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Protectionist Trade Policies and Agricultural Productivity in WAEMU Countries

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ABSTRACT

This paper assesses the effect of protectionist trade policies on the agricultural productivity of WAEMU countries from 1995 to 2016. A multiple linear regression model with panel data was used in this study. The estimations results indicate that the protectionist trade policy captured by State subsidy to agriculture and tax on the import of goods have a positive effect on agricultural productivity of WAEMU countries. In addition, the study reveals that sufficient availability of farm machinery and fertile soil would be of particular importance to the development of agricultural sector. In the face of globalization, these results encourage the adoption of a protectionist trade policy which would certainly improve the agricultural productivity in WAEMU countries.

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Protectionist trade policies, State subsidies, protection rate, Agricultural productivity, WAEMU.

JEL Classification
H7, H29, Q18

1. Introduction

The importance of agriculture as an engine of development has been debated since several decades. The consensus that emerges is that an increase in agricultural production is a key point for the transition from subsistence to commercial farming, which is supposed to lead to an improvement in farmers’ incomes (Houmy, 2008). Within this framework, it has been recognized that a developed agricultural sector is an effective mechanism for successful entry of developing countries into globalization. Although agriculture remains a source of wealth for the sub-Saharan African countries1, it is clear that global competition continues to be unfavourable (Baldin, 2012). Past economic policies in Sub-Saharan Africa failed to stimulate the agricultural sector in an efficient manner as was the case for Asian and Latin American countries (Haggblade and Gabre-Madhin 2010). Empirical evidence has shown that Sub-Saharan African countries are being hurt by agricultural subsidies to production and exports from the North (Tockarik, 2003) even though the World Trade Organization (WTO) has always tried to punish States that violate the regulation in this regard (Anderson and Valenzuela, 2006).

Unlike the industrialized countries, the agricultural sector occupies an important position in the most

---

1-Agriculture is the main source of employment with 65% of full-time jobs, 25 to 30% of GDP and over half of total export earnings. Most countries in sub-Saharan Africa still depend on agriculture for over 20% of their exports (Douillet, 2012).
developing countries where it is the major contributor to GDP and is the primary source of income for the population (Brüntrup et al., 2008). Thus, the development of agricultural sector is of great importance for poverty reduction in West African Economic and Monetary Union (WAEMU) countries. In this context, it is necessary for these countries to protect the sector through a protectionist trade policy. Producers, in industrialized countries continue to benefit from advantageous commercial policies.

Economic theory is not on the side-lines of the protectionist trade policies that countries engaged in international trade must adopt. While the classics consider that a protectionist trade policy is harmful or even dangerous for the economy, other theories argue that this helps the local industry to develop through State interventions in a context of imperfect competition at a world scale. By protectionist agricultural trade policy, we mean all measures that can be taken to change the equilibrium generated by the imperfect market situation for the benefit of the protectionist nation (Krugman 1979). Strong distortions and price variability observed in global agricultural markets become problematic for all countries depending on international trade. These distortions are source of concern for developing countries, which are faced with a lack of means to support their agricultural production and their producers like in industrialized countries. This situation compromises a genuine "fair competition" despite the interventions of the WTO. It was in this context that, in light of the various reforms and like most developing countries, WAEMU has adopted protectionist trade policies to enable their producers to be competitive in the international market. However, the competitiveness is still embryonic with a structural deficit despite the production potential in the region (ReSAKSS, 2011).

As an illustration, in the WAEMU zone, the stylized facts relating to the dynamic of agricultural productivity regarding the protectionist trade policy (export subsidies and import tax) lead to an ambiguity relationship. Indeed, agricultural productivity has increased from 22% over the period 1995-2002 to 25% and 19% over the period 2003-2010 and 2011-2016, respectively. Over the same periods, the subsidy rate increased from 6% to 18% and then to 30%, while the import tax increased from 24% on average at 27% and 28%. This stylized fact seems to confirm at first that the relationship between agricultural productivity and protectionist trade policy is linear. In a second step, these statistics invalidate the supposed linear relation as the increase of the variables related to the protectionist commercial policy does not necessarily induce a growth of the agricultural productivity (we observe a decrease of 6%). These facts reveal that the relationship between protectionist trade policy and agricultural productivity is uncertain. This justifies the interest of this paper in this face of regional market integration observed in developing countries. Therefore, the purpose of this paper is to assess the impact of protectionist trade policies on agricultural productivity within WAEMU countries. The paper is structured in five sections namely: literature review in section 2, methodology in section 3, results and discussion in section 4 and finally; section 5 presents the conclusion.

2. Literature Review
The concept of protectionist trade policy has been widely discussed in the literature. It should be noted that various protectionist trade policy indicators (specialization indices, import tax, intra-industry trade rate, revealed comparative advantages, and subsidy, among other) have been proposed. They most often focus on the intra-industry exchange versus inter-branch exchange debate. Following the influx of theoretical studies on protectionist trade policy in the early 1980s, many empirical contributions have emerged. We will retain in this paper some recent studies in general and those focused on sub-Saharan Africa countries.

2.1. General studies on protectionist trade policy
In his study, Goreux (2003) seeks to evaluate the damage caused by subsidies to African cotton producing countries. Based on elasticity calculation and simulations, Goreux (2003) shows an increase in the world cotton price index from around 2, 9% to 13,4% and a gain in export earnings. However, the main limit

2-The statistics were calculated based on data from WDI. We took the average annual indicators of sub-periods
that blunts the scope of these results lies in the same value of the elasticity retained for the countries. This implies that these countries have the same level of development and, by extension, identical structural characteristics. This hypothesis is not verified. In addition, the theoretical construction of the model would require rich countries to agree to eliminate their subsidies to allow the advent of fair trade as advocated by the WTO. Obviously, this suppression is far from being a reality. From this moment, the empirical literature attempts to qualify the conclusions of Goreux (2003) as "a translation of theory to algebra and finally to numbers " (Shepherd, 2004). In addition, beyond this limit, the study lacks theoretically testable foundations. This limitation was addressed in the work of Poonth et al. (2004) and Bonjean et al. (2006) who adopted different approaches. First, Poonth et al. (2004) evaluate the impact of US country subsidies on the world price and traded volumes of cotton using Agricultural Trade Policy Simulation Model (ATPSM). The study reveals that a reduction in subsidies in all countries would result in a 3.1% to 5% increase in the world price depending on the values of the supply and demand elasticities. Bonjean et al. (2006) adopted a Bayesian VAR to evaluate the impact of US and European subsidies on the international cotton market employing a dynamic partial equilibrium model. They found that the impact of US aid on the world price varies, on average, from 3% to 7%; whereas, the impact of European aid is about 2%. Following the same approach as previous studies, Crowley (2007) examines the effects of tariffs imposed by US on Japanese exports over the period 1992 and 2001. The results reveal that US tariff led to a 5% to 7% increase in exports to the third market and a 5 to 19% decrease in Japanese exports.

Beyond this rich empirical literature, in a recent study, Francis (2017) shows that protectionist trade policy has a negative impact on the productivity of the economy by discouraging competition, specialization, innovation and the transfer of knowledge within the USA. Indeed, the study indicates that the economy is thus less able to adapt well to technological changes or economic downturns. Lower productivity growth leads to lower growth. In the same vein, Derek et Collab (2013) have shown that a permanent ten percentage point increase in US tariffs on imports from all regions would result in a permanent 1% decline in the level of real GDP. Thus, tariffs and other protectionist measures can negatively affect an economy in many ways.

2.2. Studies on sub-Saharan African countries
The empirical literature has been abundant in sub-Saharan African countries. First, using time-series econometric techniques, Mahaman (2006) showed that subsidies granted by Northern countries have a negative influence on economic growth in Niger. This leads to a decline in the growth of real GDP and in turn the well-being of the populations. Douillet (2012) analyzed the effect of trade policies adopted by sub-Saharan African countries on GDP growth and agricultural growth, based on a computable general equilibrium model. Referring to the assumption that the impact of trade policies on a country depends on the relative impacts of its competitors (Carrère and De Melo 2010), the study conducts simulations using the general equilibrium model. The results show that strengthening the integration process through multilateral integration favours trade in products at more advanced stages of processing and impacts economies in terms of GDP growth, welfare, and the volume of agricultural exports. Thus, regional integration could be a mean of stimulating this competitiveness through the effect of industrial learning it induces ("learning by doing"). However, the gains from trade reforms are unequally distributed in favour of the richest within Africa, South Africa and Nigeria. Addressing the specific issue of cotton, Faye (2011) assessed the impact of US subsidies on exports of the product over the period 1982 and 2007. Using a vector autoregressive (VAR) model, the study revealed that the effects of an increase in US and European subsidies on Burkina’s cotton production are negative in the first four months. On the other hand, these effects become positive between the fourth and sixth months before becoming negative again between the seventh and the tenth month. Overall, the study postulated that US subsidies on cotton negatively affect economic activity and in turn welfare in Burkina.

The issue of protectionist trade policy has not focused solely on annuity products. Other studies have sought to assess their effect on food products such as maize and rice. In this group of studies, we can cite
Wire et al. (2015) and Liverpool-Tasie et al. (2015). From a sample of 820 rice farmers in northern Ghana, Wire et al. (2015) shows that fertilizer subsidy increases land productivity but decreases labour productivity. Liverpool-Tasie et al (2015) using panel data models, estimated the effect of profitability of fertilizer use on maize production in Nigeria. They also found that the strategy to reduce fertilizer transportation costs appears to have a much greater effect on agricultural productivity than fertilizer subsidies. Like subsidies, discriminatory protectionist measures can also distort a country's production and, in turn, exports from a foreign country to third country markets.

In total, the empirical evaluation of these different approaches reveals three main lines of results. While some studies found a positive relationship between protectionist trade policy and agricultural productivity, others show that it generates a negative impact or to some extent that this outcome is mixed or even conditioned. What about the WAEMU countries?

3. Methodology
As part of modelling the effect of protectionist trade policies (PCP) on agricultural productivity (PA), we first try to expose the specified model, and present the characteristics of our specification panel on the eight (8) WAEMU countries during the period 1995-2016.

3.1. Specification
Our specification is based on the empirical model developed by Issiyaka et al (2010) which seeks to analyze the impact of chemical fertilizer subsidies on cereal production in Burkina Faso. Starting from his model, ours is as follows in panel data:

\[
\text{Ln}(P)_{it} = \alpha_i + \alpha_1 \text{Ln}(M)_{it} + \alpha_2 \text{Ln}(S)_{it} + \alpha_3 \text{Ln}(T)_{it} + \alpha_4 \text{Ln}(K)_{it} + \alpha_5 \text{Ln}(F)_{it} + \alpha_6 \text{Ln}(TA)_{it} + \mu_{it}
\]

Where,
- \(P_{it}\) the value added of agricultural production from country \(i\) in year \(t\);
- \(M_{it}\) a variable of agricultural mechanization which measures the quantity of machine used for the production in country \(i\) in year \(t\);
- \(S_{it}\) State subsidy to production in country \(i\) in year \(t\);
- \(T_{it}\) are tax on goods, including levies imposed for income or protection and determined on a specific or ad valorem basis from country \(i\) in year \(t\);
- \(K_{it}\) the human capital of the country \(i\) in year \(t\);
- \(F_{it}\) measures amount of fertilizer used (in kilograms per hectare) for the production in country \(i\) in year \(t\);
- \(TA_{it}\) arable land available in hectare from country \(i\) in year \(t\);
- \(\mu_{it}\) denotes the error term.

With \(\alpha_i\) (the specific effect for each country); \(\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5, \alpha_6\), the parameters. All variables are in logarithms.

3.2. Variables Description
**Agricultural productivity (P):** Agricultural productivity measures the efficiency of the use of production factors. There are several productivity indicators such as total factor productivity that reflects the efficiency of the use of all factors of production, including the productivity of land and farm labour, which is the two most commonly, used partial productivity indicators (Farm, 2013). However, as shown by Fuglie et al. (2012), this indicator as defined only takes into account the value of agricultural production. To get a better idea of the economic efficiency of production, it would be more appropriate to use the value added. In the case of our study, we use agricultural productivity in terms of value added of agricultural production.
Protectionist trade policy is captured by state subsidies (S) and import tax (T) which are supposed to benefit the producers of this good and the state (Oloukoi, 2009).

Agricultural mechanization (M) is the set of tools and machines that can intervene in manual cultivation, hitched or motorized for all operations from clearing and land development to processing. It increases the productivity of human labor (UNIDO, 2008). This variable refers to the number of wheel and track tractors operating in agriculture after the calendar year.

Quantity of fertilizer used (Q) results in the use of fertilizers, improved seeds, phytosanitary products, animal or motorized traction, and water control. Thus, the amount of fertilizer used is fertilizer consumption (100 grams per hectare of arable land). It measures the amount of plant feed used per unit of arable land (Rahman 2004).

Arable land "in hectare’’(TA) includes temporary land for mowing or grazing, land under the market or vegetable gardens and land temporarily fallow. Land abandoned due to shift culture is excluded.

Human capital (K) is captured by several indicators in the literature. In this paper, the labour force is a good proxy for human capital to the extent that it measures the level of labour available in the agricultural sector.

3.3. Estimation Method and Data Source
The first thing to check when using panel data is the nature of the model specification (homogeneous or heterogeneous specification of the data generating process, fixed effect or random effect). However, before anything else, it is important to assess the quality of our series through the stationary test. This depends largely on the reliability of our estimates. In this respect, we carry out the Im-Pesaran-Shin stationarity test (IPS).

The data used in this study comes from the World Development Indicators database (WDI) and the UEMOA annual reports. This study focuses on the eight (8) countries of WAEMU namely: Benin, Burkina Faso, Côte d'Ivoire, Guinea, Mali, Niger, Senegal and Togo. Given the availability of statistics for each country, the period covered by the study extends from 1995 to 2016. That is, an observation of 176 (22 x 8) for each variable, which allows us to have a cylindrical panel.

4. Analysis and presentation of the results
4.1. Result of preliminary tests
First of all, we need to take a hard look at the data we have. A summary of these data can be found in the following (Table 1) shows large differences in the values of some variables, meaning that the WAEMU countries have different characteristics regarding the evolution of the variables explained. We then chose to use in this analysis a log transformation. This procedure has the advantage of correcting the problem of large discrepancies and gives us the opportunity to interpret the coefficients in terms of elasticity and also allows to exclude the influence of the different units of measurement in the model to be estimated.

