

Retracted: Microfinance institute's non-financial services and women-empowerment: The role of vulnerability

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ABSTRACT

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Women-Empowerment is one of the most crucial challenge in Pakistan. Pakistani women are contributing only 25-30% in nation's economy which is quite low as compared with other developed as well as developing countries such as United Kingdom (UK), United States of America (USA), Malaysia, China, Indonesia and India. To address this problem, the primary objective of this study was to examine the role of microfinance institutions in women-empowerment. Moreover, moderating role of vulnerability was also examined. Quantitative research approach and cross-sectional research design were adopted. Data were collected from the female clients of microfinance institutes in Southern Punjab, Pakistan. Survey was conducted to collect the data and questionnaires were distributed by using area cluster sampling. SmartPLS (SEM) was used to analyze the data. It was found that non-financial services of microfinance institutes such as training/skill development programs and social capital development had positive contributions towards women-empowerment. Moreover, vulnerability moderated the relationship between social capital and women empowerment. Thus, this study contributed in the body of literature by investigating vulnerability as moderating variable. Hence, this study is beneficial for microfinance institutes to enhance women-empowerment through training/skill development and social capital development.

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1. Introduction

Women are the integral part of every society as women community is playing a key role in the economic growth of country and their families (Ekpe *et al.*, 2010). For instance, women entrepreneurs in various countries such a United States (US), contributed approximately 50% to yearly gross domestic product (GDP) and contributed approximately 54.1% to generate employment opportunities. Moreover, women contributes 75% of total employment opportunities in Indonesia with 55% in gross domestic product (GDP). In case of Malaysia, women contribution in gross domestic product (GDP) is 44% with 56% contribution to generate employment opportunities. (Evbuomwan *et al.*, 2012; Norizatton *et al.*, 2011; SMEDAN 2012).

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However, the contribution of Pakistani women is quite low as compared to the various developed as well as developing countries. Pakistani women contributing only 25 to 30% in gross domestic product (GDP) and only 24% in employment opportunities which is more threatening towards nation's economy, development of communities and economic well-being of poor families. It indicates that women-empowerment is low in Pakistan. The responsible factor of low empowerment is gender discrimination. As gender discrimination is one of the problem in most of the developing countries in which men is dominants in social and economic decision making (Derera et al., 2014).

Gender discrimination is due to cultural issues, which causes unequal distribution in education and wealth (Siringi, 2011; Waring & Brierton, 2011). According to Osman et al. (2011), culture is a root cause which enhance discrimination among men and women particularly in developing countries. However, the microfinance institutes such as microfinance banks and non-government organization (NGOs) are trying to overcome these issues.

In Pakistan, total 3,030 microfinance institutes are working in Pakistan (Pakistan Microfinance Review, 2016). These microfinance institutes serving 2.8 million poor people in which 1.6 million are women (Pakistan Microfinance Review, 2014). However, approximately 40% women are facing poverty (Rehman *et al.*, 2015). High level of poverty indicates low women-empowerment in Pakistan.

Microfinance institutes are putting their efforts to minimize the poverty level through various financial as well as non-financial services (Al-Shami et al., 2016). Financial services include credit, saving and insurance opportunities, non-financial services include training plans or skill development programs and social capital development. This study is focused on non-financial services namely; training/skill development programs and social capital. However, this study is only focused on the Southern Punjab, Pakistan. As the Southern Punjab is one of the less developed area in Pakistan. That is the reason it has high poverty level among other regions of Pakistan (Afzal et al., 2015).

Moreover, vulnerability is more threatening in southern Punjab which influences negatively on women empowerment. Vulnerability factors such as environmental, economic, social and political are more common in Southern Punjab. Environmental vulnerability comprises of natural disasters such as floods, river erosion, water shortage, wind storms etc. (Banerjee & Jackson, 2017). Social vulnerability includes various issue of gender discrimination in which women are socially poor regarding decision making power in social as well as economic activities. Economic vulnerability includes shortage of financial resources and political vulnerability in less focus on development activities by government. All these factors limit the positive contribution of microfinance institutes towards women-empowerment. Therefore, in this study, vulnerability (environmental, economic, social, political) is taken a moderating variable between microfinance institutes services (training/skill development, social capital) women-empowerment.

Therefore, the research questions of the current study are given below;

1. What are the factors contributing to women-empowerment? This research question has two sub-question;
2.
 - 1.1 Does the training/skill development contribute to women-empowerment?
 - 1.2 Does the social capital contribute to women-empowerment?
3. Does the vulnerability moderate the relationship between women-empowerment and micro-finance factors (training/skill development, social capital)?

To approach the answers of these research questions, this study considers the following objectives

1. To examine the contributing factors to women- empowerment. This research objective has two sub-objectives;
 - 1.1 To study whether training/skill development programs contributes to women-empowerment.

1.2 To study whether social capital contributes to women-empowerment.

2. To examine whether vulnerability moderates the relationship between microfinance factors (training/skill development, social capital) and women-empowerment.

Thus, this study contributed in the literature by investigating various contributing factors of towards women-empowerment. Moreover, this study contributed by investigating the moderating role of vulnerability between microfinance institutes and women empowerment.

2. Review of Literature and Hypothesis Development

Mayoux's Feminist Empowerment Theory explains that microfinance institutes have significant contribution to decreases gender discrimination and increase women-empowerment. This a prominent theory which formally documented the women-empowerment and microfinance institutes (Mayoux, 1998). It creates a link between women-empowerment and microfinance institutes. According to this theory, microfinance enhances the social as well as economic empowerment (Mayoux, 2005). This theory specially focused on developing countries to enhance empowerment level among women community.

