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Mission Statement

Sukkur IBA Journal of Management and Business is peer-refereed and multidisciplinary journal. The mission of **SIJMB** is to contribute and promote research in the field of business and management sciences. The journal encourages findings of innovative and solution oriented applied research.

Aims & Objectives

Sukkur IBA Journal of Management and Business aims to publish cutting edge research in the field of business, economics and management sciences. It accepts original research articles, case studies, reviews, and short comments on diverse issues, problems, unique concepts, hypotheses, and solution oriented findings in interdisciplinary studies of economics and management sciences.

Research Themes

The research focused on but not limited to following core thematic areas;

- Entrepreneurship
- Finance
- General Management
- Globalization
- Economics
- Knowledge Management
- Leadership
- Marketing
- Operation Management
- Organization Behavior
- Organization Development
- Supply Chain Management
- Sustainability
- Human Resource Management
- Total Quality Management

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Director's Message

Sukkur Institute of Business Administration – Sukkur IBA has been imparting education with its core values merit, quality, and excellence since foundation. **Sukkur IBA** has achieved numerous milestones in a very short span of time that hardly any other institute has achieved in the history of Pakistan. The institute is continuously being ranked as one of the best business school in Pakistan by Higher Education Commision (HEC). The distinct service of **Sukkur IBA** is to serve the rural areas of Sindh and also underprivileged areas of other provinces of Pakistan. **Sukkur IBA** is committed to serve targeted youth of Pakistan who are suffering from poverty and deprived of equal opportunity to seek quality education. **Sukkur IBA** is successfully undertaking its mission and objectives that lead Pakistan towards socio-economic prosperity.

In continuation of endeavors to touch new hallmarks in the field of business education and research, **Sukkur IBA** publishes an international referred journal. **Sukkur IBA** believes research is an integrated part of modern learning and development. Consequently, **Sukkur IBA Journal of Management and Business – SIJMB** is the modest effort to contribute and promote the research environment within the institution and Pakistan as whole. **SIJMB** is peer reviewed and multidisciplinary research journal to publish findings and results of the latest and innovative research in the fields, but not limited to business, economics and management. Following the tradition of **Sukkur IBA**, **SIJMB** is also aimed to achieve international repute and high impact research publication in the near future.

Sukkur IBA is mission driven institute and committed to serve towards the socioeconomic development of Pakistan through education and research.

Prof. Nisar Ahmed Siddiqui
Sitara-e-Imtiaz
Director **Sukkur IBA**
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Editorial

Dear Readers,

Once again it's a pleasure to bring you the latest issue of **Sukkur IBA Journal of Management and Business (SIJMB).** Following our editorial policy, this issue contains double blind peer-reviewed articles which address key business, management and economic issues pertaining to both national and international levels. The continued efforts of our editorial team and reviewers have enabled **SIJMB** to present you the high quality research work based on the innovation, originality and contemporary issues in the core areas, but not limited to business, management and economics. **SIJMB** follows continuous improvement policy, and I thank all the stakeholders who have been the part of it. Moreover, **SIJMB** has continued its open access policy in order to reach larger audience and wider dissemination of published work.

While not forgetting that the **SIJMB** has an institutional association with **Sukkur Institute of Business Administration**. In fact, the initiation of **SIJMB** is an outcome of strong research orientation followed by the institute and I am grateful for continuous institutional support in this regard. In addition, the **SIJMB** provides valuable platform for national and international researchers and publishes their research findings and disseminates it to the largest stakeholders. The journal charges no any fees and also provides complimentary copy (in hard form) to each author also the supplement copies of the journal distributed to HEI and R&D institutions of the country. The journal has been archived by world's renowned scientific repositories. Journal has received recognition from several research agencies, universities and renowned professors. In coming years, the journal aims to improve its current state by attracting more national and international researchers in the field of business, management and economics.

On behalf of the **SIJMB**, I welcome submissions for the upcoming issues of the journal and looking forward to receive your valuable feedback.

Dr. Khalid Ahmed
Editor-in-Chief
SIJMB

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Does Diversification towards Oilseeds Production reduce the Import burden in Pakistan?

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Abstract
Agriculture, constitutes a large segment of Pakistan's economy, is facing problems in the production of oilseed crops. The situation is getting bad to worse due to increase in population and demand of oilseeds has increased from 1.298 million tons to 3.069 million tons during the last thirty three years with the same local production capacity. During 2013-14, the local oilseed production comprised of 17.9 percent of the total consumption, while the remaining 82.1 percent of the demand was fulfilled through import. The Ordinary Least Square (OLS) technique is applied to examine the impact of different factors on the IHVC in Pakistan. The regression coefficient of import of oilseeds showed a negative and highly significant impact which indicated that huge import of oilseeds badly affects the public exchequer. The regression coefficient of number of tube wells, availability of credit and farm machinery (tractor) showed a positive and significant impact on IHVC. The regression coefficient of local production of oilseed crops showed a positive and significant impact, it showed that increasing the area for production of oilseeds enhanced the contribution of high value crops in GDP resultantly reduce the import burden.

Key words: Index of High Value crops, Crop Diversification, Oilseeds, Yield potential, yield gap

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1. Introduction

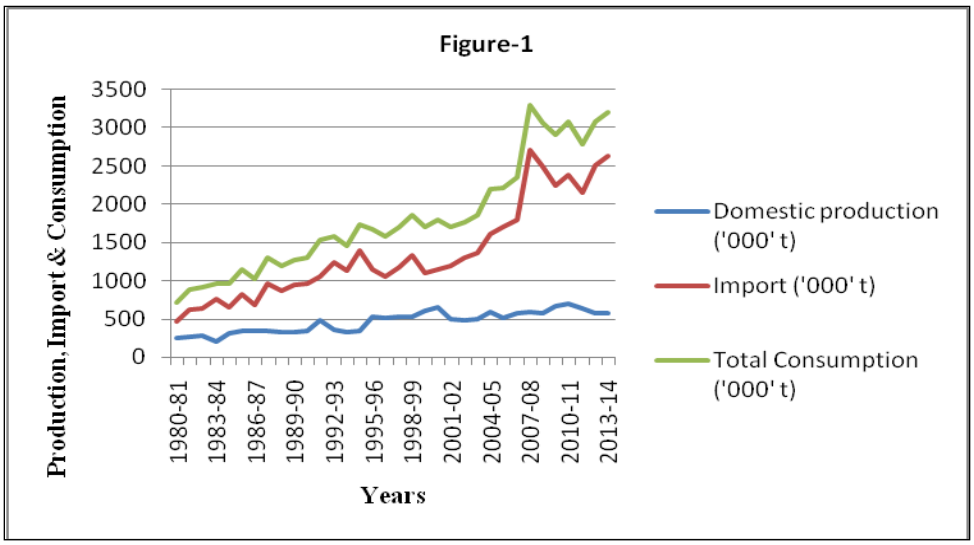
Agriculture sector is an important sector of the Pakistan's economy, is facing problems in the production of oilseed crops. The local oil seed production comprised of 17.9 percent of the total domestic consumption, while the remaining huge shortage of 82.1 percent of consumption was fulfilled through imports, during 2013-14 (Economic Survey of Pakistan 2014-15). Due to decline in local production of oilseed crops, the import is growing rapidly every year and causing the huge expenditure on account of it. Farmers are less concerned to increase the area and production of oilseed crops on the grounds that growing season of oilseed crops coincides to growing season of wheat and they are not interested to give up their main crop. The oilseed crops are required to be promoted among farmers by ensuring excellent return in market, resulting, the local production of the oilseeds crops will enhance to meet the requirement of the huge growing population.

The trends show a slow pattern of crop diversification in crop sector in terms of grains, cash crops, pulses, oilseeds, vegetables, fruits and other minor crops from 1980 to 2013. The area share of food grains (wheat, rice, bajra, Jowar, maize and barley) was 56 percent of the total cropped area during the year 1980 and it remained 56 percent of the total cropped area during 2012-13 having nil percent increase in cropped area during the last three decade. Furthermore, the contribution of cash crops during the year 1980 was 15 percent and increased up to 19 percent in 2012 showing the growth of 4 percent. Pulses, oilseeds, vegetables, fruits and other minor crops contributed 5 percent, 3 percent, 2 percent, 4 percent and 12 percent respectively to the total cropped area during the year 2012. Area share of oilseeds and vegetables remained same from 1980 to 2012, only area share under fruit cultivation showed a small increase of 2 percent while pulses recorded decline by 1 percent during the last thirty three years under study (Agricultural Statistics of Pakistan, 1980-81 to 2013-14).

Pakistan is facing acute shortage of edible oil production, about 82.1 percent of the total demand was imported and only 17.9 percent of edible oil need was met through domestic production. The status of domestic production, import and total consumption of edible oil in Pakistan is provided at annexure-A. It showed that domestic production of edible oil during the year 1980 was 247 thousand tons while 465 thousand tons of edible oil was imported which was 65.3 percent of the total availability during the same year. The current deficiency was observed during the years 2007, 2008, 2012 and 2013, and domestic production of edible oil was recorded 588 thousand tons, 565 thousand tons, 567 thousand tons and 573 thousand tons respectively. The import during the same periods were 2700 thousand tons, 2489 thousand tons, 2502 thousand tons and 2,627 thousand tons which were 82.1 percent, 81.5 percent, 81.5 percent and 82.1 respectively of the total availability of edible oil in Pakistan (Agricultural Statistics of Pakistan, 1980-81 to 2013-14).

Figure-1 showed that local production of oilseed crops failed to meet the consumption needs of the peoples of Pakistan and therefore the domestic production line and import

of oilseeds line were started separating from each other and the gap between the two lines were increasing with the passage of time.



Due to import of edible oil, the expenditure on this account was growing rapidly from Rs.2.61 billion to Rs.246.89 billion from 1980 to 2013 which cost the public exchequer badly (Agricultural Statistics of Pakistan, 1980-81 to 2013-14).

2. Yield potential

Pakistan produces a number of oil seed crops but there is a huge gap between the potential yield and the average yield of different oilseed crops. It is noted that about 74 percent in rapeseed-mustard, 75 percent in groundnut, 72 percent in linseed, 69 percent in sunflower and 65 percent in sesame crops were unable to achieve the yield potential due to non-adaptation of proper crop management practices (Agricultural Statistics of Pakistan, 2012-13). It is a major problem that there is a big yield gap between the potential yield and the national yield, which shows that the efforts should be made to minimize the yield gap by adopting the modern technology to achieve the potential yield on account of edible oil production. The detail of yield gap of different oilseed crops is given in table-1.

Table-1 Yield gap of different oilseed crops

Oil seed Crops	Potential Yield (kg/ha)	Average Yield (kg/ha)	Yield gap (kg/ha)	Unachieved (%)
Sunflower	4,000	1,239	2,761	69
Rapeseed-mustard	3,500	922	2,578	74
Groundnut	4,000	995	3,005	75
Sesame	1,200	418	782	65
Linseed	2,500	710	1,790	72

Source: Agricultural Statistics of Pakistan, 2012-13

3. Objective of the Research

The objective of the paper is to determine that crop diversification towards production of oilseed crops reduces the import burden in Pakistan and to recommend policy prescriptions for the promotion of oilseed crops based on finding of the study.

4. Literature Review

Anderson and Vandervoort (1982) found that rural infrastructure development, use of agricultural credit to farmers and increased in land values were associated to the growth of agricultural production. Chand (1995), concluded that rural infrastructure played a significant role for the profitability and success of crop diversification towards the production of minor crops and it reduced the transaction costs.

De (2000) used the Herfindahl index (HI), Ogive Index (OI), Entropy Index (EI) as well as Modified Entropy Index (MEI) to check the extent of crop diversification and its variation across various districts of West Bengal and observed large scale variation in crop diversification across districts overtime were depending on the growth of utilization of improved agricultural technology.

Guvele (2001) found that crop diversification towards high value crops enhanced the income of Sudani farmers and reduced the volatility in income.

Smith, Gordon, Meadows, and Zwick (2001) concluded that infrastructure development in rural areas increased the opportunities for rural poor by accessing to product market. Estache (2003) found that infrastructure development assisted the under privilege areas to be connected with the developed markets for the transaction purpose and had access for productive activities.

Helfand and Levine (2004) observed that the efficiency measure was regressed on a set of explanatory variables which includes farm size, type of land tenure, composition of output, access to institutions and indicators of technology and input usage. The relationship between farm size and efficiency was found to be non-linear, with efficiency first falling and then rising with size. Type of land tenure, access to institutions and markets, and modern inputs were found to be important determinants of the differences in efficiency across farms.

Birthal, Joshi, Roy, and Thorat (2007) concluded that the major determinant for the growth of high value crops was urbanization and also found that infrastructure development, provision of credit to farmers and technological advancement were the other determinants that helped to boost up the production of high value crops.

Birthal et al. (2007) concluded that demand for high value crops were increased in India and farm income of farmers were also increased with the passage of time as the farmers moved from staple crops towards fruits, vegetables and oilseeds. Van den Berg et al. (2007) found that the income received from crop diversification towards high value crops in China became sustainable than the income from the rice production.

Rahman (2008) found that crop diversification would be a desired strategy for agricultural growth in Bangladesh and concluded that development of the rural infrastructure improved the technical efficiency and might synergistically promote crop diversification by opening up opportunities for technology diffusion, marketing, storage and resource supplies.

Ibrahim, Rahman, Envulus, and Oyewole (2009) observed that income and crop diversification was identified as basic strategy for raising income and reducing rural poverty in a rural area of North Central Nigeria based on the data collected from rural household by using the Simpson Index of Diversity (SID) and Ordinary least square (OLS) regression analysis. It was concluded that the basic determinants of crop diversification towards high value crops were the availability of tractor hiring services, high return from crop production, age and level of education of household head, number of extension visits, and availability of electricity in the household and distance from local market.

Briones (2009) concluded that evidence points to an important role for vegetables and fruits in agricultural diversification and rural development from traditional crops. He emphasized the need for the diversification that could be pro-poor as it may enhance the incomes of the smallholders and workers. It was also observed to deliver benefits to both producers and consumers from the expansion of sub-sector; vegetables and fruits output grown more rapidly than agriculture as a whole and to realize its potential for agricultural diversification and rural development policy change and institutional reforms were very important for the development of vegetables and fruits sub-sector in Philippine.

A. Abro and Sadaqat (2010) observed that income per hectare of high value crops was greater than the income per hectare of major crops in Pakistan and concluded that diversification towards high value and labor intensive crops enhanced the income as well as employment opportunities to farmers resulting into decline in poverty from rural areas. Further, A. A. Abro (2012) found that infrastructural development, increase in per capita income, and use of fertilizer and number of tube wells, availability of water for irrigation purpose, tractors, availability of credit and rainfall were the main determinants of crop diversification towards high value crops in Pakistan.

Kumar De (2013) observed that option remained for the growth of agriculture was to diversify the land use for cultivation of crops which were environment friendly and more remunerative, the choice of highly remunerative crops were also depended on the availability of appropriate infrastructure required for easy access to markets, harvest of crops on time, protection from post-harvest loses as well as proper marketing of those crops.

Ali, Erenstein, and Rahut (2014) observed that households having women's participation in farming activities were able to grow more high value crops and

concluded that households having women's participation in farming activities have higher income and were able to keep more cattle and suggested that their participation needed to be encouraged to enhance the household income and to reduce the poverty from rural areas of Pakistan.

5. Research Methodology

5.1. Measurement of Crop Diversification:

The crop diversification is examined by using various indices such as, Herfindahl Index (HI), Simpson's Index (SI), Entropy Index (EI), Modified Entropy Index (MEI) and Ogive Index. The most widely indices use in agricultural diversification are the HI, SI and the entropy index, these indices are computed on the basis of share of gross cropped area under various crops cultivated.

Herfindahl Index (HI) is used to capture the change in the level of concentration and diversification in Pakistan. HI is defined as the sum of squares of 'n' proportion, this is a simple measure of concentration which shows for increasing diversification, HI is decreasing and vice versa. That is,

$$H = \sum_{i=1}^{N} s_i^2$$

Where s_i represents the proportion of area under i^{th} crop to Gross Cropped Area (GCA). The value of Herfindahl index lies between one and zero, it takes value one in case of perfect specialization and zero in case of perfect diversification. Lower the value of HI more the diversification and more the value of HI resulting less the diversification. We examined the share of different crops in gross cropped area during 1980-81 to 2013-14 in Pakistan, the data on area under various crops such as; food crops, cash crops, pulses, oilseeds, vegetables, condiments, fruits and others was sourced from Agricultural Statistics of Pakistan (1980-81 to 2013-14).

5.2. Basic criteria of Herfindahl Index (HI):

- HI below 0.01 (or 100) indicates a highly crop diversification in the country.
- HI between 0.1 (or1,000) to 0.18 (1,800) indicates a moderate crop diversification.
- HI above 0.18 (1,800) indicates a high level of crop concentration.

5.3. Calculation of HI by using percent of crop share:

- The Herfindahl Index is used as the square of the percentage crop share of each crop sum of squares of 'n' proportion, this is a simple measure of concentration which shows for increasing diversification, HI is decreasing and vice versa.. That is,
- HI = (share of food crops)^2 + (share of Cash crops)^2 + (share of pulses)^2 +(share of oilseeds)^2 +(share of vegetables)^2 +(share of condiments)^2 +(share of fruits)^2 +(share of others)^2

The Herfindahl index calculated from the share of percentage of various categories of crops from1980 to 2013 is as under;

- HI (1980) = $(56)^2 + (15)^2 + (6)^2 + (3)^2 + (1)^2 + (1)^2 + (2)^2 + (16)^2$
  HI (1980) = 3,136 + 225 + 36 + 9 +1 +1 +4 + 256 = **3,668**
- HI (1990) = $(55)^2 + (16)^2 + (7)^2 + (2)^2 + (1)^2 + (1)^2 + (2)^2 + (16)^2$
  HI (1990) = 3,025 + 256 + 49 + 4 +1 +1 +4 + 256 = **3,596**
- HI (2000) = $(56)^2 + (18)^2 + (6)^2 + (3)^2 + (1)^2 + (1)^2 + (3)^2 + (12)^2$
  HI (2000) = 3,136 + 324 + 36 + 9 +1 +1 +9 + 144 = **3,660**
- HI (2013) = $(61)^2 + (19)^2 + (5)^2 + (3)^2 + (1)^2 + (1)^2 + (3)^2 + (7)^2$
  HI (2013) = 3,721 + 361 + 25 + 9 + 1 + 1 + 9 + 49 = **4,176**

Now we compare the calculated HI of selected years (Further detail is provided at annexure-B) with the basic criteria (i.e HI above 1,800) and observed that calculated HI was greater than the basic criteria. It was found that there was a higher level of crop concentration in Pakistan and needed further crop diversification towards high value crops. (Pingali & Rosegrant, 1995) defined diversification as "change in product (or enterprise) choice and input use decisions based on market forces and the principles of profit maximization". Birthal et al., (2007) defined agricultural diversification as "encompasses change in production portfolio from low-value to more remunerative and high-value commodities like fruits, vegetables, oilseeds, milk, meat, eggs and fish that expand farm and non-farm sources of income". The Ordinary Least Square (OLS) technique is used to check the effects of various factors on the Index of High Value Crops (IHVC) in Pakistan by using following econometric model;

IHVC = f (Import of Oilseeds, Tube wells, Domestic production of oilseeds, Credit disbursed, and Number of Tractors, ϵ)

The Index of High value Crops at constant prices with 1980 as the base year will be included as explained variable and other explanatory variables such as import of oilseeds (in 000 tons), number of tube wells (in 000), Domestic Production(in 000 tons), Credit disbursed (in billions) and number of Tractors will be used.

6. Detail of variables and its sources

Import of oilseeds:

Import of oilseeds (in 000 tons) is taken from the various issues of Agricultural Statistics of Pakistan.

Number of Tube wells:

The number of tube wells is taken from the various issues of the Economic Survey of Pakistan.

Domestic production of oilseeds:
Domestic production of oilseeds (in 000 tons) is taken from the various issues of Agricultural Statistics of Pakistan.

Availability of credit:
The availability of credit for farmers is taken from the various issues of the Economic Survey of Pakistan.

Number of Tractors:
The number of tractors is taken from the various issues of the Economic Survey of Pakistan.

Index of High Value Crops (IHVC):
The Index of High Value Crops is calculated on the basis of data collected from the various issues of ESP and Agricultural Statistics of Pakistan.

7. Factors impact the Index of High Value Crops

To determine the impact of various factors on index of high value crops, a multiple regression analysis was used to prove that how different variables adopted in model effect the index of high value crops. The values for Index of High Value Crops were taken as explained variable and other various factors that affecting income from high value crops was included as explanatory variables. Results of the multivariate regression analysis have been presented in Table-2. The F-value was 182.25 and found overall significant. The R^2 value of 0.970 meant 97.0 percent fits data extremely well. The tests of heteroscedasticity and auto-correlation were run and found that model was free from these problems.

Table 2: Determinants of Diversification towards Production of Oil seeds (1980-2013)

Explanatory Variables	Dependent Variable: Index of High value Crops at 1980-81 prices			
	Coefficient	Std. Error	t – value	P. Value
Import of Oilseeds(000 tons)	-0.455484	0.186341	-2.444351	0.0211
Number of Tube wells (in 000)	0.880132	0.428760	2.052740	0.0495
Domestic Production(000 tons)	1.784970	0.503557	3.544723	0.0014
Credit disbursed (in billions)	9.611282	0.895700	10.73047	0.0000
Tractors	14.92036	3.912370	3.813637	0.0007
C	69.10616	175.5598	0.393633	0.6968
R-squared			0.970190	
Adjusted R-squared			0.964867	
Durbin-Watson stat			1.654504	
F-statistic			182.2575	
Prob(F-statistic)			0.000000	

To check the impact of import of Oilseeds on Index of High value crops; The regression coefficient of import of oilseeds showed a negative and highly significant impact which indicated that huge import of oilseeds badly effect the share of GDP contributed by the high value crops in Pakistan and also cost the public exchequer. The regression coefficient of number of tube wells showed a positive and significant influence on IHVC, it resulted that due to increase in the number of tube wells, enhanced the contribution of high value crops in GDP. The regression coefficient of local production of oilseed crops showed a positive and significant impact, it showed that increasing the area for production of oilseeds enhance the contribution of high value crops in GDP resultantly reduce the import burden. The regression coefficient of availability of credit showed a positive and significant impact on IHVC; it meant that crop diversification towards oilseeds production enhanced with the availability of credit, because farmers would be able to purchase inputs in time. The coefficient of farm machinery (tractors) showed a positive and a significant impact on Index of High Value Crops which indicated that farmers having tractors were able to diversify towards high value crops because they could perform various farming activities on time and could supply their output in market easily.

