used for the plantation of fruits. Permanent agriculture land covers an area of 201,539,000 m², 38.9% of which is used for planting olives, and 31.6% used for citrus fruits (IDAL, 2020b). Moreover, "the Lebanese Agriculture Research Institute (LARI), a governmental organization under the Ministry of Agriculture conducts basic scientific research for the development of the agricultural sector in Lebanon. Research focuses on biological agriculture, irrigation, and greenhouses, as well as the focus on olives, citrus and exotic agriculture (ibid).

Based on the aforementioned facts, there is a major potential for improvement. However, since 2011, the Syrian crisis has resulted in massive influxes of refugees across the region primarily into neighboring Iraq, Jordan, Lebanon, and Turkey, where Lebanon hosts around 1.7 million refugees, to be the country that has the highest concentration of refugees in the world (FAO, 2018). This large and unexpected number of Syrian refugees increased labor supply by a range of 30 to 50 percent (with the largest impacts on women, youth and unskilled workers). Moreover, refugees drove down agricultural wages substantially and put Lebanon under political and economic challenges, where the Lebanese citizen is competing with refugees for jobs, access to public services, infrastructure, and natural resources (FAO, 2018). Moreover, the Syrian crisis lead to an increase in the cost of shipping Lebanese agricultural products by land to Arab markets, which steer the Lebanese food exports to lose their competitiveness in the Gulf market in front the neighboring countries (LAU, 2015).

Furthermore, the Southern area of Lebanon has suffered from the crisis where according to Antoine Howayek, the president of the Lebanese Farmers' Association; the 90% of the banana crop exported to Syrian market has fallen to 50% due to the crisis (LAU, 2015). At the same time Ramiz Osseiran, head of the Farmers' Association in the South of Lebanon said, "Syrians' consumption of Lebanese produce dropped by around 70% due to the population's lower purchasing power in the war-ravaged country,

and due to the fact that a huge number of Syrians have left their country” (ibid, Para 5). Syrian women work as agricultural workers and are being recruited in teams to secure income and shelter; these women have increased their agricultural expertise especially those who come from similar agricultural areas in Syria. This fact has affected the local population’s livelihood, the employment rate and specifically the poverty incidence which has risen to 42% in South Lebanon compared with the national poverty rate of 28% per cent which is 21% (ILO, 2014).

3. Methodology

Over the past ten years, according to the Institute for Women’s Policy and Research, the gender wage gap has seen little change; between 2016 and 2017, the gap for full-time workers with weekly salaries grew wider by 0.1 percentage points (Calfas, 2018). For as long as women have been in the workplace, women have faced threats about whether they are really up to the job like men do, and the more women break into male-dominated fields, such as agricultural areas, the more they discover such inequality (Waxman, 2019).

This research is a quantitative descriptive research that collects primary data from a conveniently selected sample of agricultural employees, who were willing to participate, using a survey questionnaire. The questionnaire aims to assess the existence of the wage gap within agricultural firms in South Lebanon. Also, the research intends to study female employees who are affected by the sticky floor and to show the necessity of equitable rules against discrimination in the work place.

3.1 Sample Selection

The present study is based on an adequate sample of employees selected from five private Lebanese agricultural organizations located in South Lebanon. The size of the sample is 385 persons, where its size was determined based on Cochran’s rule (Hejase & Hejase, 2013b) with 95% confidence level, an estimated proportion of 50% due to lack of pilot studies, and 5% error to tolerate. Participants were selected conveniently provided they were willing to participate. Moreover, participants were clearly informed about the research objectives, and were transparently assured confidentiality of their responses, therefore all participants were willing to offer their responses and had no objections whatsoever or concerns either physically or emotionally while participating in this endeavor. The researchers collected the data personally from most of the employees due to the low educated respondents who cannot fill the survey forms, consequently, it can be said that a 100% response rate was achieved. Moreover, the questionnaire was translated into the Arabic language [from English to Arabic first, then from Arabic to English for the sake of minimization of errors] to avoid respondents’ misunderstanding. Finally, Data analysis was performed using the Statistical Product and Service Solutions, SPSS version 24, an IBM software product (Hejase & Hejase, 2013b). Descriptive statistics and cross-tabulations were used to interpret the collected primary data.