The analysis of descriptive statistics of the variables of the model can be extended by that of the correlations that we present in the table 2. Indeed, this analysis aims to detect the problem of Multicollinearity which makes it difficult to interpret the results from the econometric estimations. From this table, it appears that agricultural productivity (P) remains weakly correlated with the explanatory variables. Even better, as can be seen, the partial correlation between the variables is weak by compared to 0.5. Thus, these results suggest a risk of Multicollinearity that is almost low in the model to be estimated.
Table 1: Description of the variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Min</th>
<th>Max</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Productivity (P)</td>
<td>5.94</td>
<td>0.54</td>
<td>4.87</td>
<td>7.03</td>
<td>176</td>
</tr>
<tr>
<td>Subsidies (S)</td>
<td>2.24</td>
<td>1.21</td>
<td>-0.90</td>
<td>3.61</td>
<td>176</td>
</tr>
<tr>
<td>Import tax (T)</td>
<td>3.19</td>
<td>0.36</td>
<td>2.40</td>
<td>3.84</td>
<td>176</td>
</tr>
<tr>
<td>Quantity of fertilizer used (Q)</td>
<td>1.34</td>
<td>1.69</td>
<td>-5.48</td>
<td>3.52</td>
<td>176</td>
</tr>
<tr>
<td>Agricultural machines used (M)</td>
<td>6.81</td>
<td>1.55</td>
<td>4.38</td>
<td>9.33</td>
<td>176</td>
</tr>
<tr>
<td>Arable land (TA)</td>
<td>2.62</td>
<td>0.65</td>
<td>0.95</td>
<td>3.83</td>
<td>176</td>
</tr>
<tr>
<td>Human capital (K)</td>
<td>4.26</td>
<td>0.14</td>
<td>3.93</td>
<td>4.53</td>
<td>176</td>
</tr>
</tbody>
</table>

Source: Author

Table 2: Matrix of correlation coefficients between variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>P</th>
<th>S</th>
<th>T</th>
<th>Q</th>
<th>M</th>
<th>TA</th>
<th>K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Productivity (P)</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Subsidies (S)</td>
<td>0.31</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Import tax (T)</td>
<td>0.22</td>
<td>0.34</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Quantity of fertilizer used (Q)</td>
<td>0.14</td>
<td>-0.19</td>
<td>-0.47</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Agricultural machines used (M)</td>
<td>0.16</td>
<td>0.08</td>
<td>0.14</td>
<td>0.20</td>
<td>1.00</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Arable land (TA)</td>
<td>0.33</td>
<td>0.20</td>
<td>0.02</td>
<td>-0.13</td>
<td>-0.55</td>
<td>1.00</td>
<td>-</td>
</tr>
<tr>
<td>Human capital (K)</td>
<td>-0.26</td>
<td>0.22</td>
<td>-0.01</td>
<td>-0.08</td>
<td>-0.15</td>
<td>0.34</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Source: Author, from the estimation in Stata 14

After describing the variables and analyzing the correlation matrix, it is necessary to check the stationarity of the variables, essential condition for a good estimation of the model.

**Stationarity test.**
The IPS test performed on each series of our model gives the following results reported in Table 3. We find that all P-values are below the critical value of 5%. This leads to the admission that all the variables are stationary. Since the stationarity of the variables is verified, it is appropriate to test for the model specification. It is therefore appropriate to use the Hausman test which aims to choose between fixed effects and random effects model.

Table 3: Results of the stationarity test

<table>
<thead>
<tr>
<th>Variables</th>
<th>Value of the statistic</th>
<th>P-Value</th>
<th>With constant</th>
<th>With Trend</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>-2.48</td>
<td>0.0065</td>
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<td>Yes</td>
<td>Stationary</td>
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<td>Stationary</td>
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<tr>
<td>T</td>
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<td>0.0252</td>
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<td>Yes</td>
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<tr>
<td>Q</td>
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<td>Yes</td>
<td>Yes</td>
<td>Stationary</td>
</tr>
<tr>
<td>M</td>
<td>-1.31</td>
<td>0.0937</td>
<td>Yes</td>
<td>Yes</td>
<td>Stationary</td>
</tr>
<tr>
<td>TA</td>
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<td>0.0864</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>K</td>
<td>0.66</td>
<td>0.0471</td>
<td>Yes</td>
<td>Yes</td>
<td>Stationary</td>
</tr>
</tbody>
</table>

Source: Author, from the estimation in Stata 14

Table 4 reports the results of the Hausman test of model specification. Note that the conclusions from the first two specification tests are obviously contradictory. Such results of Hausman test makes it possible to discriminate between a fixed effect model and a random effect model. If the probability of the Hausman test is less than 5%, it is concluded that the fixed effects model is preferable to the random effects model. For this study, the chosen model is the one with fixed effect.

Table 4: Specification test
4.2. Estimation result and discussion

The results of model estimates characterizing agricultural productivity through protectionist trade policies are presented in Table 5. The results show that protectionist trade policy variables (subsidies, import tax) and the amount of agricultural machinery used, availability of arable land were found to be relevant in explaining the level of agricultural productivity in terms of value added within WAEMU countries. Indeed, the study indicates that a 10% increase in subsidies to agriculture (S), generates an increase in the capacity to produce in terms of a surplus value added of 0.4%. Thus, the response to an increase in aid to agriculture (S) induces an increase in the level of agricultural productivity. This could be explained by the fact that an increase in subsidies implies a reduction in production costs and therefore an increase in the production capacity which certainly affects agricultural productivity. These results are consistent with those found by Wire et al. (2015) and Liverpool-Tasie et al. (2015) who show that within countries, protectionist trade policies via subsidies and import taxes are an effective weapon for improving the welfare of vulnerable countries in the global market via increasing agricultural productivity.

Table 5: Results of estimations

Endogenous variable : Agricultural productivity

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>T-Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants (S)</td>
<td>0.042</td>
<td>3.94 **</td>
</tr>
<tr>
<td>Quantity of fertilizer used (Q)</td>
<td>-0.022</td>
<td>-0.07</td>
</tr>
<tr>
<td>Import taxes (T)</td>
<td>0.172</td>
<td>2.11 **</td>
</tr>
<tr>
<td>Human capital (K)</td>
<td>-0.054</td>
<td>0.21</td>
</tr>
<tr>
<td>Agricultural machine (M)</td>
<td>0.325</td>
<td>7.53 **</td>
</tr>
<tr>
<td>Arable land (TA)</td>
<td>0.565</td>
<td>6.70 **</td>
</tr>
</tbody>
</table>

As for the agricultural import tax (T) when it increases by 10%, there is an improvement in local production of 1.7%. This result reveals that the local products protection policy through a limitation of the entry of foreign products into the national markets of the WAEMU countries favours the sale at reasonable prices of local products on their market. Thus the added value resulting from this flow positively influences agricultural productivity. Similarly, the variables quantity of agricultural machinery used and availability of arable land have a positive impact on the level of agricultural productivity of the respective order of 3.2% and 5.6%. This result could be justified by the fact that the higher the use of agricultural machinery, the more the amount of cultivated land. Controlling for other factors, this would induces an increase in productivity under normal conditions. These results are in line with those found by
Crongd (2010) in South Kivu in the Democratic Republic of Congo, which showed that the use of agricultural machinery favoured an 85% increase in maize production, 95% increase in bean production and 11% increase in groundnut production.

In sum, this study shows that protectionist trade policies have a positive effect on the level of agricultural productivity of the WAEMU countries. This corroborates the results of Shepherd's (2004) empirical studies which showed that subsidies affect global production. In addition, these results support studies that state that import restrictions benefit domestic producers (Crowley, 2007; Wire et al., 2015 and Liverpool-Tasie et al, 2015).

5. Conclusion
The purpose of this paper is to assess the effect of protectionist trade policies on agricultural productivity in the WAEMU countries. From the estimation of fixed effect model over the period 1995 to 2016, two major conclusions can be drawn from the study. First, the study shows that state subsidies to agriculture and import taxes have a positive effect on agricultural productivity growth. Second, protectionist trade policies will be conducive to productivity growth, within a framework of quantitative use of agricultural machinery and increasing the availability of arable land.

In terms of implications for economic policies, this study suggests that protectionist trade policies must be encouraged in all the countries of the Union. For this purpose, the study suggests (i) - to provide to producers subsidized agricultural machinery in order to gradually eliminate the use of archaic tools. This would increase the extension of uncultivated arable land and productivity since the farmer man's physical strength is very limited compared to the use of machinery; (ii) to promote the valuation of the potential arable land in each country; (iii) - to train producers to adapt to new farming techniques, climate change, and water management such as irrigation.

References
relations internationales.
Poonyth et al, (2004). Impact of cotton Subsidies on Developing Countries and poor people in those countries, Document de travail, Overseas Development Institute, Londres
Economic Determinants of Tax Buoyancy in Pakistan: An ARDL Bounds Testing Approach

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ARTICLEDATA

ABSTRACT
Fiscal policy, being the policy of government expenditures and revenues can play an imperative role in mobilization of resources. Tax revenues determine the capability of an economy to finance government spending but tax situation in many developing countries like Pakistan is very unfortunate. This study explores the economic determinants of tax buoyancy in Pakistan for the period of 1996 to 2016. For this purpose, aggregate and disaggregated analyses of various types of taxes have been conducted using the ARDL bounds test technique. The findings of the study demonstrate that various taxes buoyancies have mixed results with various economic factors.

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1. Introduction

Since last many decades, the fiscal deficit stands as one of the imperative issues across many developing countries due to the imbalance between expenditures and revenues (Ansari, 1982). One can easily understand the escalating demand for public funds to finance the public expenditures in developing countries to achieve the goals of socio-economic development. For this purpose, an effective tax policy needs to be amplified to become a significant tool for the better mobilization of resources (Wawire, 2011). Thus, a government can play a pivot role in stabilization of economy by using different tools of fiscal policy.

Tax is a major source of revenue for any government for administrating its functions. Collection of revenues from different tax sources may support to enhance the speed of development for any country (Haque, 2009). In any country, if tax administration is not performing in an efficient way, it shows that there is some ambiguity in the fiscal system.
Developing countries may increase their economic growth through proper mobilization of their domestic resources which can be attained by the generation of tax revenues (Wilford and Wilford, 1978). Unlike most of the developing countries, Pakistan is blessed with natural, physical and human resources but she is facing the problem of fiscal deficit due to the inappropriate utilization of the resources. Historically, Pakistan is facing the music regarding socio-economic and political spheres. The situation of fiscal deficit has remained flimsy and it is recorded at 3.9 percent of GDP in the current year. There are many reasons for low tax collection including tax evasion, complicated procedure, and narrow tax base. Since last three years, the trends of fiscal indicators have been observed ascendant in Pakistan. Overall public revenues and particularly tax to GDP ratio have mounted from 9.8 percent to 12.6 percent and 13.3 percent to 15.3 percent respectively while public spending to GDP ratio has condensed from 21.5 percent to 19.9 percent (GOP, 2016).

Thus, the country is compelled to rely on developed countries for the financial assistance to finance its development projects. Thus, in a developing country like Pakistan resource mobilization may help to reduce the fiscal deficit and achieve economic development. Rest of the paper is organized as: Section 2 explains the concept and measurement of tax buoyancy. Section 3 discusses the various studies conducted on the subject. Section 4 outlines the model, data and methodology. In section 5, the results and discussions have been explained. Finally, the conclusion and polices have been offered in section 6.

2. Tax Buoyancy: Concept and Measurement
Tax buoyancy is a measure to determine the tax performance of any country and an important ingredient in the fiscal policy of an economy. The concept of tax buoyancy can be used to calculate the sensitivity, responsiveness, proportionate or percentage change in tax revenues or tax receipts to percentage change in GDP. Tax buoyancy is a crude measure and does not differentiate between the discretionary and automatic growth of revenues. The formula of tax buoyancy is given as:

\[
\text{Tax Buoyancy} = \frac{\text{Percentage Change in Tax Revenue}}{\text{Percentage Change in GDP}} \times 100
\]

A tax will said to be buoyant in which revenues increase by more than one percent for one percent increase in GDP or output or national income. Tax buoyancy explains the growth in tax revenues by adopting the discretionary changes (change in tax base) and automatic changes (increase in number of taxpayer by increase in real income or through tax administration work efficiently). During the economic growth process, tax buoyancy reveals the capability of the tax structure to generate the tax revenues.

3. Review of Assorted Literature
In this section, we have examined all those empirical studies which are associated with our analysis along with their key results. A number of studies have been conducted to investigate the tax buoyancy across different countries with different results. Table 1 shows the summary of the reviewed empirical literature.

<table>
<thead>
<tr>
<th>Reference(s)</th>
<th>Time</th>
<th>Country</th>
<th>Methodology</th>
<th>Main Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naqvi.A.H (2016)</td>
<td>2004-2014</td>
<td>Comparative Performance of States of India</td>
<td>Ordinary Least Squares (OLS)</td>
<td>An aggregate analysis has been done in which general category shows that Haryana, Goa, and Rajasthan having the low buoyancy which is less than one. The findings of the study show that value added in the services sector, budget deficit, and import having positive and significant impact while manufacturing sector has insignificant and official development assistance has negative but significant impact.</td>
</tr>
</tbody>
</table>
### 4. Model, Data and Methodology

#### 4.1 Model Specification

A number of tax buoyancy models have been proposed with economic variables. The models observe the impact of economic variables further across total tax buoyancy, direct tax buoyancy, indirect tax buoyancy, income tax buoyancy, workers’ welfare tax buoyancy, customs duty tax buoyancy, federal Individual tax and Excise duty are significant. Company tax, carbon tax, VAT and custom duty are insignificant impact on GDP.

Short Run: Personal income Tax, Social Security Contribution, Excise Tax and Property Tax having the buoyancy coefficient less than one while Corporate Income Taxes and Goods and Services Taxes have buoyancy coefficients greater than one.

Long Run: Personal income Tax, Social Security Contribution, Corporate Income Taxes and Goods and Services Taxes having buoyancy coefficients greater than one. Excise Tax and Property Tax having the buoyancy coefficient is less than one.

Elasticity and Buoyancy coefficients of Total tax revenue, direct taxes, sales tax and value added tax is greater than one. Whereas customs duties elasticity and buoyancy coefficient

Buoyancy coefficients of direct and indirect taxes, income tax , company tax, property tax, excise tax and trade tax are less than one while value added tax buoyancy coefficient is greater than one.