8. Conclusion

The OLS technique was applied to examine the impact of different factors on the IHVC in Pakistan. The regression coefficient of import of oil seeds showed a negative and highly significant impact which indicated that huge import of oil seeds badly affect the share of high value crops contributed in GDP and also cost the public exchequer. The regression coefficient of number of tube wells, availability of credit and farm machinery (tractor) showed a positive and significant impact on IHVC. The regression coefficient of local production of oilseed crops showed a positive and significant impact, it showed that increasing the area for production of oilseeds enhanced the contribution of high value crops in GDP resultantly reduce the import burden. It was also suggested that the efforts should be made to minimize the yield gap by adopting the modern technology to achieve the potential yield of oilseed crops. Farmers should be awarded with a good return in the market and country's production capacity of oilseed crops be improved by increasing local edible oil production resulting in decline in import on account of edible oil.

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Annexure-A

Domestic production, import and total consumption of edible oil in Pakistan

Year	Domestic production ('000' t)	Import ('000' t)	Total Consumption ('000' t)	Import as % of total consumption	Amount in Billion
1980-81	247	465	712	65.3	2.61
1981-82	256	624	880	70.9	3.39
1982-83	275	640	915	69.9	3.51
1983-84	200	752	952	79.0	6.49
1984-85	309	653	962	67.9	6.78
1985-86	335	815	1,150	70.9	6.02
1986-87	334	687	1,021	67.3	3.85
1987-88	333	959	1,292	74.2	7.23
1988-89	327	859	1,186	72.4	8.41
1989-90	330	940	1,270	74.0	7.98
1990-91	338	960	1,298	74.0	9.02
1991-92	486	1,046	1,532	68.3	10.03
1992-93	348	1,231	1,579	78.0	15.19
1993-94	317	1,131	1,448	78.1	14.69
1994-95	344	1,390	1,734	80.2	30.78
1995-96	528	1,142	1,670	68.4	28.67
1996-97	515	1,057	1,572	67.2	23.91
1997-98	518	1,178	1,696	69.5	33.3
1998-99	531	1,325	1,856	71.4	40.54
1999-00	607	1,091	1,698	64.3	21.4
2000-01	642	1,144	1,786	64.1	19.04
2001-02	497	1,197	1,694	70.7	24.03
2002-03	475	1,293	1,768	73.1	34.29
2003-04	494	1,361	1,855	73.4	37.91
2004-05	583	1,605	2,188	73.4	44.98
2005-06	510	1,696	2,206	76.9	44.91
2006-07	565	1,787	2,352	76.0	59.51
2007-08	588	2,700	3,288	82.1	136.8
2008-09	565	2,489	3,054	81.5	142.1
2009-10	662	2,238	2,900	77.2	148.0
2010-11	696	2,383	3,079	77.4	224.0
2011-12	636	2,148	2,784	77.2	216.4
2012-13	567	2,502	3,069	81.5	241.9
2013-14	573	2,627	3,200	82.1	246.89

Source: Agricultural Statistics of Pakistan (1980-81 to 2013-14)

Annexure-B

Share of Different crops in Total Cropped Area during 1980-81 to 2013-14 ('000' hectares)

Year	Food crops	%	Cash Crop	%	Pulses	%	Oilseeds	%	Vegetables	%	Condiments	%	Fruit	%	Others	%	Total	HHI	HHI (in decimals)
1980-81	10745	56	2993	15	1253	6	552	3	161	1	121	1	306	2	3199	16	19330	3,668	0.3668
1981-82	11111	56	3217	16	1321	6	541	3	173	1	116	1	344	2	2957	15	19780	3,668	0.3668
1982-83	11257	56	3226	16	1335	6	559	3	196	1	123	1	369	2	3065	15	20130	3,668	0.3668
1983-84	11283	56	3173	16	1307	7	473	2	200	1	132	1	390	2	3032	15	19990	3,676	0.3676
1984-85	11256	56	3200	16	1415	7	505	3	205	1	131	1	408	2	2800	14	19920	3,652	0.3652
1985-86	11192	55	3194	16	1452	7	508	3	224	1	135	1	431	2	3144	15	20280	3,570	0.3570
1986-87	11678	56	3317	16	1522	7	466	2	246	1	134	1	460	2	3077	15	20900	3,676	0.3676
1987-88	10883	56	3464	18	1222	6	409	2	250	1	133	1	427	2	2732	14	19520	3,702	0.3702
1988-89	11737	54	3551	16	1395	7	481	2	262	1	133	1	445	2	3816	17	21820	3,520	0.3520
1989-90	11921	56	3505	16	1496	7	477	2	286	1	142	1	450	2	3183	15	21460	3,676	0.3676
1990-91	11933	55	3601	16	1538	7	496	2	280	1	139	1	456	2	3377	16	21820	3,596	0.3596
1991-92	11667	54	3794	17	1420	7	523	2	291	1	166	1	464	2	3395	16	21720	3,520	0.3520
1992-93	12191	54	3787	17	1453	7	540	2	299	1	132	1	476	2	3562	16	22440	3,520	0.3520
1993-94	11918	55	3832	18	1481	7	496	2	311	1	174	1	540	2	3118	14	21870	3,604	0.3604
1994-95	12296	56	3937	18	1511	7	572	3	325	1	181	1	566	2	2752	12	22140	3,668	0.3668
1995-96	12473	55	4202	19	1599	7	620	3	289	1	185	1	622	3	2600	11	22590	3,571	0.3571
1996-97	12113	53	4332	19	1575	7	679	3	301	1	196	1	629	3	2905	13	22730	3,408	0.3408
1997-98	12618	55	4234	18	1565	7	665	3	325	1	192	1	640	3	2801	12	23040	3,562	0.3562
1998-99	12598	55	4288	19	1531	7	656	3	334	1	195	1	646	3	2612	11	22860	3,576	0.3576
1999-00	12734	56	4182	18	1419	6	619	3	331	1	216	1	658	3	2581	11	22740	3,637	0.3637
2000-01	12358	56	4078	18	1329	6	523	3	323	1	208	1	672	3	2549	12	22040	3,660	0.3660
2001-02	11999	54	4339	20	1380	6	579	3	329	1	169	1	664	3	2661	12	22120	3,516	0.3516
2002-03	11990	55	4069	19	1424	7	572	3	340	2	180	1	652	3	2623	12	21850	3,602	0.3602
2003-04	12657	55	4291	19	1447	6	709	3	346	2	182	1	735	3	2573	11	22940	3,566	0.3566
2004-05	12603	55	4343	19	1942	7	694	3	351	2	195	1	795	3	2309	10	23230	3,558	0.3558
2005-06	12896	56	4200	18	1405	6	729	3	364	2	230	1	815	4	2491	11	23130	3,647	0.3647
2006-07	13066	55	4320	18	1472	6	764	3	379	2	197	1	833	4	2529	11	23560	3,536	0.3536
2007-08	13020	55	4512	19	1533	6	803	3	408	2	236	1	853	4	2485	10	23850	3,552	0.3552
2008-09	13879	58	4054	17	1465	6	748	3	398	2	223	1	857	4	2174	9	23798	3,800	0.3800
2009-10	13758	58	4295	18	1395	6	693	3	388	2	217	1	852	4	2175	9	23773	3,835	0.3835
2010-11	13097	58	4808	21	1329	6	664	3	411	2	288	1	836	4	1967	9	23400	3,952	0.3952
2011-12	13053	58	4114	18	1259	6	713	3	254	1	170	1	811	4	2277	10	22651	3,851	0.3851
2012-13	12761	56	4272	19	1221	5	588	3	256	1	210	1	805	4	2637	12	22750	3,693	0.3693
2013-14	13900	61	4237	19	1170	5	571	3	231	1	226	1	776	3	1619	7	22730	4,176	0.4176

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The Impact of Organizational Culture Types on the Job Satisfaction of Employees

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Abstract

The study focused on investigating the impact of organizational culture types on the job satisfaction of employees. The study was based on four cultural types named as clan, adhocracy, market, and hierarchy culture. The empirical investigation was conducted by data collection from 11 organizations of Rawalpindi and Islamabad with the help of questionnaire based on five points Likert scale. The famous organizational culture model adopted from research of S. K. Cameron, & Freeman, J. S. (1991) which incorporated clan, adhocracy, market and hierarchy cultures were utilized to test hypotheses against job satisfaction. The study was based on collection of data from entrepreneurial organizations and it was interesting to note that all the four type of cultures were prevailing in the same nature of the organizations. The study was conducted in order to cater with the discrepancies found in the literature. The Asian cultural studies depict contradictory phenomena as compared to the Western studies and this study added to the literature by showing that being Asian country the results match with the studies conducted in Western settings. The study suggests that culture types strongly impact the job satisfaction of employees. Employees working under clan and adhocracy culture were satisfied with their jobs. While those working under hierarchy and market cultures were dissatisfied with their jobs. The findings of the study are not just significant for academic purposes but are also critical for managers in determining the employee job satisfaction.

Keywords: Organizational culture, Job satisfaction, Clan culture, Market culture, Hierarchy culture, Adhocracy culture.

1. Introduction

A term of anthropology culture refers to the beliefs, norms, principles and values that exist in a society. Culture is one of the dominant and leading factor which influences the beliefs and values of individuals. As organizations form part of the society the culture is one of the significant indicators in organizations too. As culture also prevails

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in an organization where employees share values and beliefs these factors influence them at their job Huey Yiing and Zaman Bin Ahmad (2009); J. JOHNSON and McIntye (1998); Lund (2003); Schiuma et al. (2012). The area of organizational culture can be traced back to the last part of the Hawthorne studies but it was not until late 1970's when researchers started to focus keenly on the area of organizational culture. With the start of 1980's it was the time period when the term "organizational culture" became vastly popular. Culture that prevails in organization is one of the basic indicators or factor which needs to be understood in order to study and understand an organization. The culture of an organization is actually the particular behavior and attitude of a group of people which is affected by certain norms of the organization. The reason behind the popularity was the awareness of managers with the fact that culture plays a significant role in determining the job satisfaction of the employees. The popularity of organizational culture increased the interest of researchers and scholars in this area and they started to explore it in their studies. Hofstede (1984), was the researcher who widely explored the area of culture. Later on Deal and Kennedy (1982), worked on organizational culture. They defined it as the manner by which things are done in an organization. Schein (1990), added to the subject with his research which focused on internal and external integration of resources which helps an organization to flourish and if the culture is positive it helps organizations to gain competitive advantage too. S. K. Cameron, & Freeman, J. S. (1991), worked on the culture currently prevail within an organization to the preferred culture that employees want in an organization. This study is a very helpful tool for determining the impact of culture on employees.

As numerous studies suggest organizational culture as one of the most important area Adler and Jelinek (1986); Boxx, Odom, and Dunn (1991); Chatman (1989); Chatman, Polzer, Barsade, and Neale (1998); Deshpande and Parasuraman (1986) and management recognize the relevance of organizational culture with job related variables such as job performance, job satisfaction and job commitment etc. Hofstede (1984); (Eric MacIntosh & Doherty (2005), (2007); (E MacIntosh & Doherty, 2008); (O'Reilly, Chatman, & Caldwell, 1991); (Quinn, 1988). Culture is an area of interest for the managers because of the fact that it forms the behavior of employees towards their organization and towards their job. Rosenfield (1998), worked on two schools of thoughts regarding culture. The two schools distinguished, includes applicable school of thought and analytical school of thought. The former focused on the history of a culture of an organization and the impact of that culture on the behavior of employees. While the later focused on culture in terms of leading and gaining competitive advantage. The former focuses more on the job satisfaction of employees in relation to culture of an organization. As the area of organizational culture is relatively new there have been a few studies which explored the relationship of organizational culture with job satisfaction. Buono, Bowditch, and Lewis (1985), explored the impact of merger on employee job satisfaction as the culture of organization changes with the strategic decision of mergers. Deshpande, Farley, and Webster Jr (1993), studied job satisfaction of employees by using culture type framework in order to know job satisfaction of employees in USA. Nystrom (1993) studied the job satisfaction variable in relation to

the culture of health care and medical organizations. Lund (2003) studied the marketing profession in cross sectional firm and explored the level of job satisfaction with respect to the prevailing culture in their organizations. These studies develop the basis for studying organizational culture of firm with their respective culture type in order to know job satisfaction of employees.

It is also significant to note that there various studies have incorporated various organizational culture models Agho, Mueller, and Price (1993); Boxx et al. (1991); Hofstede, Neuijen, Ohayv, and Sanders (1990) and very few focused on the framework developed by S. K. Cameron, & Freeman, J. S. (1991); Lund (2003). Also, the domain of organizational culture is separate from that of corporate culture and in past researchers have considered corporate culture as organizational culture (Deal & Kennedy, 1982); (Huang & Wu, 2000). This study aimed at identifying the type of cultures prevailing in entrepreneurial organizations which are same in nature but the significantly differ in terms of leadership, the strategic directions, management of employees, the measurement of success criteria and dominant characteristics.

A significance of this study is in terms of the fact that past researches either took organizational culture as one single variable or explored a particular type of culture. Also few models were utilized and this model was not vastly explored. Another of the interesting fact is that the cultural studies in Asian context depict different results and discrepancies are seen in terms of the linkage of the variables. This study addresses those lacked areas by studying various cultural types with a model that is not vastly explored. The research will provide answer to the problem statement that "organizational culture types impact the job satisfaction of employees in entrepreneurial organizations"?

2. Literature Review

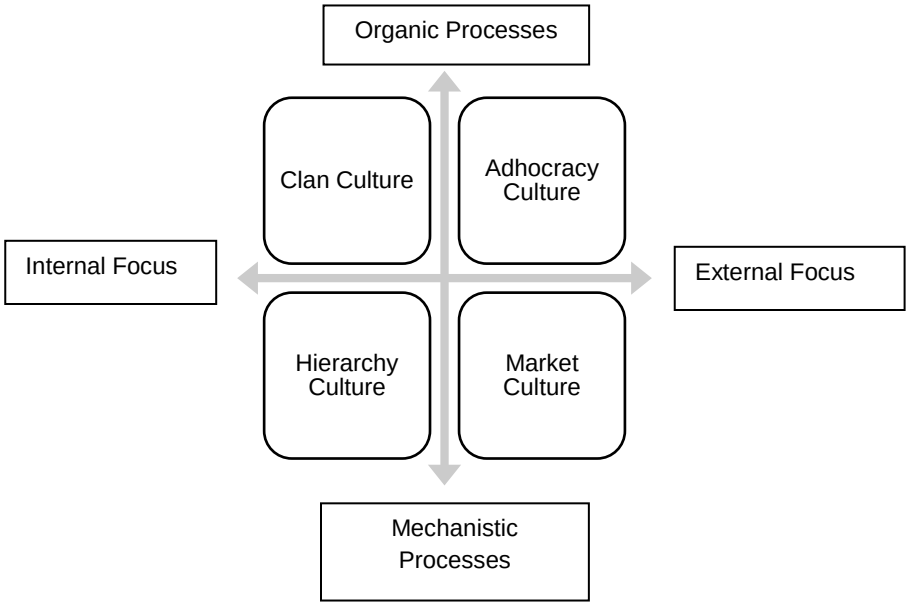
2.1. Organizational Culture

Organizational culture is a topic of interest in academics; many researchers have done immense work on culture Quinn and McGrath (1985); Quinn and Rohrbaugh (1983); Schein (1984); Schneider and Snyder (1975); Wilkins (1983) as it affects many dimensions including the satisfaction of employee at work Lund (2003); Eric MacIntosh and Doherty (2007) defined organizational culture as forces which influence the coordination of members of an organization. These forces include the values, principles, beliefs and the basic rules followed by an organization which ultimately affects the behavior of the employees of that organization. According to Daft (2001), organizational culture comprise of the key values and the basic assumptions including the principles and norms which are accepted and jointly shared by the members of the organization.

The variable of organizational culture has been studied vastly by many researchers with some studies having focus on the visible artifacts of culture while other focused mainly

on the deep rooted factors. The studies that investigated the visible parts of the culture of an organization included factors such as slogans, ceremonies, signs and symbols while other studies that deeply explored the cultural factors focused on values and norms (Davis, 1990). Researchers of organizational culture have also proposed different forms and types of cultures. K. Cameron and Quinn (1999), identified that the organizational cultures are divided into four kinds based on some competing values which generates an organizational profile for an organization. Visible and invisible factors combine together to formulate the cultural profile for an organization. The location, architecture and dress code are some of the example of visible culture while invisible culture includes the way to achieve and strive for a target; the philosophies followed by the management and the attitudes and believes. K. Cameron and Quinn (1999), in their research vastly explored the culture type by developing an authentic scale to analyze the type of these cultures. Clan culture is the culture which invites friendliness, is like a home and employees regard it as a family. Employees are loyal to the organization; the figure head treats every employee with love and care. Employees are more committed to their work and the organization focus on the development of the employees with the long term orientation of employees as well as the benefits of the organization. Adhocracy culture is one where the focus of organization is on innovation and risk taking. Organization of such cultures achieves their targets with the help of differentiation edge brought by innovation. The figure head in such cultures are the transformational leaders who keep on bringing changes and improvements in the organization. The market focused cultured organizations emphasis on the short term outputs. The employees working in such type of organizations are competent and proficient. Organizations with market culture focus on gaining most of the market share by using competitive pricings. Hierarchy culture focuses on a very organized and formalized working environment. Rules and procedures are strictly followed with a focus on achieving goals with incurring very low cost. According to Daft (2001), the cultures existing in organizations are adaptability, clan, bureaucratic and achievement culture. S. K. Cameron, & Freeman, J. S. (1991), identified the culture types as clan, adhocracy, market and hierarchy and organizations are generally a mixture of these cultures with one of the culture as the dominant one. Deal and Kennedy (1982), in their research said that culture is a critical factor for the success of an organization. They worked on four dimensions of cultures which included symbolic attributes, people working in an organization who follow certain attributes, the informal communication network and the values which forms the center for the organization. S. K. Cameron, & Freeman, J. S. (1991), used four quadrants to represent the culture of an organization which is appropriate for an organization to follow in a particular situation. These quadrants included the values and beliefs in relation to the culture of an organization.

Figure 1: Culture Types



Source: Adopted from Cameron and Quinn (1999)

Lund (2003), in his study found out that the most dominant culture in US firms is market culture. Wallach (1983) argues that organizations are not made up of a single culture instead they are formed with the help of bureaucracy, supportiveness and innovation. Organizations vary in degree to which each of the form combine to make a culture in an organization. A reflection can be seen in working of the organizations in the way they are managed, structured and developed (Hofstede, 1984). The working environment of organizations can be divided into eastern and western cultures which have significant impact on the overall culture prevailing in an organization. Further explaining these cultures the ones with eastern values promote collectivism, support, have a bureaucratic control, centralized decision making with no signs of empowerment and a high power distance. On the contrary organizations following the western views supports individualism, have a flatter structure than the taller one which means they are not bureaucratic, low power disparity is there, employees play their part in decision making and employees get more opportunities (Chen, 2002). Organizational culture impacts the goal setting of employees in professional world as well as in their personal life. Organizational culture influence the way employees think, act, perceive things and accomplish the goals (Hansen & Wernerfelt, 1989).

2.2. Job Satisfaction

According to Locke (1969), job satisfaction is the satisfying and confident state of employees which basically is the result of job evaluation on basis of certain criteria. Brooke, Russell, and Price (1988) defined job satisfaction as the satisfaction of needs

and wants of employees which are shown by the attitude and behavior of an employee towards the job. Job satisfaction in relation to different cultures and their affects have been discussed and examined by different researchers. Kangas, Kee, and McKee-Waddle (1999) defined job satisfaction as employee's feeling about his work and job along with the aspect which influence these feelings including his relations with supervisors, satisfaction with the pay and benefits, terms with his colleagues and opportunities to excel at current job. According to Chan, Shaffer, and Snape (2004), job satisfaction includes feelings of an employee at his job along with the activities he has to perform to responsibilities he has in a particular environment. Agho et al. (1993), explained that job satisfaction depends on the norms and the institutional values of an organization. Locke (1970), evaluated that the level of job satisfaction have a direct relation with the structure of an organization. Flexible structures increase the job satisfaction of employees while inflexibility decreases the level of job satisfaction. Robinson, Robinson, Porporino, and Simourd (1996) in their study explained that formalization impacts the job satisfaction of employees. It basically is the method by which employees are given a task to perform. It totally depends on the organization; some organizations give their employees the flexibility to perform the task others do not, which directly have an impact on the job satisfaction of employees. Spector (1997) suggests that there are certain job oriented factors which affect the job satisfaction level. Environmental factors play a significant role in determining the level of job satisfaction. These factors include wage which helps an employee to fill his basic and social needs. Excelling opportunities which helps an employee to develop himself and which is necessary for the psychological development as well. Relationship and affiliation with one's supervisor and peers is also an important factor which helps to determine the job satisfaction of an employee. Internal conditions and communication also play a significant role for determining job satisfaction as it includes the perceived value about an organization by its employees along with the understanding of employees with the goals of the organization.

