



WOMEN AUTONOMY AND SUSTAINABLE DEVELOPMENT: A CASE OF SOUTHERN PUNJAB

Hafsah Batool, Department of Economics, Lahore College for Women University, Lahore, Punjab, Pakistan

Nablia Asghar, Department of Economics, University of Education, Lahore, Punjab, Pakistan

Hafeezur Rehman, Department of Economics, University of Management and Technology, Lahore, Punjab, Pakistan

Mumtaz Anwar, School of Economics, Punjab University, Punjab, Pakistan

Abstract

Purpose of the study: The aim of the study to determine the factor affecting women autonomy and; the impact of women empowerment on sustainable economic development in Southern Punjab.

Methodology:Data have been gathered from 370 female participants. The Ordinary Least Square (OLS) regression as a model has been used to investigate the effect of empowering women on sustainable economic growth for Southern Punjab. Multi-stage cluster sampling technique has been carried out using primary data in the Southern Punjab region.

Main Findings: The study analysed that the familial, decision-maker strength and mobility freedom are statistically important factors and they have a positive impact on rural growth; though controlled resources impact is insignificant.

Applications of this study:This study can be effective in housing and job opportunities have been perceived as an important aspect of women's equality. Women can also be greatly empowered through access to media, especially television.

Novelty/Originalityof this study:It will be helpful to the policy maker that trained medical personnel attend births. Capacity building and creativity would also increase the availability of Internet services at a low price in urban and rural areas and allow online learning opportunities accessible.

Keywords: Women Autonomy; Sustainable Development; Southern Punjab region; Ordinary Least Square; Multi-stage Clustering Sampling

I. INTRODUCTION

Women empowerment is a useful tool for bringing up millions of people out of the vicious cycle of poverty (Zoynul and Fahmida, 2013), reducing the mortality rate, declining dependency burden and for long term sustained development of the world(Rosell et al., 2012).Women's participation is important for making significant and permanent changes not only for women themselves but for all. Women and girls make up an unreasonably large proportion of the poor and are more likely to be hit by hunger, violence, disasters and climate change. Also, compared to men, they often do not have legal rights or essential living services.Numeral recent studies worldwide indicate that for a country to ensure sustainable growth, women empowerment is essential (Lange et al., 2018). The substantial expense for them and their homes and countries (Klasen and Santos, 2018) is implicit in the inequalities of gender.

Women's empowerment is an essential aspect of equality for women and men. It includes growing femininity, decision-making skills, access to and control of opportunities and resources, power and change of life (Cornwall and Rivas, 2015). Distinct research shows the multidimensional, complicated and interpretable mechanism of empowerment (Mokomane, 2012).Other studies have identified empowerment through different processes/subjects that reproduce empowerment definition, such as success (Kabeer, 2012). Influence over resources and agency (Malhotra 2002). Resources, organizations and effects are the various processes or fields through which feminization is accomplished(Pettit, 2012).

The nexus between economic growth and female empowerment is twofold, which is described as improving women's capacity to access health, education and earning opportunities, rights, and political participation in particular in the constituents of progress (Banerjee et al., 2013). Development can play a significant part in minimizing gender inequality. Development alone can play an important role(Ng et al., 2014).

In comparison, many stresses the second link, from empowerment to growth. Kofi Annan argued it argued that the achievement of gender equality "condition" for the accomplishment of the other human-related MDGs by 2015. It also proposed that institutional mechanisms are changed to encourage equality, and that concrete method, like scholarships for girls and quotas for women in parliament, be implemented in the report entitled "Engendering Development," which the World Bank 2001 called for policies to resolve the gender disparity in 'droids, capital and voice' (Kumar et al., 2018). The policy decisions favouring women at the expense of men will have to continue and may need to continue for a long time (Chakrabarti & Chaudhuri, 2007).

As a result, Pakistan lacks opportunities to boost economic development because it cannot uphold gender equality and fails to incorporate the views and perspectives of about half the population. According to the IMF report, it has been projected that Pakistan's GDP can be increased by about one-third if the participation rate of the female labour force is equal to that of male participation (World Economic Forum Report, 2015-16). This will contribute immensely to a nation's pursuit of sustainable economic and inclusive development in more significant involvement of women in economic activity.

Status of Women Autonomy in Pakistan:

The status of women in Pakistan is not gender integrated, as well as other elements of cultural isolation are interconnected. The status of women is an important factor for the progress of a nation. Women and men are on an equal basis in Nordic countries (Yang et al., 2017). They are completely engaged in the political, economic, business and social activities of the country and become a global benchmark and example.

Pakistan and India were born out of British colonization. One was founded on Islam, and the other has a solid foundation in Hinduism. Although both implement parliamentary democracy and are committed to secular society and modern development, the status of women is not high (Tubanova et al., 2018). However, they both have the right to vote and be elected. Judging from the negative news coming out of India, intermarriage, high dowry, status and experience of widows, heinous rate of rape and social response, etc. all point to discrimination and injustice against women in society (Soudagar et al., 2018). Although it mostly exists in rural and underdeveloped areas, its harm and impact spread throughout the community.