Buoyancy estimates are more than unity because of diversification, expansion of tax base and manufacturing sector. Structural changes occur in economy as the size of agriculture has shrink in GDP. Proportion of direct tax is also increasing in the total taxes.

Inverse relationship between Grants and tax buoyancy while positive relationship of Import, Manufacturing, Services, Monetization and Budget Deficit with tax buoyancy.

Tax buoyancy ratio is greater than unity for both direct and indirect taxes.

Tax buoyancy of GDP, volume of trade and Mo is less than one whereas growth in tax revenue has not significant relationship with investment, credit, inflation and public debt.

Import Tax (inelastic) positively, Income Tax (elastic) positively, VAT (inelastic) positively, Excise Tax (inelastic) positively affect the Tax Revenue.

Elasticity and buoyancy of estimates are higher for direct taxes followed by sales taxes. However, customs and excise duties appear to be relatively rigid, for this the overall tax elasticity is low as well. Further, the estimates of buoyancy are higher than their corresponding elasticities for all the taxes.

Value added tax, total consumption tax and import tax are buoyant. Income tax, profit tax, excise duty, gasoline tax, trade tax and export tax buoyancy coefficient is less than one.

<table>
<thead>
<tr>
<th>Study</th>
<th>Period</th>
<th>Country</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonga et al. (2015)</td>
<td>2000-2013</td>
<td>Zimbabwe</td>
<td>Ordinary Least Squares (OLS)</td>
</tr>
<tr>
<td>Belinga.V et al. (2014)</td>
<td>1965-2012</td>
<td>OECD Countries</td>
<td>Error Correction Model</td>
</tr>
<tr>
<td>Yousaf and Haq (2013)</td>
<td>1980-2011</td>
<td>Bangladesh</td>
<td>Johansen Cointegration and Vector error correction technique</td>
</tr>
<tr>
<td>Cotton (2012)</td>
<td>1990-2009</td>
<td>Trinidad and Tobago</td>
<td>Least Squares Regression</td>
</tr>
<tr>
<td>Ahmed and Mohammed (2010)</td>
<td>1998-2008</td>
<td>25 developing countries</td>
<td>Pooled Least Square</td>
</tr>
<tr>
<td>Leuthold and N’Guessan (1986)</td>
<td>1970-1979</td>
<td>Ivory Coast</td>
<td>OLS</td>
</tr>
</tbody>
</table>

Source: Author’s compilation
excise duty tax buoyancy and sales tax buoyancy. To investigate the impact of economic variables on tax buoyancy, following econometric models of aggregate taxes and disaggregate taxes have been estimated:

a) Aggregate Models

Model 1: Total Tax Buoyancy Model
\[ TBT_i = \beta + \alpha_1 MVA_i + \alpha_2 AVA_i + \alpha_3 SVA_i + \alpha_4 TRADE_i + \alpha_5 ODA_i + \alpha_6 BD_i + \alpha_7 INF_i + \varepsilon_i \]  

Model 2: Direct Tax Buoyancy Model
\[ TBD_i = \beta + \alpha_1 MVA_i + \alpha_2 AVA_i + \alpha_3 SVA_i + \alpha_4 TRADE_i + \alpha_5 ODA_i + \alpha_6 BD_i + \alpha_7 INF_i + \varepsilon_i \]  

Model 3: Indirect Tax Buoyancy Model
\[ TBINDT_i = \beta + \alpha_1 MVA_i + \alpha_2 AVA_i + \alpha_3 SVA_i + \alpha_4 TRADE_i + \alpha_5 ODA_i + \alpha_6 BD_i + \alpha_7 INF_i + \varepsilon_i \]  

b) Disaggregate Models

Model 4: Income Tax Buoyancy Model
\[ TBIT_i = \beta + \alpha_1 MVA_i + \alpha_2 AVA_i + \alpha_3 SVA_i + \alpha_4 TRADE_i + \alpha_5 ODA_i + \alpha_6 BD_i + \alpha_7 INF_i + \varepsilon_i \]  

Model 5: Workers Welfare Tax Buoyancy Model
\[ TBWWT_i = \beta + \alpha_1 MVA_i + \alpha_2 AVA_i + \alpha_3 SVA_i + \alpha_4 TRADE_i + \alpha_5 ODA_i + \alpha_6 BD_i + \alpha_7 INF_i + \varepsilon_i \]  

Model 6: Custom Duty Tax Buoyancy Model
\[ TBCD_i = \beta + \alpha_1 MVA_i + \alpha_2 AVA_i + \alpha_3 SVA_i + \alpha_4 TRADE_i + \alpha_5 ODA_i + \alpha_6 BD_i + \alpha_7 INF_i + \varepsilon_i \]  

Model 7: Federal Excise Duty Tax Buoyancy Model
\[ TBFED_i = \beta + \alpha_1 MVA_i + \alpha_2 AVA_i + \alpha_3 SVA_i + \alpha_4 TRADE_i + \alpha_5 ODA_i + \alpha_6 BD_i + \alpha_7 INF_i + \varepsilon_i \]  

Model 8: Sales Tax Buoyancy Model
\[ TBST_i = \beta + \alpha_1 MVA_i + \alpha_2 AVA_i + \alpha_3 SVA_i + \alpha_4 TRADE_i + \alpha_5 ODA_i + \alpha_6 BD_i + \alpha_7 INF_i + \varepsilon_i \]  

4.2 Description of the variables

Table 2 shows the description of the variables in detail.

<table>
<thead>
<tr>
<th>Variable(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBT</td>
<td>Total Tax Buoyancy (Total Tax as percentage of GDP)</td>
</tr>
<tr>
<td>TBD</td>
<td>Direct Tax Buoyancy (Direct Tax as percentage of GDP)</td>
</tr>
<tr>
<td>TBINDT</td>
<td>Indirect Tax Buoyancy (Indirect Tax as percentage of GDP)</td>
</tr>
<tr>
<td>TBIT</td>
<td>Income Tax Buoyancy (Income Tax as percentage of GDP)</td>
</tr>
<tr>
<td>TBWWT</td>
<td>Workers Welfare Tax Buoyancy (Workers Welfare Tax as percentage of GDP)</td>
</tr>
<tr>
<td>TBCD</td>
<td>Custom Duty Tax Buoyancy (Custom Duty as percentage of GDP)</td>
</tr>
<tr>
<td>TBFED</td>
<td>Federal Excise Duty Tax Buoyancy (Federal Excise Duty as percentage of GDP)</td>
</tr>
<tr>
<td>TBST</td>
<td>Sales Tax Buoyancy (Sales Tax as percentage of GDP)</td>
</tr>
<tr>
<td>MVA</td>
<td>Manufacturing Value Added (percentage of GDP)</td>
</tr>
<tr>
<td>AVA</td>
<td>Agriculture Value Added (percentage of GDP)</td>
</tr>
<tr>
<td>SVA</td>
<td>Services Value Added (percentage of GDP)</td>
</tr>
<tr>
<td>TRADE</td>
<td>Trade (percentage of GDP)</td>
</tr>
<tr>
<td>ODA</td>
<td>Net Official Development Assistance received (percentage of GNI)</td>
</tr>
<tr>
<td>BD</td>
<td>Broader Money (percentage of GDP)</td>
</tr>
<tr>
<td>INF</td>
<td>Inflation (measured by CPI)</td>
</tr>
<tr>
<td>( \varepsilon )</td>
<td>Error Term</td>
</tr>
</tbody>
</table>
4.2 Data and Methodology
The data for dependent variables have been taken from the website of Federal Board of Revenue of Pakistan (FBR) for the period of 1996 to 2008 and for the period of 2009 to 2016 from Budget briefs by Ministry of Finance, government of Pakistan. The data on independent variables have been extracted from the World Development Indicators (WDI) for the period of 1996 to 2016. The study has used the ARDL methodology for analysis.

5. Results and Discussions
5.1 Unit Root Analysis
Table 3 describes unit root test results at level. The results of ADF represent that variables have mixed order of integration.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Intercept</th>
<th>Lags</th>
<th>Intercept and Trend</th>
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<th>None</th>
<th>Lags</th>
<th>Conclusion</th>
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</tr>
<tr>
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<td>(0.7184)</td>
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<td></td>
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<td>-3.4326</td>
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<td>(0.5200)</td>
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<td></td>
</tr>
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<tr>
<td></td>
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<td></td>
<td>(0.0779)</td>
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</tr>
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<td></td>
<td>(0.4538)</td>
<td></td>
<td>(0.3433)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TBFED</td>
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<td>-1.3866</td>
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</tr>
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<tr>
<td>TBST</td>
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<td>2</td>
<td>-0.9171</td>
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<tr>
<td></td>
<td>(0.3927)</td>
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<td>(0.1583)</td>
<td></td>
<td>(0.3049)</td>
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<td>MVA</td>
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<td>(0.5597)</td>
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<tr>
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<td>1</td>
<td>-0.7359</td>
<td>2</td>
<td>I(0)</td>
</tr>
<tr>
<td></td>
<td>(0.0393)</td>
<td></td>
<td>(0.0163)</td>
<td></td>
<td>(0.3827)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BD</td>
<td>-1.6998</td>
<td>0</td>
<td>-1.5641</td>
<td>0</td>
<td>-0.6412</td>
<td>0</td>
<td>I(1)</td>
</tr>
<tr>
<td></td>
<td>(0.4154)</td>
<td></td>
<td>(0.7687)</td>
<td></td>
<td>(0.4260)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INF</td>
<td>-4.4763</td>
<td>0</td>
<td>-4.3456</td>
<td>0</td>
<td>-1.0201</td>
<td>1</td>
<td>I(0)</td>
</tr>
<tr>
<td></td>
<td>(0.0026)</td>
<td></td>
<td>(0.0143)</td>
<td></td>
<td>(0.2647)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors’ calculations

5.2 Bounds Analysis
Table 4 shows the results of Wald test of the tax buoyancy models for economic variables. The calculated value of F-Statistics in each tax buoyancy model is more than the values of upper bound at 5 percent and 10 percent levels of significance. Therefore, a long run relationship exists in all the tax buoyancy models.

<table>
<thead>
<tr>
<th>Models</th>
<th>F-Statistics</th>
<th>At 5% Significance Level</th>
<th>At 10% Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
</tr>
<tr>
<td>Model 1</td>
<td>3.9502</td>
<td>1.97</td>
<td>3.18</td>
</tr>
<tr>
<td>Model 2</td>
<td>4.7497</td>
<td>2.32</td>
<td>3.5</td>
</tr>
<tr>
<td>Model 3</td>
<td>3.3483</td>
<td>2.32</td>
<td>3.5</td>
</tr>
</tbody>
</table>
5.3 Long-Run Estimating Results

The next step is to conduct the detail investigation of long-run relationships and detect the long-run coefficients of ARDL models. Table 5 and 6 display the estimated long run results of aggregate models and disaggregate models respectively. Firstly, we explain Table 5 in which the long-run results of aggregate analysis of overall, direct, and indirect tax buoyancy models have been shown. The dependent variables are overall tax buoyancy, direct tax buoyancy and indirect tax buoyancy in model 1, 2 and 3 respectively.

The results of MVA indicate that it has a positive and significant impact on overall tax, direct tax, and indirect tax buoyancies. It suggests that when manufacturing sector grows, government revenues from this sector would escalate as in the case of Pakistan, the government collects 68% of the tax revenues from this sector (GoP, 2016). So, the revenues from the direct taxes and indirect taxes increase the total tax revenues of the government. So, manufacturing sector growth leads to increases in the volume of GDP and tax revenues of the government by the manufacturing sector. Thus, the values of the overall tax, direct tax, and indirect tax buoyancies coefficients will increase that might be beneficial for the economy. Qazi (2010) exhibited that manufacturing sector is significant and positively related with total tax buoyancy, direct tax buoyancy and indirect tax buoyancy for selected developing countries. So, through the tax revenues of the manufacturing sector, the economy will be more fuelled by this sector. These results are consistent with the studies by Mawejje and Munyambonera (2016), Karagoz (2013) and Chaudhry & Munir (2010).

The variable of agricultural value added (AVA) has a positive impact on total tax, direct tax, and indirect tax buoyancies. The positive impact of AVA reveals that as agriculture sector grows, revenues of this sector will also grow which may contribute to GDP significantly. Thus the government income from the agriculture sector in the form of direct taxes and indirect taxes will increase, leading to an increase in total or overall tax revenues. Most of the incomes of agriculture sector are exempt from tax in Pakistan. Due to the strong political lobbies in developing countries, the agriculture sector is exempted from tax net (Qazi, 2010). So, the agriculture sector is leading to the lesser contribution to the national exchequer. Qazi (2010) asserted that agriculture sector is insignificant and positively related to total tax buoyancy, direct tax buoyancy and indirect tax buoyancy for selected developing countries. These results are in line with Karagoz (2013), Chaudhry and Munir (2010) and Ghura (1998).

Table 5: Long Run Estimates of Tax Buoyancy Models (Aggregate)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVA</td>
<td>0.0913</td>
<td>0.5854</td>
<td>0.6567</td>
</tr>
<tr>
<td></td>
<td>(0.0312)</td>
<td>(0.0226)</td>
<td>(0.0746)</td>
</tr>
<tr>
<td>AVA</td>
<td>0.0529</td>
<td>0.3888</td>
<td>0.4022</td>
</tr>
<tr>
<td></td>
<td>(0.4928)</td>
<td>(0.0256)</td>
<td>(0.1312)</td>
</tr>
<tr>
<td>SVA</td>
<td>0.1231</td>
<td>0.5938</td>
<td>0.5007</td>
</tr>
<tr>
<td></td>
<td>(0.0064)</td>
<td>(0.0025)</td>
<td>(0.0557)</td>
</tr>
<tr>
<td>TRADE</td>
<td>0.1462</td>
<td>0.0184</td>
<td>0.2052</td>
</tr>
<tr>
<td></td>
<td>(0.0798)</td>
<td>(0.6446)</td>
<td>(0.0041)</td>
</tr>
<tr>
<td>ODA</td>
<td>-0.1452</td>
<td>-0.0321</td>
<td>-0.5100</td>
</tr>
<tr>
<td></td>
<td>(0.5003)</td>
<td>(0.7736)</td>
<td>(0.0127)</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations
Services value added (SVA) demonstrates a positive impact on overall tax, direct tax and indirect tax buoyancies for Pakistan. With the growing services sector in the country, government revenues in the form of direct and indirect taxes will also increase. Qazi (2010) has revealed that services sector is significant and positively related to the total, direct and indirect tax buoyancies for selected developing countries. Bayu (2015) reported that services sector has a positive impact on total tax buoyancy for Ethiopia. So, through the tax revenues of the services sector, the economy will be more stimulated. Our results are supported by the studies of Samir et al. (2016) and Chaudhry & Munir (2010).

