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AN ANALYSIS OF SOCIO-ECONOMIC VULNERABILITY OF WOMEN WAGED LABOURERS IN AGRICULTURE SECTOR IN PUNJAB, PAKISTAN

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ABSTRACT

Rural women are the key players in agricultural development in Pakistan. Despite their considerable role as waged labourers, they are vulnerable under the broader patriarchal societal construct. Considering these facts, this study analyzed the socio-economic vulnerability of women-waged labourers in the agriculture sector in Punjab, Pakistan. A multistage sampling technique was adopted for sample selection. At the initial stage, Punjab province was selected purposively. In the second stage, three cropping zones (rice-wheat, cotton-wheat- maize and vegetable-mixed cropping), and subsequently, in the third stage, three districts (Nankana Sahib, Vehari, and Faisalabad) were selected purposively. Six union councils (two from each district) were selected randomly in the fourth stage. In the fifth stage, 450 respondents, 150 from each district, were interviewed using snowball sampling. A structured interview schedule was developed in accordance with research objectives. The data were analyzed using Statistical Package for Social Sciences (SPSS). The results indicated that the majority of the labourers, 55.0 percent, were 30 and above year's age group, and 65.1 percent were illiterate. 70.0 percent of respondents were married, and 41.8 percent worked more often on 1-2 km distant agricultural farms. 46.4 percent spend seven and above working hours, and 35.4 percent's daily wages were Rs. 251-300. 54.0 percent of respondents' employers preferred the mode of payment as daily wages, while 69.1 percent of labourers preferred the daily mode of payment. 60.9 percent experienced gender disparity mainly due to socio-cultural aspects that contribute to their economic vulnerability. It was recommended that education facilities should be provided in such remote areas. Women's work should be recognized by eliminating gender disparity in socio-economic aspects in particular and in all aspects in general to upgrade their socio-economic well-being.

Keywords: Agriculture; Gender; Waged labourers; Discrimination.

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INTRODUCTION

Agriculture is the major production sector of most of the less developed countries of the world, including Pakistan. The sector plays a vigorous role in the country's economy employing approximately 42.3 percent of the total labour force with a 24 percent share in the gross domestic product (GOP, 2020). It is a prime source of livelihood for about 68 percent of rural dwellers (Chandio et al., 2016). Despite being the largest employer for the rural community, the sector entails a precarious nature of work based on informal arrangements. In Pakistan, the major labour force has directly or indirectly linked to agriculture as the primary source of their earnings, where the component of gender cannot be ignored. Due to the significant importance of agriculture in the rural economy in general and in national economic development in particular, both genders (men and women) are performing idiosyncratic roles in diverse and multiple

operations related to agriculture. Nevertheless, in some instances, the contribution of women surpasses as compared to men with their productive participation (Prakash, 2003). Rural women are the major component of the country and make ample contributions to the country's economy through their vital productive and reproductive roles (Jabeen et al., 2020). It is patent that no nation can flourish until the active participation of a considerable proportion of the population. The women are simultaneously doing challenging tasks both in the private and public spheres. The contributions of rural women to sustainable agricultural development, along with their domestic work, is significant (Lambert et al., 2017). Within this background, Naveed et al. (2009) also shed light on the fact that rural women are engaged in the diverse nature of agricultural operations along with their household work. In the agricultural field, rural women work in cotton picking, wheat harvesting, rice transplanting, maize, sugarcane production, post-harvesting, and the dairy sector. Moreover, most of the activities related to fruit and vegetable cultivation are also performed by women (FAO, 2016). The women labourers are also equally efficient in various agricultural activities such as seedbed preparation, tilling, sowing, weeding, fodder cutting, drying, and storing. In addition to household tasks, the women labourers perform agricultural tasks for about 12 to 15 hours a day (Ranjna et al., 2011).

Despite the remarkable contribution of the rural women, their efforts are not acknowledged and rewarded. Historically, women are vulnerable in socio-economic aspects in the agriculture sector. Furthermore, the dearth of literature on gender relations in agriculture has further aggravated the extent of the vulnerability of women in the agricultural sector (Blau et al., 2017; Mohiuddin et al., 2020). In Pakistan, due to the rigid patriarchal structure of the society, women-waged labourers (WWLs) in the agriculture sector are more susceptible to being marginalized and are dependent on the male members in socio-economic context. This pattern of society hinders access to basic work rights and the development of voice and agency. Gender discrimination in labour terms and conditions reduces WWL's incentive to actively participate in agricultural practices and results in ineffective investment in human capital and productivity (Doss et al., 2018).