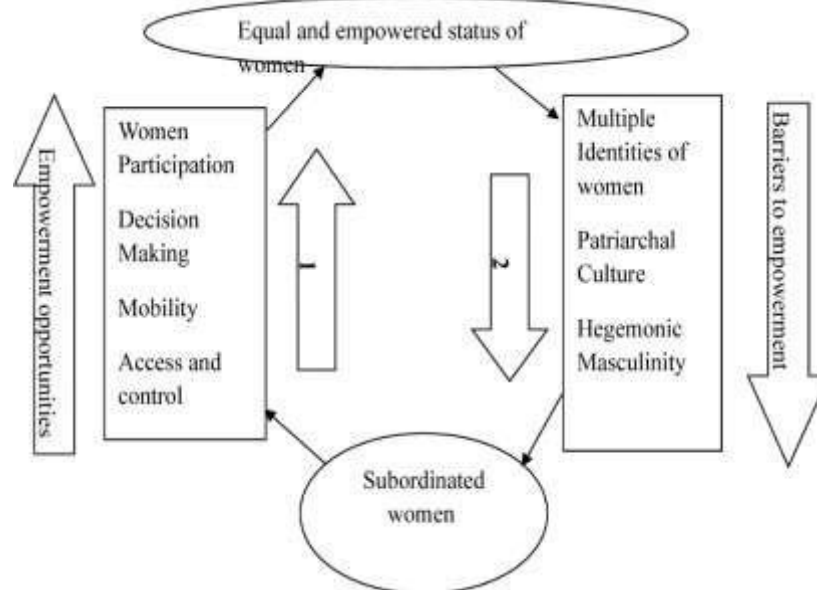


Figure-1: Identity pluralism-barriers to women autonomy in Pakistan

Studies indicate that empowerment is a multi-dynamic process that can be interpreted differently by various people (Naveed, 2020). The different dimensions of empowerment for women that can coexist economic, personal, physical, social, cultural, interpersonal (Malapit, 2019). It emphasizes that 'women's empowerment' is present in many ways, involves a broad variety of factors and materializes in numerous other processes. It includes a broad range of dimensions of women's empowerment.

Table-1: Pakistan's GII for 2018 relative to selected countries

	Gii	Gii	Maternal	Adolescent	Female	Population with at	Labour	force	
						Female	Male	Female	Male

Pakistan	0.547	136	178.0	38.8	20.0	26.7	47.3	23.9	81.5
Bangladesh	0.536	129	176.0	83.0	20.3	45.3	49.2	36.0	81.3
India	0.501	122	174.0	13.2	11.7	39.0	63.5	23.6	78.6
South Asia	0.510	-	176.0	26.1	17.1	39.9	60.8	25.9	78.8

Women's Role in Economic Growth

For society to ensure the sustainable development of a nation, equality for women is necessary. Women have benefited from economic advances in Asia. Gender disparity is narrowing in many countries, according to the 2011 World Economic Forum's study Gender Gap (World Economic Forum Report, 201516). Female indicators progress in terms of health, education, financial opportunities and politics.