Additionally, in this study "Relational Theory of Risk" explains the effect of vulnerability. This theory has three fundamental elements: an object at risk, a risk object, and a relationship of risk (Boholm & Corvellec, 2011). A risk object is comprised of any risky event or hazard such as vulnerability factors which may threaten the object at risk. An object at risk is an object ascribed with some value. A *risk object* may modify the *object at risk* (Corvellec, 2010). However, the third element is based on the relationship of a *risk object* and *object at risk*. In this study *women-empowerment* is taken as *object at risk* and *vulnerability* is taken as a *risk object*. Moreover, as microfinance institutes services are helpful to enhance women-empowerment, thus this a valuable relationship, hence, this relationship (microfinance institutes and women-empowerment) is also taken as *object at risk* which could be modified through vulnerability. Third element is the relationship of women-empowerment and vulnerability. All these relationships are shown in below equations;

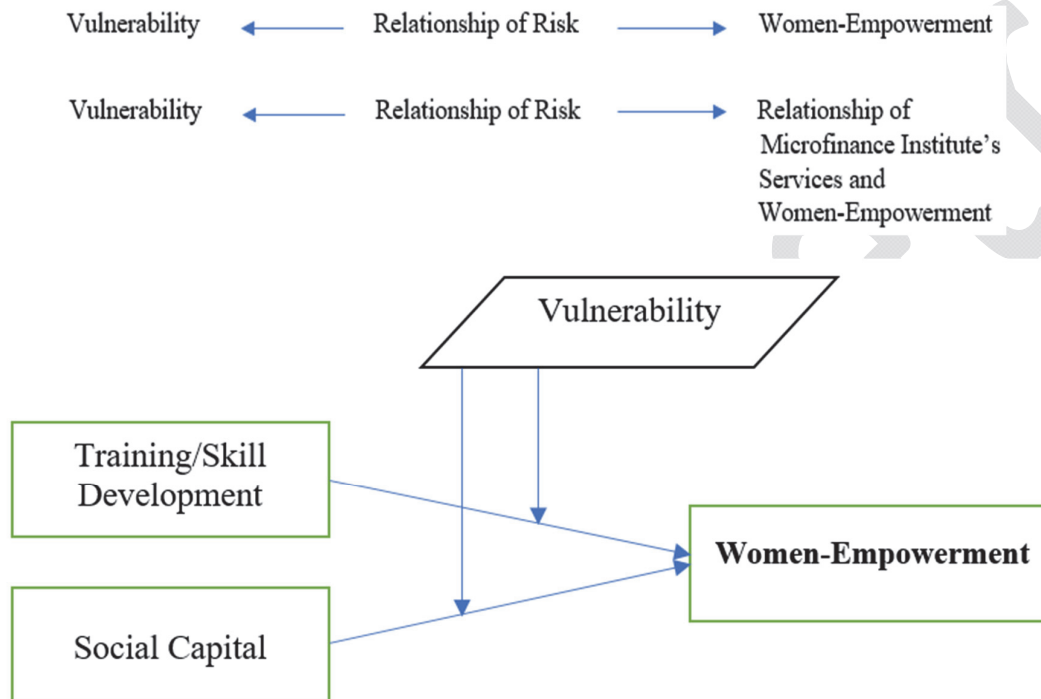


Fig. 1. Theoretical Framework

Women-empowerment is known as the process of equipping women to be economically independent, self-reliant, having positive esteem which allows them to defend any challenging circumstances and to contribute to various development activities (Kapila *et al.*, 2016). It is a process in which women get more control over different resources (Jamal *et al.*, 2016). However, women-empowerment is low in developing countries, particularly in Pakistan. From previous few decades, microfinance institutes providing various services to alleviate poverty and enhance women-empowerment. The aim of microfinance institutes is to support women micro-enterprise through training or skill development programs and social capital development. Microfinance institutes are also providing other financial services like credit (Arif *et al.*, 2017; Hameed *et al.*, 2019a, 2019b). However, this study is limited to non-financial services such as training and social capital.

Training is an important microfinance factors which offers skills as well as experience to the women entrepreneurs (Akanji, 2006; Cheston & Kuhn, 2002; Kuzilwa, 2005). It is the process of teaching different skills to women because the women in developing countries has low level of education (Harrison & Mason, 2007; Ibru, 2009). Training increases the success rate of women micro-enterprise which generate the income. Income enhances the economic and social empowerment. According to Hameed *et al.*, (2017), training has significant positive effect on micro-enterprise success.

Moreover, literature demonstrates that training has positive influence on enterprise success (Glaub & Frese, 2011; Bischoff *et al.*, 2013). Furthermore, training has significant influence on women awareness (Dandedjrohoun *et al.*, 2012) which enhances the women decision-making power. Additionally, it increases the satisfaction level among individuals (Hussain *et al.*, 2013). Thus, training/skill development programs enhances the income through women micro-enterprise success which increases the women's economic as well as social empowerment. Hence, it is hypothesized that;

H₁: Training/Skill development has significant relationship with women-empowerment

Nevertheless, "Social capital is defined as 'the connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them'" (Putnam, 2000, p.18). Social capital has been a more adapted instrument by societies to address a development imperative (Kifle, 2007). It is significantly associated with women-empowerment (Mayoux, 2001). Network of people has key role in poverty reduction and empowerment.