The contribution of agricultural labourers to support their respective families is remarkable (Akram et al., 2019). It is however pertinent to mention that the role of rural women as a first-line labour force in the agriculture sector is not fully acknowledged in the national account (Ishaq & Memon, 2016; Zaheer et al., 2018). Women agriculture labourers face severe socio-economic issues that make them vulnerable workers (Mirjat et al., 2019). The existing literature on the agricultural labour market is patchy and possesses limited information regarding the labour input in the production process in general and about activities performed by WWLs in particular. Since women's labor is the most imperative asset for the agriculture sector (front runner of the economy), emphasis is required to address the vulnerability by improving the wage rates and working conditions (Dey de Pryck & Termine, 2014). Given this background, the research aimed to distill the socio-economic vulnerability of women-waged labourers in the agriculture sector in Punjab, Pakistan.

LITERATURE REVIEW

In Pakistan, the contribution of women labourers is not only confined to crop production but also in livestock management such as animal rearing, cleaning of sheds, dung collection, feeding and watering, milk processing, poultry keeping, and harvesting of vegetables (Javed et al., 2006; Fabiyi et al., 2007; Luqman et al., 2013, Arshad et al., 2013). The participation of women labourers in the agriculture sector is more pronounced than male counterparts, particularly in post-harvesting (Amodu et al., 2017).

Afzal et al. (2010) analyzed the role of women in crop-related activities in the district Okara, Pakistan. It was reported that women labourers play a significant role in the production of corn, rice, wheat, sugarcane, and vegetables by performing different tasks such as cleaning of seeds, sowing, harvesting, and weeding.

Siddique et al. (2009) revealed the working conditions of women labourers in the district Sialkot, Pakistan. The women perform various household responsibilities such as cooking food, house cleaning, washing clothes, and caring for children/elderly. In the agriculture sector, mostly the rural women in the study area were engaged in vegetable picking and livestock management. Manzoor et al. (2018) conducted a study, "Sustainable rural development through women's engagement in the livestock sector in Punjab, Pakistan". It was highlighted that rural women play a central role in the sustainability of the livestock sector for the fulfillment of their household needs. It was further added that many of the rural women 85.4 percent claimed that the sector is the major source of their earnings, while 74.2 percent affirmed the sector serves as the main source to fulfill the food needs of their families.

Khan et al. (2020) reported that although the participation of rural women in livestock management is incredible, their contribution is often ignored. However, for the sustainable development of the sub-sector of the economy and upgrading the socio-economic well-being of rural women, proper attention of the stakeholders and all concerned departments is required to acknowledge the significance of women's role in the agriculture sector and its allied fields. Memon et al. (2015) conducted an economic analysis of women's labour participation in agriculture in Mirpurkhas, Sindh, in 2013. It was reported that women labourers gain maximum labour opportunity during Kharif and Rabi seasons with 67 days and 53 days, respectively. The women labourers mostly gain 120 days of labour days during the year. They receive the maximum number of working days during the weeding season, with 64 days followed by 34 days during harvesting and post-harvesting activities. However, they are mostly unemployed during the summer season as it was reported as off-season in the study areas. It was observed that seasonal unemployment dramatically influenced the socioeconomic wellbeing of the labourers.

Komal et al. (2017) triggered the role of rural women in agriculture with special reference to post-harvest yield losses and their impact on rural livelihoods. It was highlighted that rural women are actively linked directly or indirectly with agriculture-related activities. They exceed men in many spheres of agriculture, but their contribution is not recognized in national accounts. Their due acknowledgment is restricted not only due to their skills and capabilities but also due to the cultural origin of gender. The study proposed that to defeat this tendency, there is a need for the provision of women labourer's access to resources and rights to ensure their effective participation in agriculture to meet the growing population victual strain. The researcher emphasized recognizing the obvious and indistinguishable role of female labourers in crop growing and came up with the results that hinder females' access to substantial rights and resources to sustain their livelihood.