Trade openness (TRADE) reveals that it has a positive impact on the total, direct and indirect tax buoyancies. TRADE is significant for total tax and indirect tax buoyancies while insignificant for direct tax buoyancy. As this sector grows, the contribution of this sector in the national income may also increase. So, the government income from the international trade in the form of direct taxes and indirect taxes may increase as well. It has been noted that tax on trade is historically an integral source of revenues for the government because it is easy to collect (Farhadian-Lorie and Katz, 1989). So, through the tax revenues of international trade, the economy will be more triggered. The results are matched with the studies of Karagoz (2013), Chaudhry and Munir (2010), Gupta (2007) and Ghura (1998).

Net Official Development Assistance (ODA) has a negative impact on all tax buoyancies. ODA is insignificant for total tax buoyancy and direct tax buoyancy while it is partially significant for indirect tax buoyancy. As official development assistance increases, GDP growth increases but tax revenues will not boost up. In such a situation the government might not adopt the discretionary or the automatic measures for enhancing tax revenues. Hence, the buoyancies coefficients of total tax, direct tax, and indirect tax might not be increased. Qazi (2010) came up with the findings that official development assistance is negatively related with total tax buoyancy, direct tax buoyancy and indirect tax buoyancy for selected developing countries. As official development assistance of any country increases in the form of foreign aid or external borrowings, the dependence of the government on internal revenue sources will decrease. Bayu (2015) discovered that official development assistance has a negative impact on total tax buoyancy for Ethiopia. Moreover, our results are at par with Ayenew (2016), Chaudhry and Munir (2010) and Ghura (1998).

Now we turn the results of broad money (BD). It explains that broader money has positive impact on total, direct and indirect tax buoyancies. BD is found significant for total tax buoyancy and direct tax buoyancy while insignificant for indirect tax buoyancy. The positive sign on BD reveals that the greater the degree of monetization and financial depth exists in the country, the more will be the economy documented. Board money may be a large tax collecting revenue source for Pakistan contributing significantly to the GDP. The government may collect the taxes from banking transactions. Qazi (2010) found the positive association between the broad money tax buoyancies for selected developing countries. Furthermore, the sign of BD is quite similar as in the studies by Karagoz (2013) and Chaudhry and Munir (2010).

Inflation is a core macroeconomic variable that has a strong bearing on tax revenues. The values on the coefficient of INF depict a negative and significant impact on overall, direct and indirect tax buoyancies. The inverse relationship between inflation and tax buoyancies shows that with an increase in inflation, the purchasing power of people may decrease. According to the Musa (2016) total tax revenues may decrease due to the high prices and less utilization of goods and services. Therefore, the values of the overall tax,
direct tax, and indirect tax buoyancies coefficients will decrease and the government has to hinge on internal or external borrowings to meet the expenditures. The sign of this variable is justified through studies by Wijayanti and Firmansyah (2017), Mawejje and Munyambonera (2016), Muibi and Sinbo (2013) and Ghura (1998).

Table 6: Long Run Estimates of Tax Buoyancy Models (Disaggregate)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
<th>Model 7</th>
<th>Model 8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Income Tax Buoyancy Model</td>
<td>Workers Welfare Tax Buoyancy Model</td>
<td>Custom Duty Buoyancy Model</td>
<td>Federal Excise Duty Buoyancy Model</td>
<td>Sales Tax Buoyancy Model</td>
</tr>
<tr>
<td></td>
<td>Dependent Variable: TBIT</td>
<td>Dependent Variable: TBWWT</td>
<td>Dependent Variable: TBCD</td>
<td>Dependent Variable: TBFed</td>
<td>Dependent Variable: TBST</td>
</tr>
<tr>
<td></td>
<td>ARDL (2, 1, 1, 1, 1, 0, 1, 0, 0, 1)</td>
<td>ARDL (1, 1, 0, 1, 0, 1, 0, 1, 1)</td>
<td>ARDL (1, 0, 1, 0, 1, 1, 1, 0, 1)</td>
<td>ARDL (2, 1, 1, 1, 1, 1, 1, 1)</td>
<td>ARDL (1, 0, 1, 1, 1)</td>
</tr>
<tr>
<td>MVA</td>
<td>0.5889 (0.0431)</td>
<td>16.2426 (0.0116)</td>
<td>2.5308 (0.0421)</td>
<td>0.3166 (0.0702)</td>
<td>1.9007 (0.1006)</td>
</tr>
<tr>
<td>AVA</td>
<td>0.3978 (0.0416)</td>
<td>10.3420 (0.0106)</td>
<td>2.5308 (0.0421)</td>
<td>0.3166 (0.0702)</td>
<td>1.9007 (0.1006)</td>
</tr>
<tr>
<td>SVA</td>
<td>0.5748 (0.0280)</td>
<td>10.1135 (0.0134)</td>
<td>2.5308 (0.0421)</td>
<td>0.3166 (0.0702)</td>
<td>1.9007 (0.1006)</td>
</tr>
<tr>
<td>TRADE</td>
<td>0.0410</td>
<td>1.4846 (0.0124)</td>
<td>0.0119 (0.0056)</td>
<td>0.0120 (0.0056)</td>
<td>0.0017 (0.0056)</td>
</tr>
<tr>
<td>ODA</td>
<td>-0.1254 (-0.0374)</td>
<td>-0.6630 (-0.0195)</td>
<td>-3.5522 (-0.0778)</td>
<td>-0.7051 (-0.0050)</td>
<td>-3.1679 (-0.1404)</td>
</tr>
<tr>
<td>BD</td>
<td>0.0995 (0.0132)</td>
<td>0.0947 (0.0195)</td>
<td>0.2185 (0.0077)</td>
<td>0.3563 (0.0050)</td>
<td>0.1241 (0.0050)</td>
</tr>
<tr>
<td>INF</td>
<td>-0.01341 (-0.0390)</td>
<td>-0.0676 (-0.0489)</td>
<td>-0.2337 (-0.0151)</td>
<td>-0.0109 (-0.0060)</td>
<td>-0.1434 (-0.0570)</td>
</tr>
<tr>
<td>C</td>
<td>-50.2492 (-50.0327)</td>
<td>-976.3142 (-0.0130)</td>
<td>-180.9086 (-0.0382)</td>
<td>-55.0631 (-0.0239)</td>
<td>-107.8521 (-0.1356)</td>
</tr>
<tr>
<td>T</td>
<td>----- (-0.4512)</td>
<td>----- (-0.0086)</td>
<td>----- (-0.0239)</td>
<td>----- (-0.0086)</td>
<td>----- (-0.0086)</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations

Now we explain the long-run results of disaggregate tax buoyancies. In Table 6, we have five disaggregate tax buoyancies models in which income tax buoyancy, workers welfare tax buoyancy, custom duty buoyancy, federal excise duty buoyancy and sales tax buoyancy are the dependent variables respectively. These models have the same economic explanatory variables as explained in Table 4.

It can be observed that we have the same signs of explanatory variables with income tax buoyancy and workers welfare tax buoyancy as these variables have similar signs with direct tax buoyancy. Moreover, we have found the same resemblance of explanatory variables with federal excise duty buoyancy, custom duty buoyancy, and sales tax buoyancy as economic variables have with indirect tax buoyancy.

5.5 Error Correction Results

Having investigated the long-run relationship between variables used in our models, now we explain the error correction estimates of these variables. The coefficient of ECM shows how slowly or quickly, a variable move towards the equilibrium path. Tables 7 and 8 show the error correction results of all tax buoyancy models.

Table 7 shows the coefficient values of error correction terms of model 1, model 2 and model 3 are -1.0293, -1.4805 and -1.4541 respectively. The negative signs of error correction coefficients confirm the existence of a convergence trend towards the equilibrium. The results show that in model 1 the error will be corrected in one year and approximately two weeks, in model 2, it will be corrected approximately in one and a half year and in model 3, the error will also be corrected in a year and approximately five months.

Table 7: Error Correction Results of Tax Buoyancy Models (Aggregate)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1 Overall Tax Buoyancy Model</th>
<th>Model 2 Direct Tax Buoyancy Model</th>
<th>Model 3 Indirect Tax Buoyancy Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable: TBT</td>
<td>Dependent Variable: TBD</td>
<td>Dependent Variable: TBINDT</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>-1.0293 (-0.4512)</td>
<td>-1.4805 (-0.0086)</td>
<td>-1.4541 (-0.0086)</td>
</tr>
</tbody>
</table>
ARDL (1, 1, 1, 1, 1, 1, 1, 1) | ARDL (1, 0, 1, 0, 0, 1, 0) | ARDL (1, 0, 0, 0, 1, 1, 1, 1)
--- | --- | ---
D(MVA) | 0.7938 (0.0246) | 0.8667 (0.0253) | 0.9549 (0.0584)
D(AVA) | 0.7943 (0.0321) | 0.7276 (0.0224) | 0.5848 (0.0971)
D(SVA) | 0.8259 (0.0121) | 0.8791 (0.0041) | 0.7281 (0.0371)
D(TRADE) | -0.2309 (0.0185) | 0.0273 (0.6376) | -0.2983 (0.0121)
D(ODA2) | -0.4187 (0.1856) | 0.0273 (0.0769) | 0.0476 (0.7697)
D(BD) | -0.2140 (0.0122) | -0.0053 (0.09076) | -0.1597 (0.0265)
D(INF2) | -0.0513 (0.0445) | -0.0139 (0.3757) | -0.0052 (0.8233)
CointEq(-1) | -1.0293 (0.0151) | -1.4805 (0.0001) | -1.4541 (0.0001)

Source: Authors’ calculations

Table 8 shows the error correction coefficient values of model 4, model 5, model 6, model 7 and model 8 are -2.6267, -1.1190, -1.0840, -1.2434 and -1.9203 respectively. The negative signs of error correction coefficients show that there is convergence trend towards the equilibrium. The results demonstrate that in model-4 the error will be corrected in two years and six months, in model-5 it will be corrected in one year and one month, in model-6 this time will be one year and approximately one month, in model-7 the error will be corrected in one and more than two months, in model-8 the error will also be corrected in one year and more than nine months.

Table 8: Error Correction Results of Tax Buoyancy Models (Disaggregate)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Income Tax Buoyancy Model</th>
<th>Workers Welfare Tax Buoyancy Model</th>
<th>Custom Duty Buoyancy Model</th>
<th>Federal Excise Duty Buoyancy Model</th>
<th>Sales Tax Buoyancy Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dependent Variable: TBIT</td>
<td>Dependent Variable: TBWWT</td>
<td>Dependent Variable: TBCD</td>
<td>Dependent Variable: TBFED</td>
<td>Dependent Variable: TBST</td>
</tr>
<tr>
<td></td>
<td>ARDL (2, 1, 1, 1, 1, 1, 1, 1)</td>
<td>ARDL (1, 1, 1, 1, 0, 1, 0, 1, 0)</td>
<td>ARDL (1, 0, 1, 1, 1, 1, 1, 1)</td>
<td>ARDL (2, 1, 1, 1, 1, 1, 1, 1)</td>
<td>ARDL (1, 0, 1, 1, 1, 1, 1, 1, 1)</td>
</tr>
<tr>
<td>D(TBIT(-1))</td>
<td>0.6502 (0.0306)</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>D(TBFED(-1))</td>
<td>-----</td>
<td>-----</td>
<td>-----</td>
<td>-0.2491 (0.0139)</td>
<td>-----</td>
</tr>
<tr>
<td>D(MVA)</td>
<td>1.2074 (0.0609)</td>
<td>10.5182 (0.0056)</td>
<td>2.7434 (0.0265)</td>
<td>1.0709 (0.0176)</td>
<td>3.6499 (0.0793)</td>
</tr>
<tr>
<td>D(AVA)</td>
<td>0.7713 (0.0535)</td>
<td>6.8053 (0.0040)</td>
<td>0.6915 (0.2511)</td>
<td>0.4204 (0.0316)</td>
<td>5.7405 (0.0102)</td>
</tr>
<tr>
<td>D(SVA)</td>
<td>1.1513 (0.0488)</td>
<td>6.7519 (0.0070)</td>
<td>2.1952 (0.0121)</td>
<td>0.9285 (0.0134)</td>
<td>3.7838 (0.0325)</td>
</tr>
<tr>
<td>D(TRADE)</td>
<td>0.0519 (0.1530)</td>
<td>-1.6615 (0.0053)</td>
<td>-0.5914 (0.0095)</td>
<td>0.0966 (0.0387)</td>
<td>-1.4280 (0.0193)</td>
</tr>
<tr>
<td>D(ODA)</td>
<td>-0.1127 (0.2226)</td>
<td>-0.7420 (0.3867)</td>
<td>1.3625 (0.0628)</td>
<td>-0.4943 (0.0256)</td>
<td>-6.0833 (0.0177)</td>
</tr>
<tr>
<td>D(BD)</td>
<td>-0.0250 (0.1968)</td>
<td>-0.0010 (0.9950)</td>
<td>-0.2369 (0.0428)</td>
<td>0.0265 (0.0800)</td>
<td>-1.0305 (0.0064)</td>
</tr>
<tr>
<td>D(INF)</td>
<td>-0.0032 (0.3942)</td>
<td>-0.1345 (0.0787)</td>
<td>-0.0259 (0.4794)</td>
<td>0.0225 (0.0336)</td>
<td>-0.2754 (0.0088)</td>
</tr>
<tr>
<td>D(T)</td>
<td>-----</td>
<td>-0.5049 (0.0069)</td>
<td>-----</td>
<td>-----</td>
<td>-0.6255 (0.0191)</td>
</tr>
<tr>
<td>CointEq(-1)</td>
<td>-2.6267 (0.0291)</td>
<td>-1.1191 (0.0004)</td>
<td>-1.0840 (0.0002)</td>
<td>-1.2435 (0.0040)</td>
<td>-1.9203 (0.0155)</td>
</tr>
</tbody>
</table>

Source: Authors’ calculation

6. Conclusion and Policy Implications

The present study investigates the impact of economic determinants on different dimensions of tax buoyancies in Pakistan. The study has used the time series data for the period of 1996-2016 to estimate the eight models for examining the relationship between economic determinants of tax buoyancy. The analysis has been done by aggregate and disaggregates levels. Three models are related to aggregate levels while five models are associated to disaggregate levels.
All the economic determinants are positively related to tax buoyancies in aggregate and disaggregate levels except official development assistance and inflation. The results of the study have alluded to some important policy implications for policy makers and future research.