Social capital is relatively beneficial to increase income generating activities (Nahapiet & Ghoshal, 1998) such as women micro-enterprise. Additionally, Atmadja *et al.* (2016) also found that social capital is the key to women micro-enterprise success as it has positive impact on women enterprise. Network of people helpful in case of any emergency. It is also a good source of initial capital for women micro-enterprise.

Thus, from the above discussion, it is evident that social capital among women is a good source for the success of women micro-enterprise. Women micro-enterprise generate income which empower women socially and economically. Hence, it is hypothesized that;

H₂: Social Capital has significant relationship with women-empowerment

However, vulnerability has negative influence on women-empowerment. "Vulnerability involves a combination of different factors that determine the degree to which someone's life and livelihood are put at risk by a discrete and identifiable event in nature or society" (Wisner *et al.*, 2004 p. 11). According to Banerjee and Jackson (2017), the vulnerability has three dimensions, namely; environmental vulnerability, economic vulnerability and social vulnerability. Along with these three types, the current study is also focused on political vulnerability. Because southern Punjab is also politically vulnerable region.

According to Herath *et al.* (2015), vulnerability factors significantly decrease women-empowerment. It is a probability to face future damage in well-being and a household becoming poorer (Christiaensen & Subbarao, 2005; Zhang & Wan, 2006). Vulnerability factors such as flood, earth quick, water shortage,

wind storms or any other natural disaster reduces the women-empowerment by damaging women micro-enterprise. As the enterprise risk management is very crucial (Hameed *et al.*, 2017). Hence, vulnerability is playing a moderating role between microfinances institutes' services and women-empowerment. Thus, it is concluded that;

H₃: Vulnerability moderates the relationship between social capital and women-empowerment

H₄: Vulnerability moderates the relationship between training/skill development programs and women-empowerment

3. Method

As the method is one of the most crucial part of every research (Imran *et al.*, 2019; Hameed *et al.*, 2018), therefore, its selection should be based on the nature of study. This study investigated the role of micro-finance services to enhance women empowerment. Moreover, the role of vulnerability is also examined as one of the factor which influence on the relationship of microfinance services and women empowerment. Thus, the primary data were collected from the female clients of microfinance institutions. Only those clients were selected which are using the microfinance services such as training/skill development and social capital development activities. Therefore, by considering the objectives and problem of the current study (Hameed *et al.*, 2017a, 2017b; Hameed *et al.*, 2018) quantitative research technique with cross-sectional research design was selected. Moreover, 5-point Likert scale was used to conduct survey.

To collect the data from female client's area cluster sampling was used. Furthermore, the sampling is divided into four steps.

1. Southern Punjab divided into 05 clusters based on cities, namely; Bahawalpur, Rahim Yar Khan, Muzaffargarh, Dera Ghazi Khan and Bahawalnagar.
2. 3 clusters are selected randomly. Selected clusters were Bahawalpur, Muzaffargarh and Bahawalnagar.
3. Sample size of each clusters is selected based on below formula.

$$nz = (Nz/N) \times n$$

where,

nz = required sample size for each cluster, Nz = total population of each cluster, N = total population size in all clusters, n = total sample size

According to the estimation total female clients having participation in all microfinance services such as credit, saving, insurance, training/skill development programs and social capital development activities are 143,000 approximately. However, in Bahawalpur, these clients are 29500, in Rahim Yar Khan 21000, in Muzaffargarh 17000, in Dera Ghazi Khan 18500 and in Bahawalnagar 14500, approximately. The total sample size in this study is 300. Now the sample size for each cluster is calculated below by using above formula.

Bahawalpur:	$nz = (29,500/100,500) \times 300 = 88$
Rahim Yar Khan:	$nz = (21,000/100,500) \times 300 = 63$
Muzaffargarh:	$nz = (17,000/100,500) \times 300 = 51$
Dera Ghazi Khan:	$nz = (18,500/100,500) \times 300 = 55$
Bahawalnagar:	$nz = (14,500/100,500) \times 300 = 43$

4. Selection of respondents randomly from Bahawalpur 88, Rahim Yar Khan 63, Muzaffargarh 51, Dera Ghazi Khan 55 and Bahawalnagar 43.

All the measures are adapted from previous studies. Women empowerment is measured based on social and economic empowerment. Training/Skill development is measured by considering the usefulness of training, frequency of these programs, role of these activities in social status, family life improvement and role in personal attributes/qualities. Social capital is measured by considering the network of people among family, relatives, friends, customers, supplier as well as other stakeholders. Finally, vulnerability is measured through, economic, political, social and environmental factors. All the scale items are given in appendix.

4. Research Analysis and Results

For data analysis the current study employs the smartPLS 3. The smartPLS 3 has been gaining popularity day by day due to its model parsimony and many studies have used this software for accurate results in context of Pakistan as well (Imran *et al.*, 2017; Imran *et al.*, 2018a, 2018b). Therefore, by using SmartPLS 3, measurement model was examined. Figure 2 shows the measurement model assessment and Table 2 shows the results of measurement model assessment. To assess the measurement model, factor loading, Cronbach alpha, composite reliability and average variance extracted (AVE) was examined. By following the instructions of Hair *et al.* (2010), all the items having factor loading less than 0.5 were deleted. In this study threshold level for Cronbach alpha was 0.7, composite reliability 0.7 and average variance extracted (AVE) 0.5 was examined. The results in Table 1 show that all the constructs achieved the minimum threshold level. Moreover, discriminant validity is shown in Table 2 which achieved the external consistency.