3.2 The Survey Design

The survey design used in this research is composed of 19 structured questions and one open question. It is formed of three main sections. Part one includes five questions (1 to 5) designed to assess the respondent’s type of work and hourly/monthly salary to determine the difference in pay between the two genders, and to know the influence of the type of work. Part two, includes ten questions (6 to 15) to assess the employees’ opinions towards wage gap existence, sticky floor, glass ceiling and the factors that affect their effectiveness at work. Additionally, an open question is included to express opinions about the wage gap. The last part consists of five questions to assess the respondent’s personal information. The questionnaire was set based on a study done in Brazil which used a similar

questionnaire as their tool to discuss the wage gap issue (Alvarezy, 2015). Also, similar surveys were conducted online within Canada, Switzerland, Germany, France, Netherlands, United Kingdom, and the United States to reveal results related to the wage gap case (Poll, 2015).

Thus, the primary aims of the research are:

- To know the hourly wage for both genders.
- To assess if gender affects salary.
- To assess if experience affects hourly wage.
- To explore if women are aware of the wage gap issue and if they consider it a discrimination act.
- To know if family responsibilities are one of the major causes of the gender wage gap.
- To identify if physical ability is the leading cause of gender wage differences.
- To discover the wage gap causes within the agricultural sector in South Lebanon.

4. Results and Discussion

4.1 Demographics

Table 2 demonstrates that participants were 54.5% females and 45.5% males, 36.4% of the workers aged between 22-28 years old, 25.5% between 15-21 years old, 24.4% in the range of 29-35 years old, while only 11.2% in the range of 36-42 years old and 2.6% between 43-49 years old. Also 45.7% of the respondents were Lebanese citizens, and 54.3% were Syrian workers. Moreover, 61.6% of the workers held a primary education level, 28.1% were illiterate, and 10.4% of the respondents had a middle stage education level. According to experience 46% of the workers had between 0-5 years of work experience, 36.1% had between 6-10 years, 24% had between 11-15 years, 4.9% had 16-20 years, and finally, 2.1% of the workers had above 20 years of experience. Additionally 66.2% of the respondents were married and carrying family responsibilities, while 33.8% were single. Also, 54.3% of the workers earned an hourly wage below 3,000 L.L. and 45.7% earned between 3,000-9,000 L.L.

Due to the sensitivity of the wage question and inability of the respondents to provide an answer related to their hourly wage, another question was raised about the range of the monthly salary under three categories: 200,000 LL to 500,000 LL, 501,000 to 800,000 and 801,000 to 1000,000 LL where the frequencies were 199 (51.7%), 166 (43.1%) and 20 (5.2%), respectively. Now because the frequency of the third category was low (which will violate the assumptions needed later for the χ^2 test of independence), this class was combined with the second class leading to new wage distribution namely 51.7% (200,000 to 500,000 LL) and 48.3% (501,000-1,000,000 LL).

4.2 Workers' Gender

The first question that the current research answers is related to the hourly wage of South Lebanon agricultural workers in regards to the gender. Table 2 shows that 34.81% of male workers earn more than 3,000 up to 9,000 L.L. while 43.6% of female workers earn 3,000 L.L. or lower.

A Chi-Square test of independence was performed to examine the relation between gender and the hourly wage. The relation between these variables was statistically significant, $\chi^2(1, n=385)=123.09$, $p=0.000$. Thus, there is enough evidence to suggest an association between gender and hourly wage as depicted in the table whereby males are more likely to get a higher hourly wage than females indicating that a significant gender wage gap subsists in South Lebanon within the agriculture sector.

Table 2. Cross Tabulation of Gender and Hourly Wage

		Hourly wage (LL)		
		Wage≤3,000	3,000<Wage≤9000	Total
Gender	Female	168	42	175
	Male	41	134	210
	Total	209	176	385

In fact, the result of gender-hourly wage dependence is consistent with what Yaacoub & Badre reported in their 2011 research that Lebanese women's average salary within the agriculture sector is 21% less than that of men's average salary (Yaacoub & Badre, 2011). Likewise, the result agrees with what has been reported in Sri Lanka that the male-female wage differentials persist in the agriculture sectors (Gunatilaka & Hewarathna, 2002).