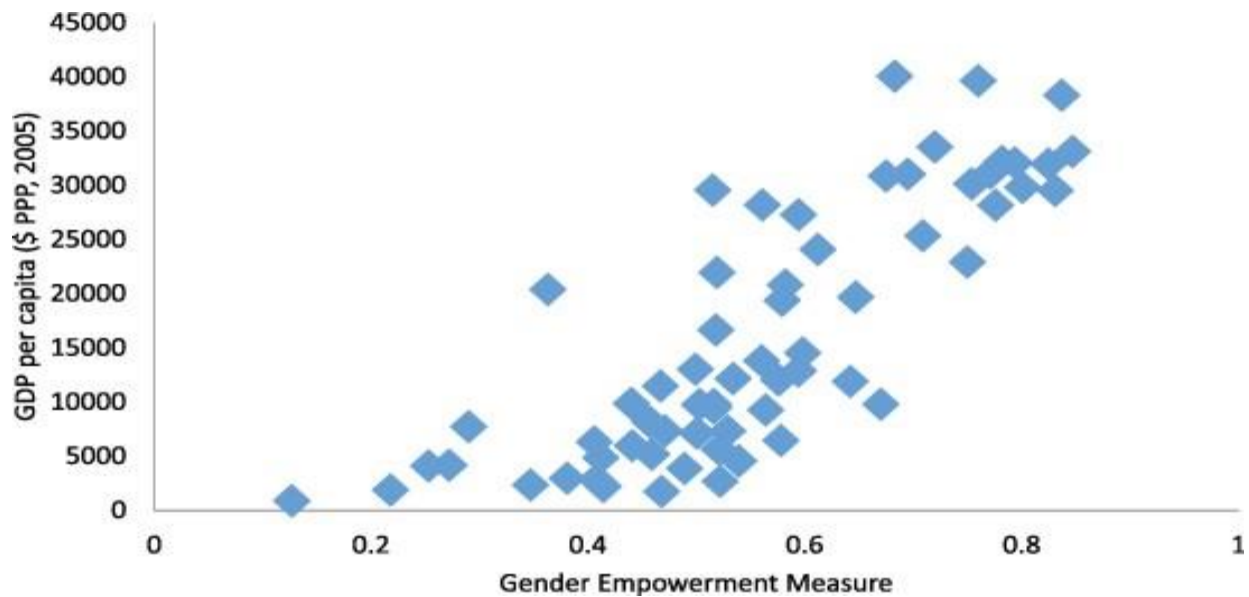


Figure-2: Women role in economic growth

South Asian countries have the lowest levels of overall gender equality but occupy three of the top five countries (Sri Lanka, Bangladesh and India) in terms of political authority. Furthermore, it is the most advanced in terms of female parliamentarians (Nepal and Pakistan), female ministers (Bangladesh), and the ratio of female leaders in the government (India, Pakistan, Bangladesh) (Women, 2014).

II. LITERATURE REVIEW

Older, mature females should have a higher rank, rights, and duties than younger females. In a report, Batool and Batool,(2019) examined women 's perspectives on the fundamental determinants of their empowerment. The analysis is based on a qualitative approach. Data from 30 married women aged 23 to 49 years through semi-structured interviews were gathered (Chaudhry, 2017). Six key topics were identified: parental role, marriage support, education and academic achievement, financial autonomy and social circles and personal characteristics. Women considered to be potential contributors (e.g., social skills, self-performance, assertiveness, and self-esteem and willingness). There were two main results; increased empowerment with biological age and marital duration, but the empowerment of women was not affected by marriage age and marital gaps and conjugal duration, but marriage age and marriage gaps did not impact the empowerment of women (Dey and Md, 2015). Empowerment increased with age; however, only in older women (41-49 years) was shown compared with the youngest group (21-30 years). Similarly, the length of the conjugal period increases women's empowerment, but the only significant change between the lowest marital life (2-6 years) and the later conjugal period (13-18 years) was recorded.

Springmann et al. (2016) used rural Uganda gender-disaggregated survey data to examine unique and household properties associated with the empowerment of women. The research identified ties between empowerment and age, education, proximity to a paved road and the market share of crop production. Age and education are linked to greater freedom, but equality in education is more critical than the average educational level among spouses. In Egypt, Zia et al. (2016) conducted self-represent cross-lagged panel

analysis to assess the positive association between the initial marriage of women in adulthood (18 years of age or older, as stated in 2006) and their longer-term post-marital economic empowerment, assessed by their involvement in the marketing and latent family economic agencies of 2012. In 2012, women's first adult marriage had optimistic unadjusted relations with their market work and the family economic organization (Hai, 2014). Since accounting for market work and family economic agency in 2006, these organizations continued to provide pre-marital control and combined fertility support. Policies to avoid child marriage will demonstrate a commitment to improving women's sustainable economic empowerment after marriage.

The secondary Applied Economics Research Center (AERC) survey data used by Sheik et al. (2015) in all of Pakistan's four provinces. The sampling technique of Strata was 47, and a total of 464 households were picked. The dependent variable was based on different magnitudes of economic decision-making: women's Economic Empowerment Index (EEI). Analysis of descriptive and multiple regressions were performed using ordinary squares (Schwab and Sala, 2016). The figures showed that about 36% of women had less, 56% had moderate, and just 8% had higher levels of economic empowerment. Sheik et al. said that their age strongly and positively shaped female empowerment. It-lead in the older days to higher levels of empowerment with higher ages because they have had experience and understanding that allow women to make wiser economic decisions (Akram, 2018). Women may be higher in the workplace because they are older

The findings of the causality test acknowledge Bi-directional causality between overall female growth and their empowerment. Both sensitization of women and their advancement, there was a unidirectional causality. The causality course went from sensitizing women to empowering women (Ali et al., 2016). Similarly, there was unidirectional causality between the inclusion of women in the workforce and empowerment of women. The path for causality, in this case was from the empowerment of women to the inclusion of women in the workforce (Cao, 2020). Women have been exposed to positive and significant impacts in the understanding of the rights, economic empowerment, and overall development, measured from the Gender Enablerment Index (GEM).

Only when women do not know of their roles and rights is it insufficient to make legislation. Berg et al. (2010) agreed that the legislation was a useful tool for improving women's situation. Empowerment of women can be achieved by raising women's awareness of their rights. Also recognized are the positive relationship between 'legal awareness of rights' and empowerment of women (Chopra et al., 2016). The purpose of education is essential to human development. The development of education depends on other factors, such as health and income. Education enables a person to excel in centuries-long knowledge capital. It also makes an individual more relevant and creative. Education improves the individual's selfrealization (Meekan and Lowe, 2019).

A study in India found a relatively more significant share of women completing middle education at a minimum, having access to mobility, having access to cash for illiterate women, were consulted in the family decision making (Wodon and Briere, 2018). Xiao (2014) studied post-graduate teachers in Chennai Indian District. Many analyses of regression have been done. The results reinforced the belief that higher education resulted in higher empowerment of women. The empowerment of women can also be supported by informal education.