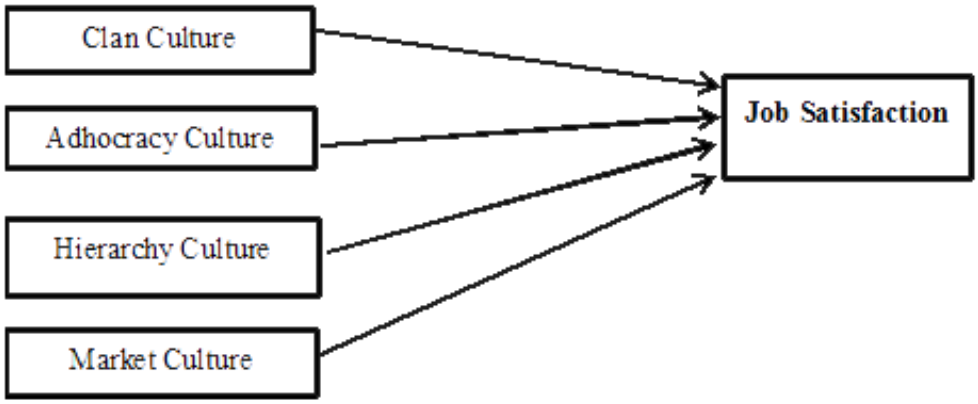
2.3. Organizational Culture and Job Satisfaction

Flynn, Chatman, and Spataro (2001) identified in their research that organizational culture directly affects the individual behavior as well as the progress and performance of the organization, the individual behavior turns in favor of the organization if employees are more comfortable in the values adopted by an organization. J. JOHNSON and McIntye (1998) identified that there exists a direct relationship of organizational culture and job satisfaction. Culture shows an immense influence on the job satisfaction of employees' working in an organization with specific values and beliefs. Martin (1992) in his study proposed three dimensions of organizational culture as integration, fragmentation and differentiation which ultimately form the values and beliefs for an organization. Huey Yiing and Zaman Bin Ahmad (2009) found in their study that there is a positive correlation between organizational culture and job satisfaction. Lund (2003) identified in his research the relationship between organizational culture and job satisfaction. He identified that clan culture which is most flexible has a positive relationship with the job satisfaction. Adhocracy culture which

has a focus on innovation is also positively related with job satisfaction. On the other hand market culture with a focus on goal completion and hierarchy culture with a stressful environment is negatively related to the job satisfaction of employees. McKinnon, Harrison, Chow, and Wu (2003) concluded in their research that employees are more satisfied with their job in organizations that opt for innovation and continuous improvements. Odom, Boxx et al. (1991) in their research worked on the impact of organizational culture on job satisfaction with the findings that bureaucratic culture has an impact on job satisfaction of employees. According to Schein (1996), employees working under bureaucratic culture, where employees do not have a friendly environment are least satisfied at work. The culture where organizations were having a supportive cultural environment leads to a higher job satisfaction of employees. Schiuma et al. (2012) found out that there is a negative impact of bureaucratic organizational culture on job satisfaction of employees. Innovative and supportive culture on the other hand had a positive impact on the job satisfaction of employees. Lund (2003) concluded in his research that marketing professional of cross-sectional firms of clan and adhocracy culture are more satisfied with their job than the marketing professionals of market and hierarchy culture. Koberg and Chusmir (1987) identified in their research that bureaucratic, innovative and supportive culture is positively related to the job satisfaction of employees. In an interesting study by Lok and Crawford (1999) it was identified that bureaucratic is the most dominant culture in organizations of China and employees working under such culture are highly satisfied with their jobs. Williams, Manwell, Konrad, and Linzer (2007) conducted a research with a focus on four types of culture on job satisfaction. The culture types included were human resource, entrepreneurial, bureaucratic and rational culture. The results indicated that the most dominant culture is human resource and satisfaction level of employees is also higher in this culture than any other.

3. Research Framework

Figure 2: Theoretical Framework



3.1. Research Hypotheses

H1: Employees working under clan culture are satisfied with their jobs.

H2: Employees who work under adhocracy culture are satisfied with their jobs.

H3: Employees working under the hierarchy culture are not satisfied with their jobs.

H4: Employees who work under the market culture are not satisfied with their jobs.

4. Methodology

4.1. Research Instrument

A self-administrated questionnaire was used as a medium to measure organizational culture and job satisfaction. The scale measuring organizational culture was originally developed by S. K. Cameron, & Freeman, J. S. (1991) which was ordinal in nature and later on researchers modified it to use for their studies (Shurbagi, 2012). The modified version of the scale was adopted for this study. The modified scale is based on 5 point Likert scale ranging from strongly disagree (1) to strongly agree (5). The variable of organizational culture is divided up into six key dimensions which are named as dominant characteristics, leadership of the organization, employee management, the glue which hold the organization together, the strategic emphasis of the organization and the success criteria. A total of 24 items were used to assess the four types of culture. The four dominating cultures clan, adhocracy, hierarchy and market were measured with the help of this scale.

In order to measure job satisfaction the scale was adopted from Lund (2003) which was developed and utilized for the research by Wright and Cropanzano (1998) to measure the level of employees' satisfaction at work. The scale contains a total of five items that captures the satisfaction of employees with their work, colleagues, supervisors, wages and the excelling opportunities. The scale is based on 5 points Likert scale ranging from strongly disagree (1) to strongly agree (5). The detail of instruments used in this study is presented in Appendix (A).

4.2. Sample and Data Collection

The research aimed to determine the job satisfaction of employees of entrepreneurial organizations in Islamabad and Rawalpindi. The data was collected with the help of self-administrated questionnaire which targeted employees of various organizations of Islamabad and Rawalpindi. The total number of questionnaires were distributed to different organization included 200 and a total number of 120 questionnaires were returned from 11 organizations out of the 25 organizations. Non-probability sampling was used to obtain data from respondents; convenient sampling was source of collection of data from the targeted population of Islamabad and Rawalpindi. Of the total respondents 16% were female respondents while 84% of the respondents were male. The age of the respondents were between 21-50 years and the years of association with their current organization ranged from less than a year to a range between 6-10 years.

4.3. Data Analysis

The statistical package for social sciences (SPSS 13) was used for analysis of the data. The coding of the variables was done with proper attention. First the mean scores of all the cultures, clan, adhocracy, hierarchy and market were calculated separately. Job satisfaction scores were also calculated by computing the mean scores of the variable. Reliability analysis was performed and Cronbach's alpha was calculated in order to determine the reliability of the data. Item to item and overall data reliability was tested. To test the hypotheses of this study multiple regression analysis was performed. Correlation analysis was also the part of the study which helped in determination of the strength of the relationships of variables. The results are presented with the help of tables for better representation and understanding.

5. Results and Findings

5.1. Reliability Analysis

In order to check whether data is reliable or not reliability analysis was performed and the value of Cronbach's alpha helped in determination of data reliability. The item-item reliability was analyzed and the results are presented in Table 1 which indicate that the data is highly reliable. The data shows reliability of clan culture as .710, adhocracy culture as .812, market culture as .827, hierarchy culture as .713 and job satisfaction as .840. This indicates that the data is reliable as it is greater than 0.7 for all the variables.

Table 1: Item-Item Reliability

Variables	Number of Items	Cronbach's Alpha
Clan Culture	4	.710
Adhocracy Culture	4	.812
Market Culture	4	.827
Hierarchy Culture	4	.713
Job Satisfaction	5	.840

5.2. Correlation Analysis

Table 2: Correlation Analysis

	Job Satisfaction	Clan Culture	Adhocracy Culture	Hierarchy Culture	Market Culture
Job Satisfaction	1	.225*	.253*	-.566*	-.563*
Clan Culture	.225*	1			
Adhocracy Culture	.253*	-.425**	1		
Hierarchy Culture	-.556**	-.274**	-.285**	1	
Market Culture	-.563**	-.312**	-.357**	.544**	1

*p<0.05, **p< 0.01

Table 2 depicts the correlation between the variables of study. It is evident from the results that a weak positive correlation of .225 exists between the variables of clan culture and job satisfaction. It signifies that when clan culture's attributes are more depicted in the values of the organization, job satisfaction of employees also increases. Similar is the case of adhocracy culture and job satisfaction which also weakly positive correlate with a correlation of .253. An increase in adhocracy cultural aspects will also increase the satisfaction of employees at work. The correlation between hierarchy culture and job satisfaction is moderate negative with a value of -.566 which indicates that an inverse relation exist between these two variables. An increase in hierarchy culture will decrease the job satisfaction. Similar is the result for market culture in which a moderate negative correlation -.563 exists between the variables of market culture and job satisfaction. An increase in market culture will result in decrease of job satisfaction.

5.3. Regression Analysis

Table 3: Regression Analysis

Variable	B	t	Significance
(Constant)	7.267	8.101	.000
Clan Culture	.225	2.510	.013*
Adhocracy Culture	.426	4.663	.000***
Hierarchy Culture	-.466	-4.797	.000***
Market Culture	-.356	-4.020	.000***

*p<0.05, **p<0.01, ***p<0.001, R^2 = .414

Regression analysis was performed to test the hypotheses of this study. Table 3 depicts the results which indicate that all the proposed hypotheses are being accepted. Employees working under clan culture are satisfied with their jobs as the hypothesis is accepted with a t value of 2.510 and the result is significant at 95% level of significance. The beta value of .225 which indicates that when 1 unit of clan culture increases it increase the job satisfaction by .225 units. Thus, H1 is accepted and null hypothesis is rejected. Adhocracy culture also positively impacts the job satisfaction as employees working under this type of culture are satisfied with their jobs, depicted by the results of regression. The t value is 4.663 and the result is significant at all three level 90%, 95% and 99%. The beta value indicate that 1 unit increase in adhocracy culture will increase job satisfaction by .426 units, indicating that H2 is accepted and null hypothesis is rejected. Employees working under hierarchy culture are not satisfied with their job is depicted by the results with t value of -4.797 which is significant at 90%, 95% and 99% level. The value of beta indicate that with an increase of 1 unit of hierarchy culture the job satisfaction decreases by -.446 indicating H3 is accepted and null hypothesis is rejected. Employees working under market culture are also dissatisfied with their jobs, shown by regression results. The t value is -4.020 and the results are significant at 90%,

95% and 99% with a beta value of -.356. This indicates that with 1 unit increase of market culture the job satisfaction of employees will decrease by -.356 units, indicating H4 to be accepted and null hypothesis to be rejected.

For the value of R^2 which is .414 shown below the table indicates that 41.4% change in job satisfaction of employees is caused by the independent variables of clan culture, adhocracy culture, hierarchy culture and market culture.
Regression Equation is given below:

Job satisfaction = 7.267 + .225 (clan culture) + .426 (adhocracy culture) - .446 (hierarchy culture) - .356 (market culture)

6. Discussion and Conclusion

The research was conducted in order to examine how organizational culture leads to the job satisfaction in entrepreneurial organizations. The study focused on the impact and influence of organizational culture types on job satisfaction of employees of various organizations. By identifying various types of organizational culture on the basis of literature, the model of Cameron and Quinn was utilized for this study. On the basis of the model the hypotheses of the study was established which suggested that clan and adhocracy culture are positively related to job satisfaction and hierarchy and market culture to be negatively associated with job satisfaction. The main aim of study was to fill out for the discrepancies found in the literature regarding the use of this particular model and to examine these variables in context of Asian culture which depict results in contrast to the Western studies.

The results produced from this study are consistent with the previous researches done in terms of the fact that organizational culture does have a significant relationship with the job satisfaction of employees Huey Yiing and Zaman Bin Ahmad (2009); McKinnon et al. (2003); Schiuma et al. (2012); Silverthorne (2004) particularly in the settings of entrepreneurial organizations. All four hypotheses were tested by using the organizational culture framework and the results produced suggests that as we move along the line employees working under clan and adhocracy show satisfaction with their jobs while those who work under hierarchy and market show dissatisfaction. Findings related to clan culture were similar to Schiuma et al. (2012) as employees feel safe and secure under a culture which is supportive, they tend to show satisfaction towards organization's environment from where they get the needed support Koberg and Chusmir (1987); Schiuma et al. (2012) found the relation of supportive culture with the job satisfaction of employees and their research results suggested the same as the result of this research that a positive association is there between clan culture and job satisfaction of employees. Kalliath and Morris (2002) evaluated that the level of job satisfaction has a direction relation with the structure of an organization. Flexible structures increase the job satisfaction of employees while inflexibility decreases the level of job satisfaction. The results regarding adhocracy culture were similar to that of McKinnon et al. (2003) as employees are more satisfied with their job in

organizations that opt for innovation and continuous improvements. The hierarchy culture results are also consistent with the research of Odom, Boxx, and Dunn (1990) as organizational culture has an impact on job satisfaction with the findings that bureaucratic culture leads to dissatisfaction of employees. Job satisfaction of employees is affected by the culture type in which the employees work and employees feel satisfied in culture where they get flexibility and are given autonomy rather than defined rules (Deshpande et al., (1993). Employees in medical care organizations are satisfied if given a culture which is not rigid and that do not contain fixed rules and regulation including commands for work (Nystrom, 1993).

K. Cameron and Quinn (1999) framework of organizational culture was utilized to conduct this study. The cultural model was used in relation to job satisfaction. All four cultures were evaluated with respect to their relation to job satisfaction. Following were the key results of this study:

1. Culture is a leading predictor of job satisfaction level of employees. According to the framework of K. Cameron and Quinn (1999) there are four types of organizational cultures. Employees who are working under the clan and adhocracy culture are found to be satisfied with their jobs, whereas results indicate that those who are working under the hierarchy and market culture were not satisfied with their jobs.
2. The variance is seen in the job satisfaction level of employees under different types of culture where they work. This variation is due to variability of characteristics and features of each culture type employees share.
3. The most popular and dominant type of culture is clan; clan is considered a culture with a welcoming environment. The second most popular culture type was adhocracy which is linked with higher job satisfaction as compared to other types from the model of organizational culture. Adhocracy is regarded as with a dynamic and creative place to work. Market culture and hierarchy culture were found to be in an inverse relationship with job satisfaction means scores. Market culture is defined as result-oriented, production intensive work place. Hierarchy culture is symbolized with informed procedures and methods that bind employees of the organization what to do, when to do, where to do and how to do.

7. Limitations of the Study

The limitations of study found were similar to that of Chang and Lee (2007). Due to time limitation factor the research investigations were limited to few factors.

7.1 Geographical Limitations

Although, this study explores a new dimension exploring organizational culture type relationships with job satisfaction however there are few limitations of study. Firstly, only organizations of geographical location of Rawalpindi and Islamabad were used to gather data. The total numbers of organizations studied under this research were eleven

in number. So the findings can never be generalized for organizations outside this geographical location which is one of the main constraints of this research. Due to this constraint external validity of this study is quite low. However, result of another study conducted on marketing professionals of USA showed similar results as of this study. Even though, USA is quite different from Pakistan in context of politics, economy and culture, but results of that study supports findings of this study and enhance its validity to a certain extent.

7.2. Sampling Limitations

Convenient sampling was used to collect data from employees of eleven organizations of Rawalpindi and Islamabad. Due to this factor the biasness of the study increased and generalizability of study is reduced. This study can be analyzed in more detail, but due to time constraint many other dimensions are not touched.

7.3. Study Design Limitations

Design of this study was cross-sectional i.e. one point data is collected, this reduced relationship of model presented in this study. In order to make study more robust and strong in nature longitudinal study is the appropriate study which does take time but provides long lasting results which have a bigger impact.

8. Implications and Future Research Directions

To overcome limitations of this study, few future research directions are provided to explore this model more accurately. This study was about relationship of organizational culture type on job satisfaction of employees of organizations of Islamabad and Rawalpindi but the organizations accessed were much smaller in size. Telecom sector and banking sector was not targeted at all. The organizations targeted exhibit very specific form of organizational structure and its culture is always different from other organizations of Pakistan. In order to increase external validity and be at more generalized findings, this study need to be conducted in diverse geographical and occupational settings. In future, the same model should be tested in different organizational sectors e.g. telecom sector, textile sector, banking industry and in government organizations as well.

Coming towards next limitation, in future longitudinal study needs to be conducted. So, respondents' biasness will be minimized when questions of independent and dependent variables will be asked at different times. This will enhance robustness of study. Along with this, in future, probability sampling could be used to make this study more generalized.

Though, the study contains certain limitations but it does provide significant implications for managers. As the results suggests that the type of culture that prevails in an organization impacts the job satisfaction of employees, the sub factors of culture must be in coherence with each other. For example, if the organization is a supportive place, the leader must also be facilitator, the work environment must be team based,

there must be trust among the members of the organizations and in order to build commitment employee participation must also be the essential part. Also, organizations must focus on the development of its employees and they must keep employees ahead of everything by keeping them as the priority. The study also helped in identifying that culture type is a significant aspect which must not be ignored at all. Employees who work under conditions where they are not given voice in form of participation, the leadership is self-focused, the strategic direction uses employees just as a mean and there is no human development leads to dissatisfaction of employees which can cause consequences for the organizations.

In conclusion it is critical to note that the type of organizational culture has a substantial impact on the satisfaction of employees and the sub cultural factors must be keenly seen by the managers so that their employees stay satisfied.

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APPENDIX (A)

Questionnaire:

Your Age ☐ 16-20 ☐ 21-30 ☐ 31-40 ☐ 41-50 ☐ >50

Male ☐ Female ☐

For how long you have been working for the organization: less than a year ☐ 1-5 years ☐ 6-10 years ☐ more than 10 years ☐

The following statements describe the statements regarding the organization you are working for. For each, please indicate the extent to which you agree/disagree with the statements by mentioning the appropriate number on the scale.

Strongly Disagree				Strongly Agree
1	2	3	4	5

1. **DOMINANT CHARACTERISTICS**
   a. The organization is a very special place. It is like an extended family. People seem to share a lot of themselves.
   b. The organization is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.
   c. The organization is very production oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.
   d. The organization is a very formalized and structured place. Bureaucratic procedures generally govern what people do.

2. **ORGANIZATIONAL LEADERS**
   a. The leaders of the organization are generally considered to be mentors, facilitators, or parent figures.
   b. The leaders of the organization are generally considered to be entrepreneurs, innovators, or risk takers.
   c. The leaders of the organization are generally considered to be hard-drivers, producers, or competitors.
   d. The leaders of the organization are generally considered to be coordinators, organizers, or efficiency experts.

3. **MANAGEMENT OF EMPLOYEES**
   a. The management style in the organization is characterized by teamwork, consensus and participation.

b. The management style in the organization is characterized by individual risk-taking, innovation, flexibility, and uniqueness.
c. The management style in the organization is characterized by hard-driving competitiveness, goal directedness, and achievement.
d. The management style in the organization is characterized by careful monitoring of performance, longevity in position, and predictability.

4. ORGANIZATION GLUE

a. The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.
b. The glue that holds the organization together is orientation toward innovation and development. There is an emphasis on being on the cutting edge.
c. The glue that holds the organization together is the emphasis on production and goal accomplishment. Marketplace aggressiveness is a common theme.
d. The glue that holds the organization together is formal rules and policies. Maintaining a smooth running organization is important.

5. STRATEGIC EMPHASES

a. The organization emphasizes human development. High trust, openness and participation persist.
b. The organization emphasizes acquiring new resources and meeting new challenges. Trying new things and prospecting for new opportunities are valued.
c. The organization emphasizes competitive actions and achievement. Measurement targets and objectives are dominant.
d. The organization emphasizes permanence and stability. Efficient, smooth operations are important.

6. CRITERIA OF SUCCESS

a. The organization defines success on the basis of development of human resources, teamwork, and concern for people.
b. The organization defines success on the basis of having the most unique or the newest products. It is a product leader and innovator.
c. The organization defines success on the basis of market penetration and market share. Competitive market leadership is key.
d. The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling, and low cost production are critical.

The following statements describe your feelings towards certain job-related issues regarding the organization you currently work for. For each, please indicate the extent

to which you agree/disagree with the statements by mentioning the appropriate number on the scale.

Strongly Disagree **Strongly Agree**

1 2 3 4 5

A. All in all, I am satisfied with the work of my job.
B. All in all, I am satisfied with my co-workers.
C. All in all, I am satisfied with the supervision.
D. All in all, I am satisfied with my pay (total wages and other benefits).

All in all, I am satisfied with the promotional opportunities.

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Sustainable Soil Management Practices: Adoption and Its Impact on Farm Income in Ramechhap District, Nepal

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Abstract

This study was carried out to assess the impact of sustainable soil management (SSM) practices in relation to technology adoption and farm income in Ramechhap district of Nepal in 2015. Total 120 sample households were taken (60 SSM practices adopters and 60 non-adopters) using random sampling technique. Primary data were collected through face-to-face interview, focus group discussion, direct observation and key informant interview to gauge the impact using with-without SSM project intervention approach. Descriptive statistics along with independent t-test, chi square test, Probit and income function multi-regression models were used for data analysis. From the cost-benefit analysis, in tomato production, all the variables were found to be significantly different except cost of planting materials. The gross margin, gross income and B: C ratio were also found to be significantly different in tomato production by SSM practices adoption. In beans, potato and cauliflower production, most of the variables were found to be significantly different. The results revealed that, farm income was higher in adopters by significant margin whereas the income from services and remittance was higher in non-adopters than adopters. Probit model revealed that type of family and trainings received were found statistically and positively significant on SSM practices adoption whereas education of household head had negative impact. Income function multi-regression model showed that SSM adoption, male of the respondent, education of the household head and farm size have positively significant on farm income whereas nuclear family type was negatively determinate on farm income. Among the variables, SSM practices adoption was major determinate factor on farm income. If farmer adopted SSM practices, farm income would be about 198 percent higher than among non-adopters. SSM technology has identified an environmentally friendly and improved rural farmers' income in a sustainable manner in Nepal.

Keywords: SSM practices, Technology Adoption, Farm income, Nepal.

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1. Introduction

Nepal has a total area, production and productivity of the vegetables as 246,392 hectares, 3,301,684 metric tons (MT) and 13.40 MT/ha respectively. The contribution of vegetables in AGDP is 20.74 percent Diary (2014). The ecological diversity and the favorable condition to produce different crops in different region have provided a lot of scope and opportunity to the farmers of the country. In recent times, demand for the healthy vegetable products and the increased nutritional knowledge of the people have also provided further scope for the commercial vegetable production. Off-season vegetable farming is one of the methods of commercialization. Off- season vegetable farming refers to the production of vegetables before or after their normal season of production by using different agro climatic conditions, adjusting the planting time, selecting and improving the varieties, and/or creating a controlled environment. AEC (2006) reported that off-season vegetable farming is one of the potential sources of income and reliable means for the reduction of poverty and malnutrition persisting over the hills of Nepal. Because of comparative advantage through topography Prasain (2011) farmers from hills have greater value to produce off-season vegetables during rainy season when prices observed higher in Terai areas and Indian boarder cities.

Sustainable Soil Management Program (SSMP) targets improvements in soil fertility and productivity in the mid hills of Nepal with the aim of increasing food production, food security and farm income. SSM practices includes improved farm yard manure, improved cattle sheds and urine use, legume integration, use of bio-pesticide integrated plant nutrient systems, fodder promotion for livestock, SSM-based vegetable production etc.

In the recent years there is increasing consciousness on the quality of the food items that the peoples are consuming. So farmers are moving towards the commercialization of vegetable farming. In the long run excessive application of chemical fertilizers and pesticides is causing the partial desertification in many pocket areas of Ramechhap district. There is ever increasing input supply and decreasing trend of productivity so that threat the livelihood of farmers in agriculture (NPG, 2003). Thus commercial vegetable farming and increasing demand of healthy vegetables in the market has created the study environment for SSM based vegetable production economics.

This study focused on identification of sustainable soil management based vegetable production along with their economic feasibility. The finding of this research answers the issues of SSM based production, Marginal output from it, and types of SSM practices preferred by farmers. Furthermore, this study also answers which SSM practice is economically profitable and perception of farmers towards SSM practices is identified. This study helps the farmers to rethink about production activities they are doing and for development workers about which activities are to be promoted. Also in case of researchers the finding of this study helps to identify the strengths, weaknesses, opportunities and the threats of particular cultivation practices.

Since Ramechap is one of the hilly districts of Nepal, the production techniques have not been well developed and the production and productivity are low. The problem of the food security is significant problem in the region. The production of the district is not sufficient. Similarly, the problem of fertilizer availability and its continuous going sky touching prices, and considering of soil health on order to sustain the soil production farmers have to use farm yard manure. SSM based agriculture is cost effective, affordable and does not require expensive technical investment but provides more employment opportunity. It is a viable solution to preventing global hunger by providing comparatively higher yields from low input agriculture in food deficit regions (Leu, 2004).