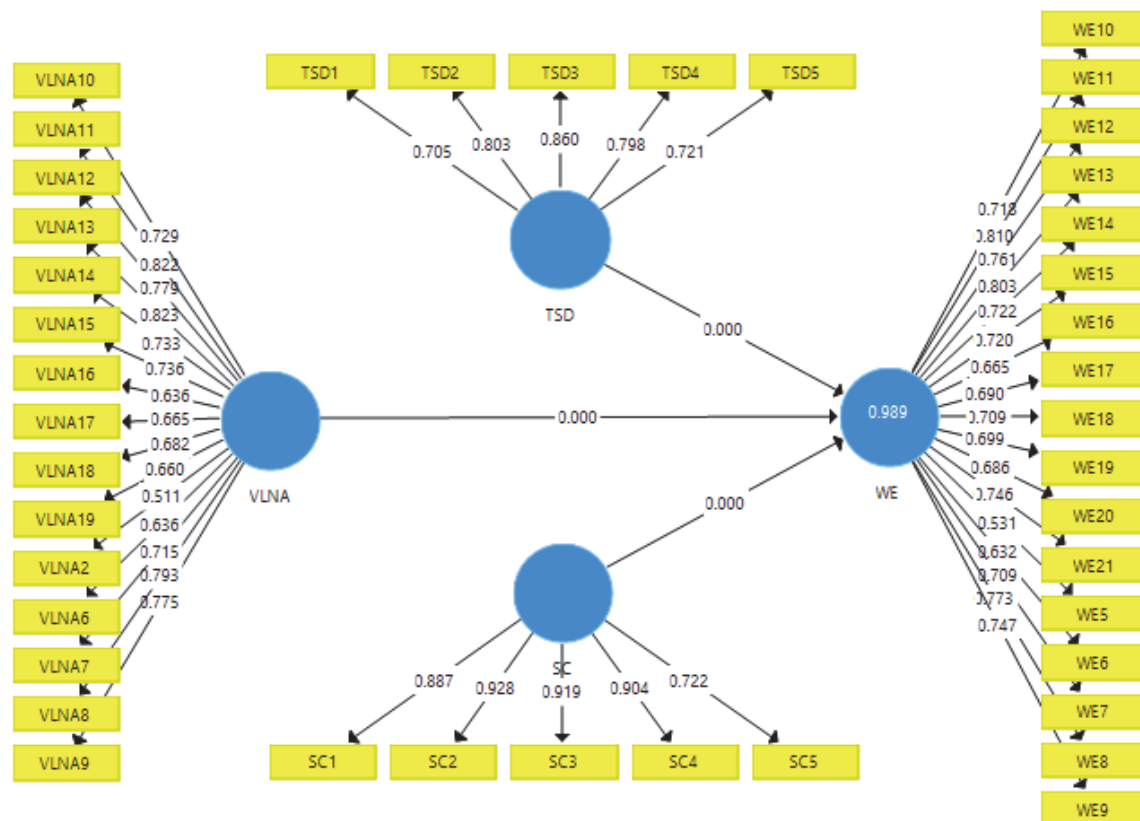


Fig. 2. Measurement Model Assessment

Table 1

Internal Consistency, Convergent Validity and Average Variance Extracted (AVE)

<i>Construct</i>	<i>Indicators</i>	<i>Loadings</i>	<i>Cronbach Alpha</i>	<i>Composite Reliability</i>	<i>AVE</i>
<i>Training/Skill Development (TSD)</i>	TSD1	.705	.838	.885	.608
	TSD2	.803			
	TSD3	.860			
	TSD4	.798			
	TSD5	.721			
<i>Social Capital (SC)</i>	SC1	.887	.921	.942	.766
	SC2	.928			
	SC3	.919			
	SC4	.904			
	SC5	.922			
<i>Vulnerability (VLNA)</i>	VLNA2	.511	.931	.940	.515
	VLNA6	.636			
	VLNA7	.715			
	VLNA8	.793			
	VLNA9	.775			
	VLNA10	.729			
	VLNA11	.822			
	VLNA12	.779			
	VLNA13	.823			
	VLNA14	.733			
	VLNA15	.736			
	VLNA16	.636			
	VLNA17	.665			
	VLNA18	.682			
VLNA19	.660				
<i>Women-Empowerment (WE)</i>	WE5	.531	.940	.947	.512
	WE6	.632			
	WE7	.709			
	WE8	.773			
	WE9	.747			
	WE10	.718			
	WE11	.810			
	WE12	.761			
	WE13	.803			
	WE14	.722			
	WE15	.720			
	WE16	.665			
	WE17	.690			
	WE18	.709			
	WE19	.699			
	WE20	.686			
	WE21	.746			

Table 2

Discriminant Validity

	SC	TSD	VLNA	WE
SC	0.875			
TSD	0.497	0.780		
VLNA	0.654	0.639	0.718	
WE	0.671	0.633	0.615	0.716

Structural Model Assessment

Hypotheses were tested through bootstrapping in PLS. In this part, structural or inner model was assessed to examine the relationship between concerned variables. The t-value ≥ 1.96 was examined to reject or accept the hypotheses. Fig. 3 shows the structural model assessment and Table 3 shows the results of structural model assessment. It is evident the t-value for both relationships is more than 1.96 which is significant. Thus, there is a relationship between training/skill development and women empowerment.

Moreover, there is a relationship between social capital and women empowerment. Hence, H₁ and H₂ are accepted.