Das (2015) reported that rural women play a significant role in all agriculture-related activities, from pre-harvesting to post-harvesting. However, despite their significant contribution, their role in agriculture and the factors affecting their participation have not yet been recognized. It was recommended that some policy implications should be initiated and ensured for the wellbeing of waged labourers in the agriculture sector. Bakhsh et al. (2017) examined the health impact of cotton harvesting on cotton pickers in the district of Vehari, Pakistan. It was analyzed that despite the efforts to increase the use of protective measures to reduce the risk of health hazards, most cotton pickers still are not inclined to use such precautions while cotton picking in the field. The young female cotton pickers adopt personal protective equipment as compared to elderly ones. The most common diseases among cotton pickers were headache, sleeplessness, cough, flu, fever, skin and eye irritation. It was observed that health costs due to the use of personal protective equipment also restrict their use by female cotton pickers. It was concluded that female cotton pickers should be given proper training and education regarding the importance and use of precautionary components to reduce health risks.

Awan et al. (2015) analyzed the major factors that affect and limit the female LF supply in agriculture in a study conducted in the district Rajanpur, Pakistan. It was found that many of the women were compelled to work outside the home due to poor financial conditions. However, the religious nature of the area restricts women to work outside the home.

METHODOLOGY

The study was conducted by employing a “multistage sampling technique”. At the initial stage, Punjab province was selected purposively because it is the largest province in terms of population and agricultural production. In the second stage, three cropping zones, rice-wheat, cotton-wheat- maize and vegetable-mixed cropping, were selected purposively to ensure that all major cropping zones were well represented. In the third stage, three districts, Nankana Sahib, Vehari, and Faisalabad were selected from the selected zones using a simple random sampling technique. In the fourth stage, tehsil Sangla Hill and Shahkot from district Nankana Sahib, tehsil Jaranwala and tehsil Sadar from district Faisalabad, tehsil Vehari and tehsil Burewala from district Vehari, in sum six rural tehsils (two from each district) were selected purposively. Initial field visits were made to find out the areas with a higher probability of WWLs. In the fifth stage, 450 respondents (WWLs), 150 from each district, were interviewed using the snowball sampling technique because of the least availability of list/information regarding WWLs. The choice of sample size was informed by Krejcie and Morgan (1970), indicating a reasonable sample to draw valid statistical inferences. Data were collected using a structured interview schedule, which was developed in accordance with the research objectives. The collected data were analyzed by using standard descriptive and inferential statistical measures using Statistical Packages for Social Sciences (SPSS).

RESULTS AND DISCUSSION

Table 1 shows that 14.3 percent of the WWLs were aged up to 19 years. At the same time, 12.9 percent and 18.2 percent were in the 20-24 years and 25-29 year’s age categories, respectively. However, 55.0 percent belonged to the 30 years & above age group. The research findings were found similar to Abbas et al. (2015), who conducted a study in three districts (Vehari, Sahiwal, and Bahawalnager) of Southern Punjab, Pakistan, regarding the pesticide’s hazardous effects on the health of waged labourers working in cotton fields. It had been found that the average age of most of the WWLs from district Sahiwal was 33 years old. Nevertheless, the women who belonged to the Vehari district were related to the age group of 39 and above years, while the interviewed labourers from Bahawalnager were comparatively young, belonging to the 26 and above year’s age group. In another study, Siddique et al. (2009) analyzed that the majority of the WWLs in agriculture, 30.4 percent, were in the middle age group and had more sense of responsibility for work to meet their household needs.

Table 1. Distribution of the WWLs according to the age group.

Age categories	Frequency	Percentage
Up to 19 years	64	14.3
20-24 years	58	12.9
25-29 years	82	18.2
30 and above years	246	55.0
Total	450	100.0

Table 2 shows that most of the respondents, 65.1 percent, were illiterate, 14.9 percent had primary education, and 8.7 percent had a middle level of education. However, 11.4 percent were related to matriculation and above education level. Hassan (2010) also concluded that rural women were deprived

of educational facilities. The vulnerability of women in their access to the right to education was obviously being kept behind in educational opportunities.