The overall objective of this research was to assess the impact of sustainable soil management practices in relation to technology adoption and farm income in Ramechhap district of Nepal.

Specific objectives of this study were as followed:

1. To investigate the factor determining adoption of SSM practices considering vegetable growers.
2. To assess impact of SSM technology on farm income in relation to vegetable production.
3. To analyze strengths, weaknesses, opportunities and threats of SSM practices focusing to adoption and its consequences.

2. Literature Review

Sustainable agriculture is as a set of management strategies addressing the main societal concerns about food quality or environment protection (Francis, Sander, & Martin, 1987). In other words, agricultural systems are considered to be sustainable if they sustain themselves over a long period of time, that is, if they are economically viable, environmentally safe and socially fair.

As farmers increasingly confront declining per capita return arisen from miniaturizing land holdings caused by steadily growing population, they are required to make additional efforts to increase agricultural production. They will thus adopt an agricultural system only when it is both economically and environmentally suitable (Rasul & Thapa, 2003). The adoption of sustainable agriculture strategies/technologies has received frequent attention in recent years, both by producers and consumers. Despite economic and noneconomic disadvantages of conventional agriculture, farmers have been slow to adopt these practices, and adoption appears to vary widely by region and crops (Musser et al., 1986). In recent years organic agriculture has been adopted by most of the farmers as a means of sustainable agriculture.

There are, as with sustainable agriculture, a variety of definitions of organic farming Mannion (1995) refers to it as a holistic view of agriculture that aims to reflect the

profound interrelationship that exists between farm biota, its production and the overall environment. Scofield (1986) stresses that organic farming does not simply refer to the use of living materials, but emphasizes the concept of 'wholeness', implying the "systematic connection or co-ordination of parts in one whole". Organic production is feasible virtually throughout the country, without major adjustments to traditional production methods. Organic seed production, vegetable production, fruits production etc. could be made easy under such a diverse topography, soil and climatic situations. Thanks to physical conditions that made this possibility easy. Direct market linkage with India could be other strength. Organic production has been started by the farmers themselves without government intervention.

Farming in the mid-hills of Nepal is characterized by a close relationship between crop production, livestock and forestry, with trees and crops providing fodder and bedding materials for livestock, which in turn provide draft power and manure. Soil fertility is largely maintained by the application of compost and manure, but in recent years a decline in soil fertility has been reported (Shrestha et al., 2000). It is a well-established that soil fertility in Nepal is declining in recent years, increased use of high-yielding crop varieties in intensive cropping systems have led to an increased demand for nutrients. The locally available sources of nutrients, mainly farm-yard manure (FYM), compost, and biologically fixed nitrogen are not sufficient to meet the needs. Farmers in accessible areas have started to use chemical fertilizers as a means of coping with the reduced nutrient availability. However, imbalanced use, and inappropriate timing and methods, of fertilizer application have resulted in adverse effects on soil productivity, on sustainability, and on environmental quality (Joshi & Ghimire, 1996); (Sthapit et al., 1988); (Subedi et al., 1989); (Tamang, 1992).

The problems of soil quality deterioration and fertility decline are prevalent throughout the world but they are especially serious in the heavily populated, under-developed, and ecologically fragile areas of the (Nepal Harden, 2001). Comparative profitability of conventional or inorganic and SSM based production practices varies due to wide range of production methods used in different regions and with different crops, and because of the variable organic price premiums (Cook, Norris, & Pickel, 1989). The profitability of SSM based production method usually depends on price premiums. Scialabba (2006) found that the productivity of organically grown carrot yield is found higher (27.9 MT/ha) than that of inorganically grown carrot (26.30 ton/ha). In some situations SSM based growers may be less vulnerable to natural and economic risks than conventional farmers since their systems are usually more diversified (Olson, Langley, & Heady, 1982). SSMP and the SSM practices that are promoted are increasingly relevant and important in the struggle for mid-hill food availability and livelihood sustainability (SSMP, 2009).

The periodic application of farmyard manure (FYM) has been reported to improve many physio-chemical properties of the soil, viz., improvement in soil structure,

increased water-holding capacity, and enhanced biological activity (Maheswarappa, Nanjappa, & Hegde, 2015); (Schjønning, Christensen, & Carstensen, 1994). Farmyard manure is also a good reservoir of nutrients, adding to fertility build up in the soil. It is known to improve soil productivity on a sustainable basis over a long period (Flaig, 1975). Legumes have long been advocated as the missing ingredient for conserving soil resources in subsistence agriculture and Legume intensification is often advocated to improve the productivity and sustainability of cereal-based cropping systems in developing countries (Cromwell & Winpenny, 1993); (Thapa, 1996).

The use of plants, plant material or crude plant extracts (botanical insecticides) for the protection of crops and stored products from insect pests is probably as old as crop protection itself. Indeed, prior to the development and commercial success of synthetic insecticides beginning in the 1940s, botanical insecticides were major weapons in the farmer's arsenal against crop pests (Thacker, 2002).

Rogers (2003) defined the adoption process as "the mental process an individual passes from first hearing about an innovation to final adoption". Several adoption and diffusion processes may occur simultaneously. Mann (1978) pointed out such adoption processes may follow specific sequential patterns. Constraints to the rapid adoption of innovations involve factors such as the lack of credit, limited access to information, aversion to risk, inadequate farm size, inadequate incentives associated with farm tenure arrangements, insufficient human capital (Feder, Just, & Zilbermanm, 1985).

3. Research Methodology

3.1. Conceptual Framework

This study mainly focused on the impact and economic significance of sustainable soil management practices based vegetable production. This study also examined the level of adoption and the associated factors related with the adoption of SSM practices. Age, gender, economically active members in a family, education level, farm size, farm income, household head, training received and membership in farming groups/ organizations, etc. are the socio-economic factors that govern the adoption of livelihood strategies. Access to assets (natural, physical, social, human, financial, etc.) by the farmers leads them to change the livelihood strategy from conventional farming to commercial/sustainable farming through the continuous adoption of sustainable soil management practices. Problems like decline in soil fertility, expensive inorganic inputs, timely unavailability of inorganic fertilizers, environment pollution, pesticides hazards, unhealthy foods creates environment favorable for the adoption of SSM practices. When it shows positive impacts (economic, social, environmental, institutional, etc.) on living it gives livelihood outcomes like improved soil health, higher productivity, higher net farm income, improved food safety, quality and food security, more self-sufficiency, sustainability of crop production, better functioning social network and groups, ecological balanced, sustainable use of natural resources,

Reduced dependence on costly inputs and credits. This ultimately leads to the better health increased household income and better welfare of the people (Figure 1).

Figure 1: Conceptual framework adopted for the study (Own illustrations)

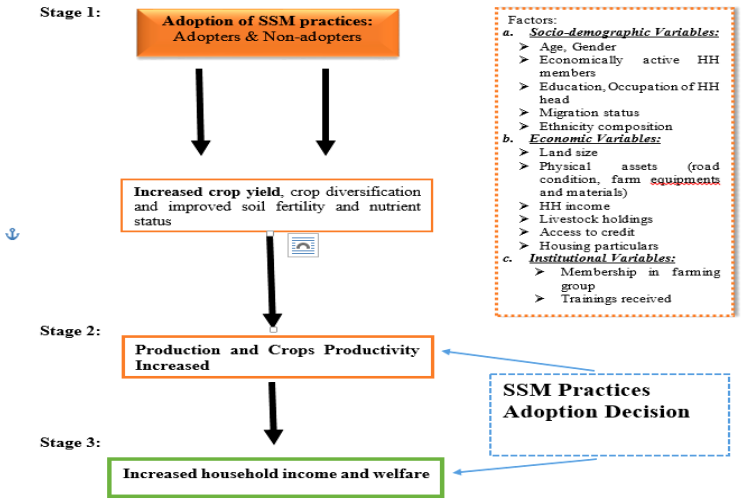
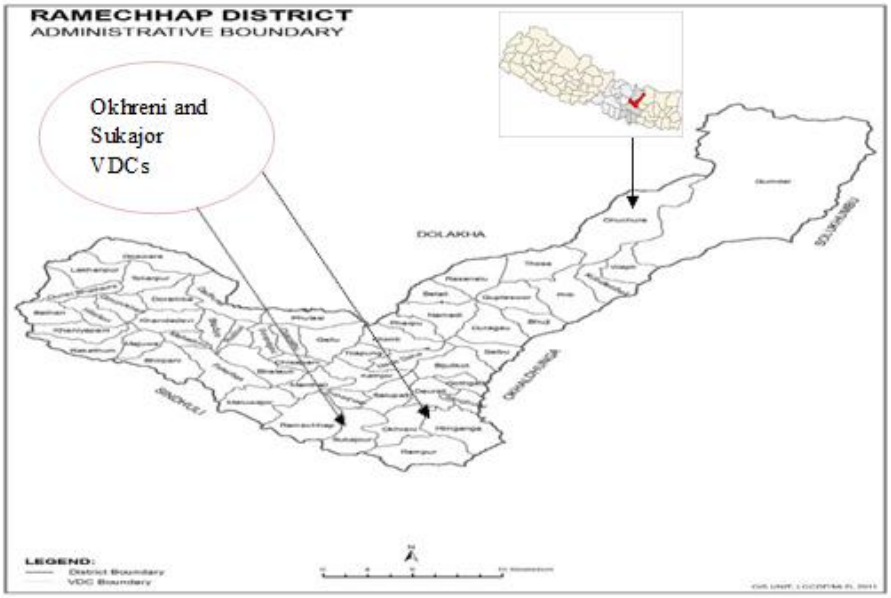


Figure 2: Map of Ramechhap district showing research site (DADO, 2010)



Selection of the study area

The pocket areas within the district were selected purposively based on area coverage and production of vegetables as well as the SSMP implemented areas. Based on these criteria, two Village Development Committees (VDCs) namely, Okhreni and Sukajor were selected from Ramechhap District where SSM program had successfully launched for about five years. Site of the study area is presented in Figure 2.

Sample and sample selection procedure

By using sampling frame, a simple random sampling technique was used to collect necessary information from both VDCs. The procedure was comprehensive and representative of the whole population. Total 120 samples were taken using purposive random sampling technique. Total 60 samples were taken from Okhreni VDC and remaining 60 samples from Sukajor VDC in Ramechhap district.

Methods of data collection

During this study, both the primary and secondary data were collected. The methodologies consisted of field survey, review of previous studies, and interviews with leading vegetable producers, and also direct observation of the farmer's field.

- **Preliminary Survey**

Prior to the field survey, a field visit was carried out to the study area in 2014. The main objective of the visit was to become familiar with geographical as well as other different features of the study area.

- **Preparation of Interview Schedule and Pre-testing**

After preliminary field visit, interview schedule was prepared for the field survey to collect primary information from the farmers. Pre-testing of interview schedule was done before the field survey to the few of the respondents. The finalization of the interview schedule was done by giving due consideration to the points where we felt there should be some corrections during the pre-testing.

- **Focus Group Discussion (FGD) and Key Informant Survey (KIS)**

FGD and KIS was done in both the VDCs involving the VDC/ward representatives, female farmers of different ethnic groups, school teachers, leader farmers and key informer from the VDC.

- **Household Survey**

Field survey was conducted in both selected VDCs randomly as 60 household from each VDC making total respondents 120. Regular checking and validation of the information were done immediately after filling the interview schedule.

- **Methodological approach of impact evaluation**

With without approach was used for the impact study of sustainable soil management practice. For the impact assessment pair t test was used to test the impact of adoption of these practices on area and production of the different crops.

Methods of Data Analysis

The collected information were tabulated, coded and fed into the computer for analysis. Data were fed to Microsoft excel and analysis was done by using Statistical Package for Social Sciences (SPSS version 23.0) and STATA (version 13.0). Different statistical tools like mean, frequency, chi- square test, t-test, F-test, standard deviation, Ordinary Least Square Technique of Multiple Regression and the Likert scale technique as well as correlation study were done to derive inference needed.

- **Model specification**

Profit model for adoption decision and income function model for impact of farm income were used in econometric analysis. The Probit model specified in this study to analyze farmer's adoption of sustainable soil management practices in relation to farm income was expressed as follows:

$$\text{Pr (adoption, yes=1)} = b_0 + b_1 X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + e_i \quad \text{eq. (i)}$$

$$\text{Farm income } (Y_i) = b_0 + b_1 X_1 + b_2X_2 + b_3Y_i + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + b_{12}\text{SSM Adoption}_i + e_i \quad \text{eq. (ii)}$$

Where,

Pr (adoption, yes=1) = Probability score of adopting SSM practices (at least two SSM practices=1, 0=Otherwise)

X_1= Age of HH head (Years)

X_2= Gender of HH head (Dummy: Male=1, 0=Female)

X_3= Ethnicity/Social background of the family (Higher caste=1, 0=Otherwise)[2]

X_4= Family type (Nuclear=1, 0=Joint)

X_5= Educated family members (Numbers)

X_6= No of schooling years of HH head (Numbers)

X_7= Economically Active Family members (Numbers)

X_8= Migration (Household member migrated to aboard=1, 0=Otherwise)

X_9= Farm size (ha)

X_{10}= Trainings (Training received=1, 0=Otherwise)

[2] Brahmin and Chhetri are Higher castes in Nepal

X_{11}= Membership of other farming groups/organizations (Membership=1, 0=Otherwise)
SSM Adoption$_i$ = If farmer adopted at least two or more SSM practices=1, 0=Otherwise
Farm Income (Y_i)= Farm income from agriculture and livestock sectors (Nepalese Rupees in Natural Log)
b_1, b_2.... b_{11}= Probit coefficient ; b_0= Regression coefficient.

4. Results and Discussion

Socio demographic characteristics of sampled households in the study area

The average number of educated household member was 3.49 whereas that of adopters (3.85 years) was slightly higher than that of non-adopters (3.13 years). The average family size was 7.38 whereas that of adopters was found to be 6.48 and that of non-adopters was 8.28. Average family size in the study area was found greater than that the district average of 5.15 (DADO, 2010) and national average of 4.7 (CBS, 2011). The average number of economically active household members was found to be 4.84 and the average of adopters 4.27 was higher than that of non-adopters 5.23 (Table 1).

Table 1: Socio-demographic factors of the households by SSM practices adoption

Socio-demographic variables	Total (N=120)	Adopters (n=60)	Non-adopters (n=60)	Mean difference	t-value
Age of household (HH) head	48.1(12.36)	47.43(12.94)	48.76(11.83)	-1.33	-0.589
Years of schooling of HH head	2.98(2.53)	3.03(2.19)	2.92(2.85)	0.12	0.251
Agriculture engaged HH members	4.05(1.57)	3.88(1.34)	4.22(1.76)	-0.33	-1.164
Educated HH members	3.49(1.32)	3.85(1.54)	3.13(0.92)	0.72	3.07***
Family size	7.38(3.01)	6.48(1.24)	8.28(1.28)	-1.8	-3.416***
Economically active HH members(age group 15-60)	4.85(2.03)	4.27(0.65)	5.43(0.71)	-1.17	-3.271***
Elderly HH members(age group above 60)	0.54(0.68)	0.47(2.41)	0.62(3.28)	-0.15	-1.202
Dependency ratio in HH	0.33(0.16)	0.33(0.18)	0.33(0.13)	0	0.036
Migrants number in HH	1.38(0.73)	1.29(0.68)	1.44(0.76)	-0.15	-0.63

Land holdings

The average land holding of the household was found to be 13.39 Ropani[3] which is lesser than the national average of 0.8 hectare. From the study it was found that 45.80 percent of the household had small farm size (less than 10 Ropani), 41.70 percent had medium farm size (10-20 Ropani) and only 12.50 percent had large farm size (more than 20 Ropani). Table 2 presents the land holding size of the sampled households in the study area.

[3] 1 hectare = 19.66 Ropani

Table 2: Land holding size of the sampled households in the study area

Land holding (Ropani)	Total(N=120)	Adopters (n=60)	Non-adopters (n=60)
Less than 10 (small)	55(45.8)	23(38.3)	32(53.3)
10 to 20 (medium)	50(41.7)	27(45.0)	23(38.3)
More than 20 (large)	15(12.5)	10(16.7)	5(8.4)

Note: Figures in Parentheses indicate Percent

Livestock holding

All the farm families were engaged in livestock farming. Average livestock holding was 6.38 LSU[4] with maximum 19.46 LSU and minimum of 1.92 LSU in entire site. The average, maximum and minimum value of LSU was found greater in adopters than that of non-adopters (Table 3).

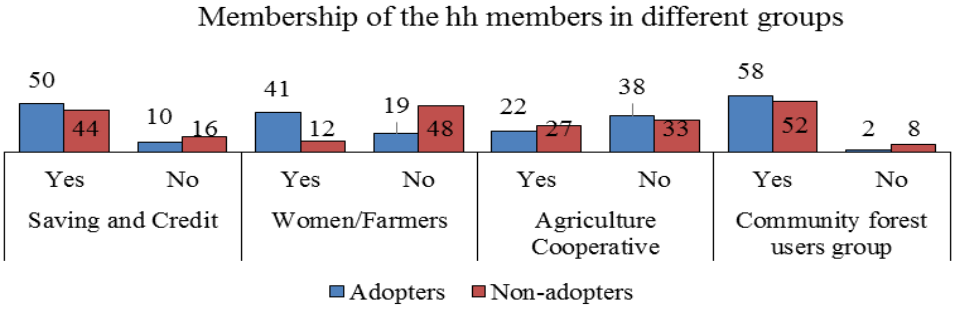
Table 3: Livestock holdings by SSM practices adopters and non-adopters

	Livestock standard unit		
	Mean	Maximum	Minimum
Non adopter	6.14	12.60	1.92
Adopter	6.62	19.46	2.00
Mean Difference	0.48	6.86	0.08
Total	6.38	19.46	1.92

Different organizations/groups membership by household members

Majority of household were found participating in the organizations like community forest user group and saving and credit group. 91.7 percent of the household members were found to be participated in community forest user groups followed by 78.3 percent of household members in saving and credit groups (Figure 3).

Figure 3: Membership of the household members in different groups



[4] LSU is Livestock Standard Unit (based on cattle equivalent: 1 cow/cattle= 10 goats/lambs= 4 pigs and = 143 chicken/ducks)

Comparative economics of tomato cultivation in between adopters and non-adopters of SSM practices

Area of tomato under cultivation was found significant difference between adopters and non-adopters of SSM Practices. Hired Labor cost was found significant difference as there was decrease in cost by Rs. 796. Other cost items like total manure cost, cost of chemical fertilizers, cost of pesticides, total cost of production and average cost were found significant difference at 1 percent and 5 percent level of significance, respectively. Likewise, per ropani cost of chemical fertilizers, cost of pesticides and total cost of cultivation were found decreased by NRs. 367, 321 and 3598, respectively. The average cost (NRs/kg) was found significantly lower after practicing SSM by about NRs. 9 than non-adopters (Table 4).

It was found that Net income (Rs/ropani), Gross income (Rs/ropani), and B: C ratio was found significant difference between adopters and non-adopters of SSM Practices. Table 5 presents the comparative return of tomato cultivation by SSM adoption.

Table 4: Comparative cost of tomato cultivation by SSM adoption

	Total (N=120)	Adopters (n=60)	Non-adopters (n=60)	Mean difference	T value
Area (ropani)	0.66	0.83	0.49	0.33	3.19***
Hired labour cost	503.25	203.13	1000.00	-796.88	-3.34***
Cost of planting materials	593.18	581.77	612.07	-30.30	-1.53
Cost of chemical fertilizers	498.21	359.64	727.59	-367.95	-8.54***
Cost of manure	1543.55	1623.33	1411.49	211.84	2.26**
Cost of pesticides	189.33	68.23	389.77	-321.54	-5.45***
Packing and marketing cost	717.48	908.33	401.60	506.74	9.16***
Total cultivation cost	6122.09	7921.13	4323.05	3598.08	4.14***
Average cost	9.00	5.53	14.75	-9.22	-6.24***

Note: *** And ** indicates significant difference at 1% and 5% levels, respectively

Table 5: Comparative return of tomato cultivation by SSM adoption

Variable	Total (N=120)	Adopters (n=60)	Non-adopters (n=60)	Mean difference	T value
Net income (NRs/ropani)	30429.42	48175	12683.83	35491.17	6.14***
Gross income (NRs/ropani)	32516.67	51091.67	13941.67	37150	5.95***
B:C ratio	4.83	5.97	2.95	3.02	5.93***

Notes: *** indicates significant difference at 1% level

Comparison of household incomes in between adopters and non-adopters of SSM practices

On farm income and off farm income and total household income was found significant after the adoption of SSM practices. In total, the share of farm income from vegetables and livestock were found significantly different at 1 percent level. Similarly the income from services was significantly different at 1 percent level after the adoption of SSM practices (Table 6).

Table 6: Annual income from various sources by SSM practices adoption

Income in the HH	Total (N=120)	Adopter (n=60)	Non-adopter (n=60)	Mean difference	T-value
Cereals	0.01(0.09)	0.00(0.00)	0.02(0.13)	-0.02	-1.00
Vegetable	87133(90169)	154267(78119)	20000(33609)	134267	12.23***
Livestock	27525(21402)	34600(25822)	20450(12462)	14150	3.82***
Business	5583(34685)	0(0)	11167(48611)	-11167	-1.78*
Services	38500(97610)	11583(68886)	65417(114008)	-53833	-3.13***
Wage labor	11379(28143)	9100(24190)	13658(31652)	-4558	-0.89
Remittance	81367(176094)	60233(109123)	102500(222997)	-42267	-1.32

Notes: Figures in parentheses indicate standard deviation. *** And * indicates significant difference at 1% and 10% levels respectively

Reasons for adopting sustainable soil management practices

It was observed that 98.3 percent of the sampled farmers expressed the reason of adopting sustainable soil management practice was for sustainable production. 93.3 percent of household opinion on adoption was due to healthy soil and environment. Higher yield was the main reason for all of the SSMP adopting households whereas the higher price was the reason for 78.3 percent of the adopters (Table 7).

Table 7: Reasons for adopting sustainable soil management practices

Reasons for adoption of SSM Practices	Frequency	Percent
For sustainable production	59	98.3
For healthy soil and environment	56	93.3
Reduced side effects on health	32	53.3
Due to external support training, subsidy, etc	59	98.3
Due to minimization of cost	48	80.0
For higher yield	60	100
For higher price	47	78.3

(Source: Field Survey, 2015)

Reasons for non-adoption of SSM practices

Several reasons can be there for the non-adoption of SSM practices. All the respondents expressed lack of trainings and external support as the major reason for SSM non-adoption followed by increased workload on women and lack of labors due to migration of 5 percent and 1.7 percent respondents respectively (Table 8).