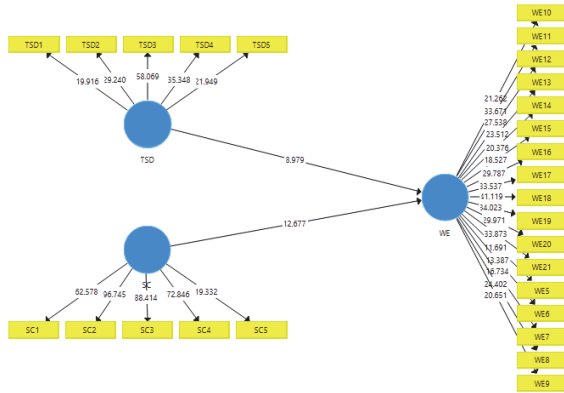


Fig. 3. Structural Model Assessment

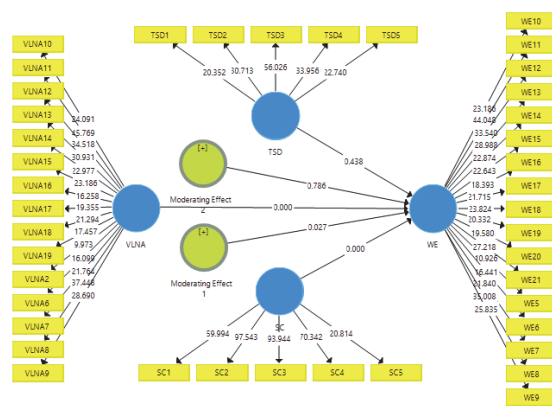


Fig. 4. Structural Model Assessment (Moderation Effect)

Nevertheless, Table 3 and Fig. 4 show the moderation effect of vulnerability. It is found that vulnerability is one of the moderating variables between social capital and women empowerment. As the t-value of 2.220 in Table 4 is significant. Thus, H₃ is accepted. However, Vulnerability is not a moderating variable between training/skill development and women empowerment as the t-value 0.271 is not significant. Thus, H₄ is rejected.

Table 3
Direct Hypotheses Results

Hypotheses	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values
H ₁ SC → WE	0.503	0.500	0.040	12.677	0.000
H ₂ TSD → WE	0.390	0.394	0.043	8.979	0.000

Table 4
Moderation Effect Results

Hypotheses	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	P Values
H ₃ SC → VLNA × WE	0.015	0.016	0.007	2.220	0.027
H ₄ TSD → VLNA × WE	-0.002	-0.002	0.006	0.271	0.786

Table 5 shows the variance explained through R². Variance explained 67% is considered to be substantial (Chin, 1998). In this study it is 98.9% which is substantial. Thus, all the set of variables are expected to explain 98.9% of variance in dependent variable. Furthermore, Table 6 shows the quality of model through predictive relevance (Q²). In the current study Q is more than zero as recommended by Henseler et al. (2009). Thus, model achieved the certain quality as the Q² is more than zero.

Table 5
Variance Explained

Latent variable	Variance explained (R ²)
Employee loyalty	98.9%

Table 6
Predictive Relevance (Q²)

Total	SSO	SSE	Q ² = (1-SSE/SSO)
Firm's Open Innovation Performance (FOIP)	6,001.000	3,176.642	0.471

5. Research Findings and Discussion

The current study is based on microfinance institutions and women empowerment. Majorly, this study examined the effect of non-financial services of microfinance institutions on women empowerment. Non-financial services include training/skill development and social capital. Moreover, role of vulnerability was examined as a moderating variable between microfinance institutions services and women empowerment.

While analyzing the study, it was found that training/skill development and social capital had significant relationship with women empowerment with t-value 8.979 and 12.677, respectively. Positive beta values of 0.390 and 0.503 respectively show positive and direct relationships. It indicates that training/skill development of poor women and social capital increase the women empowerment. The results of the current study are consistent with various previous studies (see, for instance, Al-Shami et al., 2016; Arif et al., 2017; Bernard et al., 2016; Mayoux, 2001).

Furthermore, while examining the moderating role of vulnerability, it is found that vulnerability moderates the relationship between social capital and women empowerment with t-value 5.422. However, positive beta value 0.204 indicates that vulnerability moderates the relationship positively. As Fig. 5 demonstrates, vulnerability enhances the positive relationship of social capital and women empowerment.