4.3 Workers' Experience

A Chi-Square test of independence was calculated comparing the frequencies of the wage categories and years of experience. When considering both genders, a significant dependency was found with χ^2 (3, n=385)=117.93 and $p=0.000$. Actually, higher years of experience are associated with higher wages. Table 3 depicts the frequencies of respondents who fall under the different gender-years of experience categories. Female workers dominate the low wage category at all levels of experience. Furthermore, males dominate the high wage category irrespective of the years of experience. In fact, for females alone, the Chi-Square test of independence provides a significant dependency between years of experience and wage category with χ^2 (3, n=210)=60.361 and $p=0.000$. Similarly for males the test gives χ^2 (3, n=175)=40.112 and $p=0.000$ indicating a significant dependence. This implies that even with accumulated work experience females remain in disadvantage subject to the gender wage gap. Vincent (2013) gave an explanation to this verity by elucidating that more experience means more working hours and full time job that women can't endure due to family responsibilities and child bearing, he called it "Family Gap" due to the conflicts between family and work responsibilities that women are exposed to. The aforementioned is confirmed as well by McGuinness et al. (2011) who assessed the role of motives in explaining the gender wage gap finding that most women indicating family commitments. In addition, Mas and Pallais (2016) conducted a field experiment to study compensating differentials. They found that females, particularly those with children, are more willing than men to trade off higher wages in order to work from home and to avoid disruptions to their work schedule.

Table 3. Cross Tabulation of Wage versus Experience for Both Genders

		Years of Experience=Exp.				
		Exp.<5	5≤Exp.<10	10≤Exp.<15	Exp.≥15	Total
Females	Wage≤3,000 LL	115	49	3	1	168
	3,000<Wage≤9000	7	20	10	5	42
Males	Wage≤3,000 LL	29	10	1	1	41
	3,000<Wage≤9000	26	60	28	20	134

4.4 Workers' Age

A Chi-Square test of independence was applied to compare the frequencies of the wage categories to age categories for the total respondents. A significant dependency was found where χ^2 (4, n=385)=80.517 and $p=0.000$. One might ask here: is a higher age category associated with higher hourly wage? To answer this question, the Chi-Square test was applied only for females where it was found that χ^2 (4, n=210)=24.976 and $p=0.000$ implying that age and wage are significantly dependent where Table 4 demonstrates clearly that 35.6% of females are young (below 28 years) and belong to the low wage category. In contrast, the application of the Chi-Square independence test to males gave χ^2 (4, n=175)=37.468 and $p=0.000$, thus suggesting again a significant dependence but this time 31.4% of males with ages above 22 years belonging to the higher wage category. As a matter of fact, looking at Table 4, it is unmistakable that females' wages remain in the low category even when age increases. Moreover, the table reveals that for the wage range 3000-9000 LL males do outnumber the females in all age categories. The National Research Council (2001) indicated that in general for all career ages, men earn at least 10% more than women of the same career age. Interestingly, Elkins (2017) confirms the above results as shown in Figure 1 depicting the difference of pay growth versus age in favor of males.

Table 4. Cross Tabulation of Workers' Ages against Wage for Both Genders

		Age (Years)				
		15-21	22-28	29-35	36-42	43-49
Females	Wage≤3,000 LL	61	76	23	8	
	3,000<Wage≤9000	3	17	17	5	
Males	Wage≤3,000 LL	21	9	9	2	0
	3,000<Wage≤9000	13	38	45	28	10