Table 8: Reasons for SSM practices non-adoption

Reasons for SSM practices non-adoption	Frequency	Percent
Increased workload on women	3	5.0
Lack of labor due to migration	1	1.7
Lack of trainings and external support	60	100

(Source: Field Survey, 2015)

Impact of SSM practices on chemical fertilizers and pesticides use

Study showed that use of chemical fertilizers was found decreased by majority of adopters (71.7 percent) and increased for 15 percent of adopters. For only 13 percent adopters it remained same after adoption of SSM practices. Whereas use of chemical pesticides was decreased by 73.3 percent for adopters it only increased by 10.0 percent and remained same for 16.7 percent after adoption of SSM practice.

SWOT[5] Analysis of SSM practices

Sustainable soil management (SSM) practices help to benefit farmers by reducing the cost of cultivation, increasing net return per unit area and also by reducing the harmful effects of over/misuse of chemical fertilizers and pesticides. In the long run excessive application of chemical fertilizers and pesticides with the population increment and initiation of commercial vegetable cultivation is causing the partial desertification in many pocket areas of agriculture (Awasthi, 2003). Manandhar (2004) suggested there is an urgent need for increasing the production and productivity, commercialization and competitiveness using the resource in sustainable manner. Thus, this research study was conducted to analyze the impact and economic significance of SSM practices in people's livelihoods. The strength, weakness, opportunities and threat of SSM practices from production and marketing perspective are presented in Table 9.

Factors affecting the level of SSM practices adoption using Probit model

Probit regression model focused on the 120 sampled farmers adopting sustainable soil management practices. Probit model was found to be correctly classified by 95.83 percent. For the interpretation of the model, marginal effects were driven from the regression coefficients (Table 10).

[5] Strength, Weakness, Opportunities and Threats

Table 9: SWOT analysis of SSM practices

Themes	Strengths	Weaknesses
Vegetable production	➢ Higher yield ➢ Sustainable production and source of income for longer period. ➢ Trainings availability and capacity increased. ➢ Increased soil fertility and crop productivity.	➢ Unable to produce vegetables as per efforts due to the lack of other resources like irrigation. ➢ Occurrence of insect/pests and disease.
Vegetable marketing	➢ Easy access to transportation and vehicles for marketing	➢ Lack of storage facilities. ➢ Stalls for loading and unloading of the products unavailability at market. ➢ Perishable and delicate nature of the vegetable products causing damage during transportation.
Local policy framework	➢ Political support to the program and support from every facet of the community. ➢ 15 percent budget allocated for the members of SSMP through AFEC[6].	➢ Budget leakage problems as there is no direct access of budget by the people.
GESI[7] aspects	➢ Strong and more women participation/involvement in the program. ➢ Ethnic groups and minority groups also actively and highly involved in the adoption.	➢ Workload on women. ➢ Difficulty in inclusion of women and socially backwarded community as it is difficult to convince them.
Themes	Opportunities	Threats
Vegetable production	➢ Upliftment of the living standard of the people. ➢ Livelihoods promotion of the community. ➢ Quality and nutrition awareness raised in the community.	➢ More supply of the vegetables than demand in a small market. ➢ Quantity focused by the farmers than the quality which possesses question for the sustainability of the practices.

[6] Agriculture, Forest, Environment Committee at local level

[7] Gender Equity and Social Inclusion

	➢ Good health and healthy society.	
Vegetable marketing	➢ Products are also transported outside village and even outside the district.	➢ Price fluctuation. ➢ Collection centers, storage and stalls lacking.
Local policy framework	➢ 15percent Budget allocated in the program through AFEC. ➢ Agriculture sector is focused at the village and district level.	➢ All the groups and people cannot be included and some may feel being isolated.
GESI aspects	➢ Women empowerment. ➢ Ethnic groups have raised awareness. ➢ Discrimination in the community is reduced.	➢ DAGs8 can be isolated and left behind as compared to other communities due to illiteracy and their laggardness.

(Source: Field Survey, FGDs and KII, 2015)

Eleven variables namely age, gender, ethnicity, education of household headed, number of educated family members, number of economically active household members, out-migration, farm size and membership of other farming groups and organizations as well as farm income were applied to gauge the farmers' adoption behavior in SSM practices. Out of them, four variables were statistically significant for the level of adoption, they were; Type of family, education of household head, trainings received by household members and log farm income (i.e natural log transfer of farm income). More the family being nuclear, higher would be the probability of adoption level. The study revealed that, type of family was positively significant. Keeping other factors constant, if family is nuclear type, probability of adoption would increase by 76 percent. This might be due to the technology replacing the labour force in the agricultural activities. Although Hofferth (2003) reported that higher size of the household reduces the labour constraints and influence the adoption of new technology positively but on other hand technology replaces the labour force and increases the resource use efficiency. Thus nuclear family has less labour force and is more in need of technology than joint family with sufficient labour supply.

Higher education level of household head provides good ability to analyze and respond to new information much faster than their counterparts with lower education (Alam, 1965). Higher educated household head is expected to be more efficient and adopt new technologies in a shorter period of time than lesser educated one. The result showed that there is a negative relationship between status of education of household head and

[8] Disadvantage Groups

adoption of SSM practices. An increase in the level of the education lowers down the probability of technology being adopted. One year increase in education level of household head decreases the level of adoption by 9 per cent. This might be due to the fact that higher the level of education by household head, more is the chance of him/her being involved in other occupations like services, business etc. In our society farming is mainly done by the uneducated people traditionally, that is the old school thought which is still prevailing in the communities.

Contact with agriculture extension officers provide different information and increases the access of farmers to trainings which impacts farmer's capacity and they are expected to adopt new tools and technologies that suits them best. Trainings received (dummy) was positively significant to the adoption of SSM practices. Farmers receiving formal or informal training from either governmental or non-governmental organizations, the probability of adoption would increase by 60 percent. This can be credited to the improvement in skills, knowledge, awareness and realizing positive benefits from the adoption due to trainings. Shinghi, Fliegel, & Kivlin (1973) reported positive relationship between social participation or trainings and adoption behaviour of farmers. Training helps to emphasize the message and improve the accuracy of technology packages through adoption (Table 10).

From the regression of the natural log transfer of farm income (i.e. log farm income), it was found that five independent variables were statistically significant for the farm income namely adoption, gender, family type, education level of household head and farm size. The regression model had good explanatory power at 1 percent level (Table 11). Farm income and adoption of technologies were found positively correlated. Study revealed that higher the adoption of technology higher was the farm income in the households. Result showed that if farmer adopts SSM practices at farm level, the farm income would be increased by 198 percent as compared to non-adopter which was found significantly significant at 1 percent level. This result was supported by Shinghi, Fliegel, & Kivlin (1973) who reported the positive correlation between adoption and farm income.

Similarly Gender and farm size was found to be positively correlated with the farm income. Result also revealed that household head being male increases the farm income by 36 percent and 1 unit increase in farm size increases the farm income by 1 percent.

Result can be supported as household head being male generally increases the farm income which might be due to the fact that the male are involved in the heavy works in farm thus more work leads to more income. Alam (1965) stated the positive relationship between the household head being male and the farm income in Indian community.

Table 10: Factors influencing determinate of SSM practices adoption by farmers using Probit model

Variable	Coefficient	Std. Error	Z	P>|Z|	dy/dx
Age (in Year)	-0.0044	0.04	-0.11	0.91	-0.00069
Gender (Male=1)	0.22	0.81	0.27	0.78	0.03
Family (Nuclear type=1)	3.24*	1.97	1.65	0.09	0.76*
Ethnicity (Higher caste=1)[9]	-0.10	1.51	-0.07	0.94	-0.01
Education (Year of schooling)	-0.57**	0.24	-2.33	0.02	-0.09**
Educated (No. of educated members in household)	0.28	0.28	0.85	0.39	0.04
Economically active HH member	-0.22	0.38	-0.58	0.56	-0.03
Migration (Yes=1)	-0.47	0.89	-0.53	0.59	-0.06
Farm size (in ha)	0.01	0.05	0.26	0.79	0.0021
Trainings received (Yes=1)	2.55**	1.22	2.09	0.03	0.60**
Membership (Yes=1)	0.32	1.33	0.24	0.80	0.04
Number of observations			120		
LR chi2(11)			145.99		
Pseudo R^2 value			0.8776		
Log likelihood			-10.18		
Correctly classified model			95.83%		
Area under ROC curve			0.9964		

Notes: ***, ** and * indicate significant difference at 1%, 5% and 10% levels, respectively. dy/dx denotes marginal effects after Probit

Higher educated household head is expected to be more efficient and adopt new technologies in a shorter period of time than lesser educated one. The result showed that there is a significant positive relationship between level of education of household head and farm income. An increase in the level of the education increases the farm income in the family. One year increase in education level of household head increases the farm income by 11 percent. This might be due to the fact that higher the level of education by household head more is the chance of him/her adopting new technologies. This adoption of technology increases the efficiency of the farm production and decreases the cost of cultivation or farm production which ultimately increases the profit and thus farm income. Alam (1965) stated the positive relation between education level of the progressive farmers and the farm income.

The study revealed the negative relation between family type and the farm income. It showed that more the chance of family being a nuclear one lesser is the farm income in

[9] Brahmin, Chettri and Takuri are the higher castes in Nepal.

the household. From the result it was found that a family being a nuclear decreases the farm income by 50 percent. This might be due to the availability of the more labor force in the agricultural activities. Hofferth (2003) Reported that higher size of the household reduces the labor constraints and influence the adoption of new technology positively which ultimately helps in increasing the farm income (Table 11).

Table 11: Impact of SSM practices adoption on farm income (NRs. in natural log)

Variable	Coefficient	T value	P>|Z|	Std. error
SSM Adoption (Yes=1)	1.98***	7.71	0.000	0.25
Age of the respondent (in Year)	-0.0043	-0.40	0.690	0.01
Gender (Male=1)	0.36*	1.67	0.098	0.22
Family (Nuclear type=1)	-0.50*	-1.86	0.066	0.27
Ethnicity (Higher caste=1)	0.33	1.31	0.193	0.25
Education (Year of schooling)	0.11**	2.23	0.028	0.05
Educated (No. of educated members in household)	0.0028	0.04	0.971	0.07
Economically active HH members	-0.024	-0.32	0.751	0.07
Migration (Yes=1)	0.30	1.26	0.211	0.24
Farm size (in hectare)	0.01*	1.69	0.094	0.0077
Trainings received (Yes=1)	-0.21	-0.86	0.392	0.25
Membership (Yes=1)	-0.34	-0.72	0.473	0.47
Summary Statistics:				
N				120
R-Squared value				0.537
Adjusted R-Squared value				0.485
F(12, 107) value				10.35**

Note: ***, ** and * indicate significant difference at 1%, 5% and 10% levels, respectively.

5. Conclusion

Sustainable soil management is an advantageous practice for the vegetable growing farmers which promotes sustainable agriculture and discourages inorganic farming. It helps to benefit farmers by reducing the cost of cultivation, increasing net return per unit area and also by reducing the harmful effects of over/misuse of chemical fertilizers and pesticides. SSM practices adoption has played a major role in livelihood promotion and economic upliftment of the vegetable growing farmers.

From the study it was found that lack of trainings and external support along with the lack of local resources specially irrigation problem was the major reason for non-

adoption of SSM practices. Probit model showed that, three variables were statistically significant for the level of adoption, they were; type of family, education of household head and trainings received by household members. From the regression of the farm income it was found that five independent variables were statistically significant for the farm income namely adoption, gender, family type, education level of household head and farm size. Farm income and adoption of technologies were found positively correlated. Study revealed that higher the adoption of technology higher was the farm income in the households. Result showed that if farmer adopts SSM practices at farm level, the farm income would be increased by 198 percent as compared to non-adopter which was found significantly significant at 1 percent level.

These SSM practices are easily accessible in local conditions, cost effective and help to maintain soil health and fertility as well as increase farm income. Study also revealed that adopters were found more food secured than non-adopters. It was also observed that the adopters had more access to membership in different farming groups and organizations, trainings and attended more educational meetings than non-adopters in recent times. Adopters also had more access to information and technology than non-adopters.

Realizing the potential and significance of the sustainable soil management practices and its contribution to household food security, it is necessary to promote these practices in different parts of the country.

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Role of Social Networks, Emotional Intelligence and Psychosocial characteristics in developing Entrepreneurial Intentions of Students

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Abstract

In today's world the term "Entrepreneurship" is garnering great attention as it leads to value creation and help the countries on their journey towards achieving economic prosperity. Yet, to date the research determining the combined impact of various environmental, emotional and psycho-social factors on entrepreneurial intentions is scarce. This study examines how the perception of backing and assistance received by social networks; personal as well as professional shape entrepreneurial intentions. Current study explores the mediating role of a cognitive factor that is self-efficacy and a direct relation of a psycho-social factor that is self-esteem on entrepreneurial intention. With a sample of 192 students the model was tested using multiple regression analysis. The findings reveal that social networks and emotional intelligence has a significant role in determining entrepreneurial intentions. Self-efficacy was found to mediate both the relations, while the relation between positive self-esteem and entrepreneurial intention could not be proved. The study creates useful suggestions and awareness for the academic domain as well as policy makers in this region.

Keywords: Social networks, self-efficacy, entrepreneurial intentions, and self-esteem.

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1. Introduction

In the current years, the word "Entrepreneurship" has received considerable focus of researchers and practitioners. Entrepreneurship leads to value creation and plays an important role in the economic growth (Zampetakis, Kafetsios, Bouranta, Dewett, & Moustakis, 2009). There is a significant contribution of entrepreneurship in the development process of economy, because entrepreneurs are the ones who bear risk and take advantages of the opportunities existing in the imperfect market place (Leibenstein, 1968). Though entrepreneurship has caused an upward surge in various countries, Pakistan still remains entangled in the low gears of economic success (Haque, 2011).

Knowledge and considering the factors which lead to entrepreneurial intention is important, as intentions are crucial in determining the actual behavior (Krueger, Reilly, & Carsrud, 2000). A good understanding of these predictor variables can lead to establishment of supportive policies and initiatives that could help individuals, especially university students who have greater propensity to carry out their own businesses Robinson and Sexton (1994). The researchers have over the years predicted various variables like personality, culture, social capital to have an impact on entrepreneurial intention. Social networks are defined as the connections among the various players Hoang and Antoncic (2003) and they have a significant role in understanding the entrepreneurial intent (Fernández-Pérez, Alonso-Galicia, Rodríquez-Ariza, & del Mar Fuentes-Fuentes, 2015). People with superior emotional intelligence have a firm faith on their capabilities and possess greater propensity to carry out entrepreneurial activities (Mortan, Ripoll, Carvalho, & Bernal, 2014). Self-esteem is usually referred as affective and emotional component of self and described as how individuals feel or think about their own self (Crocker & Wolfe, 2001).

There is a dearth of research on entrepreneurial attitude and entrepreneurial intentions in Pakistan. There is non-availability of scientific data in the context of Pakistan which creates problems for policy makers Ali, Topping, Tariq, and Wakefield (2011). A report on global entrepreneurship monitor stated that the report would serve as the guideline for researchers to study the impact of environmental variables and social capital that impacts entrepreneurship in Pakistan (Mian, 2010). Fernández-Pérez et al. (2015) studied the influence on entrepreneurial intention by social networks with mediator as self-efficacy. They stated that it would be a good contribution to examine the effect on entrepreneurial intentions by psycho-social factors. Mortan et al. (2014) conducted a research to determine the role of self-efficacy as the mediator in the association between emotional intelligence and entrepreneurial intention. They recommended that future study need to incorporate impact of environmental variables in determining the relation among emotional intelligence plus entrepreneurial intention in addition to that the research needs to be applied on a homogeneous sample. The framework developed for this study therefore, takes into account the directions specified by the previous researchers. This research aims to examine the direct and indirect influence of social networks and emotional intelligence on entrepreneurial intention with self-efficacy as

the mediating variable. It also aims to study the effect of self-esteem on entrepreneurial intention on a homogenous sample.

1.1. Research Objectives

1. To determine the association between entrepreneurial intention and self-esteem
2. To determine the association between entrepreneurial intention and self-efficacy
3. To determine the association between self-efficacy and emotional intelligence
    a. To determine the association between entrepreneurial intention and emotional intelligence.
    b. To determine the role of self-efficacy as the mediator in the association between emotional intelligence and entrepreneurial intention.
4. To determine the association between self-efficacy and social networks.
    a. To determine the association between entrepreneurial intention and social networks
    b. To determine the role of self-efficacy as the mediator in the association between social networks and entrepreneurial intention

1.2. Research Questions

1. Amid self-esteem and entrepreneurial intention does an association exist?
2. Amid self-efficacy and entrepreneurial intention does an association exist?
3. Amid emotional intelligence and self-efficacy is there a relation?
    a. Is there a relation between emotional intelligence and entrepreneurial intention?
    b. Is the relation amid emotional intelligence and entrepreneurial intention mediated by self-efficacy?
4. Amid social networks and self-efficacy does an association exist?
    a. Is there a relation between Social networks and entrepreneurial intention?
    b. Is relation amid social networks and entrepreneurial intentions mediated by self-efficacy?

2. Literature Review

2.1. Entrepreneurial Intention

It is described by researchers as having the disposition and temperament to commence commerce or to employ a novel dimension among the existing business (Guerrero, Rialp, & Urbano, 2008); Li, Wu, & Wu, 2008). Entrepreneurial intention is the cognitive depiction of an aim/objective that an individual is struggling to achieve. It also includes the development of an action plan that individuals seek and utilize for fulfilling their aims (Tubbs & Ekeberg, 1991). Some scientists Li et al. (2008) define it as the mental state of individuals which encourages them to form a novel business or else a novel value driver amid current establishments. If we talk about the evolution of entrepreneur intention model there are two key models that are EE model (Entrepreneurial Event Model) and the other one is TPB model (Theory of Planned

Behavior). These were proposed in eighties and nineties. The EE model was first given. Under this model business creation is taken as an event which is described by collaboration amid enterprises, abilities, administration, relative self-rule as well as risk. EE model states that there are three things which results in a personal choice for starting a new business. These include the insight of feasibility, desirability and tendency to act (Shapero & Sokol, 1982).

After nine years TPB model was proposed (Ajzen, 1991). Theory of Planned Behavior is defined with an idea that any behavior requires a definite amount of planning is required by any behavior and this can be foretold through the intention to implement such behavior. This model explains that three elements result in forming intention. These three are the one's outlook about the behavior, subjective customs i.e. perception of other folks' views of the anticipated behavior, in addition the subject's insight of behavioral control.

2.2. Self-esteem and Entrepreneurial Intention

The word self-esteem is defined in different contexts. In the simplest way, self-esteem is considered as an individual's optimistic or adverse assessment of their own self. Self-esteem is usually referred to as affective and emotional component of self and described as how individual feels or thinks about himself (Brown, 2014). Self-efficacy and Self-esteem are varying and distinct concepts (Kernis, 2003). Belief in one's ability is self-efficacy Bandura (1977) while self-esteem refers to person's judgment about his worth (Kernis, 2003). Greater self-regulation is required for individuals with higher self-esteem and the persistence to carry out tasks even after failure is greater in them (Di Paula & Campbell, 2002). High esteem persons are more oriented towards optimistic things and chances and opportunities in the environment (Heimpel, Elliot, & Wood, 2006).

Findings show that having self-esteem high is positively linked by person's decisions to carry out particular actions with determination (Baumeister, Campbell, Krueger, & Vohs, 2003). High self-esteem individuals take greater risks while individual having self-esteem low are considered risk averse (Campbell & Lavallee, 1993). Self-esteem is an element of self-confidence and it is related to entrepreneur intention and other characteristics like internal locus of control, risk and ambiguity tolerance (Koh, 1996). However, literature linking self-esteem to entrepreneurial process is still limited given the verity that it is the most considered concept (Kwan, John, & Thein, 2007).

Robinson, Stimpson, Huefner, and Hunt (1991) concluded that in comparison between entrepreneurs and non-entrepreneurs, non-entrepreneurs emerge as individual who carry greater self-confidence Laguna (2013) studied the entrepreneurial intention impacted by of self-efficacy and self-esteem among unemployed and found general self-efficacy has positive impact on business start-up or entrepreneurial intention. Pour, Nooriaee, and Heydari (2013) also found that entrepreneurship orientation is positively

related with high need for achievement, innovation, high self-esteem and self-actualization among university students. McKay (2001) conducted a study on women entrepreneurs and identified factors that led them to start up their own business. Through interviews study identified four motivators, being active, high self-esteem, stability and income among women entrepreneurship. Therefore it is hypothesized that:

H1: Entrepreneurial intention is positively impacted by self-esteem.

2.3. Self-efficacy and Entrepreneurial Intention

Self-efficacy (SE) is an individual's view that he can carry out successful completion of a particular task undertaken by him (Bandura, 1977). SE is also described as "personal beliefs and attitudes toward the control and management competencies needed to successfully address the targets and challenges involved in creating a new company" (Drnovšek, Wincent, & Cardon, 2010); McGee, Peterson, Mueller, & Sequeira, 2009). Researchers regard self-efficacy (SE) as a motivational construct and regard to it as the most important and significant factor in explaining the entrepreneurial intention as well as behavior (Carr & Sequeira, 2007); Liñán & Chen, 2009).

Whether I am a Hero, will be one or never can be a hero depends in complete entirety on the belief one has on oneself. Individuals with high self-efficacy exhibit proactive attitudes and give importance to self-regulation. Their life actions do not result from the circumstances of life, instead they contribute towards establishing favorable circumstances for themselves (Bandura, 1977). Self-efficacy has been propitious for researchers and extensive work of research has been carried on its significance on a broad spectrum from workplace to homes.

Previous studies show self-efficacy as important predictor of entrepreneurial intention (Lee, Wong, Der Foo, & Leung, 2011); Mortan et al., 2014). Study conducted by Chen, Greene, and Crick (1998) predicted that business students intention to become entrepreneurs by starting new business is positively influenced by self-efficacy. Therefore it is hypothesized as:

H2: Entrepreneurial intention is positively related to self-efficacy.

2.4. Emotional intelligence, Self-efficacy and Entrepreneurial intentions

Emotional intelligence is a kind of societal and individual intellect including capability to control individual's own emotions plus others thinking and feelings (Salovey & Mayer, 1990). According to Bar-On (1997) emotional intelligence is described as non-reasoning capabilities as well as abilities which help individual to cope with external environmental demands and pressures. Emotional intelligence is related with many consequences like career success Lopes, Salovey, and Straus (2003), work presentation O'Boyle, Humphrey, Pollack, Hawver, and Story (2011), job satisfaction and job commitment (Carmeli, 2003). Current studies devote huge attention towards

entrepreneurship and emotional intelligence concepts but literature on the impact of emotional intelligence on entrepreneurial intention is still inadequate. Zampetakis et al. (2009) state that emotional intelligence influence entrepreneurial behavior in two aspects; firstly through self-efficacy which means that persons having high emotional intelligence are resistant to stress. Secondly persons having high emotional intelligence are proactive in addition more creative disposition exists in them leading to entrepreneurial behavior.