Table 3 indicates that the majority of the WWLs, 70.7 percent, were married. However, 18.4 percent of those interviewed were single. While only 2.4 percent were divorced, and 8.4 percent of the respondents were in the widowed category of marital status. The WWLs mentioned that although the economic conditions were also miserable before their marriages, they experienced more responsibilities after their marriages. Therefore, to supplement their families' needs, they work in the fields. The results of the study were homogenous to Khanum (2016), who narrated that most women, 75 percent engaged in the agriculture sector, were married.

Table 4 shows that about 41.8 percent of WWLs reported that they worked often in fields 1-2 km distant from their residence. While 25.3 percent narrated 3-4 km field distance and 23.6 percent worked in 5-6 km distant fields. However, 9.3 percent worked in 7 km and above distant farm places from their residence. It was concluded that the WWLs preferred to avail picking or any other agricultural-related activity near their residences but often had to move to far-flung areas for labour work. Therefore, it has become evident that the distance of the field did not matter for these vulnerable workers, as they needed labour opportunities to fulfill their survival needs which are directly interlinked with their daily wages. The results of the study were found in line with Abbas et al. (2015), who indicated that WWLs often traveled 5-8 km from their residence to work in agricultural fields.

Table 2. Distribution of the WWLs according to the level of education.

Education Level	Frequency	Percentage
Illiterate	293	65.1
Primary	67	14.9
Middle	39	8.7
Matriculation and above	51	11.4
Total	450	100.0

Table 3. Distribution of the respondents according to their marital status.

Marital Status	Frequency	Percentage
Single	83	18.4
Married	318	70.7
Divorced	11	2.4
Widowed	38	8.4
Total	450	100.0

Table 4. Classification of the respondents according to the field distance

Field Distance	Frequency	Percentage
1-2 km	188	41.8
3-4 km	114	25.3
5-6 km	106	23.6
7 km and above	42	9.3
Total	450	100.0

Table 5 indicates that 9.1 percent of the respondents often spend 1-2 hours in the fields to perform their labour activities, and 14.7 percent get engaged for 3-4 hours in the fields. However, 29.8 percent of the respondents reported that they spend 5-6 hours in the fields to earn for the fulfillment of their household

needs. The majority of the WWL, slightly less than half of the total population, 46.4 percent remained busy for 7 hours and above in fieldwork. The research findings were in line with Ranjna et al. (2011), who narrated that WWLs perform agricultural tasks for about 12 to 15 hours a day.

Table 5. Classification of the WWLs according to their number of working hours spent for agriculture-related labour.

Working hours	Frequency	Percentage
1-2 hours	41	9.1
3-4 hours	66	14.7
5-6 hours	134	29.8
7 hours and above	209	46.4
Total	450	100.0

Table 6 shows that poor WWLs have active participation in agricultural activities but more often have meager payments. The research findings indicated that 7.1 percent of the respondent's daily wage was Rs.151-200. While 32.2 percent indicated that they earned Rs. 201-250 for the labour they performed in the field/per day. However, 35.8 percent earned Rs. 251-300, and 16.9 percent of respondents' daily wage was Rs. 301-350. Only 8.0 percent stated that they earned Rs. 350 and above. The research findings were found compatible with the report of the Pakistan Bureau of Statistics (PBS, 2015) that agriculture is the lowest-paid economic sector of the country.

Table 6. Daily wages of WWLs for agricultural labour.

Daily wages	Frequency	Percentage
Rs. 151-200	32	7.1
Rs. 201-250	145	32.2
Rs. 251-300	161	35.8
Rs. 301-350	76	16.9
Rs. 350 and above	36	8.0
Total	450	100.0

Table 7. Employer's mode of payment - WWL's preferred mode of payment.

Categories	Employer's Mode		WWL's preferred mode	
	Frequency	Percentage	Frequency	percentage
Daily	243	54.0	311	69.1
Weekly	46	10.2	54	12.0
Monthly	23	5.1	31	6.9
Once in season	43	9.6	29	6.4
Irregular	95	21.1	25	5.6
Total	450	100.0	450	100.0

Table 7 shows that most of the respondents, exactly 54.0 percent, narrated that the mode of payment of their employers was on a "daily bases", 10.2 percent more often received their wages on a "weekly basis. Only 5.1 percent of the WWLs have a monthly wage pattern provided by their employers, and 9.6 percent of the WWL's mode of payment was "once in a season". However, 21.1 percent respondents received their wages on "irregular bases". The WWL's preferred mode of payment was also analyzed in comparison to the employer's mode of payment. The majority of the WWLs, 69.1 percent, reported that they preferred to receive their wages on a "daily basis". While 12.0 percent, slightly more than (one-tenth) WWLs preferred mode of payment was "weekly bases". 6.9 percent and 6.4 percent were in favour of "monthly and once in

a season” respectively. However, 5.6 percent preferred irregular modes of payment. It was concluded that the majority of the WWL’s prime source of family income was labour, even though most of the labourers mentioned that the daily family meal depends on their labour wages. Therefore, most of the respondents preferred to receive their wages on a daily basis.