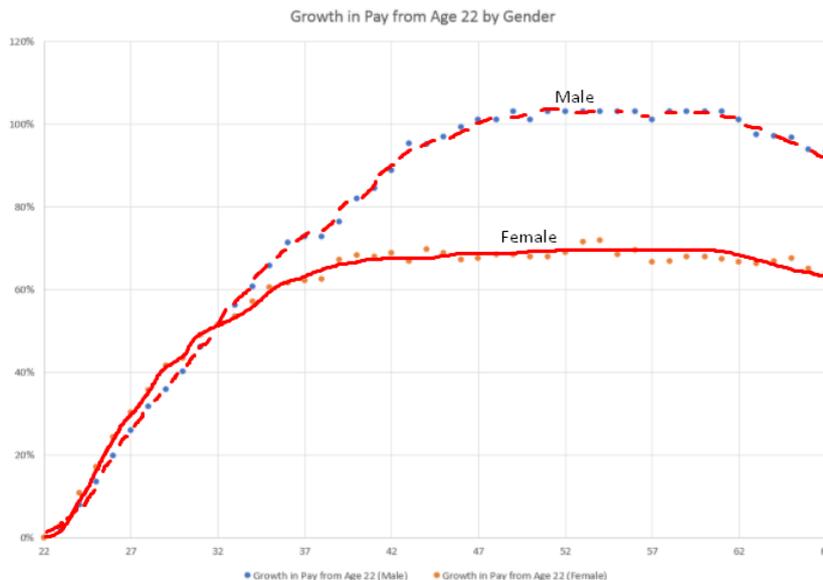


Figure 1. Growth in Pay from Age 22 by Gender

Source: Elkins, 2017.

4.5 Workers' Nationality

Data from Table 5 which depicts the distribution of the hourly wage versus nationality reveals that 54.3% of the workers were Syrians while 45.2% were Lebanese and 0.5% were others. The expected contingency table platform shows more than 20% of the cells have an expected count less than 5 implying that the Chi-Squares will not have a Chi-Square distribution and therefore is not valid. The usual, classical solution in such cases is to combine categories before doing the Chi-Square test. Thus, Table 5 used collapsed data allowing a Chi-Square test of independence to identify dependency between nationality and pay category for all respondents where the results demonstrated that there is a significant dependency between hourly wage and nationality ($\chi^2(1, n=385) = 4.621, p=0.032$). In fact, workers' nationality does affect wage at levels of significance below 5%. Moreover, the Chi-Square test was performed on each gender to get that for females $\chi^2(1, n=210) = 0.486, p=0.486$ indicating no significant dependence; and for males $\chi^2(1, n=175) = 4.117, p=0.042$ showing a significant dependence between nationality and the paid hourly wage; so, it looks that male workers' highest wages are marginally higher for Lebanese than for other nationalities specifically Syrians.

Table 5. Cross Tabulation of Workers' Nationalities against Wage for Both Genders

		Nationality		
		Lebanese	Syrian+Others	Total
Females	Wage≤3,000 LL	70	97 (+1)	168
	3,000<Wage≤9000	20	22	42
Males	Wage≤3,000 LL	14	26 (+1)	41
	3,000<Wage≤9000	70	64	134

4.6 Workers' Educational Level

Table 6 shows that 61.6% (237) of the workers did attain the primary level, 28.1% (108) were illiterate and 10.4% (40) had middle school education. Chi-Square test of independency to compare wage and education categories for all workers shows $\chi^2(2, n=385)=0.059, p=0.971$ which specifies a significant independency between the worker's educational level and wage category. Additionally for female and male workers the test resulted in $\chi^2(2, n=210)=0.442, p=0.802$ and $\chi^2(2, n=175)=1.569, p=0.456$, respectively suggesting no statistically significant dependence. It looks that this consequence within the Lebanese agricultural sector does not agree with the United Nations Economic and Social Commission for Western Asia study which concluded that the percentage of the female workers that have completed college education or above was 65% where for males was 46% and the difference in pay between them was around 27% (ESCWA, 2009).

Table 6. Cross Tabulation of Workers' Educational Levels against Wage for Both Genders

		Education			Total
		Illiterate	Primary	Middle School	
Females	Wage≤3,000 LL	43	109	16	168
	3,000<Wage≤9000	9	28	5	42
Males	Wage≤3,000 LL	16	20	5	41
	3,000<Wage≤9000	40	80	14	134

4.7 Family Responsibility (Marital Status)

In studying if the marital status (family responsibility) of the worker affects the worker's wage, Table 7 reveals the frequencies of the sampled workers under the two different wage categories. It is evident that females dominate the low wage category (wage≤3,000 LL) while males dominate the higher wage category (3,000<wage≤9,000).