Zampetakis et al. (2009) considered the relationship amid emotional intelligence, organizational support as well as entrepreneurial intention. The findings show that both variables have positive influence on entrepreneurial behavior. Emotional intelligence's direct influence on entrepreneurial behavior indicates that people possessing greater emotional intelligence have stronger control over the positive and negative aspects of their emotions, which suggests that entrepreneurial behavior is affected by individual perception of their emotional capabilities.

Emotional intelligence is considered to be positively related with self-efficacy (Mortan et al., 2014). Self-efficacy is described as conviction in one's capability to succeed in particular job and is affected by performance, achievements experience and emotional arousal (Bandura, 1977). Salvador (2008) found that some components of emotional intelligence positively influence self-efficacy. Findings show that emotional intelligence has a vital part in developing entrepreneurial self-efficacy and people possessing emotional intelligence have high opportunities be pursue entrepreneurial activities (Salvador, 2008). Mortan et al. (2014) studied the role of self-efficacy as the mediator in the relationship of emotional intelligence and entrepreneurial intention. The findings of research show that two factors of emotional intelligence have positive relation with entrepreneurial self-efficacy which in turn facilitates individuals to undertake entrepreneurial activities. Person with high emotional intelligence have a firm belief in their abilities and have better opportunities to pursue entrepreneurial activities.

H3A: Entrepreneurial self-efficacy is positively impacted by emotional intelligence and entrepreneurial intention is positively impacted by self-efficacy.

H3B: Entrepreneurial intention is positively impacted by emotional intelligence.
H3C: The association amid emotional intelligence and entrepreneurial intention is mediated by self-efficacy.

2.5. Social networks, Self-efficacy and Entrepreneurial Intentions

In decisions relating to company start up social relations plays a very significant role (Hoang & Antoncic, 2003); (Witt, 2004); (Zimmer, 1986). Social networks are described as the set of players (individuals or organizations) plus through the associations amid these players Hoang and Antoncic (2003) Social networks could offer information, guidance plus emotional provision on behalf of entrepreneurial creativities

compensating for academics' lack of administrative plus commercial abilities in addition contributing to support academics' entrepreneurial intentions (Vohora, Wright, & Lockett, 2004).

People with whom we have a pleasant relationship in our close surroundings, like families, friends and coworkers are called "personal networks". These associations are casual as well as close, founded on conviction, common morals plus shared feelings. Relations resulting from links shaped in the course of academic as well as research activities are "professional networks". This set comprises mentoring associations, those resulting from presence at forums plus seminars in addition those preserved with stakeholders in business area – potential consumers, dealers, competitors or financiers. They are formal and less affective (Fernández-Pérez et al., 2015).

Academics forming fragment of commercial set-ups have admission to business-related data, assets plus helpful references (Murray, 2004). Such relations could motivate researchers to give additional period to gain a better know how of work practices as well as abilities in private area. These advantages sequentially toughen their logic of control over their capability to attain accomplishment like entrepreneurs (Ozgen & Baron, 2007). Mentoring is mainly cooperative in promoting the transmission of information and in allowing academics to improve capabilities valued in their actions of entrepreneurial (St-Jean & Audet, 2012). Various features of affective knowledge, counting self-efficacy can be improved by mentoring (St-Jean & Audet, 2012).

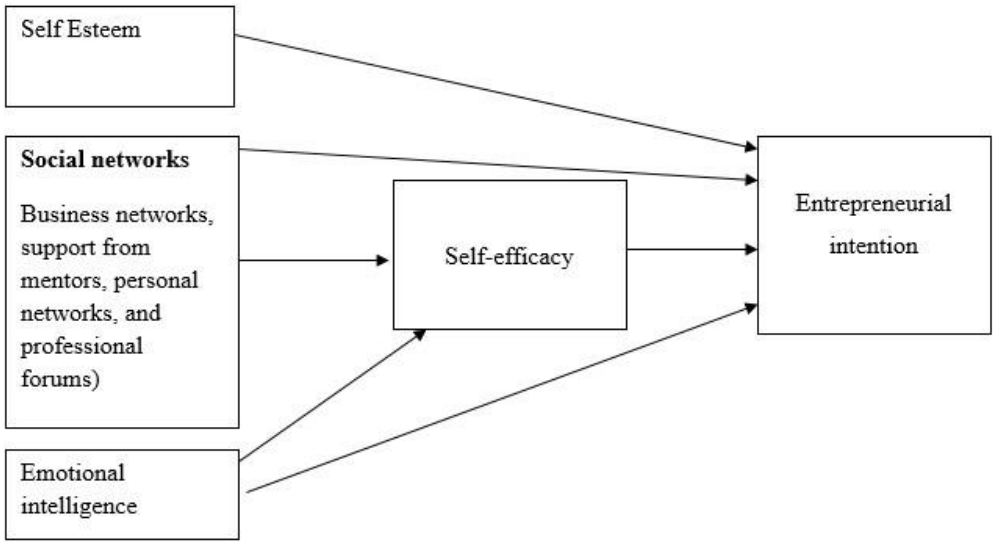
Self-efficacy can be improved over experiences delivered using social models, plus in personal networks they are also found (Bandura, 1977). Entrepreneurs feel extra assured in their capability to commence business if they consider means, information and abilities required to commence a business is offered by their personal networks (Carr & Sequeira, 2007). Sessions, conferences and workshops are observed as official networks of present improvements and facts for researchers who desire to increase further understanding in their area (Ozgen & Baron, 2007). The presence of a shared vocabulary amongst associates, along with common attitudes as well as the admission to latent resources, might improve the perceived control level in a fresh entrepreneurial procedure (De Carolis, Litzky, & Eddleston, 2009). So the existences of positive influence on self-efficacy exists through role models (Johannisson, 1991).Therefore, it is hypothesized that:

H4A: Self efficacy is positively impacted by social networks and entrepreneurial intention is positively impacted by self-efficacy

H4B: Entrepreneurial intention is positively impacted by social networks

H4C: The association amid Social networks and entrepreneurial intention is mediated by self-efficacy

Theoretical Framework



3. Methodology

3.1. Study Design

The main aim of this cross sectional research is to conclude direct influence of social networks, emotional intelligence, as well as self-esteem on entrepreneurial intention. The research explains the relation amid social networks, emotional intelligence as well as entrepreneurial intentions mediated through self-efficacy. Present quantitative research is of causal nature. This research incorporates survey method, data is collected using questionnaires.

3.2. Population

The target population consists of group of participants who have the information that is required to the researcher (Ellison, Farrant, & Barwick, 2009). The population of this study constitutes students of management and business studies in Pakistan.

3.3. Sample

Convenience non probability sampling method was adopted. In addition students of Rawalpindi and Islamabad having business and management majors constitute the sampling frame. Convenience non probability technique is considered low cost and efficient for conducting researches in social sciences (Ellison et al., 2009). A total of 220 questionnaires were floated out of which 192 were usable.

3.4. Research Instrument and measures

Questionnaires were used for the purpose of data collection. Questionnaires are considered very effective for the data collection process as they facilitate in determining

the exact relations between variables (Sekaran, 2006). The instrument was separated into 2 divisions. The first division comprised of demographic queries and the second division comprised of the study variables. Lickert scale with five points was used to measure responses of all variable except the demographic variables. Scale of emotional intelligence was taken from Schutte et al. (1998) and comprised of 33 questions. The scale for professional networks, personal networks and self-efficacy was adopted from Ozgen and Baron (2007); Sequeira, Mueller, and McGee (2007) and comprised of 10, 3 & 10 questions respectively. The scale for entrepreneurial intention was adopted from Prodan and Drnovšek et al. (2010) and Liñán and Chen (2009) and comprised of 4 questions. The 10 item scale for self-esteem was adopted from (Rosenberg, 1965).

3.5. Pilot Testing

Pilot testing was conducted to determine the reliability of instrument.

3.6. Data Collection

220 questionnaires were distributed. 150 were self-administered while the remaining were sent through email. The response rate was 87 %.The questionnaire was measured on 5 point Likert scale and comprised of closed ended questions. Data was collected from the students with business and management majors, and studying in the universities of Rawalpindi and Islamabad.

3.7. Data Analysis Methods

For the analysis purpose statistical package for social sciences was utilized. Demographic as well as Reliability analysis were conducted. The data was also checked for issues of Normality. Correlation was directed to conclude the strength of relationships. Regression analysis was led for determining the validity/acceptance of proposed relations.

4. Results and Analysis

For data analysis various statistical tests were run. Statistical package for social sciences (SPSS) was used for data analysis. The test includes descriptive reliability test, normality test, Pearson's correlation test, regression test and mediation tests.

To define the internal consistency concerning the variables reliability test is performed. According to Gerber and Finn (2005), the value of Cronbach alpha nearer to 1 is considered better for research. Reliability of every element in questionnaire is endorsed by means of Cronbach's alpha value. The dependent variable that is 'Entrepreneurial Intention being with four (04) items has 0.846 (84.6%) reliability value. Social networks is the first independent variable with Cronbach Alpha 0.847 (84%). Emotional Intelligence has highest reliability of 89.7%. Self-efficacy and self-esteem have reliability equal to 84.3% and 67.3%. Finally, the overall reliability of the instrument consisting of 70 items is 93.4%.

4.1. Reliability of instrument

Table 4.1.

	Variable	No. of Items	A
1	Social Networks (Personal, business, mentors and professional forums)	13	0.847
2	Self-Efficacy (ESE)	10	0.843
3	Emotional Intelligence (EI)	33	0.897
4	Self Esteem (ES)	10	0.673
5	Entrepreneurial Intention	4	0.846
	Overall Scale	70	0.934

4.2. Normality of instrument

Table 4.2.

Statistics		
Variables	Skewness	Kurtosis
Social Networks	-.767	.725
Self-Efficacy	-.821	1.237
Emotional Intelligence	-1.101	1.958
Self Esteem	-.021	.926
Entrepreneurial Intention	-1.077	1.270

The values of Skewness represent the asymmetry in the data while the kurtosis represents the values for the flat and peak points of the data in comparison to the normal distribution. According to Thode (2002) the skewness and kurtosis values that fall in the standard range of -2 to +2 are considered acceptable for research. The data for current study is considered normal as the skewness values of all variables fall in the acceptable range of -1 to +1. All values of kurtosis for all variables do lie between 0-2. Hence data is normal.

4.3. Descriptive

The demographic profile and information is presented in the following table. The table displays frequency, percentages (%) and demographics statistics of respondents.

Table 4.3 Demographics Profile

Questions	Options	Frequency	Percent	Mean	Standard Deviation
Gender	Male	101	52.6	1.474	0.500
	Female	91	47.4		
Age	Less than 20	15	7.8	2.328	.893
	20-25	131	68.2		
	26-30	22	11.5		
	31-35	16	8.3		
	Above 35	8	4.2		
Status	Student	143	74.5	1.328	0.606
	Working	35	18.2		
	Other	14	7.3		

In table it is shown out of total 52.6 percent respondents are males (101) where as 47.4 percent are female respondents. As per the results, 68.2 % of the total 192 respondents belong to the age range of 20-25. And lowest rate of response is of the respondents having age above 35 which is 4.2% of the total respondents. About 74.5% of the respondents are students and 18.2% are working. The values of standard deviation depict the deviation of data from the mean value.

4.4. Correlation Analysis

Correlation test is applied for discovering the power or intensity of association among two variables. According to (Taylor, 1990), the correlation values of 0 to 0.3 indicate that correlation is weak; values among 0.4-0.6 specify that correlation is moderate, and 0.7-0.9 indicates correlation is strong.

Table 4.4.

	Social Networks	Emotional Intelligence	Self Esteem	Self-Efficacy	Entrepreneurial intentions
Social Network	1				
Emotional – Intelligence	.633**	1			
Self Esteem	.115	.235**	1		
Self-Efficacy	.600**	.736**	.256**	1	
Entrepreneurial intentions	.338**	.448**	.121	.491**	1

This table summarizes the value of Pearson's correlation coefficient. Social networks and Entrepreneurial intentions depict a weak positive correlation (0.338). A moderate positive correlation exists between emotional intelligence and entrepreneurial intentions. Self-esteem does not depict a significant correlation with entrepreneurial intention. Self-efficacy exhibits a moderate correlation with entrepreneurial intention. Face validity is used in order to validate the instrument by showing questionnaire to various PHD scholars in field of Management sciences.

4.5. Regression Analysis

In order to identify the proposed relation between variables multiple linear regression is used. The independent variable for present study is entrepreneurial self-esteem and dependent variable is entrepreneurial intention.

Table 4.5.

Model	B	t value	Sig.
(Constant)		9.146	.000
Self esteem	.175	1.681	.094

Dependent variable: entrepreneurial intention

The impact on the dependent variable caused by the independent variable is depicted by the value of beta. Significance value shows whether the proposed relationship holds true or not. The beta value for the relation of self-esteem is 0.175. This depicts that a single unit raise in self-esteem leads to 17.5% increase in entrepreneurial intention. The p value

for the relation is 0.094 which shows that the relation is insignificant. Hence, the hypothesis Self-esteem has positive impact on entrepreneurial intention is rejected.

Table 4.6 Model Summary

Model	R	R^2	Adjusted R^2	F value	Sig.
	.121	.015	.009	2.825	.094

Predictors constant: Self-esteem

R square explains thepercentage of change in dependent variable due to independent variable.Value of R-squared lies between 0 and 100%. If r square value is 0 percent it indicates no variability of data around the means (Frost, 2013). R-Square is 0.015 and the F-value is 2.825. The significance value of 0.094 show that the overall model is insignificant.

4.6. Mediation Analysis

To check the mediated impact of self-efficacy on the relation between emotional intelligence and entrepreneurial intention, mediation analysis is conducted. The following 4 steps are necessary to determine the mediation effect (R. M. Baron & Kenny, 1986).

1-There should be significant relationship between emotional intelligence (independent variable) and Self-efficacy (mediator).
2-There should be significant relationship between emotional intelligence (independent variable) and entrepreneurial intention (dependent variable).
3- Self efficacy (mediator) should have significant effect on dependent variable (entrepreneurial intention).
4-The effect of the emotional intelligence on entrepreneurial intention should decrease either significantly (partial mediation) or insignificantly (full mediation), after self-efficacy (mediator) is introduced.

Table shows steps for mediation analysis. Step 1 shows the association between emotional intelligence and self-efficacy. Significance value shows whether the proposed relationship holds true or not. It shows that self-efficacy is positively impacted by emotional intelligence. Beta value indicates the change in dependent variable by independent. In above Beta value is .969 which means that one unit change in emotional intelligence will cause 96% change in self-efficacy. The p-value for relationship is 0.000 which means that the relationship is significant at 95% confidence interval as $p<0.005$. It also proves purposed hypothesis that *Emotional intelligence positively influences entrepreneurial self-efficacy.*

Table 4.7 Mediation Analysis (Emotional intelligence, self-efficacy and entrepreneurial intention)

	Beta	T value	Sig.
Step1 (DV=Self Efficacy)			
Emotional intelligence	.969	14.973	.000
Step2 (DV=entrepreneurial intention)			
Emotional intelligence	.779	6.900	.000
Step 3 (DV= entrepreneurial intention)			
Self-Efficacy	.649	7.771	.000
Step 4 (DV= entrepreneurial intention)			
Emotional intelligence	.328	2.034	.043
Self-efficacy	.466	3.810	.000

Step 1.dependent variable: Self Efficacy
Step 2, 3 and 4 dependent variable : entrepreneurial intention

In step 2, the relationship between Emotional intelligence and entrepreneurial intention is depicted. The p value of relationship is .000(<0.05) which means that the relationship is significant at 95% confidence interval. The beta value is .779 which means that one unit change in emotional intelligence will cause 78% increase in entrepreneurial intention. It satisfies our second condition of mediation and also proposed hypothesis that *Emotional intelligence positively influences entrepreneurial intention.*

Step 3 highlights the relation existing between self-efficacy and entrepreneurial intent. The p value is 0.00(<0.05). This depicts that at 95% confidence interval, the relation is significant. The beta value is .649 which shows that a unit change in self efficacy can bring 64% variation in entrepreneurial intention. It satisfies our third condition for mediation and also proposed hypothesis that *Self efficacy has positive impact on entrepreneurial intention.*

Step 4 shows last step for mediation analysis. When self-efficacy is regressed upon entrepreneurial intention the impact of emotional intelligence on entrepreneurial intention is reduced. The p value of 0.043 indicates the existence of partial mediation at 95% confidence interval. It satisfies the last condition for mediation analysis and also prove proposed hypothesis that *self-efficacy acts as the mediator in the relation between emotional intelligence and entrepreneurial intention.*

Table 4.8 Model summary (Emotional intelligence, self-efficacy and entrepreneurial intention)

	R	R^2	Adjusted R^2	F value	Sig.
Step1 (DV=Self Efficacy)					
Emotional intelligence	.736	.541	.539	224.40	.000
Step2(DV=entrepreneurial intention)					
Emotional intelligence	.448	.200	.196	47.615	.000
Step 3 (DV= entrepreneurial intention)					
Self-Efficacy	.491	.241	.237	60.386	.000
Step 4 (DV= entrepreneurial intention)					
Emotional intelligence Self-efficacy	.507(b)	.256	.250	32.760	.000

Step 1.dependent variable: Self Efficacy
Step 2, 3 and 4 dependent variable : entrepreneurial intention

The variation in the dependent variable brought about by the independent variable is explained by the value of R square. Value of R-squared lie in between 0 and 100%. If r square value is 0 per cent it indicates no variability of data around the means. While the opposite holds true if the value of R square is 100 per cent (Frost, 2013). For step 1 value of R square is .541 which means that one unit change in emotional intelligence will cause 54% change in self-efficacy. The value of F is also significant (224.40). For Step 2 value of R Square (.200) indicates that 20% variation will occur in entrepreneurial intention if emotional intelligence is varied by a single unit. The value of F is 47.615 and significant at 95% confidence interval. In step 3 the R square value is .241 which means that one unit change in self-efficacy will cause 24% change in

entrepreneurial intention. In step 4 R square value is .256 which shows that dependent variables explain 25 percent variation in the dependent variable (entrepreneurial intention).The F value tells about the overall significance of the regression model. The significant F value indicates the overall significance of the model.

Table 4.9 Table Mediation Analysis of Social networks, self-efficacy and entrepreneurial intention

	Beta	T value	Sig.
Step1 (DV=Self Efficacy)			
Social Networks	.630	10.338	.000
Step2 (DV=entrepreneurial intention)			
Social Networks	.469	4.956	.000
Step 3 (DV= entrepreneurial intention)			
Self-Efficacy	.649	7.771	.000
Step 4 (DV= entrepreneurial intention)			
Social Networks	.095	.864	.389
Self-efficacy	.595	5.694	.000

Step 1.dependent variable: Self Efficacy
Step 2, 3 and 4 dependent variable : entrepreneurial intention

Table 4.8 shows steps for mediation analysis *Social networks, self-efficacy and entrepreneurial intention.* Step 1 shows the relationship between social networks (IV) and Self-efficacy (DV). It shows that social networks has positive effect on self-efficacy. The p-value for relationship is 0.000 which means that the relationship is significant at 95% confidence interval as $p<0.005$. Beta value is .630 which means that one unit change in social networks will cause 63% change in self-efficacy. It satisfies our first condition of mediation analysis and also our proposed hypothesis that "*Social networks (Business networks, support from mentors, personal networks, and professional forums) have a positive impact on self-efficacy".*

The association between social networks and entrepreneurial intention is depicted in Step 2. The p value for relationship is 0.000 which means that the relationship is significant at 95% confidence interval as $p<0.005$. Beta value is .469 which means that one unit change in social networks will cause 46.9% change in entrepreneurial intention. It satisfies our second condition for mediation and also prove hypothesis that *Social networks (personal networks, business networks, professional forums and support from mentors) have a positive impact on entrepreneurial intention.*

Step 3 shows relationship between two variables, self-efficacy and entrepreneurial intention which is also significant. Step 4 shows final step of mediation. The relation

between self-efficacy and entrepreneurial intention becomes insignificant when self-efficacy (mediator) is regressed upon dependent variable, indicating that self-efficacy fully mediates the relationship between social networks and entrepreneurial intentions. It proves hypothesis that "*Self-Efficacy acts as the mediator in the relation between Social networks (comprising of personal networks, business networks, professional forums and support from mentors) and entrepreneurial intention".*

Table 4.10 Model Summary

Model	R	R^2	Adjusted R^2	F value	Sig.
Step1 (DV=Self Efficacy)					
Social Networks	.600	.360	.357	106.876	.000
Step2(DV=entrepreneurial intention)					
Social Networks	.338	.114	.110	24.564	.000
Step 3 (DV= entrepreneurial intention)					
Self-Efficacy	.491	.241	.237	60.386	.000
Step 4 (DV= entrepreneurial intention)					
Social Networks	.494(b)	.244	.236	30.526	.000
Self-efficacy					

Step 1.dependent variable: Self Efficacy

Step 2, 3 and 4 dependent variable : entrepreneurial intention

Table shows the statistical values of R, R square, adjusted R square and F. For step 1 value of R square is .360 which means that one unit change in social networks will cause 36% change in self-efficacy. The value of F is also significant (106.876). For Step 2, R square is .114; indicating 11% variation in entrepreneurial intention can be caused by a unit change in social networks. The value of F is 24.564 and significant at 95% confidence interval. In step 3 the R square value is .241 which means that one unit change in self-efficacy can create 24% change in entrepreneurial intention. In step 4 R square value is .244 which shows that dependent variable self-efficacy and social networks explain 24.4 percent variation in the independent variable.The F value tells

about the overall significance of the regression model. The F value is also significant which means that overall the model is significant.

Table 4.11 Results Summary

Hypothesis	Sig.	Results
H1: Entrepreneurial intention is positively impacted by self-esteem.	.094	Rejected
H2: Entrepreneurial intention is positively related to self-efficacy	.000	Supported
H3A: Entrepreneurial self-efficacy is positively impacted by emotional intelligence and entrepreneurial intention is positively impacted by self-efficacy	.000	Supported
H3B: Entrepreneurial intention is positively impacted by emotional intelligence	.000	Supported
H3C: The association amid emotional intelligence and entrepreneurial intention is mediated by self-efficacy.	0.043	Supported (Partial mediation)
H4A: Self efficacy is positively impacted by social networks and entrepreneurial intention is positively impacted by self-efficacy	.000	Supported
H4B: Entrepreneurial intention is positively impacted by social networks	.000	Supported
H4C: The association amid Social networks and entrepreneurial intention is mediated by self-efficacy.	.389	Supported (Full Mediation)

5. Discussion and Conclusion

5.1. Discussion

Hypothesis H1 stating Self-esteem has positive impact on entrepreneurial intention is rejected. This result was indeed surprising. However, literature linking self-esteem to entrepreneurial process is still limited given the verity that is self-esteem is greatest considered notion (Kwan et al., 2007).