Rusthoven et al. (2020) found that both formal and informal education in rural Bangladesh was used to impact women's empowerment positively and in no small measure. The study concluded that education, and training, could further improve women's socioeconomic conditions and allow them more meritoriously to assert and protect their rights. Furthermore, education helped women question the socio-cultural norms which impede their well-being.

Nawaz et al. (2015), using data from 500 reproductive-aged (15-49) women, clarified female empowerment determinants in residential and non - residential relations in Chapais, Nawabganj, Bangladesh. The logistic regression model was used, which took women's choice as the dependent variable in their homes. It has been shown that the level of education of women improves decisionmaking.

The level of education has influenced not only women's voting decisions, but also their style of family life, household spending, their freedom to travel, household decisions, and political participation. The level of education, therefore played a significant role in defining and opening up new possibilities of women's life patterns.

In Tardif et al. (2019) found a significant marginal negative impact on women 's mobility in the UterPardes region of India. The explanation for these results was that Tamil Nado had a somewhat higher level of education registration than UterPardes in social development. The negative effect may indicate that a woman's mobility was blocked another year as her household and social tasks were restricted. The average number of enrolments in schools in UterPardes was, by comparison, fewer.

III. METHODOLOGY

Theoretical Framework;

The theoretical and empirical literature concerning autonomy and sustainable development of women are discussed in this second chapter and form the core subject for a dissertation. The research intends to examine the influence of women's empowerment on sustainable growth. Therefore, in sustainable growth, concepts, attitudes and obligations of women's empowerment should be studied.

Study Area

This study is based on the primary data analyses collected from Southern Punjab. Multi stage stratified cluster sampling technique (MICS, 2017) has been employed for selection of survey sample in study areas.

Sample

When collecting primary data, the sample size should be calculated carefully, as the analysis has a very profound effect. The total sample size, from targeted population, of 370 is determined by using following statistical formula,

$$Zz\partial/\delta^2$$

Where:

- $\partial^2 = P(1-P)$
- P = prevalence rate (female literacy rate)
- Z = 95% confidence interval
- $\delta =$ acceptable error 5%

Sampling Frame

The Table 2 shows the sample selection criteria of Southern Punjab. Sample sizes were 370 respectively, as per given formula. The details of clusters are given in following Table 2.

Table 2: Punjab Sample Selection Criteria

Region	District	Household		Cluster	P* (%)	z-value
Southern Punjab	Bahawalnagar	Rural	234	Mari Mian Sahib Otari; Berwala, Chak 119/6, 116/F, 212/F	59.9	95% (1.96)
		Urban	136	Minchinabad; Madni Colon; Urdu Road; Gulshan-e-Iqbal		

Data Collection

Data were collected via a well-designed interview questionnaire in this study. The questionnaire included different types of multiple choice and open questions. These problems were linked to the ages of women, the women's education, the working status of women, attitudes of women, family structures, household income, sanitation, springs of waters, spending time in unpaid household care jobs. The qualitative questions were converted to quantitative with the help of dummy variable by assuming their values into '0' or '1'. The questionnaire was prepared in English language for convenience it was translated into Urdu with the help of bilingual experts. For more convenience of sample respondent's questions were asked in Urdu, Punjabi and Saraiki languages. The validity and internal consistency of the questionnaire was checked by Cronbach's Alpha. The value of Cronbach's Alpha for present study was 0.727. **Research Methodology**

The detail of methodology and research process for this study is explained as under.

The Principal Component Analysis (PCA)

PCA is a method for data transformation that reduces a lower number of items for further study (for example, ICA) by multidimensional data sets. In PCA a number of interlinked variables are converted into a new collection of variables known as main components (PCs) to be uncorrelated and much of the variance in the entire data set is preserved by the first few PCs. The first PC is then a linear combination of all the existing variables such that the greatest variance is achieved. Second, the PC also represents a linear

combination of the original variables such that the remaining PCs have the most variance. PCA is an unregulated technique where previous group experience is not mandatory and thus possible groupings of samples in an experiment are often explored.

PCA Polychoric

Kolenikov and Angeles, (2009) recently identified a technique to use Polychoric Correlations to integrate categorical variables into PCA. They conclude that the proportion of explained variance is more reliable with this approach than with other methods. Therefore, Polychoric PCA should be used if the proportion of explicit variance is essential for research. Studies say that polychoric associations, as often the case of Likert papers (Basto and Pereira, 2012), are to be used in the treatments of ordinal data or in the presence of strong biases or curtosis. Polychoric PCA is computationally intensive; however, the proportion of variance explained is calculated reliably, while others provide estimates that are downward-scaling (Roberts and Gannon, 2014). We use Polychoric PCA, based on Polychoric correlations, following Kolenikov and Angeles (2009). These are calculated with maximum probabilities, provided that the latent variables that are the focus of the ordinary category data are normally distributed. SED index and CWEMI are constructed with the weighted sum of component scores. We can see weight are shown in Table 3 and 4.