A Chi-Square test of independency was calculated to compare wage and family responsibilities categories. A significant result was obtained with $\chi^2(1, n=385)=12.631, p=0.000$ revealing that there is a statistically significant dependence between hourly wage and family responsibility. The Chi-Square test for females gave $\chi^2(1, n=210)=3.108, p=0.078$ indicating a significant independency (at 5% level of significance) thus showing that females are underpaid irrespective of their marital status. For males alone, the test gave $\chi^2(1, n=175)=22.656, p=0.000$ designating that the marital status of the male does affect his wage. Similar outcomes were achieved by Garikipati (2008) and by the European Commission (2014) where both studies stated that family responsibility (which is generally attached to females) is one of the causes of gender pay gap.

Table 7. Cross Tabulation of Workers' Marital Status and Type of Work Versus Wage for Both Genders

		Marital Status			Type of work		
		Singl e	Marrie d	Tota l	Eas y	Har d	Total
Females	Wage ≤ 3,000 LL	60	108	168	160	8	168
	3,000 <Wage ≤ 9000	9	33	42	38	4	42
Males	Wage ≤ 3,000 LL	27	14	41	5	36	41
	3,000 <Wage ≤ 9000	34	100	134	9	125	134

4.8 Worker's Physical Ability

Cleveland, Stockdale, & Murphy (2000) and Hamdar et al. (2015) assert that in the work field, there's some work called "women's work" and other work known as "men's work" a fact that leads to wage gaps. Therefore, the current study assessed the dimension of the worker's physical ability to perform hard or easy activities and how this influences the wage category. A Chi-Square test of independency was calculated to identify dependency between wage and physical ability. For the totality of respondents the data given in Table 7 indicated a significant dependency where $\chi^2(1, n=385)=105.388$ and $p=0.000$. As for the females alone, the test gave $\chi^2(1, n=210)=1.414$ and $p=0.234$ which means that there is a significant independency between wage and type of work when it comes to females; in other words females are underpaid irrespective of the hardness of work they perform. On the other hand, for males, the Chi-Square test gave $\chi^2(1, n=175)=1.280$ and $p=0.258$ indicating a significant independency with males getting higher wages when they perform hard tasks. So, physical ability is one of the causes which stand behind the wage gap within the agricultural sector in South Lebanon. Indeed, within the agricultural sector, ability to perform hard work is associated with higher productivity and thus higher wages. Similar findings were reported by Thapa (2008) who stated in his study performed in Nepal that male labor is more productive in agriculture than female labor. Furthermore, Lips (2009; cited in Hejase et al., 2013c) asserted that certain jobs require masculine qualities which eventually keep women out from entering those domains.

4.9 Workers' Awareness of the Gender Wage Gap

Workers' awareness of the existence of a gender gap is tested with the dependency Chi-Square test to relate the levels of gender wage gap awareness with gender. Significant dependency is identified between gender and awareness of pay gap where $\chi^2(2, n=385)=40.797$ and $p=0.000$, indicating that the majority of males are in fact aware of the existence of the gender wage gap in comparison to females.

Table 8. Cross Tabulation of Wage Gap Awareness Versus Gender

		Awareness of gender wage gap			
		Yes (% in gender)	No (% in gender)	Don't know (% in gender)	Total
Gender	Female	95 (45.2%)	36 (17.1%)	79 (37.6%)	210
	Male	135 (77.1%)	15 (8.6%)	25 (14.3%)	175
	Total	230	51	104	385

Moreover, Table 8 shows that 59.74% (230 out of 385) of the workers answered that there is a wage gap, 13.25% (51 out of 385) answered with “No”, and 27.01% (104 out of 385) responded “I do not know”. Therefore, it looks that more than the half of the workers (~ 60% are aware of the wage gap).

4.10 Workers' Efficiency

Applying the Chi-Square test to Table 9 aiming at identifying if there is a relation between gender and the issue of “Money earned affects the way I do my work”; the outcomes indicated that there is a significant dependence with a value of $\chi^2(2, n=385)=19.599$ and $p=0.000$. This result implies that workers believe that gender and the belief that money earned affects efficiency at work are related specifically among males who in their majority (86.8%) agree that money earned affects their performance.