Table. 8 Classification of the WWLs according to their experience of gender disparity.

Gender Disparity	Frequency	Percentage
Never	69	15.3
Seldom	274	60.9
Always	107	23.8
Total	450	100.0

The assessment in Table 8 shows that the vulnerability of the WWLs has also been analyzed in the context of gender disparity at the workplace, which dramatically influenced the access of WWL’s for standards and rights at work. The results indicated that only 15.3 percent of the respondents reported that they had “never” experienced discrimination based on their gender in work opportunities at the workplace. However, most of the respondents (60.9 percent) pointed out that they “seldom” experienced such disparity. While 23.8 slightly less than (one quarter) perceived that the women labourers “always” faced gender disparity in work opportunities. Pervez and Iraqi (2018) also supported that discrimination based on gender is the most pervasive issue in less income countries, including Pakistan. Moreover, ILO (2018) and Moreira da Silva (2019) also reinforced that the proportion of women as unpaid workers is 76.2 percent at the global level, which is 3.2 times greater than un-paid men. Discrimination on the basis of gender inequality limits women’s access to rights at work and increases socioeconomic vulnerability (Nisak et al., 2020).

Table 9. Distribution of the WWLs according to the main factors of gender disparity.

Factors of gender disparity	Frequency	Percentage
Social	168	37.3
Cultural	187	41.6
Religious	56	12.4
Others	39	8.7
Total	450	100.0

The results in Table 9 unveiled that 37.3 percent of the respondents reported that the social factors caused gender disparity in the context of access to rights at work and made them vulnerable workers. While 41.6 percent of the WWLs perceived cultural factors as a main reason for the gender disparity at the household level as well as at the workplace. However, 12.4 percent assumed religious factors, and 8.7 percent pointed out “other” factors that caused such disparity for women. The research findings were similar to Eldred (2013) and Yount (2017), indicating that various factors cause the vulnerability of WWLs. It is not merely a question of assets or opportunity access but also limited control over resources and making choices for them in different spheres of their lives. The social structure of the society and gender-based prescribed roles, rights, and responsibilities added to their level of socio-economic vulnerability.

CONCLUSIONS AND POLICY IMPLICATIONS

The rural labour market in the agriculture sector represents a high level of informality, casual work arrangements and pervasive gender-based disparity. Moreover, it has attuned globally that the underperformance of agriculture in developing countries is attributable to women’s untapped vulnerability in the socio-economic context and inability to take advantage of opportunities in the sector.

It was concluded that the majority of the labourers were in the age group of 30 and above years and were illiterate. The majority of the labourers were married and worked on distant farms for long working hours in return for low wages that hardly meet their domestic needs to meet their domestic needs. More often, the women-waged agricultural labourers experienced gender disparity mainly due to socio-cultural factors. It was recommended that the WWL must have access to education and skill enhancement opportunities. Education will work as a ray of hope to have access to standards and rights at work and also to have better work opportunities. There is a need to listen to their untold stories regarding their socio-economic vulnerability and to ensure the provision of proper wages to upgrade their socio-economic wellbeing.