Table-3: Weights through PolychoricPrincipal Component Analysis of women autonomy indicators

Variables	Weights	Variables	Weights
DFOD	0.210	OCHV	0.675
NFOD	0.199	DEPL	0.268
DCFEE	0.199	DCHC	0.312
DFRG	0.210	DOHC	0.394
DJEW	0.196	SDPROB	0.131
DPROP	0.188	OPEMNS	0.137
VNHS	0.271	ACOMG	0.131
VFAHS	0.268	UNEVENT	0.138
VSHOP	0.257	UNFORSN	0.151
VIWED	0.275	SOLVP	0.145
BAC	0.254	COPAB	0.137
SSAC	0.387	SEVSOL	0.127
CPSAV	0.142	THNKSOL	0.128
ECOM	0.275	HANDLEV	0.161

Table-4: Weights through Polychoric Principal Component Analysis of SustainableEconomic development index

Variables	Weights
PHW	0.322
HPBGS	0.501

RENG	0.565
LPCI	0.361
ADLVRY	0.130
HMOB	0.418
SANT	0.419
LWTR	0.379

Variables Description

Summary of selected variables in present study is given below in Table 5

Table-5: List of the variables

Variables	Description of variables
Dependent variable	
CWEI	<p>Cumulative Women Empowerment Index</p> <p>i. Household decision making (HHD)</p> <p>ii. Economic empowerment (SMOB)</p> <p>iii. Social empowerment (EEM)</p> <p>iv. Political empowerment (POLEM)</p> <p>v. Familial/interpersonal empowerment (FAMEM)</p> <p>vi. Psychological empowerment (PSYEM)</p> <p>It is calculated by six dimensions of women empowerment from a series of questions from questionnaire through Polychoric Principal Component Analysis.</p>
SEDI	<p>Sustainable Economic Development Index</p> <p>i. Economic variables</p> <p>ii. Social variables</p> <p>iii. Environmental</p> <p>It is calculated by above mentioned three dimensions through series of questions from SDGs 2030 from questionnaire through Polychoric Principal Component Analysis)</p>
Explanatory variables	
NCHLD	It is number of children of respondent
EDU	Number of Years of schooling completed of respondent
HEDU	Number of Years of schooling completed of respondent's husband
UPCW	Time spent in Unpaid domestic care work
TEC	Household has facility of internet = 1 if yes or = 0 if not

PHYC	It is physical assets of respondent's household
------	---

IV. RESULTS/ FINDINGS

In recent decades, the centrality of women's empowerment and the realization of women's rights have been increasingly recognized in achieving sustainable growth. This recognition is evident in a number of international standards and agreements, including Principle 20 of the 1992 Rio Declaration on Environment and Development, in its Declaration on the Full Participation of Women, which is central to achieving sustainable development. In the 1995 Beijing Declaration and Forum for Action, adopted by Member States, governments were called upon to incorporate gender issues and viewpoints into sustainable development policies and programs. Women constitute around half the population of Pakistan. It is a known fact that in the development process of Pakistan, the role of female is undermined as compared to their male counterparts. It is noteworthy that in 2006, Pakistan ranked at 112, and since then, its position has been increasingly worsening every next year. In this study, statistics show that the literacy rate of adult female (% of females ages 15-24) is only 42.72%, compared to 69.57% for adult males (% of males ages 15-24) (WDI, 2015). Similarly, Labor force participation rate for ages 15-24, for female remains 21.10% while Labor force participation rate for ages 15-24, for male stood at 67.19% (ILO, 2014).

This study has vividly discussed the empirical findings of different indices of women empowerment in Southern Punjab and the impact of cumulative index of this imperative and indispensable component of sustainable economic growth on sustainable economic development.

The study reveals that how empowering women in Southern Punjab, Pakistan will influence sustainable economic development. The coefficient of the Women's Index of Empowerment shows the increase of the Punjab level of sustainable development by 0.096 points. The findings consistently show the positive impact on economic and social development of women empowerment (Bhoganadam et al. 2014; Baig, et al. 2018). The analysis has been done for each region i.e., Southern Punjab separately not only with cumulative women empowerment index with other important determinants of SED but the predictive strength of economic, cultural, familial, political and psychological fields of the woman empowerment has been done with SEDI.

Table-6: Regression results of Women Empowerment on Sustainable Economic Development for Southern Punjab

Dependent Variable: SEDI	Coef.	S.E	T	P> t
Commutative Women Empowerment Index	0.096	0.027	3.550	0.000
Education of Female Respondent	0.022	0.009	2.530	0.012
Education of Respondent' Husband	0.063	0.012	5.140	0.000
Adoption of Technology by the Respondent	0.356	0.093	3.810	0.000
Number of Respondent' Child	-0.294	0.062	-4.760	0.000
Access of Household Physical Assets	0.059	0.023	2.570	0.011
Women Unpaid Domestic Care Work	-0.113	0.051	-2.210	0.028
C	3.496	0.327	10.680	0.000
Summary Statistics				
Number of observations = 370 F(7, 362) = 25.14				
Prob> F = 0.0000; R-squared = 0.3271; Adj R-squared = 0.3141				

The empirical results indicated that women empowerment has a positive and significant impact on sustainable economic development index for a sample of Southern Punjab. The study indicated a positive

impact of respondent education, respondents husband education, availability of technology, household physical assets on sustainable economic development, while number of children and unpaid domestic care work done by women negatively affect SED in Southern Punjab. A fairer distribution of unpaid work would therefore not only benefit women, but also result in more efficient workers and stronger economies (Georgieva, et al., 2019). As far as different dimensions of women empowerment are concerned, the dimension of interpersonal/ familial empowerment, political empowerment and economic empowerment are significantly positively influencing sustainable economic development in Southern Punjab.