Table 9. Cross Tabulation of Answers to “Money Earned Affects the Way I Do My Work” Versus Gender

		Money earned affects the way I do my work			
		Agree (% in gender)	Disagree (% in gender)	Neutral (% in gender)	Total
Gender	Female	142 (67.6%)	37 (17.6%)	31 (14.8%)	210
	Male	152 (86.8%)	12 (6.9%)	11 (6.3%)	175
	Total	294	49	42	385

Moreover, according to Table 9, 76.4% (294/385) of workers agreed that the money they earn affect their efficiency at work, while 12.7% (49/385) disagreed and 10.9% (42/385) had a neutral opinion. To reinforce the aforementioned idea related to “money earned affects the way I do my work”, workers were asked about their prime motivation factor that contributes to better productivity; 53.0% answered that it is the wage paid (money), 5.5% said promotion, 4.7% picked insurance, 4.2% elected classification, 8.6% went with morale and 23.9% decided that all the said factors are essential. On comparing the responses of males and females, a clear gender dependency was detected $\chi^2(6, n=385)=18.683$ and $p=0.005$ where 56.7% of females compared to 48.6% among males declared that it is money what matters so that farmers will feel more motivated to improve production.

4.11 Workers' Awareness That Wage Gap Is a Direct Discrimination

On asking if the difference in pay between men and women is a direct discrimination, 40.3% (155/385) of the respondents answered yes, 33.8% (130/385) answered no and around 26% (100/385) expressed that they actually don't know (Table 10). To verify if gender has to do with these percentages, a Chi-Square test was performed and the result was $\chi^2(2, n=385)=7.141$, $p=0.028$ which implies a

significant relationship where surprisingly men were the majority who attested to this discrimination.

Table 10. Cross Tabulation of Recognizing That Wage Gap Is a Direct Discrimination and Gender

		Wage gap is a direct discrimination			Total
		Yes (% in gender)	No (% in gender)	Don't know (% in gender)	
Gender	Female	72 (34.3%)	76 (36.2%)	62 (29.5%)	210
	Male	83 (47.4%)	54 (30.9%)	38 (21.7%)	175
	Total	155	130	100	385

4.12 Workers' Awareness That a Sticky Floor Does Exist

This study examined the existence of a sticky floor for women in the agricultural sector in South Lebanon. Results show upon asking the respondents if men get promoted faster than women that 56.6% (218 out of 385) in favor, 13.2% (51/385) against and 30.2% (116/385) answered that they don't know. Again the Chi-Square test of independence revealed that $\chi^2(2, n=385)=52.243, p=0.000$ which implies a significant relationship exists with 76.6% of men assured the fact as compared to 40.0% of women who did the same. Likewise, 6.3% of men answered no compared to 19.0% of women. Thus, the sticky floor prevails among women within the agriculture sector in South of Lebanon. This result agrees with Khanna (2012) in India who argued that the sticky floor effect persists even after controlling personal and job attributes; thus, implying heavy discrimination of the poor women.

4.13 Workers' Beliefs about Experience, Gender, and Earnings

Three questions related to experience in relation to salary, gender in relation to wage and earnings within the agricultural sector were asked. As for experience affecting salary 195 (56.6%) answered yes, 78 (20.3%) said no and 112 (29.1%) replied that they don't know; additionally, the Chi-Square test of independence pointed to a significant dependence of the answers with gender ($\chi^2(2, n=385)=21.223, p=0.000$) where 63.4% of males against 40.0% of females affirmed the idea (16.0% of males rejected the idea against 23.8% of the females).

On considering the answers to "gender affects money earned", 234 (60.8%) answered yes, 61 (15.8%) said no and 90 (23.4%) replied that they don't know; additionally, the Chi-Square test of independence pointed to a significant dependence of the answers with gender ($\chi^2(2, n=385)=13.954, p=0.001$) where 70.9% of men against 52.4% of women agreed that gender affects earnings; likewise, 10.9% of men against 20.0% of women rejected the idea; in addition, 18.3% of men against 27.65 of women informed that they don't know.

When asked if women earn less than men within the agricultural sector, 235 (61.0%) respondents answered yes, 53 (13.8%) replied no and 97 (25.2%) replied that they don't know. For this question, the Chi-Square test of independence pointed to a significant dependence of the answers with $\chi^2(2, 385)=37.887, p=0.000$ where 77.7% of the males against 47.1% of the females admitted the statement while only 6.9% of the males against 19.5 of the females denied the statement (15.4% of males and 33.3% of females declared that they don't know).