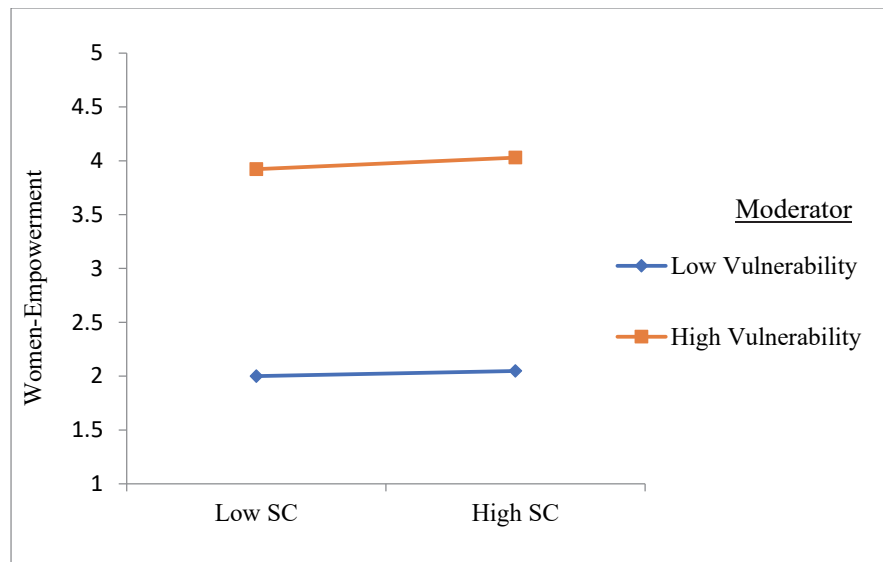


Fig. 5. Moderation Effect

However, these results of moderation are against the previous studies and theory. As according to “Relational Theory of Risk” vulnerability is one of the risk object which may harm the women empowerment. Vulnerability comprises of natural disasters such as floods, river erosion, water shortage, wind storms etc. (Banerjee & Jackson, 2017) which influence negatively on empowerment level. Herath *et al.* (2015) found that vulnerability factors significantly decrease women-empowerment. It is a probability for facing future damage in well-being and a household becoming poorer (Christiaensen & Subbarao, 2005; Zhang & Wan, 2006). On the other hand, the current study found that vulnerability enhance the women empowerment through social capital. The reason behind these findings is that social capital is the network of people which is normally created to handle any uncertainty. A strong network of people with each other in the intention to handle vulnerability not only decreases the vulnerability but also strengthen the women empowerment in case when people help each other. The network of people is not only helpful in vulnerability but it also very helpful in routine tasks of micro-enterprise. That is the reason vulnerability enhances the women empowerment. An intention towards a network of people which is created to handle vulnerability not only decreases the vulnerability but also enhances women empowerment level.

Furthermore, moderation effect in case of training/skill development is insignificant with t-value 1.269. It indicates that there is no moderation effect of vulnerability between training/skill development and women empowerment. Insignificant moderation is based on two facts, first, the training/skill development in microfinance institutions are and vulnerability are two separated concepts. Training/skill development are basically provided to poor people to support their micro-enterprise. Poor people run their micro-enterprises more effectively by getting training. However, vulnerability are basically disasters having no specific link with training service of microfinance institutions. Secondly, the focus of this study is that microfinance institutions provide services which influence positively on micro enterprise and vulnerability destroys the micro enterprise which influence negatively. When the vulnerability destroys micro-enterprise it directly affects on credit and other financial resources on owner, but it does not impact on capabilities of owner which are learned through training and skill development programs. Therefore, vulnerability does not decrease the positive effect of training/skill development on women empowerment.

5. Conclusion

The current study has investigated the role of microfinance institution's non-financial services (training/skill development, social capital) on women empowerment. This study is based on Southern part of Punjab region in Pakistan. Data were collected from female clients of microfinance institutions. It is found that training/skill development and social capital are the key elements to enhance women empowerment. More and more the training activities to run micro enterprise will be the women's empowerment. Network of people in form of social capital is much helpful to enhance women empowerment. Additionally, vulnerability factors enhance the positive effect of social capital on women empowerment.

References

- Afzal, M., Rafique, S., & Hameed, F. (2015). Measurement of living standards deprivation in Punjab using AF method periodical comparison approach. *The Pakistan Development Review*, 54(4), 739-763.
- Akanji, O. O. (2006). Microfinance as a strategy for poverty reduction. *Central Bank of Nigeria Economic and Financial Review*, 39(4).
- Al-Shami, S. S. A., Razali, M. M., Majid, I., Rozelan, A., & Rashid, N. (2016). The effect of microfinance on women's empowerment: Evidence from Malaysia. *Asian Journal of Women's Studies*, 22(3), 318-337.
- Arif, M., Hameed, W. U., Hussin, T., Azeem, M., & Basheer, M. F. (2017). Combination of microcredit and micro-training with mediating role of formal education: A micro-Enterprise Success Formula. *Journal of Business and Social Review in Emerging Economies*, 3(2), 285-291.
- Atmadja, A. S., Su, J. J., & Sharma, P. (2016). Examining the impact of microfinance on microenterprise performance (implications for women-owned microenterprises in Indonesia). *International Journal of Social Economics*, 43(10), 962-981.
- Banerjee, S. B., & Jackson, L. (2017). Microfinance and the business of poverty reduction: Critical perspectives from rural Bangladesh. *Human relations*, 70(1), 63-91.
- Bernard, D. K., Kevin, L. L. T., & Khin, A. A. (2016). Entrepreneurial Success through Microfinance Services among Women Entrepreneurs in Sri Lanka: A Pilot Study and Overview of the Findings. *International Journal of Economics and Financial Issues*, 6(3).
- Bischoff, K. M., Gielnik, M. M., Frese, M., & Dlugosch, T. (2013). Limited access to capital, start-ups, and the moderating effect of an entrepreneurship training: integrating economic and psychological theories in the context of new venture creation (summary). *Frontiers of Entrepreneurship Research*, 33(5), 3.
- Boholm, Å., & Corvellec, H. (2011). A relational theory of risk. *Journal of Risk Research*, 14(2), 175-190.
- Cheston, S., & Kuhn, L. (2002). Empowering women through microfinance. Draft, Opportunity International.