- Firstly, the manufacturing sector has a positive relationship with the tax buoyancies which reveals that it is the biggest source of the government revenue collection and it has a large share in the total tax revenues. Thus, with the government and policymakers need to put good policies in place that we will and ensure on increase in tax collection by this sector.
- Secondly, the agriculture sector has a positive relation with tax buoyancies. But it can be observed that contribution of this sector in tax revenues is very low. So, there is need to impose some taxes in this sector for revenue-enhancing which might lead to an increase in tax buoyancy as well.
- Thirdly, the Services sector has a positive impact on tax buoyancies. Services sector has a significant contribution in GDP. Hence, the government can widen the tax base for this sector and may increase its tax revenues.
- Fourthly, the Trade Openness has a positive relationship with tax buoyancies. For increasing the tax revenue there must be increased in the tax base on trade in the form of customs and federal excise duty to augment buoyancy coefficient.
- Fifthly, evidence on official development assistance has a negative relation with tax buoyancies. Implying of the government depends on the foreign aid and external borrowings; it will not impose further taxes in order to generate revenue in the country. That’s why total tax revenues will be decreased and value of tax buoyancy will decrease as well. So, government should less rely on foreign assistance.
- Sixthly, monetization and financial depth need to be expended in the economy. As the economy becomes more documented, each transaction tax gets collected. This will increase tax revenues and value of tax buoyancy would also increase.
- Finally, the negative relationship of inflation with tax buoyancies demonstrates that government needs to avoid the internal or external borrowings which might be the cause of future inflation. Hence, the government needs to generate its own revenues and resources.

References


Poverty Alleviation through Institutional Empowerment of Social and Economy on Poor Society in Gowa Regency

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ARTICLEDETAILS

ABSTRACT

The purpose of this paper is to examine the extent to which the role of government in empowering marginal/poor communities through various empowerment programs. To examine and explain the extent to which the benefits of programs to empower the poor society in reducing poverty. To examine and explain the Poverty Reduction Model that is more in line with the local wisdom of the people of South Sulawesi especially in the community in Kabupaten Gowa. It is intended to find a model that fits the needs and conditions of the poor communities in South Sulawesi, especially in Gowa so that it can be applied to poverty alleviation efforts in the future. An interview and observation were done to 20 people from the poor community, government, community leaders, and practitioners in Gowa regency. Descriptive and reflective sections were used to analyze the data and examining the poverty alleviation model through the empowerment of socio-economic institutions in South Sulawesi in Gowa regency. With the method of synergizing between Social Institution and Economic Institution, the researcher found that society can develop itself creatively and productively, so gradually Poverty will decrease as expected. Based on survey results, observations and interviews on the subject in this study, it can be concluded several things: That poverty experienced by the people of Gowa Regency is cultural and structural poverty so that people naturally experience poverty without realizing it as a problem in their lives living as they are with the non-poor community. Poverty is seen as something destiny and need not be too much of a problem, but they live their lives as they are.

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1. Introduction

Poverty is a crucial problem faced by all countries in the world, both developed countries, and developing countries. Poverty is still a global issue today. This means that poverty is not only a significant problem in Third World Countries, but it is also an issue in the Advanced Industrialized Countries. It is at least observable in the data showing that in the United States in 1980 there were still 2.8 million subsidized people, more than half of the group is still relatively weak, as described (Sulaiman cited in Muhtar, 2005).
In the context of Indonesia, poverty alleviation has been going on since PELITA I (48 years old). The effort has not been able to eradicate poverty significantly, especially with the economic crisis that occurred in 1997 caused the poverty rate to increase and reach 40 percent of the total population Indonesia (Muchtar, 2005). The incidents are a valuable lesson for the government in carrying out the national development in general, and the poverty reduction program in particular that places the poor as the object of development needs to be corrected. Thus, in poverty reduction efforts need to change the development paradigm that places the poor as the object of development changed to the subject of development in addition to broad community participation is necessary for formulating poverty alleviation programs.

As with South Sulawesi, there have been many programs undertaken by the government in efforts to alleviate poverty such as; Urban Poverty Program (P2KP), Fishermen Economic Empowerment Program (PEMP), Inpres Village Left Behind (IDT), Raskin, and Direct Cash Assistance (BLT). All such poor community empowerment programs have not been able to run efficiently. Even the BSM program at this time very concerns because there are still many people who can become BSM participants.

2. Theoretical Study
2.1 Theory and the Concept of Empowerment
Community empowerment efforts are central issues that often leveled by the government and society, but until now the issue of community empowerment is still in the socialization stage to find a model of development specific community groups, given the complexity of the problems faced by the community itself both individually and in groups.

Community empowerment often uses the term community development. Community empowerment can be defined as a method that enables people to improve their quality of life and be able to enlarge their influence on the processes that affect their lives (AMA, 1993) in Suharto (2005). In particular, community development is concerned with the efforts to meet the needs of disadvantaged or oppressed people, whether caused by poverty or by discrimination based on social class, ethnicity, gender, age, and disability (Twelve trees, 1991).

The definitions and the statements gave us a sight that empowerment is a process and purpose, whereas a process; empowerment is a series of activities to strengthen the power or empowerment of weak groups in society. It is including individuals who have problems of poverty, while empowerment as a goal indicates the state or outcome to be achieved by a social change; namely people who have power, independence or have knowledge and ability in fulfilling their life needs both physical, economic, and social such as; confidence, able to convey aspirations, have livelihood, participate in social activities and independent in carrying out task - the task of his life.

Empowerment is a significant aspect of getting attention in making public policy to clear the direction and objectives to be addressed and achieved by public policy, and most importantly is such a policy accommodates the needs of the community.

In connection with the above opinion, Sennet and Cobb (1972) and Conway (1979) in Suharto (2005) stated that the lack of empowerment of the community is caused by several factors such as; powerless economic security, lack of experience or access to the political arena, to information, lack of financial support, lack of training.

2.2 The Concept and Poverty Indicators
In general, the concept of poverty can be distinguished from different perspectives, but can be distinguished in three forms as described by Townsend in Ridwan (2008), as follows:
a. Absolute poverty, a state in which the level of income people have is below the poverty line, or some income not is enough to meet the basic minimum needs of life. Therefore absolute poverty is often referred to as natural poverty.

b. Relative poverty is a form of poverty by looking at what percentage of the national income is received by a population group with a specific income class compared to the proportion of national income received by the population group with other income groups (based on the dimension of place and time).

c. Cultural Poverty is a form of poverty that refers to the attitude of a person or society who because of their cultural factors do not want to try to improve their level of life despite the efforts of outsiders to help him. Even in the theory of "culture of poverty" it has been stated that poverty can arise as a result of the values or culture shared by the poor themselves, such as lazy, easy to surrender to fate, lack of work ethic and so on.

2.3 The Concept and Theory of Institutional

There is a belief that institutionality can be a source of efficiency in the economic progress that most economists, even the most liberal, have accepted. It is just that until now there is still no clarity about the meaning and definition of the institutional. At least, although at the same level of substance many economists define institutions with diverse perspectives (Yustika, 2006).

North (1994) cited in Yustika (2006) defines institutions as rules that limit human devised behavior to build structures of political, economic, and social interactions. In this context, institutions have three components, namely formal institutions, informal institutions, and enforcement mechanisms.

3. Methodology

This research was conducted in South Sulawesi in Gowa Regency. The choice of location is based on the consideration that poverty research at the site can provide sufficient information because the chosen location has a sparse (population) number of people can also represent other areas.

An interview and observation were done to 20 people from the poor community, government, community leaders, and practitioners in Gowa regency. Descriptive and reflective sections were used to analyze the data and examining the poverty alleviation model through the empowerment of socio-economic institutions in South Sulawesi in Gowa regency.

The process of data analysis is done qualitatively with open interviews, qualitative approaches that emphasize interpretive paradigm, to understand the meaning behind the individual's awareness of research subjects.

4. Result and Discussion

4.1 Gowa Regency Poverty Mapping

Gowa regency as a district very close to the city of Makassar, with community activities focusing on agriculture in general so that the condition of society only rely on income in the agricultural sector. It is known that people living from agricultural livelihoods face low-income issues compared to industry and services sectors.

Based on survey data of region potential by Regency and City in South Sulawesi Year 2014, it is known that Gowa Regency has poor society as many as 60,000 people or 8.73 percent of total population that exists. In general, the poor community in Gowa Regency can be classified into two traits of poverty:

a. Absolute Poverty, where the income level of the poor is below the poverty line, where incomes are not enough to meet the minimum essential needs of everyday life.
b. Cultural poverty, where the poor are due to cultural influences, they accept their situation, they do not want to try to improve the level of life and accept the situation as it is. They are caught in a cycle of poverty which is naturally without them knowing it.

Based on data from BPS Year 2013, it can be explained that the income of farmers on average per year for rice farmers only Rp 2,851,000, for palawijafarmers Rp 2,612,000, horticultural farmers Rp 1,773,000, plantation crops Rp 729,000, livestock business Rp 612,370. This figure can be understood how the low income of people working in agriculture sector earns below the poverty line is based on the assumption that someone who earns Rp 300,000, per month is considered not poor. Then the highest farmer income is rice farming of Rp 2,851,000, if divided by 12 months it will get the number Rp 237,583 per month.

### 4.2 Reviewing Empowerment Strategies Appropriate to Local Communities

Poverty is one of the problems that must be considered in development because one measure of development success is to reduce poverty. Therefore now there has been a shift in the meaning of development from an orientation that prioritizes the rate of growth towards equitable development. According to the traditional view, development is always identified with increasing per capita income by economic growth strategy (trickle down effect strategy).

With a high growth rate, per capita income will rise so that unemployment, poverty, and inequality in income distribution can be solved. However, the fact is that the increasing rate of economic growth is accompanied by increasing unemployment, poverty and the increasingly uneven distribution of income. In connection with that, new ideas emerged to look at the concept of development. Economic development should not only rely on an increase in national income but also need to pay attention also to poverty and income distribution.

The poverty alleviation program undertaken by the government has been considered less emphasizing the empowerment aspect, more like SantaClaus so that its impacts make people spoiled, do not want to work hard even according to Gumilar (2007) the provision of various direct financial assistance impacts to perpetuate poverty. It should be realized that the problem of poverty is not only an economic problem but rather a complex problem, multidimensional so that the response requires an approach or strategy from various aspects, both economic, political and socio-cultural aspects.

Program poverty alleviation is like SantaClaus such as cash transfer programs (BLT) although based on good intentions, but in fact not able to encourage the poor to become an independent citizen. Therefore, poverty alleviation programs that need to be more emphasized empowerment aspects, among others need to be equipped with entrepreneurship education, to change the attitude of mental dependence and develop a work ethic, so that it can grow self-reliance. In this way, it is expected to generate awareness of the poor to engage in productive activities resulting in increased incomes and reducing poverty.

On the other hand, efforts to alleviate poverty should not only be the responsibility of the government but a shared responsibility of both government and society. To overcome poverty, the most critical efforts in alleviating poverty should be made by the community itself, especially at the village level. The community itself is one type of local institutions need to be improved its role to come forward in poverty alleviation programs in their respective regions.

### 4.3 Approach and Theory of Poverty

#### a. Poverty Approach

There are several approaches to understanding poverty. According to Armawan (HTTP://indrasetiawansd.-wordpress.com/2006/12/02/) in understanding poverty can be done with five approaches, as follows:

1. **The income approach:** where a person is said to be poor if his income is below a reasonable minimum level.
2. Basics needs approach, where one is said to be poor if they are not able to meet basic needs such as; food, clothing, shelter, primary school and so on.

3. The accessibility approach, where a person is weak because of lack of access to productive assets, social and physical infrastructure, information, markets, and technology.

4. Human capability approach, where someone is said to be poor if the relevant does not have the ability that can function at a minimum level.

5. Inequality approach, in which a person is said to be poor if the income is to the community in his community. This approach is a relative poverty approach.

From these figures, the stronger is that poverty is not just a matter of income or a small economic aspect, but a multidimensional problem. Poverty not only talks about low incomes but also concerns about inadequate housing, limited access to productive assets, low human development and so on.

b. The Theory of Poverty
Poverty is a classic problem that has existed since time immemorial and will likely remain an actual problem today. Therefore, although the poverty alleviation program has done, poverty still exists. According to Suharto in understanding poverty, there are two paradigms or grand theory, namely the Neoliberal and Social Democratic paradigms. Neo-liberal supporters argue that poverty is an individual issue caused by the weakness of the individual's weaknesses and choices.

Poverty will be lost if market forces are expanded to the most significant extent, and economic growth is driven to the highest possible level. Therefore, poverty reduction strategies must be 'residual,' temporary, and involving only families, self-help groups or religious institutions. Meanwhile, the state only acts as a night watchman and can only intervene if the institutions are not able to carry out their duties. Neo-liberal Theory believes that thanks to the superiority of market mechanisms and economic growth naturally will be able to overcome poverty and social injustice.

Social Democratic theory argues that poverty not an individual issue, but a structural problem. Poverty is caused by injustice and inequality in society due to the clogging of certain groups' access to various community resources. Social-Democrat supporters argue that equality is an essential prerequisite for achieving independence of freedom. The realization of freedom can only be achieved if everyone has or can reach resources, such as education and good health and adequate income. The State has an essential role in ensuring that everyone can participate in activities in the community that enable them to make choices in fulfilling his or her needs.

c. Indicators of Poverty
In determining poverty, there are several criteria for measuring poverty. Tambunan states that the magnitude of poverty can be measured with or without reference to the poverty line. The concept that refers to the poverty line is called absolute poverty, while the concept of measurement not based on the poverty line is called relative poverty. Relative poverty is a measure of the gap in income distribution, while absolute poverty is the degree of poverty below the poverty line, where minimum needs for survival not be met.