Hypothesis H2 stating the association amid self-efficacy as well as entrepreneurial intention has been proved and is supported by previous studies. Researches relating to entrepreneurial behavior have presented that views relating to self-efficacy might be

applicable in illuminating and deploying the abilities essential to prosper in every phases of entrepreneurship (Drnovšek et al., 2010); (McGee et al., 2009). People having advanced ranks among self-efficacy have more confidence in their competences; in addition they have a stronger certainty about the achievement of a specific job and believe that their duties rest on their struggle and ability. Thus, there exists a strong association among self-efficacy plus one's performance (Bandura, 1977).

Hypothesis H3A stating entrepreneurial self-efficacy is positively impacted by emotional intelligence and entrepreneurial intention is positively impacted by self-efficacy is accepted. Prior studies found that some components of emotional intelligence positively influence self-efficacy (Salvador, 2008). Previous findings show that emotional intelligence plays a main part in evolving entrepreneurial self-efficacy. Moreover, people having high emotional intelligence have high opportunities to pursue entrepreneurial activities (Salvador, 2008). Hypothesis H3B stating emotional intelligence has positive impact on entrepreneurial intention is also accepted. Previous studies examined the connection between emotional intelligence, organizational support and entrepreneurial intention. The findings show that both variables have positive influence towards entrepreneurial behavior. The direct influence towards entrepreneurial behavior by emotional intelligence indicates that individuals with relatively high emotional intelligence have control over their positive and negative emotions suggesting that entrepreneurial behavior is affected by individual perception of their emotional capabilities (Zampetakis et al., 2009).

Hypothesis H3C stating the association amid emotional intelligence and entrepreneurial intention is mediated by self-efficacy is proved. Past researches studying emotional intelligence, as well as entrepreneurial intention connection mediated by self-efficacy also supports the result of this study. Research finds the existence of positive relation between emotional intelligence and entrepreneurial self-efficacy which in turn facilitates individuals to undertake entrepreneurial activities. Person with high emotional intelligence have a firm belief in their abilities and have better opportunities to pursue entrepreneurial activities (Mortan et al., 2014).

Hypothesis H4A stating self-efficacy is positively impacted by social networks and entrepreneurial intention is positively impacted by self-efficacy is proved and found support in the work of other researchers. For instance, researchers who usually cooperate with companies are more familiar in identifying the profitable openings ascending from their own surveys and also expected to stand up to patent requests (Bercovitz & Feldman, 2008); (Oliver, 2004). Mentoring also offers academics with remarkable funding in commerce administration, psychological support (Nandram, 2003). In psychological phase, assistances stated relate towards inspiration, confidences as well as gaining criticism. Various features of affective knowledge, including self-efficacy can be improved by mentoring (St-Jean & Audet, 2012). The discipline and control in fresh entrepreneurial procedure might be improved by the presence of a

communal terminology among associates, together with common approaches and abilities and the admission to prospective resources (De Carolis et al., 2009). In this reverence, self-efficacy might be progressively influenced by role models (Johannisson (1991). Coworkers play a significant part in aiding them to increase knowledge as well as consciousness of abilities. In all-purpose, individuals are fascinated by others processing skills and competences which is desired by them Byrne (1971) by observing individuals comparable to our own selves who have flourished in achieving the targets and jobs they intended to, strengthens our confidence that we can prosper in a similar manner (Carr & Sequeira, 2007); (De Carolis et al., 2009).

Hypothesis H4B stating entrepreneurial intention is positively impacted by social networks is proved. Social networks establish a vital device for retrieving the means desirable to start a commercial start-up (Davidsson & Honig, 2003); Mosey & Wright, 2007). Social networks act as the profit source for academic entrepreneurs as they can used in gaining material information as well as funding to commercialize the outcomes of their investigation, an aspect of abundant worth to frequently not market or business-oriented persons (Mustar et al., 2006); (Vohora et al., 2004).

Hypothesis H4C the association amid social networks and entrepreneurial intention is mediated by self-efficacy is also proved. The notable impact of self-efficacy‘s positive mediator influences on AEI focus the importance of the intellectual viewpoint in entrepreneurial intentions (R. A. Baron, 2004). Self-Efficacy emulate persons’ exclusive life know-hows and one consequence of this exclusivity is that particular folks, however not others, are knowledgeably ready for commencing an innovative undertaking (Wirtz, 2011).

5.2. Conclusion

Substantial attention is given to the word “Entrepreneurship” in recent years. Entrepreneurship has emerged as the main stream topic of research because of its role in the economic development of countries. Developing nations like Pakistan need to conduct much research on this topic as it can help the country in gaining economic success. A good understanding of the factors that result in entrepreneurial behavior can lead to the establishment of supportive policies and initiatives that could help the underdeveloped and developing nations in their economic success.

This research determines the impact of social networks as well as emotional intelligence on entrepreneurial intentions through self-efficacy. It also determined the relation amid self-esteem and entrepreneurial intent. The research found that self-efficacy mediates the entrepreneurial intent and social networks association. It was also found to mediate the association between entrepreneurial intent and emotional intelligence. The research found no backing and support for the relation among self-esteem and entrepreneurial intent.

Theoretical contribution and practical implication of the research:

Entrepreneurial process is outlined by Individual dissimilarities, and it is assured that we should be aware that to engage in entrepreneurial activities people will differ in their capabilities and abilities. The finding of this research are significant to those individuals institutions, and schools who desires the training and progress of entrepreneurs to be encouraged, it's very helpful for companies to enhance entrepreneurial behavior . Entrepreneurial process can becomes ones key success factor by training prospective entrepreneurs on emotional intelligence and giving assistance male their skills more valuable. Moreover, those people who think they lack skills to take path of entrepreneurship ESE could be used to encourage entrepreneurial actions in such folks without trying or testing their skills. Our results also show that social networks improve academics attitudes and capabilities to exploit business opportunities.

The restraint of current investigation is sample size as well as the study units (universities). Prospective research is suggested to take increased sample as well as sample units to forecast entrepreneurship intention of management and business students in Pakistan. A longitudinal study can be conducted using the model of the study. The entrepreneurial intention between male and females can be studied keeping the male-dominant culture society of Pakistan to assess if there is any significant attraction of men towards entrepreneurial activities as compared to women. Several factors affecting students' learning entrepreneurship, for example: social factor, factors involving their perception about themselves and the confidence they put in themselves, school environmental factor, emotional factor, student's personal factor, and various other factors could be considered. This study fixated on relationship plus the impact of Social Networks, Self-esteem as well as Emotional Intelligence on Entrepreneurial Intentions of Pakistani students. As only the quantitative analysis has been implemented in this research, it is recommended to adopt qualitative research process for future effort in offering more valuable material for students' learning and studying entrepreneurship and for the school curriculum to be built upon the factors described above. Further study can be carried between business & management students and non-business management students towards analyzing the willingness towards entrepreneurial careers.

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Appendix:

Questionnaire

Entrepreneurship is about people, their choices and actions in starting, taking over or running a business or their involvement in a company's strategic decision making. Please answer the following questions keeping in view your intention of starting a business. Kindly read the scale provided. It shall serve as a guide to aid you in being better able to complete the form. It will take 10-15 min to fill the questionnaire. Thank you!

Scale	Strongly Disagree	Disagree	Don't Know	Agree	Strongly Agree
	1	2	3	4	5

Social Networks (Personal Networks)
1. My friends would approve and help in my decision to create a firm.
2. My close family would approve and help in my decision to create a firm.
3. My colleagues would approve and help in my decision to create a firm.

Social networks (Business Networks)
4. My contacts or discussions with potential customers could provide me with information and support that could help or encourage me to undertake a new venture.
5. My contacts or discussions with potential suppliers could provide me with information and support that could help or encourage me to undertake a new venture.
6. My contacts or discussions with potential competitors could provide me with information and support that could help or encourage me to undertake a new venture.
7. My contacts or discussions with new partners or potential investors could provide me with information and support that could help or encourage me to undertake a new venture.

Social Networks (Mentors)
8. Having a mentor helps me recognize an opportunity.
9. Having a mentor helps me undertake a new venture.
10. Having a mentor provides me with information to undertake a new venture.

Social Networks (Professional Forums)
11. Practitioners' seminars, conferences, workshops or courses help me obtain information and skills to undertake a new venture.
12. Technical or professional publications help me to obtain information and skills, encouraging me to undertake a new venture.

13. My contacts or discussions with colleagues in forums could provide me with useful information and skills to undertake a new venture.

Self-Efficacy

14. I feel capable of recognizing when an idea is good enough to support a major business venture.
15. I feel capable of discovering new ways to improve existing products or services.
16. I feel capable of identifying new areas for potential growth and profitable market niches for a product or a service.
17. I feel capable of creating products or services that meet customer needs.
18. I feel capable of recruiting the right employees for a new venture.
19. I feel capable of negotiating and communicating with other people in the creation of a new venture.
20. I feel capable of identifying potential sources of funding to invest in a new venture.
21. I feel capable of working productively under stress, pressure and conflict.
22. I feel capable of persisting in the face of adversity.
23. I feel capable of making decisions under uncertainty and risk.

Emotional Intelligence

24. I know when to speak about my personal problems to others.
25. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them.
26. I expect that I will do well on most things I try
27. Other people find it easy to confide in me.
28. I find it hard to understand the nonverbal messages of other people.
29. Some of the major events of my life have led me to re-evaluate what is important and not important.
30. When my mood changes, I see new possibilities.
31. Emotions are some of the things that make my life worth living.
32. I am aware of my emotions as I experience them.
33. I expect good things to happen.
34. I like to share my emotions with others.
35. When I experience a positive emotion, I know how to make it last.
36. I arrange events others enjoy.
37. I seek out activities that make me happy.
38. I am aware of the nonverbal messages I send to others.
39. I present myself in a way that makes a good impression on others.
40. When I am in a positive mood, solving problems is easy for me.
41. By looking at their facial expressions, I recognize the emotions people are experiencing.
42. I know why my emotions change.
43. When I am in a positive mood, I am able to come up with new ideas.
44. I have control over my emotions.
45. I easily recognize my emotions as I experience them.

46. I motivate myself by imagining a good outcome to tasks I take on.
47. I compliment others when they have done something well.
48. I am aware of the nonverbal messages other people send.
49. When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself.
50. When I feel a change in emotions, I tend to come up with new ideas.
51. When I am faced with a challenge, I give up because I believe I will fail.
52. I know what other people are feeling just by looking at them.
53. I help other people feel better when they are down.
54. I use good moods to help myself keep trying in the face of obstacles.
55. I can tell how people are feeling by listening to the tone of their voice.
56. It is difficult for me to understand why people feel the way they do.

Self-esteem

57. I feel that I am a person of worth, on an equal basis with others.
58. I feel that I have a number of good qualities.
59. Overall I am inclined to feel that I am a failure.
60. Overall I am satisfied with myself
61. I am able to do things like most other people.
62. I feel I do not have much to be proud of.
63. I take a positive attitude towards myself.
64. I wish I could have more respect for myself.
65. There are times when I feel I am totally useless.
66. There are times when think I am no good at all.

Entrepreneurial Intention

67. If I identified possibilities for a commercial application for one or more of my inventions, I would consider becoming an entrepreneur to commercialize the opportunity.
68. I am interested in setting up my own business.
69. I have seriously thought of starting my own business.
70. There is a high probability that I will start my own business in the next five years.

GENDER: 1. Male 2. Female

AGE:

1. less than 20
2. 20-25
3. 26-30
4. 31-35
5. Above 35

STATUS: 1. Student 2. Working 3.other

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Co-Integration between Stock Prices and Exchange Rate of Selected SAARC Countries: An Empirical Study

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Abstract
This study examines the relationship between stock prices and exchange rates of three selected SAARC countries including Pakistan, India and Srilanka; using monthly data from period of January 1999 to December 2015. This study employs statistical techniques of Augmented Dickey Fuller (ADF), Phillips Perron (PP), unit root tests, and Johansen's Co-integration test to determine long run equilibrium association ship between stock price indices and exchange rates. The study finds out no Co-integration between the two variables, hence no long run association is existing between them. This finding implies that investors in these markets are having more opportunities for diversifying their portfolios. However, using Granger Causality and impulse response tests, it finds significant short-run feedback effects, as stock prices Granger cause exchange rates in case of Pakistan and unidirectional causality flows from exchange rates to stock prices in case of Srilanka but no proof of causality running in either direction in case of India. Hence the findings for Pakistan and Srilanka have crucial policy implications.

Keywords: Exchange rate, Stock price indices, Johansen Co-integration, Granger Causality, Impulse Response, SAARC countries.

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1. Introduction

The South Asian Association for Regional Co-operation (SAARC) is an economic organization comprising of eight countries that are located in the South Asia namely; Pakistan, India, Srilanka Bangladesh, Bhutan, Maldives, Afghanistan and Nepal. Development and investment carry lot of importance in these countries (Devanthran, 2009). These countries have witnessed financial market reforms of early 90s, Asian currency crisis of 1997-98, and arrival of floating exchange rate in 1970s. All these developments suggest the importance of understanding association ship between stock prices and foreign exchange rate in these regions.

Stock market, being an important component of capital market, plays an essential role in economic development of the country. When capital market is efficient, it can enhance growth of the economy by maintaining financial sector and providing good investment channels, which play very necessary role whilst engaging domestic and foreign investors (Okoli, 2012).

When there is high exchange rate, home currency depreciates and stock prices decrease, which increases risk and has negative consequences on economy. When a currency depreciates in relation to the other currencies, imports become expensive. This means our currency will buy less of foreign currency; hence it will be difficult to purchase foreign goods. One of the biggest disadvantages of high exchange rate is that it can lead to trade deficits. If exchange rates are stable it will leave a good impact on our economy and benefits businesses in a way that it reduces the risk factors for businesses as well as for investors (Ahmed, 2015).

When there is fluctuation in exchange rate; it will affect stock prices (Halttunen, Masson, & Branson, 1977). High stock prices will result in increased flow of foreign capital. Hence, fall in share prices will be leading to decrease in wealth of company which will lead country's wealth to diminish (Meese, Rogoff, & Kenneth, 1983);(Ghartey, 1998); and (Hasan, Javed, & Tariq, 2009).

The investors, before making investment, remain vigilant and look at the stock markets performance by noticing stock market index. The stock market index provides us with a yardstick to measure the individual portfolios' performance and it also helps investors with predicting future market trends. The performance of stock market can be measured by observing changes in stock market index that is also affected by various different factors which include social factors, macroeconomic, and political factors.

The rise and fall in the prices of stocks is a crucial mechanism of economies for corporations, policy makers, researchers and investors etc. This rise and fall in prices of stocks is maily determined by Demand and supply (Market forces). The stock price is fixed when supply is equal to demand (Muhammad & Suleman, 2014). When there

is change in stock market index it can create disturbance in the exchange rate and other macroeconomic factors (Issahaku & Haruna, 2013).

Despite many investigations, the association between stock prices and exchange rates has remained inconclusive theoretically as well as empirically. Traditional approach theory depicts that there is interrelationship between stock prices and exchange rate and causal relationship runs from exchange rates to stock prices Umer, Sevil, and Kamişli Moreover, the relationship between these two variables is positive. This theory proposes that depreciation in domestic currency gives room to the local firms and these firms become more competitive due to increase in their exports increase which leads to rise in stock prices. On second side, Portfolio Balance Approach suggests that there is negative association between these two variables and causal association-ship runs from stock prices to exchange rates. This theory postulates that individual investors hold local and foreign assets along with money. When there is rise in domestic stock prices then individuals rush to have local (domestic) stock and want to sell foreign stock. Obviously, due to the reason, domestic money demand increases which leads to increase in domestic currency value hence exchange rate (domestic price of foreign currency) decreases (Aydemir & Demirhan, 2009); (Granger, Huang, & Yang, 1998); (N. Muhammad, Rasheed, & Husain, 2002).

Another way through which stock prices may change exchange rates is outflow and inflow of foreign capital. Due to increase in share prices the domestic investors' wealth rises that will in turn swells money demand and hence it also increases interest rates. This increase in interest rates attracts foreign capital which ultimately appreciates the domestic currency (Tourani-Rad, Liu, & Shrestha, 2008). Besides that, a market may come under the influence of both these models/approaches. If this situation prevails in the market then feedback trend appears in the market (Granger et al., 1998).

In addition to Traditional Approach and Portfolio Approach model, another model i.e. Asset Market Approach has also been discussed in the literature (N. Muhammad et al., 2002); (Tourani-Rad et al., 2008). According to this approach, there is no linkage between exchange rates and stock prices because exchange rate and stock prices movements may be driven by various factors. Hence there may be no association ship between exchange rates and stock prices.

The present study adds to literature by analyzing practical association between exchange rates and stock prices of SAARC countries. The specific objective of this study is to empirically investigate Co-integration between Stock prices and Exchange rates of SAARC countries.

Some studies have already been conducted to investigate the relationship between exchange rates and stock prices of different economies but still there is room to investigate such relationship using Co-integration analysis in a different context.

Furthermore, existing studies provide conflicting results regarding the relationship between stock prices and exchange rates. This study is also making contribution in this field as it is one of the earlier studies in context of SAARC countries.

The findings of this study are crucial to investors for making short run decisions, as they need to keep in mind the relationship between the two variables. Since the investors are always looking for earning good returns with less risk, so this study, examining the Co-integration between stock market indices of SAARC countries and exchange rates, may be helpful to them in portfolio diversification decision. If stock market and exchange rates are found highly co-integrated with each other, then the investors will not be getting good benefit of diversifying their portfolios.

The remaining paper is organized as follows. Section 2 discusses literature review; section 3 describes data and research methodology. Results and discussion are given in section 4. Finally, section 5 draws the conclusion and recommendations.

2. Literature Review

An ample literature is available that specifically enlightens the influence of Stock prices on exchange rates. The linkage between exchange rate movements and stock market prices has been defined in context of two portfolio models of exchange rate in an economy. One is the "Flow Oriented Model" (FOM) by (Dornbusch & Fischer, 1980) and (Gavin, 1989), while the other one is "Stock-Oriented Model" (SOM) by (Frankel, 1983) and (Branson, 1983). "Flow Oriented Model" depicts that when there is change in exchange rates it causes change in stock prices with a negative correlation. Exchange rate fluctuations have impact on trade balance of an economy and also the output level of firms. Ups and downs in share price in stock market also influence aggregate demand, which in turn affects wealth. Decrease in stock prices diminishes wealth of investors and furthermore it decreases the demand for money along with currency depreciation (Gavin, 1989).

While Stock-Oriented model suggests that change in stock prices affects exchange rates with a positive correlation. In this model linkage is defined through capital accounts of country. This model states that exchange rate is equal to supply and demand for securities (including bonds and stocks). Therefore, the currency fluctuations have a significant impact on stock price fluctuations. Hence, stock price movements may influence the exchange rate movements.

Franck and Young (1972) have explored the relation between exchange rate and stock prices. They found that there is no significant integration between exchange rate and stock prices. Aggarwal (2003) has made an attempt to explore the dynamic relationship between exchange rate of Dollar and the stock prices indices of US. They report positive significant integration between variables. Later on Aggarwal (2003) results are re-confirmed by the attempts made by (Giovannini & Jorion, 1987).

Soenen and Hennigar (1988) study the association between U.S. stock market prices and exchange rates of 15 countries. The findings of this study suggest that there is negative but statistically significant association between exchange rate and stock prices.

Smyth and Nandha (2003) investigated the relationship between stock prices and exchange rates in four South Asian countries including Pakistan, India, Bangladesh, and Sri Lanka on daily data from 1995 to 2001 applying Engle-Granger and Johansen's co-integration techniques. They do not explore any long run association between the two variables for four countries. Using Granger causality test they also conclude that exchange rates Granger cause the stock prices in Sri Lanka and India but for Pakistan and Bangladesh they report no evidence of causality running in either direction.

Phylaktis and Ravazzolo (2005) examine short run and long run association-ship between exchange rates and stock prices using monthly data from 1980 to 1998 for Hong Kong, Malaysia, Indonesia, Philippines, Singapore and Thailand, using Co-integration technique and Granger causality test. They report that stock prices and exchange rates are positively related and US stock price is the causal factor which acts as a channel that links the exchange rates of five countries to their stock market indices.

Yau and Nieh (2006) use monthly data of Japan and Taiwan from 1991 to 2005 to study the relationship among Japan and Taiwan prices of stocks and Yen /NTD exchange rates. They apply Granger causality test and found bi-directional causality between the stock prices of Japan and Taiwan but no significant causal association between Yen /NTD exchange rate and the stock prices of Taiwan and Japan has been found. From the Johansen method of co-integration it is concluded that no long run association among the three variables.

Pan, Fok, and Liu (2007) use Johansen co-integration test and Granger causality to explore the linkages between exchange rates and stock prices using daily data from 1988 to 1998 for seven Asian countries namely Hong Kong, Singapore, Japan, Malaysia, Taiwan, Korea, and Thailand. They conclude that during the Asian financial crisis period, there is no long run stable association between exchange rates and stock prices. For Japan, Hong Kong, Malaysia and Thailand there exists a significant causal association between exchange rates and stock prices before the 1997. During the Asian financial crisis period they find causal relationship from exchange rates to stock prices for all countries except Malaysia.

Tourani-Rad et al. (2008) examines the relationship between nominal exchange rates and stock prices using weekly data of seven years (from January 1995 to December 2001) of the Hong Kong economy. Granger Causality and Johansen Co-integration tests are performed. The key findings of their study is that in the short run, causality runs from exchange rate to stock prices whereas, there is no long run relationship between the said variables.

Lee, Doong, and Chou (2011) explores the dynamic relationship between stock prices and exchange rates in the G-7 countries (France, Canada, Italy, Germany, Japan, USA and UK) using daily data from 1993-1996. This study uses Johansen maximum likelihood method and Engle-Granger of co- integration. Results reveal that there is no long run association between exchange rates and stock prices for all of G-7 countries.

Umoru and Asekome (2013) report positive co-integration between exchange rate and stock prices in Nigerian Stock market. The prime findings using the Granger Causality test shows bi-directional relationship between exchange rate and stock prices.