- Chin, W. W. (1998). Commentary: Issues and opinion on structural equation modeling. *MIS Quarterly*, 22(1), 7-16
- Christiaensen, L.J., & Subbarao, K. (2005). Towards an understanding of household vulnerability in rural Kenya. *Journal of African Economies* 14(4), 520–558.
- Corvellec, H. (2010). The narrative structure of risk accounts. Paper presented at the SRAEurope 2010 Annual Meeting, June 21–23, in London, UK.
- Dandedjrohoun, L., Diagne, A., Biaou, G., N'Cho, S., & Midingoyi, S. K. (2012). Determinants of diffusion and adoption of improved technology for rice parboiling in Benin. *Revue d'Etudes en Agriculture et Environnement-Review of agricultural and environmental studies*, 93(2), 171-191.
- Derera, E., Chitakunye, P., O'Neill, C., & Tarkhar-Lail, A. (2014). Gendered Landing Practices: Enabling South African Women Entrepreneurs to access start-up Capital. *Journal of Enterprising Culture*, 22(03), 313-330.
- Ekpe, I., Mat N., & Razak, R. (2010). The Effect of Microfinance Factors on Women Entrepreneurs' Performance in Nigeria: A Conceptual Framework. *International Journal of Business and Social Science* 1(2).
- Evbuomwan, G. O., Ikpi, A. E., Okoruwa, V. O., & Akinyosoye, V. O. (2012). Preferences of micro, small and medium scale enterprises to financial products in Nigeria. *Journal of Agricultural Economics and Development*, 1(4), 80-98.
- Glaub, M., & Frese, M. (2011). A critical review of the effects of entrepreneurship training in developing countries. *Enterprise Development and Microfinance*, 22(4), 335-353.
- Hameed, W. U., Hashmi, F., Ali, M., & Arif, M. U. H. A. M. M. A. D. (2017a). Enterprise Risk Management (ERM) System: Implementation Problem and Role of Audit Effectiveness in Malaysian Firms. *Asian Journal of Multidisciplinary Studies*, 5(11).
- Hameed, W. U., Azeem, M., Ali, M., Nadeem, S., & Amjad, T. (2017b). The Role of Distribution Channels and Educational level towards Insurance Awareness among the General Public. *International Journal of Supply Chain Management*, 6(4), 308-318.
- Hameed, U.H., Shabbir, M.S., Raza, A., & Salman, A. (2019a). Remedies of low performance among Pakistani e-logistic companies: The role of firm's IT capability and information communication technology (ICT). *Uncertain Supply Chain Management*, 7.
- Hameed, W. U., Nadeem, S., Azeem, M., Aljumah, A. I., & Adeyemi, R. A. (2019b). Determinants of E-Logistic Customer Satisfaction: A Mediating Role of Information and Communication Technology (ICT). *International Journal of Supply Chain Management*, 7(1), 105-111.
- Hameed, W.U, Mohammad., B.M., & H. M., & Shahr, H. K (2018). Pursuing Goal of Self-Sustainability but Leads towards More Instability: Challenges and Way Forward of Self-Help Groups (SHGs). *International Journal of Business and Tehnpreneurship*, 8(1), 67-76.
- Harrison, R. T., & Mason, C. M. (2007). Does gender matter? Women business angels and the supply of entrepreneurial finance. *Entrepreneurship Theory and Practice*, 31(3), 445-472.
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). *The use of partial least squares path modeling in international marketing*. In New challenges to international marketing (pp. 277-319). Emerald Group Publishing Limited.
- Herath, H. M. W. A., Guneratne, L. H. P., & Sanderatne, N. (2015). Impact of microfinance on women's empowerment: a case study on two microfinance institutions in Sri Lanka. *Sri Lanka Journal of Social Sciences*, 38(1), 51 – 61.
- Hussain, S., Rizwan, M., Nawaz, M. S., & ul Hameed, W. (2013). Impact of Effective Training Program, Job Satisfaction and Reward Management System on the Employee Motivation with mediating role of Employee Commitment. *Journal of Public Administration and Governance*, 3(3), 278-293.
- Ibru, C. (2009). Growing microfinance through new technologies. Federal University of Technology, Akure, Nigeria.
- Imran, M., Aziz, A.B., Hamid, S. N. B. A., & Hameed, W. U. (2019). The contributing factors towards e-logistic customer satisfaction: a mediating role of information Technology. *Uncertain Supply Chain Management*, 7(1).