REFERENCES

- Abbas, M., Mehmood, I., Bashir, A., Mehmood, M.A., & Hassan, S. (2015). Women cotton picker's perception about health hazards due to pesticide use in irrigated Punjab. *Pakistan Journal of Agricultural Research*, 28 (1), 76-84.
- Afzal, A., Ali, T., Ahmad, M., Amin, H., & Saki, S. (2010). Women in agriculture: results from a survey of Okara district of Pakistani Punjab. *Pakistan Journal of Agricultural Research*, 23(1), 64-69.
- Akram, M.B., Iqbal, A., & Mahmood, Q.K. (2019). Role of rural women in livestock production in district Pakpattan. *Pakistan Journal of Agricultural Research*, 57(2), 127-134.
- Amodu, M.O., Amodu, M.F., Bimba, J.S. & Bolori, M.T. (2017). Assessment of occupational hazards and health problems among female farmers in North-Eastern Nigeria. *Journal of Engineering, Technology and Environment*, 13(2), 209-218.
- Arshad, S., Muhammad, S., & Ashraf, I. (2013). Women's participation in livestock farming activities. *The Journal of Plant Sciences*, 23(1), 304-308.
- Awan, A. G., Nadeem, N., & Nawaz, M. A. (2015). Analysis of profitability of Bt cotton growers in district Multan-Pakistan. *Journal of Resources Development and Management*. 5, 1-7.
- Bakhsh, K., Ahmad, N., Tabasum, S., Hassan, S., & Hassan, I. (2017). Health hazards and adoption of personal protective equipment during cotton harvesting in Pakistan. *Science of the Total Environment*, 589(15), 1058-1064.
- Blau, F.D., & Khan, L. M. (2017). The gender wage gap: extent, trends, and explanations. *Journal of Economic Literature*, 55(3), 789-865.
- Chandio, A.A., Yuansheng, J., & Magsi, H. (2016). Agricultural sub-sectors Performance: An analysis of sector-wise share in agriculture GDP of Pakistan. *International Journal of Economics and Finance*, 8(2), 156-162.
- Das, L. (2015). Work participation of women in agriculture in Odisha. *Journal of Humanities and Social Sciences*, 20(7), 66-78.
- Dey de Pryck, J., & Termine, P. (2014). Gender inequalities in rural labor markets. In *gender in agriculture*, edited by A. R. Quisumbing, R. Meinzen-Dick, T. L. Raney, R. Croppenstedt, J. A. Behrman, and A. Peterman. Amsterdam. pp. 343-370.
- Doss, C., Meinzen-Dick, R., Quisumbing, A., & Theis, S. (2018). Women in agriculture: four myths. *Global Food Security*, 16, 69-74.
- Eldred, J. (2013). Literacy and women's empowerment: stories of success and inspiration. UNESCO Institute for Lifelong Learning. Feldbrunnenstrasse 58, 20148 Hamburg, Germany.
- Fabiyyi, E. F., Danladi, B.B, Akande, K.E., & Mahmood, Y. (2007). Role of women in agricultural development and their constraints: A case study of Biliri Local Government Area, Gombe State, Nigeria. *Pakistan Journal of Nutrition*, 6(6), 676-680.