The existence of various criteria of poverty causes the difference of data about poverty. Poverty criteria are as follows:

1. World Bank Criteria
The World Bank uses the basis of per capita income in dollar-denominated standards. In 1990 the World Bank established a poverty line of $1 per capita per day and in 2000, and now the World Bank sets a poverty line of $2 per capita per day.

2. Central Statistics Bureau Criteria
The criteria used by the Central Bureau of Statistics (BPS) to determine the poverty line is the minimum expenditure required to meet the needs of daily living. The minimum spending on daily living is measured
by food expenditure equivalent to 2100 calories plus expenditure for non-food items that include clothing, housing and various goods and services (Khomsan, 2007).

1. **Criteria According to Sayogya**  
Sayogya uses the equivalent kilogram of rice to determine the criteria for poverty line boundaries. Based on that, Sayogya grouped the community into four groups, as follows:

1. Very Poor under 240 kg equivalent of rice for rural areas, Below 360 kg equivalent of Rice for Urban.
2. Poor Equivalent 240 - 320 kg of rice for rural and Equivalent 320 - 480 kg of rice for urban areas.
3. Almost Poor Equivalent 320 - 480 kg of rice for rural and Equivalent 480 - 720 kg of rice for urban areas.
4. Quite equals more than 480 kg of rice for rural Equals more than 720 kg of rice for urban areas.

**d. National Program for Community Empowerment (PNPM) Independent**  
Poverty is a complex issue so that its mitigation requires the participation of various parties together and coordinated. Poverty reduction efforts need to involve caring groups, volunteers, businesses and local governments. To improve the effectiveness of poverty alleviation starting in 2007 the government launched a popular National Community Empowerment Program called PNPM Independent.

Based on PNPM Independent General Guidelines, PNPM Independent is a national program in the form of a policy framework as the basis and reference for the implementation of community-based poverty reduction programs. PNPM Independents implemented through harmonization and development of system and program mechanisms and procedures, provision of assistance, and stimulant funding to encourage community initiatives and innovation in poverty reduction efforts in a sustainable way.

PNPM Mandiri as the development of the Sub-District Development Program (KDP) and the Urban Poverty Program (P2KP) and the Acceleration of Development of Disadvantaged and Special Areas (P2DTK) for the development of disadvantaged areas, post-disaster, and conflict. Empowerment-based poverty reduction in PNPM Mandiri is strengthened by various community empowerment programs implemented by various departments/sectors and local governments.

e. Learning Process as a Strategy  
Empowerment of Poor People in Poverty Alleviation Program is one of the realizations of empowerment process in poverty eradication program given in PNPM Mandiri. The poor people in the rural area given the learning process through learning activities, training, and assistance by the village facilitators to increase awareness, understanding, and participation of citizens, to foster an attitude of community independence in overcoming the problem including the desired development. Learning activities in the context of empowering the poor are done through (1) climate creation, (2) potential strengthening and (3) protection, with the following realization.

a. Creation of a climate that enables the development of universal values of humanity. For this purpose, socialization of universal human values, societal principles, and sustainable development are carried out. Universal values of humanity in the form of togetherness, honesty, volunteerism, justice, equality, and unity in diversity, during the social principles of cooperation, democracy, transparency, and accountability. The socialization of these values and principles is considered necessary as globalization fosters the development of different values and cultures that glorify the spirit and soul of individualism destroying excellent values and cultures which are the richness and superiority of the Indonesian nation.

b. Institutional strengthening, which is carried out through the process of forming local institutional learning in the form of Self-Helping Community Body (BKM) and Non-Governmental Groups (KSM) are entrenched, transparent and accountable. Rooted in the formation of institutions conducted with the bottom of the community base ranging from neighborhood, hamlet and the village / urban village level.
c. Strengthening the potential and power, in the form of providing financial aid, human resource development, infrastructure development which is incorporated in the learning of development of Tridaya, which is economical, social and environmental development. This potential strengthening is intended as a stimulant as a means to mobilize and increase citizen participation.

Tridaya development is one of the elaborations of the program of the development program in PJM Pronangkisby the priority needs. Development of economic sector in the form of revolving capital loan which is intended for poor people who have abusiness registered in Self-Mapping (PS) and joined in Self-Help Groups (KSM).

5. Conclusion

Based on the survey results, observations and interviews on the subject in this study, it can be concluded several things, as follows: (1)That poverty experienced by the people of Gowa Regency is a cultural and structural poverty, so that people naturally experience poverty without realizing it as a problem in their lives living as they are with thenon-poor community. Poverty is seen as something destiny and need not be too much of a problem, but they live their lives, as they are; (2)To empower the poor community, it is necessary to select the right strategy for the needs of the community in moving the local wisdom of the community to be able to help them out of the hardships of life; (3)An ideal empowerment strategy is strategy with the model of learning in addressing the problems faced in the life of the community. Learning can change the people's mindset from laziness to being diligent from helpless be to empowered.

References
Farm Households’ Willingness to Pay for Forestation Based Soil Conservation Program on Communal Land in Bagh District, Kashmir

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ABSTRACT

This study investigated farmers’ willingness to pay (WTP) for a forestation based soil conservation program on communal land in district Bagh, Kashmir. Data were collected from a random sample of 180 farm households on a well-structured questionnaire possessed with a contingent valuation question. Majority of the sampled farm households reported moderate to high water erosion problem and their mean annual WTP for the soil conservation program was $34. The foremost beneficiary of the program were expected to be the farm households facing high erosion, and that’s why their mean stated WTP was significantly high than others. Other important determinants of WTP were farm-size, household’s income and head’s education, farming experience, perceptions about soil erosion and contact with extension agents. The aggregate WTP for a farm household were calculated to be $214 for 10 years. This suggests that sufficient funds can be generated from local stakeholders for the implementation of the soil conservation program.

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1. Introduction

Land degradation refers to the reduction or decline in the economic and biological activity of soil on irrigated or rain-fed agricultural land, pasture and forest resulting from natural processes or anthropogenic activities (Coxhead and Oygard, 2008). Natural processes such as water and wind erosion, salinity, water logging, and loss in native plant species as a result of invasion by other species are important factors responsible for the degradation of land (Zia et al., 2004). In addition to these natural processes, anthropogenic activities responsible for land degradation include overgrazing, unsustainable agricultural practices, burning of forest and grasslands (Shah, 2014). Land degradation is an important issue nowadays. It is happening all over the world and its consequences are devastating for human and wildlife. In South Asia, 25 percent of the total pastures and crops area is affected by water erosion, and the mountains of
Himalaya, the alluvial plains of Indus, Ganges and Deccan of Pakistan, India and Sri Lanka are the severely affected regions (Singh & Singh, 2011).

Erosion of top soil can directly or indirectly affect human and ecological systems. The effects of soil erosion can be bifurcated into on-site and off-site ones. On-site effects are reduced agricultural productivity and loss in value of agricultural land whereas Off-site effects arise from the transport of soil sediments to another farm, road or a freshwater body such as river, reservoir, etc (Hou, 2012). The effects of soil sediments’ flow into water bodies can be categorized into biological, recreational, water storage and electricity production effects. Freshwater turbidity, due to its high sediment load results in the decrease aquatic-animal population either directly through reducing their reproductive ability or indirectly by destroying their habitat. High turbidity reduces the pleasure of swimming and boating, and decrease significantly fishing ability. Sediments deposition also reduces water storage capacities in reservoirs.

Soil resource in Northern areasand Pakistanis more exposed to erosion and land sliding. In these hilly areas, forests and agriculture constitute the major portion of food, wood and fodder and, hence, act as major source of livelihood of the locals. Anthropogenic activities, such as deforestation, overgrazing and extensive agricultural practices on slopes and in the alluvial plains have made the top soil more vulnerable to intense monsoon rains and floods (Shah, 2014). Tarbela, Warsak and Mangla Dams are Pakistan’s main water reservoirs, located in the Northern areas. Heavy soil erosion has resulted in the silting up of these reservoirs and, hence, has reduced their power generating capacity. Conventional management practices of soil and water are useful tools to combat against land sliding and soil erosion, but lack its common application. The scenario gives birth to the questions of ‘how the government may respond to tackle the challenge of soil conservation?’ and ‘how to make the agricultural sector in Northern areas of Pakistan sustainable?’ The study finds its rationale for answering questions of the like nature and investigate farm households’ willing to pay (WTP) for a forestation based soil conservation program in Pakistan occupied Kashmir area.

Results of the study helps in understanding whether soil conservation program would be acceptable and viable to the households in Kashmir as well as other Northern areas of Pakistan, and whether participation and contribution of the locals therein can be ensured. The paper is structured into the following sections: Section 2 presents the methodology adopted for data collection and analysis; section 3 discusses the results from data analysis; and section 4 concludes the findings of the study and extends policy recommendations for controlling soil erosion.

2. Methodology

Study Area and Sample Selection

This study was conducted in district Bagh of Kashmir. The total human population of the district is about 0.434 millions with an annual growth rate of 2 percent. Around 90 percent of the population is settled in rural areas. The total geographic area of the District is 1368km². Its climate varies from sub-tropical to moist temperate and average annual temperature is 21°C with a range of 2°C to 40°C in the months of January to July respectively while annual precipitation is about 1500 millimeters (Shaheen et al., 2011). Bagh is one of the major agricultural districts of Kashmir. In the past two decades, large scale deforestation and unsustainable agricultural practices have made the very top soil more susceptible to water erosion.

The recommended soil conservation program includes reforestation and afforestation on slopes and riparian zones, and adoption of on farm agro-forestry, terracing and fencing. Forest cover on slopes and farmland prevent loss of top fertile soil and its flow into freshwater systems (Shah et al. 2015; Nafees et al. 2008; Benavides and Veenstra 2005; Lu et al. 2003).
A multistage random sampling technique was used in selecting farm households for data collection. In the first stage, 6 villages were randomly selected from district Bagh. In the second stage, 180 farm households were selected randomly from those villages. The sample size was decided on the basis of Yamane (1967)’s formula, and proportional allocation sampling technique was used in selecting number of farm households from each village (Cochran; 1977).

**Utilitarian Approach for WTP Measurement**

Climate change, in South Asia, has increased the intensity and frequency of occurrence of monsoon floods. In addition, large scale deforestation and unsustainable agricultural practices in the past twenty years have made the top soil more vulnerable to water erosion. In this scenario, reforestation and afforestation on slopes and riparian zones could be used as useful and effective tools for combating stopping floods and controlling soil erosion.

Agriculture is the main source of food and income for most of the households in the study area and any sort of improvement in the on-farm soil erosion control would improve agricultural productivity and profitability. The farm household’s welfare function of can be written in the form of indirect utility function as;

\[ U(Y, P, j) \ldots \ldots (1) \]

Where Y is farm household's income, P is vector of prices and j = (0,1) represent soil erosion situation; Let j = 0 indicates the current situation of on-farm soil erosion and j = 1 indicates the controlled soil erosion situation. If B is the benefit received by the farm household from on-farm soil erosion control, then the two situations can be compared as,
As household's preferences are unobservable to researcher and their WTP for the proposed program depends on benefits they receive \((B \geq \text{WTP})\); therefore, the utility in each situation can be written as follows:

\[
V(Y - \text{WTP}, P, 1) + e_1 \geq V(Y, P, 0) + e_0 \quad \text{(3)}
\]

Where \(e_0\) and \(e_1\) are random variables, independently and identically distributed with mean zero and they represent the part of utility unobserved to the researcher. Equation 3 presents the condition that determines if the farm household accepts to pay for the reforestation program. The economic valuation of on-farm erosion control benefit by the program is based on the question whether or not a given household is better off. This WTP could be zero if the benefit they receive is zero.

**Contingent Valuation Method (CVM)**

Farm households’ gain in welfare from on-farm erosion control benefit of reforestation and a forestation on communal and state owned land in Bagh district of Kashmir was estimated using Contingent Valuation Method (CVM) which is a survey based Stated Preference approach.

CVM results are sensitive to the WTP question format designed for an environmental quality improvement (Carson and Haneman 2005). Based on literature review the WTP question formats used in CVM can categorized into: (1) Open ended question; (2) Single dichotomous choice question (3) Double or multiple bounded dichotomous choice questions; and (4) Payment card question (for more details see Shah et al., 2015; Zhongmin et al. 2006; Carson and Haneman 2005). The National Oceanic and Atmospheric Administration (NOAA) Blue Ribbon Panel suggested the use of single dichotomous choice question with a mandatory payment for designing WTP scenario (Arrow et al. 1993). Later research studies experienced that the single dichotomous choice questions provides limited information about household’s WTP, and produces higher WTP compared to payment card and open-ended questions (Zhongmin et al. 2006). Also, both the single and double bounded dichotomous choice questions require large number of respondents to obtain accurate estimate of WTP (Carson and Haneman 2005, Shah et al., 2015). Furthermore, a mandatory payment, such as the income tax, is often associated with high protest rates (Loomis et al., 1993). This protest rate could be higher in developing countries where households have low income and liquidity problems. Consequently, open ended elicitation format with donation as payment vehicle was used to design WTP question for the proposed program. The wordings of the WTP question are:

- **As the loss of top fertile soil due to intense rainfall and flood waters in summer season is a serious problem in this area. Reforestation and afforestation on slopes and riparian zones could prevent floods and thus control soil erosion on slopes and farmlands. On-farm soil erosion control can improve crops production and returns.**
- **Suppose the local government set up a Natural Resources Conservation Fund (NSCF), and asks local households to make donations to this fund. The fund would only be utilized for forestation on communal and state owned land in Azad Kashmir. This will help in controlling on-farm soil erosion and conserving farmland fertility. Would you be willing to contribute to that Fund?**
  - Yes
  - No
- **If Yes, then**
  - How much your household would be willing to donate every year to this NRCF? 
  - Rs.______________ per year.

CVM survey was administered in summer 2016, and selected farm households were interviewed face to face. Before conducting the survey, all questions were pretested in a pilot study and final changes were
Econometric Model

The following regression model was estimated to determine the \( i^{th} \) farm household WTP as function of their socio-economic and agricultural characteristics.

\[
WTP_i = X_iB + \varepsilon_i \quad \ldots \quad (4)
\]

Where WTP is the \( i \)th farm household's willingness to pay, \( X \) is a vector of socio-economic and agricultural characteristics of the \( i \)th farm household, \( B \) is a parameter vector and \( \varepsilon \) is error term along with ‘0’ mean and constant \( \sigma^2 \). For open ended WTP question, a linear functional form was used and was estimated using ordinary least square (OLS) method.