Yang, Tu, and Zeng (2014) study the relationship between exchange rates and stock returns using daily data from 1997 to 2010 for countries namely Indonesia, Malaysia, India, Japan, Korea, the Philippines, Singapore, Taiwan and Thailand. They apply Granger causality test and report that during the Asian financial crisis in all the countries, except Thailand, there are feedback relations between exchange rates and stock prices and specifically in Thailand, stock returns lead exchange rates. The causal effects are heterogeneous across different quantiles and different periods and most of the foreign exchange markets and stock markets are correlated negatively.

Given the inconclusiveness and contradictory findings of earlier studies regarding the relationship of exchange rate and stock price index this study hypothesize that:

H_0: There is no Co-integration between Stock prices index and exchange rate in SAARC Countries.

H_1: There is Co-integration between Stock prices index and exchange rate in SAARC countries.

3. Data & Methodology

3.1. Data Description

The study uses monthly data for exchange rate and stock price indices of three SAARC countries namely; Pakistan, India and Sri Lanka, from period of January 1999 to December 2015. This study is confined to only these three SAARC countries because of the unavailability of data for other SAARC countries. Stock price index data of KSE-100 index from Pakistan, S&P BSE SENSEX index for India, and for Srilanka Colombo all share prices index have been used. Data for these indices and exchange rates have been obtained from Bloomberg Terminal. The exchange rates data is defined in terms of units of domestic currency for each country and have been taken in terms of US dollars. In this study all the variables are converted into natural logarithms form.

3.2. Methodology

The study uses time series data to explore Co-integration between Exchange rate and stock market indices of three selected SAARC countries. Time Series data has property

of non-stationarity. The major issue with non-stationary data is that any statistical results we get from running the regression might be spurious. Hence, it must follow the time series properties like the variable should be stationary. A data is said to be stationary if it's mean, variance, and covariance remain the same or constant over time no matter at what point we measure them. The most famous and widely used test for the stationarity of data is unit root testing. If unit root is present; it shows the data is non-stationary (Brooks, 2008). Different tests are available to check the existence of the unit root problem both at levels and at their 1st difference, to explore order of integration. This study uses Augmented Dickey Fuller (ADF) and Phillips-Perron (PP), tests to determine the stationary nature of the series.

In order to employ the co-integration analysis, the Johansen and Juselius (1990) or the Johannisson (1991) can be used. JJ procedure could determine more than one possible co-integrating vectors. This study has employed Co-integration analysis to explore the equilibrium long run relationship between exchange rates and stock prices. If there is long run association between variables, it means the variables are co-integrated. The Johansen and Juselius (1990) procedure depends on estimates of maximum likelihood and it provides Trace Value of test statistics and maximum Eigen Value for finding or detecting number of co-integrating vectors. This approach gives framework for co-integration test in the situation of (VAR) Vector Autoregressive Approach in Johansen procedure and is explained as under:

$$x_t = A_0 + \sum_{j=1}^{k} A_j x_{t-j} + \varepsilon_t$$

Where it is supposed that A_o = (n x l) vector of constants, x t is (n x l) vector of non-stationary
1(1) variable, k = number of lags, A j = (n x n) coefficient matrix.

The causality test determines that the current or lag value of one variable causes another variable. Granger causality test is used when all the series are stationarity. In Granger causality test selection of lag length is very important. To select appropriate lag length this study uses Akaike information criteria. This test proposes the null hypothesis rejection showing, there is causal association between series against the alternative hypothesis that there is no causal association between series.

4. Results and Discussion

The findings from descriptive statistics, Augmented Dickey Fuller (ADF), Phillips-Perron (PP), unit root tests, Johansen's Co-integration analysis, Granger Causality and impulse response tests are presented and discussed in this section.

4.1. Descriptive Statistics

The descriptive statistics for variables namely, exchange rate and stock price indices of three SAARC countries are shown in Table 1. The value of kurtosis and skewness reveals the lack of symmetry in distribution. As a general rule, if value of kurtosis and skewness are between 0 and 3 correspondingly, then distribution is called as normally distributed. The value of standard deviation indicates that stock price indices of Pakistan, India and Srilanka are relatively more volatile as compared to exchange rates for these countries.

Table 1: Descriptive Statistics

	Pakistan	India	Srilanka
Stock Market Index	LKSE	LBSESENSEX	LCSE
Mean	8.8744	9.1958	7.6591
Maximum	10.4840	10.2874	8.9616
Minimum	6.8311	7.9415	6.0004
Std. Deviation	1.0271	0.7362	0.9544
Skewness	-0.4229	-0.2853	-0.2609
Kurtosis	2.0717	1.5727	1.7432
JarqueBera	13.3417	19.9833	21.3045
Probability	0.00126	0.00004	0.0004
Exchange rate			
Mean	4.2655	3.8765	4.6570
Maximum	4.6865	4.1997	4.9651
Minimum	3.9029	3.6718	4.2319
Std. Deviation	0.2389	0.1282	0.1745
Skewness	0.3335	0.9923	-0.6287
Kurtosis	1.5599	3.0915	2.9934
JarqueBera	21.3046	33.387	13.373
Probability	0.0000	0.0000	0.0012
Observations	203	203	203

4.2. Unit root test results

It is crucial to test stationarity of time series data for moving towards Co-integration test and to establish long run relationship. This study uses two different tests, Augmented Dickey–Fuller (ADF) and Phillips Perron (PP) tests to find out the stationarity of data series. The test results reveal that all the series are non-stationary at levels. However, whilst taking the 1st difference, these variables become stationary at 1%, 5% and 10% levels respectively. Thus all these stationary tests indicate that all the series are integrated in order of I (1). The findings are reported in Table 2.

Table 2: Unit Root Test Statistics for Stationarity

Country		At level			At 1st Difference			
	Variables	t-Statistic	P-value	Decision	t-Statistic	P-value	Decision	Order of Integration
	ADF Unit Root Test							
	(Null Hypothesis: Variable has a unit root)							
Pakistan	*LKSE 100*	-1.353	0.605	Unit Root	-2.876**	0.000	Stationary	I(1)
	L E.RPKR	-0.534	0.881	Unit Root	-3.463*	0.000	Stationary	I(1)
India	*LSENSEX*	-0.853	0.801	Unit Root	-2.574***	0.000	Stationary	I(1)
	L E.RIND	-0.103	0.947	Unit Root	-3.463*	0.00	Stationary	I(1)
Srilanka	*LCSE*	-0.697	0.844	Unit Root	-2.876**	0.00	Stationary	I(1)
	L E.RSRI	-1.770	0.395	Unit Root	-2.574***	0.00	Stationary	I(1)
	PP Unit Root Test							
	(Null Hypothesis: Variable has a unit root)							
Pakistan	*LKSE 100*	-1.348	0.607	Unit Root	-3.463*	0.000	Stationary	I(1)
	L E.RPKR	-0.456	0.896	Unit Root	-2.876**	0.000	Stationary	I(1)
India	*LSENSEX*	-0.918	0.781	Unit Root	-2.876**	0.000	Stationary	I(1)
	L E.RIND	-0.224	0.932	Unit Root	-2.876**	0.000	Stationary	I(1)
Srilanka	*LCSE*	-0.769	0.825	Unit Root	-2.574***	0.000	Stationary	I(1)
	L E.RSRI	-1.708	0.426	Unit Root	-3.463*	0.000	Stationary	I(1)
	Test critical values (MacKinnon, 1996)							
	1%			5%			10%	
	-3.463			-2.876			-2.574	

Note: * ** and *** represent significant at 1%, 5% & 10% significance level.

The above table shows that, the test statistic value of stock price indices and exchange rate for three countries i.e. Pakistan, India and Srilanka at levels are greater than the critical values at 1%, 5% and 10% respectively, meaning that we cannot reject the null hypothesis. So it can be concluded that all these variables are non-stationary at levels and are stationary at 1stdifference. It is clear from the graphical representation given in (Appendix.1), which shows the trend on exchange rates and stock price indices for said three countries are nonstationary while taking their first difference they become

stationary. As a general rule if p-value is less than 5% so we can reject the null hypothesis and if p-value is greater than 5% then we cannot reject the null hypothesis.

4.3. Co-integration Analysis

The stationarity analysis findings reveal that, the variables are integrated in same order, so the present study employs the (Johansen & Juselius, 1990) (JJ) maximum likelihood test. The purpose is to check whether there is co-integration or whether long run relationship exists among the variables. This technique is suitable to use if all the variables are integrated in same order.

Briefly defined, a set of factors or variables is called to be co-integrated if they are individually non-stationary and integrated in the same order, but their linear combination becomes stationary (Ibrahim, 2003).The results of Co-integration analysis test are presented below and they show that the trace test statistics rejects the null hypothesis of $r \leq 0$ against the alternative $r \geq 1$ at 5% significance level.

The first step in Co-integration analysis is suitable lag selection for variables. For selection of suitable lag length, in this study the lag value is chosen on the basis of VAR statistics by the confirmation of Akaike Information Criteria (AIC). An AIC criterion suggests selection of lag length of 4 for Pakistan. For India it implies suitable lag length of 1, whereas for Srilanka it reveals value of lag length of 1.

In order to determine the number of Co-integrating vectors, Trace statistic and Maximal Eigen value tests have been used. The results suggest evidence for the presence of no co-integrating vectors in model. The results are given below in table.3.

Table 3: Johansen and Juselius Co-integration Test:

Variables	Trace Statistic		0.05 Critical value	Prob.**	Max-Eigen Statistic		0.05 Critical value	Prob.**
Pakistan	None	4.996	15.495	0.809	None	4.768	14.265	0.771
	At most 1	0.227	3.841	0.633	At most 1	0.227	3.841	0.633
India	None	2.858	15.495	0.973	None	2.774	14.265	0.961
	At most 1	0.085	3.841	0.771	At most 1	0.085	3.841	0.771
Srilanka	None	10.015	15.495	0.279	None	7.699	14.265	0.410
	At most 1	2.316	3.841	0.128	At most 1	2.316	3.841	0.128

Trace test and Max-Eigen test indicates no Co-integrating equ. at the 0.05 percent Prob. level * denotes the rejection of hypothesis at 0.05% Prob. level.

The findings of both trace statistic and Maximum- Eigen statistic are reported in the Table 4. These both tests, Trace and Maximum Eigen-statistic identified no co-integrating equations at 5% significance level. Hence it confirms that long run equilibrium association between the variables does not exist and indicates that, null hypothesis cannot be rejected which is no co-integrating relationship at 0.05% significance level.

It is very common for estimated test statistic that it can show different results (Gan, Lee, Yong, & Zhang, 2006)**.** The inferences are based on the fact or evidence that calculated value of Trace statistic and Maximum-Eigen statistic is less than their Critical values at 5% significant level (Rahman & Mustafa, 2008). Trace statistic and maximum Eigen statistic value is less than the critical values, therefore the null hypothesis cannot be rejected and it is concluded that, there is no Co-integration or no long run equilibrium association between the variables under study. The results of this study are consistent with the findings of the previous studies conducted by, (Bahmani-Oskooee & Sohrabian, 1992); (Lee et al., 2011); (Pan et al., 2007); (Smyth & Nandha, 2003); (Tourani-Rad et al., 2008). All of these studies do not find any long run equilibrium association between the two variables.

In the absence of co-integration between variables, the Granger causality test and impulse response analysis are employed within vector auto regression (VAR) framework and Granger causality test is based on Granger et al. (1998) method. The Granger technique seeks to determine how much of a variable Y can be best defined by the past values of Y variable and by adding the lagged values of another variable X. Can it improve the explanation, whereas impulse response is used to identify the response and behavior of stock prices to the shocks in relation to exchange rate fluctuations and vice-versa? Granger causality test identifies the impact of each variable's shock on the other.

Granger causality test determines two things; one is to determine uni or bilateral causality and second one to find out that which variable cause the other variable. In Granger causality test optimal lag selection is very essential. For this purpose Akaike Information Criterion (AIC) is used. Here the optimal lag length is 2. The findings of pair wise Granger causality is given in table 4.

Table 4: Granger causality test Results

Countries	Null Hypothesis/Results	F- Statistic	Probability
Pakistan	LKSE does not Granger Cause LERPKR	5.36746	0.0054
	LERPKR does not Granger Cause LKSE	2.34358	0.0987

India	LSENSEX does not Granger Cause LERIND	1.12265	0.3275
	LERIND does not Granger Cause LSENSEX	0.95055	0.3883
Srilanka	LCSE does not Granger Cause LERSRI	1.24689	0.2897
	LERSRI does not Granger Cause LCSE	3.44612	0.0338

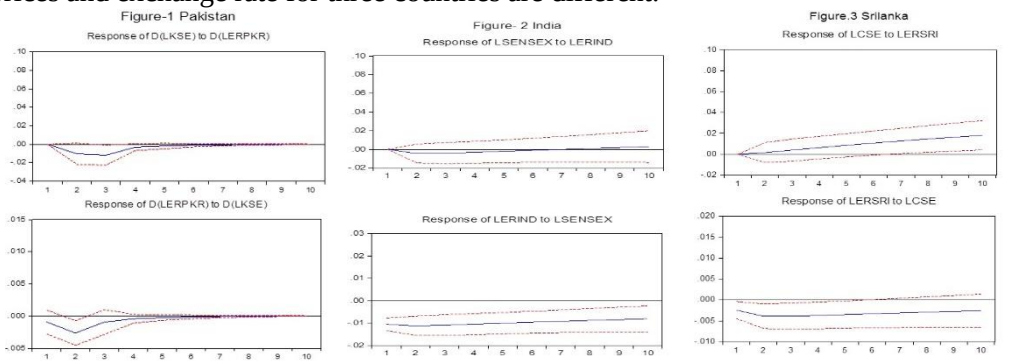
Granger causality test Results - Cont.

Table (4) shows the Granger Causality test results for three countries. Granger Causality has been applied on variables. The data are non-stationary at levels and are converted to 1st difference in order to make it stationary to test lead lag relationship. The analysis of Granger Causality reveals that there is no causality between the selected variable in case of India. In case of Pakistan analysis implies significant flow from stock prices to exchange rate and it is unidirectional. There is also significant unidirectional flow from exchange rate to stock price in case of Srilanka.

4.4. Impulse Response

The impulse response analysis indicates the response of the stock price to a one standard deviation shock to their exchange rates for three countries are presented in figure 1, 2 and 3 for Pakistan , India and Srilanka. The impulse response analysis are modelled using the generalized impulses as explained by (Pesaran & Shin, 1998).

The impulse response analysis for Pakistan, show that Stock prices respond negative and significant to the shocks inferred by the exchange rate for the few years then it becomes insignificant. For India stock market prices responds negatively for initial years and then it becomes positive and significant to the shocks induced by the exchange rate. The impulse response patterns for Srilanka indicates significant positive response to the shocks induced by the exchange rate. Impulse response shocks induced by stock prices and exchange rate for three countries are different.



5. Conclusion and Recommendation

This study aims to examine Co-integration between stock prices and exchange rates of three SAARC countries namely Pakistan, India and Srilanka. Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP), Unit root tests, Johansen's Co-integration tests, Granger Causality and impulse response tests have been employed using monthly data from period of January 1999 to December 2015. Findings of this study reveal that stock prices and exchange rates are not co-integrated and therefore no long run equilibrium association existing between them.This means that stock prices and exchange rates do not fluctuate combinely in long run.

Furthermore, even though there is no long-run associationship between stockprices and exchange rates for Pakistan, India and Srilanka, but there are notable short-run interactions between stock prices and exchange rate movements.

No co-integration denotes signal of no any forecast element between stock prices and exchange rates, hence no long run forecasts/prediction can be done on the basis of these variables. Therefore, no policy intervention can be made in order to achieve long term results. On the other hand, due to deplete of short run feedback effects between stock price and exchange rate in these countries, it is crucial that policy makers should take into consideration the short run impact of shocks to stock prices and exchange rate. The finding that stock prices Granger et al. (1998) Granger-cause exchange rates in case of Pakistan and there is uni-directional causal association that flows from exchange rate to stock price in case of Srilanka but there is no proof of causality running in either direction in case of India have important policy implications.

As current study uses bivariate approach to test relationship between stock prices and exchange rate. Multivariate approach can also be used including variables such as money supply, oil prices, interest rate and industrial production index in order to provide the new insights and useful results about this relationship.

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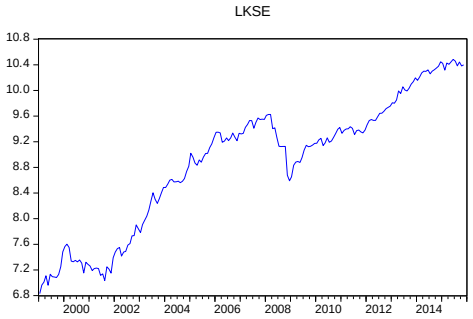
Appendix

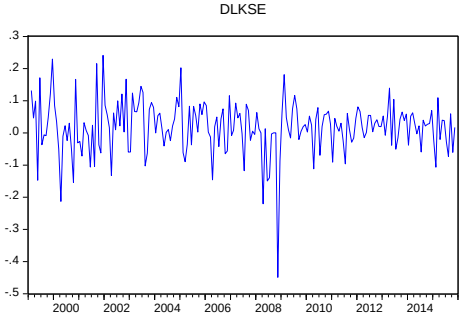
Appendix 1.

Stock Prices (KSE 100 index) PAKISTAN

Data graph set at Level



Data graph set at first difference



Stock Prices (SENSEX) INDIA

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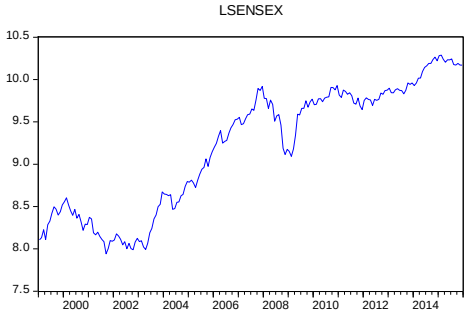

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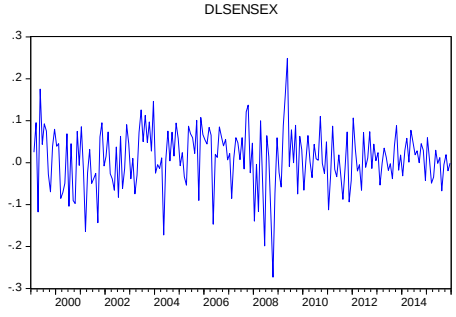
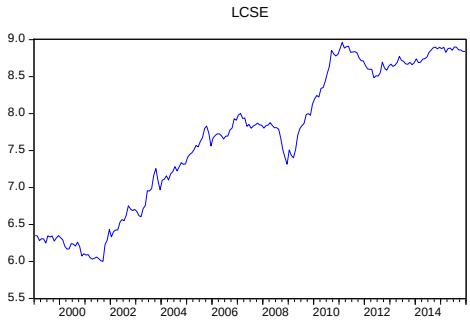


Stock Prices (CSE) SRILANKA

Data graph set at Level



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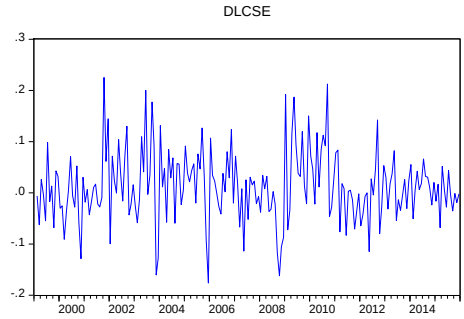
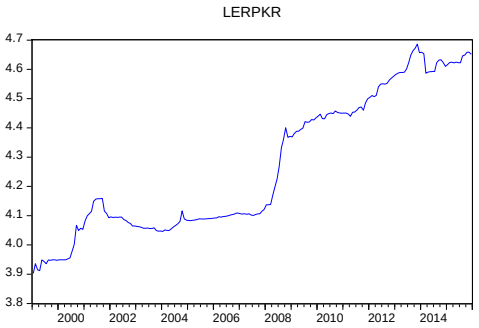


Exchange Rate (ER) PAKISTAN

Data graph set at Level



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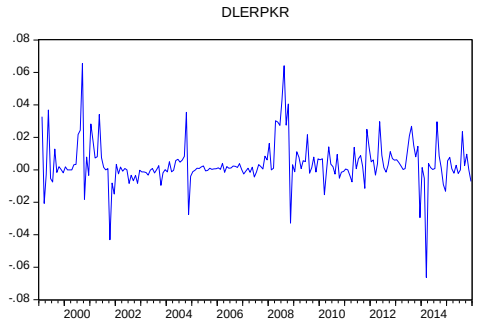

Exchange Rate (ER) INDIA

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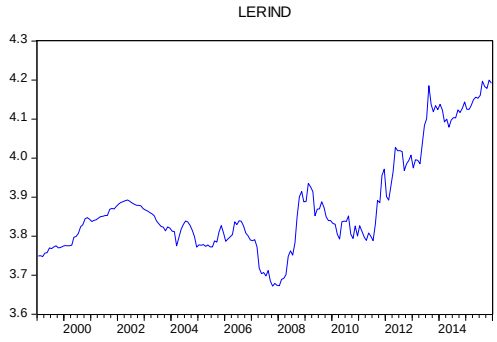

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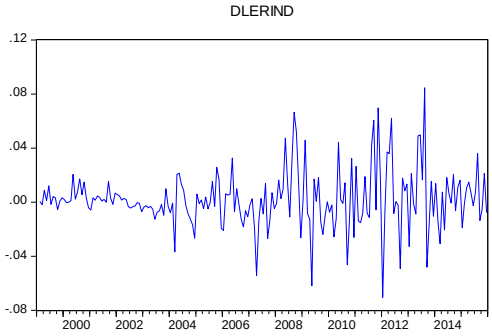
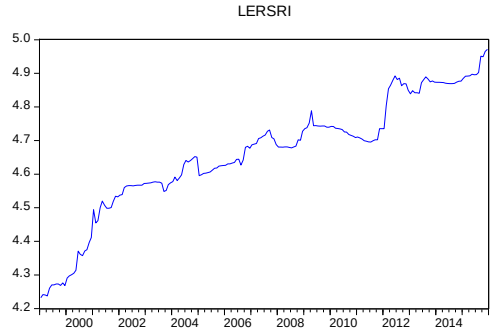


Exchange Rate (ER) SRI LANKA

Data graph set at Level



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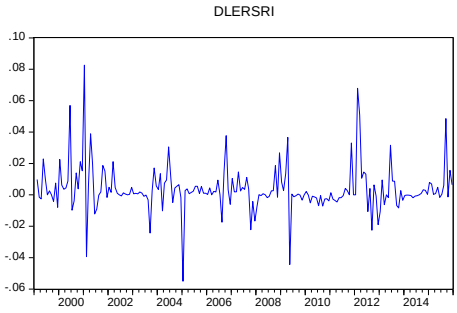

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