4.14 Estimation of the Wage Gap

The gender pay gap is the average difference in earnings between men and women (Watkins, 2018). In order to identify this gap, a very critical and sensitive question related to the monthly salary was included in the questionnaire. Such a delicate question, if allowed by law leads many people to refuse or at least to prefer not to answer it. In the USA, such a question is irritable and is becoming illegal if asked at hiring time, simply because salary history inquiries fortify discrimination by influencing the hiring and income decisions. “What’s your current salary?” is now an illegal question in at least 17 states within the USA where the salary history is banned aiming at closing the gender wage gap (Salary.com, 2020). In fact, “women and people of color deserve to be paid what they’re worth, not held back by their current or previous salary” (Ward, 2017). Thus, because of the controversial nature of the question, respondents were asked to indicate their monthly salaries within some pre-determined salary ranges. Table 11 shows the data gathered where each of the columns labelled “average” provides the average salary being the midpoint of the specific salary interval.

Table 11. Ranges of Average Salaries Earned by Agricultural Workers in South Lebanon during 2019

Monthly salary	LL	Average LL	Female (% within gender)		Male (% within gender)		Total
200,000-500,000		350,000	161	(76.67%)	38	(21.71%)	199
501,000-800,000		650,000	48	(22.86%)	118	(67.43%)	166
801,000-1,000,000		900,000	1	(0.47%)	19	(10.86%)	20
Count			210	(100%)	175	(100%)	385

Note. L.L. means Lebanese Lira or Lebanese Pound [LBP].

By applying simple statistics (Hejase & Hejase, 2013b) to the averages and their corresponding percentages (Probabilities), it is determined that the average salaries (Expected values of salaries) are LL 612,020 (std. dev. =LL 157,747) and LL 421,165 (std. dev.=LL 130,120) for males and females, respectively. Accordingly, females in the Lebanese agricultural sector suffer from (at least) a LL190,000 (std. dev.=LL 27,627) difference in pay (monthly) from men for doing almost the same work, equivalent to 31% (190,000/612020) wage gap (std. dev 27,627/157,747=17.51%).

Additionally, the nonparametric Independent-Samples Mann-Whitney U Test was performed since there is an interest in this work to assess whether or not it is reasonable to claim that the two population salary distributions (the population salary distributions for females and males) are equal, based on the information provided by the samples. The test showed that the distributions in the two groups differed significantly (Mann–Whitney $U=7880.5$, $n_{\text{females}}=210$, $n_{\text{males}}=175$, $p<0.000$) and, consequently, it can be concluded that our sample data provides strong evidence that the distribution of male salaries is higher than the distribution of female salaries indicating the aforementioned significant gender wage gap of around 31%. Indeed, this figure is in full accordance with the 31.5% wage gap reported by the ESCWA (2009) and almost similar to the 28% reported by the SOFA team and Doss (Raney et al. & Doss, 2011, p. 22).

5. Conclusions

This research aims to assess the wage gap within the agricultural sector in South Lebanon and to search for the causes behind wage gap (experience, age, nationality, educational level). In addition to investigating whether it is considered as an act of discrimination toward women, or whether the wage gap is due to physical ability that men have an advantage in. The research also detects the existence of a sticky floor facing women in agricultural jobs and if women are aware of the gap. Moreover, the study investigates whether the wage gap had any negative effect on women's performance.

The results showed a difference in pay between men and women, thus establishing that a wage gap does exist in South Lebanon within the agriculture sector. In fact, in using a Canadian website called "New Brunswick" (GNB, 2015) to calculate the wage gap of the sample, where the numbers of male and female employees with their average hourly wages were entered, the result came to be 40% which is a significant difference in pay between the two genders working within the agricultural sector in South Lebanon. This figure is in fact higher than that reported by the Economic-Social Commission for Western Asia study which concluded that the wage gap in Lebanon was 31.5% in 2009 (ESCWA, 2009).

The outcomes of this study showed that the wage gap in agricultural sector is affected by many factors such as experience (working hours), age and family responsibilities. Also, physical ability which is a vital factor affecting the wage difference, while the nationality and the educational level had no effect on wage gap. Focusing on the physical ability, it is considered as a main cause behind wage gap in the agriculture sector according to the workers' opinions where women cannot complete many tasks which after given thought are considered hard tasks (Thapa, 2008; Hejase et al., 2013c). In addition, it was concluded that the wage gap does affect the women's performance negatively, where the money was the most critical factor affecting women's effectiveness at work. Actually, Cloninger, Ramamoorthy and Flood (2011) assert if women are rewarded fairly for their work, they are more likely to show higher level of commitment that can lead to better job performance.