- Imran, M., Aziz, A., & Hamid, S. (2017). Determinants of SME export performance. *International Journal of Data and Network Science*, 1(2), 39-58.
- Imran, M., Aziz, A., Hamid, S., Shabbir, M., Salman, R., & Jian, Z. (2018a). The mediating role of total quality management between entrepreneurial orientation and SMEs export performance. *Management Science Letters*, 8(6), 519-532.
- Imran, M., Hamid, S., & Aziz, A. (2018b). The influence of TQM on export performance of SMEs: Empirical evidence from manufacturing sector in Pakistan using PLS-SEM. *Management Science Letters*, 8(5), 483-496.
- Jamal, M. A., Raihana, A. K. A., & Sultana, H. Y. (2016). Empowerment of Muslim women through microfinance and self help groups: A case study of Chennai City. *Asian Business Review*, 6(2), 117-124.
- Kapila, M., Singla, A., & Gupta, M. L. (2016). Impact of microcredit on women empowerment in India: An empirical study of Punjab state. In *Proceedings of the World Congress on Engineering (Vol. 2)*.
- Kifle, T. (2007). Do remittances encourage investment in education? Evidence from Eritrea. *GEFAME Journal of African Studies*, 4(1).
- Kuzilwa, J. (2005). The role of credit for small business success: A study of the National Entrepreneurship development fund in Tanzania. *The Journal of Entrepreneurship*, 14(2), 131-161.
- Mayoux, L. (1998). Questioning virtuous spirals: microfinance and women's empowerment impact in Africa. *Journal of International Development*, 11(7), 957-984.
- Mayoux, L. (2001). Tackling the down side: Social capital, women's empowerment and micro-finance in Cameroon. *Development and Change*, 32(3), 435-464.
- Mayoux, L. (2005) Women's Empowerment through Sustainable Microfinance: Rethinking Best Practice. Discussion Draft: 1-25.
- Nahapiet, J., & Ghoshal, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242-266.
- Norizaton, N. M., Abdul Halim, H., & Chong, C. W. (2011). Factors affecting profitability of women entrepreneurs business in Malaysia. Annual Summit on Business and Entrepreneurial Studies (AS-BES 2011) Proceeding.
- Osman, I., Ho, T. C., & Carmen Galang, M. (2011). The relationship between human resource practices and firm performance: an empirical assessment of firms in Malaysia. *Business Strategy Series*, 12(1), 41-48.
- Putnam, R. D. (2000). Bowling alone: America's declining social capital. In *Culture and politics* (pp. 223-234). Palgrave Macmillan US.
- Rehman, H., Moazzam, A., & Ansari, N. (2015). Role of Microfinance Institutions in Women Empowerment: A Case Study of Akhuwat, Pakistan. *South Asian Studies*, 30(1), 107.
- Siringi, E. M., (2011). Women's small and medium enterprises for poverty alleviation in Sub-Saharan Africa: Lesson from Kenya. *Management Research Review*, 34(2), 186-206.
- SMEDAN (2010). A report by Small and Medium Enterprises Development Agency Nigeria (SMEDAN) in 2010.
- Waring, J., & Brierton, J. (2011). Women's enterprise and Scottish economy. *International Journal of Gender and Entrepreneurship*, 3(2), 144-163.
- Wisner, B., Blaikie, P., Cannon, T. and Davis, I. (2004). *At Risk: Natural Hazards, People's Vulnerability and Disasters*, Routledge. New York, NY.
- Zhang, Y., & Wan, G. (2006) An empirical analysis of household vulnerability in rural China. *Journal of the Asia Pacific Economy* 11(2), 196-212.

Appendix

Scale Items for Women-Empowerment

1. I have sufficient independent savings.

2. I am confident to face financial crisis.
3. I have own sufficient assets like house/land/livestock in my name.
4. I am involved in decision making related to improvement in the home.
5. I am involved in decision making related to household expenses.
6. I am involved in decision making related to large purchases.
7. I can buy clothes or other essentials for myself without permission of my family.
8. I have been given the authority to go outside the home alone.
9. I am involved in decision regarding children's education/marriage/career.
10. I can discuss about birth control methods.

Scale Items for Training/Skill Development

1. Training and Skills development programs are useful in helping me in running my business.
2. The frequency of skills development programs is adequate.
3. Training and skill development programs are useful in improving my social status.
4. Training and skill development programs are useful in improving my family life.
5. Training and skill development programs are useful in helping me to develop my personal attributes/qualities.

Scale Items for Social Capital

1. Discussions with my family members and relatives help me to develop and expand my enterprise.
2. Discussions with my close friends help me to develop and expand my enterprise.
3. My connections with potential or existing customers help me to develop and expand my enterprise.
4. My connections with potential or existing stakeholders help me to develop and expand my enterprise.
5. My connections with potential or existing suppliers, distributors or manufacturers help me to develop and expand my enterprise.
6. My enterprise's social and professional networks help me to develop and expand my enterprise.
7. My connections with these people enable my enterprise to receive updated business information.

Scale Items for Vulnerability (Social, Economic, Political, Environmental)

1. Drought related stress affects my ability to prepare and recover from hazards/disasters.
2. Heavy rain and flood affects my ability to prepare and recover from hazards/disasters.
3. Water quality problems affect my ability to prepare and recover from hazards/disasters.
4. Drainage problems affect my ability to prepare and recover from hazards/disasters.
5. Erosion affects my ability to prepare and recover from hazards/disasters.
6. Sediment deposition in the river in my area affects my ability to prepare and recover from hazards/disasters.
7. Sewer back-up problems in my area affect my ability to prepare and recover from hazards/disasters.
8. Flood hazards from downstream flood structures affects my ability to prepare and recover from hazards/disasters.

9. Water and food quality/quantity hazards affects my ability to prepare and recover from hazards/disasters.
 10. Insufficient income affects my ability to prepare and recover from hazards/disasters.
 11. Aging process affects my ability to prepare and recover from hazards/disasters.
 12. Physical disability affects my ability to prepare and recover from hazards/disasters.
 13. Being a single earning hand affects my ability to prepare and recover from hazards/disasters.
 14. Emotional stress from past flooding and other hazards affects my ability to prepare and recover from hazards/disasters.
 15. The lack of opportunities (due to gender discrimination, culture, beliefs) to be involved in resource (e g., social, economic) decision-making affects my ability to prepare and recover from hazards/disasters.
 16. Lack of economic development activities in my area affects my capacity to prepare and recover from hazards/disasters.
 17. Inappropriate land-use and development by the government in my area affect my capacity to prepare and recover from hazards/disasters.
 18. A lack of community cohesiveness and partnerships affects my capacity to prepare and recover from hazards/disasters.
 19. Community conflict affects my capacity to prepare and recover from hazards/disasters.
 20. Out-migration affects my capacity to prepare and recover from hazards/disasters.
- Inappropriate resource use by government affects my capacity to prepare and recover from hazards/disasters.



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