- FAO. (2016). Assessment of International labour standards that apply to rural employment, FAO legal papers No.100. <https://www.fao.org/3/i5957e/i5957e.pdf>.
- GOP. (2020). Pakistan bureau of statistics, Government of Pakistan. Retrieved online from the website: <http://www.pbs.gov.pk/content/agriculture-statistics>.
- Hassan, M. (2010). Gender mainstreaming in agricultural extension: Analysis and obstacles to gender mainstreaming in agriculture extension: a case study of district Muzaffargarh, Pakistan. VDM Verlag Dr. Müller GmbH & Co. KG Publisher, Germany.
- ILO. (2018). Care work and care jobs for the future of decent work. Geneva: International Labour Organisation. International Labour Office, Geneva. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_633135.pdf.
- Ishaq, W., & Memon, S. Q. (2016). Role of women in agriculture: A case study of rural Lahore. *Pakistan Journal of Rural Development and Agriculture*, 1(1), 1-11.
- Jabeen, S., Haq, S., Jameel, A., Hussain, A., Asif, M., Hwang, J., & Jabeen, A. (2020). Impact of rural women's traditional economic activities on household economy: changing economic contributions through empowered women in rural Pakistan. *Sustainability*, 12(7), 1-23.
- Javed, A. B., Khan, Q.M., Haq, M.A., Khalid, A. M., & Nasim, A. (2006). Cryptogenic analysis of Pakistani individuals occupationally exposed to pesticides in pesticides industry. *Mutagenesis*, 21(2), 143-148.
- Khan, A. A., Khan, K., & Hussain, M. E. (2020). Socioeconomic conditions of rural women and their participation in livestock management activities in Chiniot District of the Punjab, Pakistan. *Journal of Geography and Social Sciences*, 2(2), 183-199.
- Khanum, Z. (2016). Women in agriculture in Gilgit Baltistan, women in agriculture in Pakistan. Food and Agriculture Organization, United Nations. Islamabad, Pakistan. Retrieved online from the website: <https://www.fao.org/3/i4330e/i4330e.pdf>.
- Komal, K., Abbas, A., & Ashraf, H. K. (2017). Role of women in agriculture: liking post-harvest wheat yield loss with rural livelihoods. *International Journal of Research in Agricultural Sciences*, 4(5), 2348-3997.
- Krejcie, R.V., & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30, 607-610.
- Lambert, E.G., Hanif, Q., James, F., Linda, D.K., & Nancy, L.H. (2017). The relationship of work-family conflict with job stress among Indian police officers: A research note. *Police Practice and Research*, 18, 37-48.
- Luqman, M., Shahbaz, B., Khan, I.A., and Safdar, U. (2013). Training need assessment of rural women in livestock management - Case of Southern Punjab, Pakistan. *Journal of Agricultural Research*, 51(1), 99-108.
- Manzoor, A., Farah, N., Khan, I. A., Jabeen, N., Afzal, S., Maan, A. A., Afzal, A., Qureshi, A. H. (2018). Sustainable rural development through women's engagement in livestock sector in Punjab, Pakistan. *Pakistan Journal of Life Sciences*, 16, 124-128.
- Memon, I. N., Noonari, S., Kalroo, M. A., Memon, Z., Pathan, A., Manzoor, A., and Pathan, M. (2015). Women labour participation of agricultural production in Sindh. *Journal of Resources Development and Management*, 10, 87-97.
- Mirjat, A.J., Soomro, B.A., & Mangi, S. (2019). Analysis of socio-economic problems affecting women in agriculture: A case study of Ghotki, Sindh, Pakistan. *International Journal of Research and Innovation in Social Sciences*, 3(4), 229-232.

- Mohiuddin, I., Kamran, M.A., Jalilov, Shokhrukh-Mirzo, Ahmad, Mobin-ud-Din, Adil, S.A., Ullah, R., & Khaliq, T. (2020). Scales and drivers of female agricultural labor: Evidence from Pakistan. *Sustainability*, 12(16) 1-15.
- Moreira da Silva, J. (2019). Why you should care about unpaid care work. OECD Development Matters. <https://oecd-development-matters.org>. accessed on 18/03/2020.
- Naveed, I., Tanvir, A., Munir, A., & Maan, A. A. (2009). Training needs of rural women in agriculture: a case study of district Bahawalpur, Pakistan. *Pakistan Journal of Agricultural Sciences*, 46(3), 200-208.
- Nisak, S.S., & Sugihartib, L. (2020.) Gender inequality and women poverty in Indonesia. *International Journal of Innovation, Creativity and Change*, 11(9), 375-387.
- PBS. (2015). Labour force survey 2014-15. Government of Pakistan, Statistics Division, Pakistan Bureau of Statistics, Islamabad.
- Pervez, S., & Iraqi, K.M. (2018). Gender discrimination – prevailing state in Pakistan. *Pakistan Journal of Gender Studies*, 16(1), 153-170.
- Prakash, D. (2003). Rural women, food security and agricultural cooperatives. Rural Development and Migration Center, New Delhi, India. pp. 3-5.
- Ranjna, M. H., Ali, S., & Luqman., M. (2011). Role of women in agricultural development. <http://www.agrihunt.com/index.php/pak-agri-outlook>.
- Siddique, A., Batool, Z., Anwar, S., & Farooq, M. (2009). An assessment of female participation in income generating activities in agriculture sector in rural of District Sialkot. *The Journal of Animal and Plant Science*, 19(4), 230-233.
- Yount, K. M. (2017). A framework for measuring women's empowerment at multiple levels. <https://a4nh.cgiar.org/2017/05/01/a-framework-for-measuring-womens-empowerment-at-multiple-levels/>.
- Zaheer, R., Hussain, S., & Nadeemullah, M. (2018). Agricultural development and the role of women's self-employment in Pakistan. *Pakistan Journal of Gender Studies*, 16(1), 103-120.