Moreover, the wage gap is a decriminalizing act women suffer from daily but unfortunately, women are unaware of this discrimination. Schieder and Gould (2016) contend that overt gender discrimination (wage gap) is typically adjusted statistically for certain characteristics, however "can radically understate the potential for gender discrimination to suppress women's earnings. This is because gender discrimination does not occur only in employers' pay-setting practices. It can happen at every stage leading to women's labor market outcomes" (Para 5).

Finally, women face a sticky floor in their careers which leads men to get promoted faster and have faster access to higher positions. The aforementioned is confirmed by Yap and Konrad (2009), Hejase et al. (2014) and Yousaf and Schmiede (2017).

Conclusively, though these findings reflected the reality of wage gap within the agricultural sector in South Lebanon they are considered as an alert for workers in general and women in specific to know their rights and seek for equality, as well as an alert for organizational administrations and policymakers. So, wage gap does exist, as proved by the present study, and the results may influence the policy makers and administrations to be more aware, take actions through new career plans, develop labor policies and set a precise regulation of work discrimination.

Finally, it is worth mentioning that the workers themselves presented the excuse of "physical ability" for the existence of a wage gap within the agricultural sector. Physical ability is one of the leading causes behind the wage gap within the agricultural sector in South Lebanon. In the open question presented to the respondents at the end of the survey questionnaire, respondents were asked about their

opinions on the wage gap. Most of the answers ended up vindicating the wage gap and neglecting discrimination by giving men the right to earn more than women due to their physical strength. Some of the workers said: “Men work more and do work that women cannot do”. Others said: “Men can do more productive work and have more responsibilities that women cannot afford”. So, in their opinion, a man deserves more money since he does more work. However, to be more accurate, “Is physical ability the real excuse for wage gap within the agricultural sector?”. The aforementioned leads to carry out future research taking into consideration cultural values. This research acts as an eye opener for other researchers locally and internationally to consider covert variables in their quest to mitigate wage gaps and discrimination against female workforce as addressed by Schieder and Gould (2016) and Meara, Pastore and Webster (2020).

5.1 Implications

The outcomes of this study are important for NGOs, academicians and researchers, policy makers and rural authorities to plan innovatively and capitalize on the untapped female workforce in the agricultural sector of the country. The following recommendations may serve as a platform to the betterment of the functions of the workforce and the mitigation of the observed wage gap.

5.1.1 NGOs

There is a major cultural bias whereby males are preferred to females because of their physical capabilities in the agricultural endeavors. Here, NGOs are called in to offer awareness campaigns directed towards spreading the reality that an integrated workforce in the rural areas leads to better productivity and division of tasks according to the nature of the land, resources, technological equipment and transportation of produce. Furthermore, training of females farmers on how to manage resources is helpful.

5.1.2 Academicians and Researchers

The current paper shed light on the continuous problem of discrimination and wage gap leading to negative consequences in productivity and motivation to engage further the female workforce. Academicians and researchers are called to emphasize the importance of the highly ignored workforce of the future, the full potential of females, in their university lectures and research endeavors directed to increase awareness of the student population and direct their efforts to study the actual agricultural difficulties and problems by involving students in their last year graduation projects and internships to offer solutions and support within a social responsibility framework which is beneficial to all.

5.1.3 Policy Makers

The Ministry of Agriculture holds the responsibility to plan and execute a series of workshops to the agricultural workforce involving both males and females in order to enforce a culture of anti-discrimination and expose the benefits to the rural farmers as well as the economy of the country. A fair pay scheme may be developed with the help of academic experts, agricultural professionals and government representatives.

5.1.4 Rural Authorities/Municipalities

Municipalities represent a direct front with the farmers, covering all of Lebanon and not only the southern part. Their execution of government planned alleviation efforts is fundamental and the municipal rural authorities will act as a real liaison with the above mentioned parties to foresee effective and efficient communication and cooperation of awareness campaigns, technical workshops, financial support and supervision of the progress.

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