3. Results and Discussion

Household Characteristics

Table 1 show that all of the households were headed traditionally by male individuals with an average age, education and farming experience of 55.7, 10.0 and 20.7 years respectively. Household size was on average 7 individuals and their average aggregated monthly income was Rs. 55777. The average farm size was 1.10 acre and agricultural practices included crops production and animal husbandry. Major crops grown in the area were maize, wheat and rice; and valuable livestock products were milk, butter and yoghurt. Small operational holdings, Irregular topography with terraced farming pattern were the apparent reasons for subsistence agricultural practices and low income.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Mean/Percentage</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head’s gender [male(percent)]</td>
<td>100</td>
<td>0.00</td>
</tr>
<tr>
<td>Head’s age (years)</td>
<td>55.70</td>
<td>12.40</td>
</tr>
<tr>
<td>Head’s education (years)</td>
<td>10.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Head’s farming experience (years)</td>
<td>20.70</td>
<td>13.50</td>
</tr>
<tr>
<td>Household size (individuals)</td>
<td>7.00</td>
<td>2.90</td>
</tr>
<tr>
<td>Monthly income (Pakistani Rupees)</td>
<td>55777 ($533.8)</td>
<td>31155 ($298.1)</td>
</tr>
<tr>
<td>Farmland area (acre)</td>
<td>1.10</td>
<td>0.50</td>
</tr>
</tbody>
</table>

\( 1 \) Pakistani Rupee = 0.0096 U.S. Dollars

On Farm Soil Erosion and Agricultural Productivity

Sampled farm households were asked questions on their on-farm soil erosion. Around 74 percent of the farm households reported frequent soil erosion caused by intense rainfall and floods in summer season. Most of them were practicing terraced farming on high, but irregular slopes. The intensity of on-farm soil erosion was investigated on a scale of low, moderate and high erosion. Moderate and high erosion were reported by 52 and 22 percent of the respondents respectively.

Majority of the respondents believed soil erosion as a prime cause for the reduced on-farm productivity. Yield gaps of 30 percent and 44 percent for wheat and maize respectively were found on high eroded soils in comparison to that of conserved soil in the study area. As land rent reflect agricultural productivity of a farmland, the rent per acre for a conserved agricultural land was on average 45 percent higher as compared to a highly eroded agricultural land in the study area. All these indicate the adverse effect of soil erosion on farm productivity and land value.

Farm Households’ Response to WTP Question

In reply to CV question for reforestation and afforestation on communal and state owned land, 95 percent
of the selected farm households were willing to pay for the program. This high response rate among farming community was because of widespread soil erosion in the study area and its adverse effects on farm productivity and returns. The mean annual stated WTP was Rs.3533 per household. This amount was 6.3 percent of their total annual income which confirms the validity of their stated WTP response. Table 2 further distributes households’ WTP response with reference to on-farm soil erosion intensity. The annual WTP for households facing zero-low, moderate and high on-farm soil erosion were Rs.1391, Rs.3511 and Rs.6050, respectively. The positive WTP for farm households facing zero-low erosion is a good example of Warm-glow phenomenon described by James Andreoni in 1989.

Table 2. Household Stated WTP for Soil Erosion Control Program

<table>
<thead>
<tr>
<th>Categories</th>
<th>Observations</th>
<th>Mean Annual WTP (Pakistani Rupees)</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household facing zero-low erosion</td>
<td>46 (26%)</td>
<td>1391 ($14)</td>
<td>1316</td>
<td>0</td>
<td>4000</td>
</tr>
<tr>
<td>Household facing moderate erosion</td>
<td>94 (52%)</td>
<td>3511 ($34)</td>
<td>1702</td>
<td>500</td>
<td>6000</td>
</tr>
<tr>
<td>Household facing high erosion</td>
<td>40 (22%)</td>
<td>6050 ($59)</td>
<td>1709</td>
<td>3000</td>
<td>8000</td>
</tr>
<tr>
<td>Average WTP per household</td>
<td>180 (100%)</td>
<td>3533 ($34)</td>
<td>2274</td>
<td>0</td>
<td>8000</td>
</tr>
</tbody>
</table>

1 Pakistani Rupee = 0.0096 U.S. Dollars

Determinants of Farm Households’ WTP

The estimated farm household’s WTP model for soil conservation on communal land is given in Table 3. Most important determinants of farm household's WTP are intensity of on-farm soil erosion, farmland size, contact with extension agent, head’s education and farming experience and total monthly income.

Intensity of on-farm soil erosion: The estimated coefficients for moderate and high on-farm erosion are positive and statistically significant which indicate that farm households facing moderate or high erosion are likely to pay more for the soil conservation program on communal land.

Farm size: As indicated by the positive and statistically significant coefficient for farm size households having larger farms are likely to pay more as compared to others. The coefficient value shows that an increase in farm size by 1 acre would increase farmer’s WTP for the program by Rs. 18.46 PKR.

Contact with extension agent: Extension education may enable farmers to better understand the impact of soil erosion on their productivity and how large scale forestation program can help in conserving soil and water resources. Thus farmers receiving extension education were expected to have high WTP for the program. The estimated coefficient for contact with extension agent is positive and significant, which is in accordance with prior expectations. This result is in line with findings of Tafa et al., 2008; Teklewold and Gunner., 2010; Gebremariam et al.; 2013 and Meseret D., 2014.

Head’s education and farming experience: In Pakistani society a household head controls their common material resources and takes major decisions. The estimated coefficients for head's education and farming experience are positive and statistically significant, showing that a farm household's WTP for soil conservation increases significantly with their head's educated level and farming experience.

Household’s monthly income: As income increase people start care for natural and environmental resources. Household’s income has a positive significant coefficient, which is consistent with Shah et al., 2016 and Janku et al., 2014 findings.

3It explains that some people give donation to charitable trust and community development works simply because of getting satisfaction from helping others.
Table 3. Estimated Farm Household’s WTP Model for Soil Conservation

<table>
<thead>
<tr>
<th>WTP determinants</th>
<th>Coefficient</th>
<th>T-value</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate erosion (1 if yes, otherwise 0)</td>
<td>1274.30</td>
<td>5.26</td>
<td>0.000</td>
</tr>
<tr>
<td>High erosion (1 if yes, otherwise 0)</td>
<td>4192.69</td>
<td>14.56</td>
<td>0.000</td>
</tr>
<tr>
<td>Farm size (Acre)</td>
<td>18.46</td>
<td>1.82</td>
<td>0.072</td>
</tr>
<tr>
<td>Contact with extension agent (1 if yes)</td>
<td>1613.46</td>
<td>3.02</td>
<td>0.000</td>
</tr>
<tr>
<td>Head’s education (years)</td>
<td>38.34</td>
<td>2.65</td>
<td>0.009</td>
</tr>
<tr>
<td>Head’s farming experience (Years)</td>
<td>11.78</td>
<td>1.90</td>
<td>0.061</td>
</tr>
<tr>
<td>Household monthly income (PKR)</td>
<td>0.03</td>
<td>8.17</td>
<td>0.000</td>
</tr>
<tr>
<td>Household size (Individuals)</td>
<td>-40.53</td>
<td>-0.89</td>
<td>0.370</td>
</tr>
<tr>
<td>Constant</td>
<td>-491.84</td>
<td>-1.10</td>
<td>0.270</td>
</tr>
</tbody>
</table>

F(8,171) = 54.3, Prob>F = 0.000, R-squared = 0.7175, Adj. R-squared = 0.7043

1 Acre = 0.405 Hectares
1 Pakistani Rupee (PKR) = 0.0096 U.S. Dollars

Estimated Aggregate Willingness to Pay

The accumulated benefits to a farm household from such on-farm soil erosion program through forestation were calculated to be Rs.22358 ($214), using a suitable discount rate of 12% and keeping the annual WTP of the farm household as constant over the lifespan of 10 years of the program as shown in Table 4. This aggregate WTP measures the value of on-farm erosion control benefit of a farm household and signifies to the existence of sufficient potential for raising funds from the local stakeholders through donations for financing the implementation of proposed soil conservation program in Northern areas.

Table 4. Present Value Aggregate WTP for Soil Conservation Program

<table>
<thead>
<tr>
<th>Assumed project life</th>
<th>Assumed discount rate</th>
<th>Present value aggregate WTP per household (Pakistani Rupees)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 years</td>
<td>12 percent</td>
<td>22358 ($214)</td>
</tr>
<tr>
<td>10 years</td>
<td>11 percent</td>
<td>23096 ($221)</td>
</tr>
<tr>
<td>10 years</td>
<td>10 percent</td>
<td>23880 ($229)</td>
</tr>
</tbody>
</table>

1 Pakistani Rupee = 0.0096 U.S. Dollars

3. Conclusion and Policy Recommendations

Small operational holdings, Irregular topography with terraced farming pattern of agriculture were the apparent reasons for subsistence agricultural practices and material yield gaps were observed in wheat and maize farming leading to a decreased rent of 45 percent eroded soils in comparison to the conserved ones. The discrepancy in rent provides a sound rationale for the initiation and launching of a community based soil conservation program in the study area. The willingness to pay as well as aggregate benefits to a farm household over a span of ten years suggests that sufficient potential exists for raising funds in the forms of donations and other mandatory payments from the local stakeholders for the implementation of community based soil conservation program through proper mobilization.

On-farm soil erosion intensity, head’s education, farming experience and perception of soil erosion, monthly income, farmland size and contact with extension agents are the important determinants of farm household’s stated WTP for soil conservation program.

Reforestation, afforestation and adoption of techniques like terracing, ditching, fencing and trees plantation on farmlands are suggested for controlling soil erosion and land sliding in the study area.

The Agricultural Department, Pakistan Forest Department and other non-government organizations, such as…

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4 In Pakistan, the Ministry of Planning and Development use 10–12% discount rate. CVM studies in developing countries have used discount rate in the range of 3–12%. The high discount rate for environmental goods means the public underestimate the importance of future benefits from environmental goods, and also demonstrates that they prefer to take short term actions on environmental restoration and protection.
as USAID and National Rural Support Program (NRSP) can play key role in educating and mobilizing farmers.

References
Institutional Quality, School Enrolment and Mobile Subscribers in Economic Community of West African States (ECOWAS-5): Impact on FDI using Panel Data

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ABSTRACT

Basically, the quality of institution, human capital (school enrolment) and infrastructure (mobile subscribers) are significant determinants of foreign direct investment (FDI). With exception of few studies on corruption, however, empirical research on the link between infrastructure, human capital and FDI remain limited. Particularly in the context of Economic Community of West African States (ECOWAS). This paper aims to examine the linkage between infrastructure (mobile subscribers, corruption, school enrolment), and Foreign Direct Investment (FDI) among selected ECOWAS countries using panel data techniques for the period of 1990-2015. The methodology carried out to achieve this objective involves the panel unit root, panel cointegration and fully modified ordinary least square (FMOLS). The result indicates that, there is long run relationship among the series. Corruption and infrastructure are negatively significantly related with FDI at the long run in the selected ECOWAS countries. The empirical evidence indicates that feeble level of institutions (corruption) and infrastructure impedes FDI inflows in the selected ECOWAS countries. The results confirm that FDI enhancement through role of institution, school enrolment and infrastructure (mobile subscribers) exist not only in the transition nation but also in the selected ECOWAS countries.

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1. Introduction

Institutional quality attributes which include freedom of economic activities and prudence of countries’ governance are acceptable determinants of Foreign Direct Investment (FDI). The multinational corporations (MNCs) steadily move from market-seeking FDI and resource-seeking FDI to efficiency-seeking FDI due to these factors (Dunning, 2002). The inflow of FDI is definitely perverse in Africa due to immense poverty while domestic savings and income continue to be low (Shahbaz & Rahman, 2010). These elements are linked with the reinforcing flows of foreign aid, the slightest advantage of Africa in world business and the mass volatility of capital flow that quickly signal for the compelling need to enhance the right type of FDI (Afolabi & Bakar, 2016).
However, with rising importance of FDI, the west African countries need to learn to attract FDI potentially (Rjoub, Aga, AbuAlrub & Bien, 2017; Dupasquier and Osakwe, 2003; Anyanwu, 2006; Azman-Saini, Baharomshah and Law, 2010). These studies further reveal that FDI exhibit a greater achievement in the economic development process i.e. domestic savings support, creation of employment and growth, assimilation into the global economy, adoption and adaptation of modern technologies, improvement of competitiveness, advancement of local suppliers, and promoting skills of local labour force (Azam & Ahmed, 2015; Azam & Gavrila, 2015).

The ECOWAS region comprises of 15 countries with a population of over 300 million and the countries are privileged with natural resources such as oil, gas and minerals in commercial quantity. Notwithstanding, the inflow of FDI to Africa recently shows less inflow to developing nations including ECOWAS. Africa’s FDI inflow revived from $2.2 billion in 1980 to $15 billion in 2004 and eventually stood at $54 billion in 2015. Africa’s percentage in addition to ECOWAS world flows declined from 2.3% in 1980 to 1.5% in 2004 and also declined more by 7% in 2014 (UNCTAD, 2015). The interminable downturn of the inflow poses a critical menace to ECOWAS countries’ economy. The quality of infrastructure in respect of i.e: transportation, power intensity, mobile subscribers poses a serious issue to assembling manufacturing and service as well as minimizes the cost of business transaction (Regional Outlook report, 2014) Moreover, profitable and productive as well as intriguing investors will consider decrease in administrative hindrances, boost of both tangible and human capital (Regional Outlook report, 2014). Thus there is necessity to examine the role of above traditional determinants of FDI. World Bank (2000) examined that around $2 trillion is wasted yearly due to fraud and misdeed, which accumulates to around 5% of GDP globally.

According to the Global Financial Integrity (GFI), sub-Saharan Africa along with ECOWAS nations faced huge loss due to illicit capital outflow which is leveled at around 4% of GDP (Zubair, Nor’Aznin, & Azam, 2017). However, the spurious misinformation of trade operations recorded to be the largest part of financial illicit outflow from developing nations. This represents 83.4% of all flows illicitly (Zubair, Nor’Aznin, & Azam, 2017). Apart from the acceptance of the impact of openness in attracting FDI inflows, several authors underlined the influence of other policy variables i.e. quality of infrastructure and the stability of macroeconomics as determinants of FDI inflow (Rjoub, Aga, AbuAlrub & Bien, 2017; Gol and Kashani, 2012; Antras and Helpman, 2004).