The findings exposed that psychological empowerment, familial/interpersonal empowerment and economic empowerment of women significantly and positively influence sustainable economic development in Southern Punjab

Table-7: Regression results of different dimension of women empowerment on Sustainable Economic development for Southern Punjab

Variables	Coefficients	Std. Error	T value	Pr(> t)
C	3.590	0.2732	13.140	< 2e-16 ***
Psychological Empowerment	0.036	0.0561	0.647	0.5183
Social Empowerment	-0.036	0.0915	-0.403	0.6869
Familial Empowerment	1.090	0.1479	7.370	1.16e-12 ***
Household decision making	-0.064	0.0773	-0.833	0.4053
Political Empowerment	0.211	0.1158	1.829	0.0682.
Economic empowerment	1.002	0.2127	4.711	3.51e-06 ***

In the context of Sothern Punjab, the results suggested that women empowerment has a substantial and significant impact on the SED Index. It is observed that schooling of the respondent and female husband's education, availability of new technology and household assets in Southern Punjab positively while of number of children and unpaid domestic care work has shown negative influence on sustainable economic development. The results also showed that psychological empowerment, family/interpersonal empowerment and women economic empowerment have important and positive effects in Southern region of Punjab on sustainable economic development.

V. CONCLUSION

The word empowerment of women is used to describe a process in which weak women or marginalised women achieve a greater share of control over their own lives, wealth and decision-making. Women empowerment includes many aspects, such as economic opportunity, social equality, political power and personal rights. It is believed that empowering women will bring about improvements in decision-making that will have a direct impact on development. Increasing women's control over resources, even in the short term, enhances their say within the home, not only increasing their health, but, as research seems to have repeatedly shown, economic growth and development. The status of women in Pakistan is not homogeneous due to the link between gender and other forms of exclusion in society. There is considerable diversity in the status of women across classes, regions and rural / urban divisions due to uneven socio-economic

development and the effect of tribal, feudal and patriarchal social formations on women's lives. The economic value of women's reproductive activities and unpaid work as a family worker in the public sector has not been recognised as profitable and is not reflected in national statistics. Women often neglect the possession of productive resources.

Southern Punjab is regarded as a backward Punjab zone in which women are unfavourable. The percentage of males' addiction is high and is primarily related to farming. Women are less motivated in Southern Punjab. The findings of this study designate that access to hospital in the event of personal health issues, engagement in social events, the cosmopolitan behaviour, awareness about women 's security legislation and written contents of Nikah-Nama ,involved in paid job and participation in politics are significant contributing factors in women empowerment.. In Southern Punjab, women empowerment is substantially diminished by unpaid housework and threat of father or husband abuse the most affective factors in deciding women empowerment.The research also highlights the empirical effect on SED in Punjab of multiple aspects of feminization. Southern Punjab has also been examined for the effects of psychological facilitating, family and social autonomy, domestic decision making, economic and political women empowerment.The analytical findings have shown that the empowerment of women has a favorable and important effect on a Southern Punjab survey of the sustainable economic development index. The findings also reflect a positive effect on the sustainable economic development measure of respondents' and their husband education, availability of technology and assets, while the number of children and unpaid domestic care work by women in Southern Punjab adversely affects sustainable economic development.The factor of intersocial / family empowerment, political empowerment and economic empowerment greatly affect sustainable economic development in different ways in Southern Punjab and the statistically neglected effect on the competitiveness of the economy is seen in psychological empowerment, social stability, and household decision-making.

Women are changing their contact actions and becoming aware of what is happening around the world, to women need to be aware of their legal rights to improve themselves before they are set up to force reforms in society. Various interventions, notably in rural areas, may be an effective tool for sensitizing women, thus facilitating the empowering of women, through electronic media, public forums, rallies and workshops. Southern Punjab can also develop economic and social facilities in society. Women may form associations and social networks to exchange views and sentiments within the community women.

VI. LIMITATION AND STUDY FORWARD

The limitations of the study come from interviewing from women only for constructing SED index measure while questions from male member of household can be done to collect information for environmental awareness, behavior etc.The present study, empowerment will be measured directly by operationalizing the notion of charge and evolving cumulative index as a measure of charge. So, the present study will not only construct a composite index of women empowerment. Still, it will also envelop all socioeconomic, political and psychological dimensions of women empowerment that have not been used in any previous study altogether. As well in studies regarding determinants of women empowerment in Pakistan have hardly used unpaid domestic care work, advertency of legal rights, especially the awareness of women protection bill, cosmopolitan attitude, the influence of a safe and clean environment.

ACKNOWLEDGEMENT

I would like to take this opportunity to thank all my colleagues and co-authors for their support in my research. I would also like to thank my family most wholeheartedly for their support throughout all my life and special characteristics through the research paper process. I have the opportunity to finish this paper because of their unconditional love and prayer. Thanks, last but not least to all those who have participated in making this thesis real.

AUTHORS CONTRIBUTION

Hafsa Batool conceived of the presented idea. Mumtaz Anwar developed the theory and performed the computations. Hafsa Batool verified the analytical methods. Both authors discussed the results and contributed to the final manuscript.

REFERENCES

1. Akram, F., Abrar-ul-Haq, M., & Raza, S. (2018). A Role of Corporate Governance and Firm's Environmental Performance: A Moderating Role of Institutional Regulations. *IJMS*, 25(2), 19-37.

2. Ali, S. S., Qazi, I. A., Arshad, M., Arshad, M., Khan, Z., Voice, T. C., & Mehmood, C. T. (2016). Photocatalytic degradation of low-density polyethylene (LDPE) films using titania nanotubes. *Environ Nanotechnol Monit Manag* 5: 44–53.
3. Banerjee, A., Chandrasekhar, A. G., Duflo, E., & Jackson, M. O. (2013). The diffusion of microfinance. *Science*, 341(6144).
4. Basto, M., & Pereira, J. M. (2012). An SPSS R-menu for ordinal factor analysis.
5. Batool, S. A., & Batool, S. S. (2018). Role of Contextual Factors in Women's Empowerment. *Journal of Arts and Social Sciences*, 1, 49-67.
6. Berg, A. T., Berkovic, S. F., Brodie, M. J., Buchhalter, J., Cross, J. H., van Emde Boas, W., . . . Mathern, G. W. (2010). Revised terminology and concepts for organization of seizures and epilepsies: report of the ILAE Commission on Classification and Terminology, 2005–2009. *Epilepsia*, 51(4), 676-685.
7. Cao, H., Kwon, C., & An, Y. (2020). Impact of Information Technology Various Use on Students Digital Reading Achievement. Paper presented at the 2020 International Conference on Big Data and Informatization Education (ICBDIE).
8. Chakrabarti, A., & Chaudhuri, K. (2007). Antenatal and maternal health care utilization: evidence from northeastern states of India. *Applied Economics*, 39(6), 683-695.
9. Chaudhry, I. S., Iffat, S., & Farooq, F. (2017). Foreign direct investment, external debt and economic growth: evidence from some selected developing countries. *Review of Economics and Development Studies*, 3(2), 111-124.
10. Chopra, M., Biehl, M., Steinfatt, T., Brandl, A., Kums, J., Amich, J., . . . Podlech, J. (2016). Exogenous TNFR2 activation protects from acute GvHD via host T reg cell expansion. *Journal of Experimental Medicine*, 213(9), 1881-1900.
11. Cornwall, A., & Rivas, A.-M. (2015). From 'gender equality and 'women's empowerment'to global justice: reclaiming a transformative agenda for gender and development. *Third World Quarterly*, 36(2), 396-415.
12. Dey, R. and M. K. Md (2015). "Assessment of key dimensions and determinants of women's empowerment in Bangladesh." *Russian Journal of Agricultural and Socio-Economic Sciences* 37(1).
13. Hai, L. T., Hai, P. H., & Dung, T. A. (2014). Influencing factors on sustainable development: A case study in Quang Tri province, Vietnam. *Environ Dev Sustain* 12, 103–116.
14. Kabeer, N. (2012). "Women's economic empowerment and inclusive growth: labour markets and enterprise development." *International Development Research Centre* 44(10): 1-70.
15. Klasen, S. and M. Santos Silva (2018). Gender inequality as a barrier to economic growth: A review of the theoretical literature, Courant Research Centre: Poverty, Equity and Growth-Discussion Papers.
16. Kolenikov, S., & Angeles, G. (2009). Socioeconomic status measurement with discrete proxy variables: Is principal component analysis a reliable answer? *Review of Income and Wealth*, 55(1), 128-165.
17. Kumar, S., Stecher, G., Li, M., Knyaz, C., & Tamura, K. (2018). MEGA X: molecular evolutionary genetics analysis across computing platforms. *Molecular biology and evolution*, 35(6), 1547-1549.
18. Malapit, H., Quisumbing, A., Meinzen-Dick, R., Seymour, G., Martinez, E. M., Heckert, J., . . . Phase, G. A. A. P. (2019). Development of the project-level Women's Empowerment in Agriculture Index (proWEAI). *World Development*, 122, 675-692.
19. Meekan, M., & Lowe, J. (2019). Does provisioning for tourism harm whale sharks at Oslob? A review of the evidence and reply to Ziegler et al. (2018). *Tourism Management*, 75, 626-629.
20. Mokomane, Z. (2012). Role of families in social and economic empowerment of individuals. United Nations Expert Group Meeting on Promoting Empowerment of People in Achieving Poverty Eradication, Social Integration and Full Employment and Decent Work for All.
21. Naveed, M., Mustafa, A., Azhar, S. Q.-T.-A., Kamran, M., Zahir, Z. A., & Núñez-Delgado, A. (2020). Burkholderia phytofirmans PsJN and tree twigs derived biochar together retrieved Pb-induced growth, physiological and biochemical disturbances by minimizing its uptake and translocation in mung bean (*Vigna radiata* L.). *Journal of Environmental Management*, 257, 109974.

22. Nawaz, F., Ahmad, R., Ashraf, M. Y., Waraich, E. A., & Khan, S. Z. (2015). Effect of selenium foliar spray on physiological and biochemical processes and chemical constituents of wheat under drought stress. *Ecotoxicology and environmental safety*, 113, 191-200.
23. Ng, M., Fleming, T., Robinson, M., Thomson, B., Graetz, N., Margono, C., . . . Abera, S. F. (2014). Global, regional, and national prevalence of overweight and obesity in children and adults during 1980–2013: a systematic analysis for the Global Burden of Disease Study 2013. *The lancet*, 384(9945), 766-781.
24. Pettit, J. (2012). "Empowerment and Participation: bridging the gap between understanding and practice." *United Nations Headquarters* 10: 6.
25. Roberts, J., & Gannon, B. (2014). The multidimensional nature of social capital: an empirical investigation for older people in Europe. *Sheffield Economic Research Paper Series (SERPS)* 2014014.
26. Rosell, R., Carcereny, E., Gervais, R., Vergnenegre, A., Massuti, B., Felip, E., . . . Sanchez, J. M. (2012). Erlotinib versus standard chemotherapy as first-line treatment for European patients with advanced EGFR mutation-positive non-small-cell lung cancer (EURTAC): a multicentre, open-label, randomised phase 3 trial. *The lancet oncology*, 13(3), 239-246.
27. Rusthoven, C. G., Yamamoto, M., Bernhardt, D., Smith, D. E., Gao, D., Serizawa, T., ... & Robin, T. P. (2020). Evaluation of first-line radiosurgery vs whole-brain radiotherapy for small cell lung cancer brain metastases: the FIRE-SCLC Cohort Study. *JAMA oncology*, 6(7), 1028-1037.
28. Schwab, K. and X. Sala-i-Martin (2016). The global competitiveness report 2013–2014: Full data edition, World Economic Forum.
29. Sheik-qasim, A., Veregin, R. P., Elliott, M. R., Davis, M. L., Qiu, S., Schneider, J. L., . . . Zwartz, E. G. (2015). Hyperpigmented Glossy EA Toner: Google Patents.
30. Soudagar, M. E. M., Nik-Ghazali, N.-N., Kalam, M. A., Badruddin, I., Banapurmath, N., & Akram, N. (2018). The effect of nano-additives in diesel-biodiesel fuel blends: A comprehensive review on stability, engine performance and emission characteristics. *Energy Conversion and Management*, 178, 146-177.
31. Springmann, M., Godfray, H. C. J., Rayner, M., & Scarborough, P. (2016). Analysis and valuation of the health and climate change cobenefits of dietary change. *Proceedings of the National Academy of Sciences*, 113(15), 4146-4151.
32. Tardif, J. C., Kouz, S., Waters, D. D., Bertrand, O. F., Diaz, R., Maggioni, A. P., ... & Roubille, F. (2019). Efficacy and safety of low-dose colchicine after myocardial infarction. *New England journal of medicine*, 381(26), 2497-2505.
33. Tubanova, D. Y., Fedosov, V. E., & Dugarova, O. D. (2018). *Dicranumignatovii* sp. nova (Dicranaceae, Bryophyta) from the Far East. *Philippine Journal of Systematic Biology*, 12(1), 37-44.
34. Wodon, Q. T. and B. De La Briere (2018). Unrealized potential: The high cost of gender inequality in earnings, World Bank.
35. Women, U. (2014). World Survey on the role of women in development 2014: Gender Equality and Sustainable Development. A report signed by the Secretary General and Executive Director, UN Women. [PDF].
36. World Economic Forum Report, (2015-16). The Global Competitiveness Report.
37. Xiao, Z., Bi, C., Shao, Y., Dong, Q., Wang, Q., Yuan, Y., . . . Huang, J. (2014). Efficient, high yield perovskite photovoltaic devices grown by interdiffusion of solution-processed precursor stacking layers. *Energy & Environmental Science*, 7(8), 2619-2623.
38. Yang, C., Schellhammer, K. S., Ortmann, F., Sun, S., Dong, R., Karakus, M., . . . Zhuang, X. (2017). Coordination Polymer Framework Based On-Chip Micro-Supercapacitors with AC Line-Filtering Performance. *Angewandte Chemie International Edition*, 56(14), 3920-3924.
39. Zia, K. M., Noreen, A., Zuber, M., Tabasum, S., & Mujahid, M. (2016). Recent developments and future prospects on bio-based polyesters derived from renewable resources: A review. *International journal of biological macromolecules*, 82, 1028-1040.

40. Zoynul, A. M., & Fahmida, M. (2013). WOMEN EMPOWERMENT THROUGH MICRO CREDIT: A CASE STUDY OF DINAJPUR, BANGLADESH. *Studies in Business & Economics*, 8(2).