The bottomline is that, this paper adds to the frontier of knowledge in a number of ways. First, it is an addition to the existing literatures on the impact of institutions, human capital (school enrolment) and infrastructure (mobile subscribers) on FDI. The limited inflows of FDI especially in the context of ECOWAS region are examined with the use of panel time series methodology. This has added another dimension to the present study. Second, this paper employs institutional quality variable (corruption) in the examination of target and source countries in order to take both pull and push factors into account. For instance, a lower level of corruption in ECOWAS’ nations, could be a source of attraction for the MNCs, but a higher level of corruption in the source nations could be a source of repulsion (Rjoub, Aga, AbuAlrub & Bien, 2017).

This study also explores the impact of corruption, school enrolment and mobile subscribers on FDI of the selected ECOWAS countries from 1990-2015 with the use of panel data. The rest of this paper elaborate the theoretical and empirical literature and elaborates methodology and data for the empirical analysis. The last section namely results discusses analysis of findings and their implications for policy.

2. Literature Review
FDI is a crucial element to economic growth and development, specifically in view that it is the vital driver of the technology transfer and competitiveness (Rjoub, Aga, AbuAlrub & Bien, 2017). Since FDI contributes to creation of jobs and economic growth which will indirectly reduce poverty, especially in relation to income. Therefore, this income will be used by states to finance infrastructure and development of services. Specifically, most of the benefits of these income can be direct and indirect. Corporate income which companies paid to state and natural resource sector revenue from FDI, all constitute the direct income, while the income that improve the tax base at all overall level is viewed as indirect income. Moreover, the research conducted by Chen and Hambright (2016) explored the same in their study on China.

Notwithstanding, as corruption spread all over the world, it is a disturbing policy interest of the government because the corruption increases cost of doing business (Zubair et al. 2017). The outcome of the investigation on FDI flow from US to Africa by Nnadozie and Osili (2004) revealed, that the performance of infrastructural quality on FDI is significantly low. Evidence from Anyanwu and Erhijakpor (2004) testified that, mobile infrastructures, GDP and trade openness extremely increase inflow of FDI into Africa as against, export processing zones, capital gains tax and credit to the private sector which are negatively significant. Presentations by Sekkat and Veganzones-Varoudakis (2007) signified that, infrastructural quality, trade openness and robust political and economic situations are essential for South Asia, Africa, and the Middle East in alluring FDI (Iamsiraroj, 2016). Oladipo (2008) explored the principles of Nigeria’s FDI inflow from 1970-2005 and revealed that, potential market size, the degree of export orientation, administering and enabling environment toward the contribution of infrastructural quality, human capital, and ensuring macroeconomy stability are vital principles of inflow of FDI (Iamsiraroj, 2016). The justification of infrastructural quality, competent infrastructure is recommended to re-enforce new technologies and to ease correlation amidst domestic firms and FDI (Busse, Erdogan, & Mühlen, 2016; Iamsiraroj, 2016). Furthermore, corruption boost apprehension, as long as corruption accessions are not reinforced in the courts of law. Foreign investors would aim to avert venturing into business in countries with immense corruption. However, a positive effect of corruption on inflow of FDI may exist. Bearing in mind the difficulty in regulation and bureaucratic flaws, corruption may surpass efficient bureaucracy by aiding the procedure of decision making (Bardhan, 1997; Iamsiraroj, 2016). In the study of Azam and Lukman (2010), Azam (2010) and Azam and Emirullah (2014) they indicated that trade openness, infrastructure, inflation, urbanization, human capital, corruption, market size and political stability are the most vital factors of the inflow of FDI.

According to Kumar (2001), testing a particular yardstick for infrastructure as well as corruption index in inflow of FDI modelling, can not only capture the actual impact but combing other variables like real exchange rate and interest rate (Zubair & Aladejare, 2017). Kenya, Obwona and Egesa (2004) indicated that, productive and appealing investors have not been eager to invest in Uganda due to lack of quality infrastructure, technological knowhow and the land locked nature of the Uganda. In the study of Morisset (2000), he concluded that, good infrastructural quality and well boosted human capital in Mali and Mozambique brought a major breakthrough in FDI.

3. Methodology and Data

The Model Specification

To determine the framework given ahead and the set up of ECOWAS, with the variation of FDI inflow in Africa. The following estimating technique was used for institutional Development and mobile subscribers in ECOWAS-5 (Nigeria, Ghana, Togo, Senegal and Cote d Ivoire).

\[
FDI_{it} = \beta_0 + \beta_1(Infra)_{it} + \beta_2(GPPPC)_{it} + \beta_3(Inflation)_{it} + \beta_4(REER)_{it} \\
+ \beta_5(Trade\ Openness)_{it} + \beta_6(Corr)_{it} + \beta_7(SchooLenrol)_{it} + \mu_{it}
\]

where \( i \) denote countries, \( t \) denotes time, and the variables are defined as:
• FDI\textsubscript{ij} denotes the net FDI inflows as % of GDP,
• Infrastructure is fixed and mobile subscribers (per 1000 people)
• GDPPC is gross domestic product per capita (US$),
• Human capital is Schoolenrolment,
• Inflation is the annual inflation rate,
• Exchange Rate is the official exchange rate to the US$ (annual average),
• Openness is openness index - total trade (% of GDP),
• Corro denotes Corruption perception Index
• $\beta$ is a vector of coefficients, and
• $\epsilon_{ij}$ represents the myriad other influences on FDI, assumed to be well behaved.

Precise observation on Vector X as the determinants of the inflow of FDI in ECOWAS countries identifies quality of Infrastructure as important factor. Sekkat and Veganzones-Varoudakis (2007) asserted that the underpinning factor for FDI inflows in emerging economies is infrastructural development. As intermediary to this variable subscribers of mobile lines as well as main mobile lines per 1000 persons was used (Calderon and Serven, 2008, Busse, Erdogan, & Mühlen, 2016; Khadaroo and Seetanah, 2007). Invariably infrastructural development like Information and Communication Technology are now penetrating in accommodating regional producers into alluring vertical FDI in manufacturing and services as well as communication chain (Addison and Heshmati, 2003). The study by Kinoshita and Campos (2003) authenticated that acceptable and reputable Infrastructures are paramount predicament for foreign investors to accomplish victoriously, heedless of the type of FDI. The adoption of main telephone lines is because of its necessity in empowering connection between host country and foreign investors.

Nelson and Phelps (1966) argued that for a nation to experience a long run sustainable economic growth, it will depend on the stock of well educated labour that is able to comprehend cutting edge technology and introduced absorptive capacity, which are innovatively productive. Furthermore, the new growth theory highlights the significant impact of human capital build-up, to justify output growth rate which includes investment in human capital and also regarded to as a critical component of long run economic growth. In addition, the endogenous growth theory, human capital are regarded to as a key determinant of economic growth (Akinlo, 2004; Benhabib and Spiegel, 1994; Mankiw, Romer and Weil, 1992; Barro and Sala-i-Martin, 2004) further stressed the significance of human capital to growth in developing and developed nations. For the purpose of this study, school enrolment was used to represent human capital.

Gross domestic product per capita: Absolutely, a large level of “credit to sectors that are private” is a gesture of domestic capital that is abundant (Busse, Erdogan, & Mühlen, 2016). Kinda (2010) Huge domiciliary credit to the private sector, likewise entails the degree of domestic capital. Similarly, foreign capital in the pattern of FDI would not be needed. Positioned by earlier studies, this paper used gross domestic product per capita (US$) as proxy for Domestic Income per person. Fernández-Arias and Hausmann (2000) established the interconnection among private credit and foreign capital in the inflows of FDI.

Inflation and exchange rate: These studies used Inflation as an index of macroeconomic instability (Busse, Erdogan, & Mühlen, 2016; Buckley, Clegg, & Wang, 2007; Zubair & Aladejare, 2017) inferred that, strong macroeconomic condition supports FDI by displaying low investment liability. Huge real exchange rate expense proportionate to the US dollar, and that entails an undervalue currency, will allure more FDI in the time overturn basically deter foreign investment. That is why, exchange rate lead us to decompose the aftereffect of comparative wealth and proximate labor outlay on FDI inflow (Busse, Erdogan, & Mühlen, 2016). Hence, a reduction of a country’s exchange rate will spur the comparative wealth of foreign firms and allow more foreign acquisition of domestic assets. Supplementarily, a reduction of a country’s rate of foreign exchange will allow capital inflow, as foreign economies endeavour to accept advantage of approximately economical domestic labor. This paper utilizes annual inflation rate as a proxy for inflation.
Trade openness: The result of trade openness is an objective for investment pattern (Zubair, 2017). Previous researchers have determined negative outcome of trade openness on FDI inflow, that is market-seeking. The rationale is that, the tariff jumping principle which specify that MNCs that pursue to work for local markets can resolve to establish subdivision in the host economy. It is, challenging for them to import produce into their economies hence, generate capital inflows toward the aforesaid country (Mijiyawa, 2012, Anyanwu, 2012). Some studies revealed that, countries that are unhindered for foreign investment earned higher FDI (Asiedu (2002), Noorbakhsh et al. (2001), Morisset (2000), Aizenman and Noy (2006), and Anyanwu (2012). In these paper total trade as a % of GDP to proxy openness to trade.

Corruption: A balance in the existence of an advantageous climate in a macroeconomic sense, corruption and policy making rules can impede international business men from putting in their interest in an economy (Rivlin, 2001, p.191). Aside from boosting the gain of accomplishing investment, corruption lags the procedure of attaining the business license mandatory for running business in the foreign country.

Time-series indexes for corruption for many developing countries are very scares. Transparency International inaugurate the compilation of data on corruption by 1995, though the World Bank’s indicator for Institute’s governance are accessible for the period 1996-2002. This paper used GDP % of government expenditure to proxy corruption and policy making rules. The basis for applying this measure is that, a large number of government officials generate advantage for abuse of treasure by their officials.

This paper utilises Secondary data also employ time series formula to form a break even data for panel from 1990 to 2015. The panel is annual data for the inflow of FDI for West Africa from ECOWAS-5 countries. The compilations of the data are accumulated and authenticated from distinct basis i.e., Direction of Trade Statistics, and World Development Indicators, International Financial Statistics by International Monetary Fund (IMF), and political rating group (PRSG).

4 Findings and Discussion
4.1 Panel Unit Root
The outcome of the panel unit root tests conducted for the variables (GDP per capita, FDI, Corruption, Reer, Infrastructure Quality, human capital(schoolenrolment), Inflation and Trade openness). Looking at Table 4.1 below, the variables show non-stationary at levels. Therefore, Levin, Lin and Chin unit root, as well as Im, Pesaran and Shin were tested again for the variables at first differenced. The outcome indicated the variables are stationary at I (1).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Level</th>
<th>First Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Statistic</td>
</tr>
<tr>
<td>FDi inflow</td>
<td>-0.3846</td>
<td>-0.8867</td>
</tr>
<tr>
<td>Gdppercapita</td>
<td>2.7359</td>
<td>-1.2912</td>
</tr>
<tr>
<td>Trade openness</td>
<td>2.0490</td>
<td>-0.5863</td>
</tr>
<tr>
<td>Reer</td>
<td>-1.1123</td>
<td>-1.1123</td>
</tr>
<tr>
<td>Inflation</td>
<td>-0.6944</td>
<td>-0.9502</td>
</tr>
<tr>
<td>HC(Schoolenrol)</td>
<td>-0.2966</td>
<td>-4.6679***</td>
</tr>
<tr>
<td>Corruption</td>
<td>1.1242</td>
<td>1.1242</td>
</tr>
<tr>
<td>Infrast(mobile)</td>
<td>0.7391</td>
<td>-1.0281</td>
</tr>
</tbody>
</table>

Table 4.1
Panel Unit Root Test
Notes: ***, ** and * indicate the rejection of the null hypothesis at 1%, 5% and 10% significant level respectively.

4.2 Panel Cointegration Test for heterogeneous panels
The hypothetical panel technique showed in table 4.2 pick up the analysis of cointegration result among the variables after the use of pedroni technique. Four of the seven tests repudiate the null hypothesis of no-cointegration after the use of ADF group test and Phillips-Perron. Accordingly, the panel technique indicated that, there is cointegration between the variables employing 5 ECOWAS nations. Conclusively, there is statistical evidence for the determinant of FDI in ECOWAS-5 nations. Nonetheless, provided the variables are basically interrelated at the longrun for the determinants of FDI hence, fully modified OLS will be examined to check more for long run interrelation among the variables (Pedroni, 1997, 2000, 2004).

Table 4.2
Panel cointegration tests for heterogeneous panel

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel v-Statistic</td>
<td>-0.981</td>
</tr>
<tr>
<td>Panel rho-Statistic</td>
<td>0.289</td>
</tr>
<tr>
<td>Panel PP-Statistic</td>
<td>-2.491**</td>
</tr>
<tr>
<td>Panel ADF-Statistic</td>
<td>-2.289**</td>
</tr>
<tr>
<td>Group rho-Statistic</td>
<td>0.944</td>
</tr>
<tr>
<td>Group PP-Statistic</td>
<td>-3.669***</td>
</tr>
<tr>
<td>Group ADF-Statistic</td>
<td>-2.883**</td>
</tr>
</tbody>
</table>

Notes: All statistics are taken from pedroni (1999), *** and ** specifies the rejection of the null hypothesis of no-cointegration at 1% and 5% significance level.

4.3 Discussion of the result
GDP was made part of FDI determinants pattern to measure market size. The outcome in table 4.3 point out that, a percentage increase in GDP per capita spur the inflow of FDI by 2.76 per cent. The compelling and positive interrelation embodying GDP and FDI testify that, foreign nations market size is a determinant of inflow in ECOWAS-5. The outcome is in line with Liargova and Skandalis (2012) Frankel et.al (2004).

This implies that, GDP or in other words the market size plays an important role for FDI inflow to the five ECOWAS countries, which aligned with Hymer, Dunning’s eclectic role OLI paradigm theory and UNCTAD framework that firms look for larger prospects when opting for FDI decisions (market-seeking FDI motive), which is mainly to serve and meet demand of large population within five ECOWAS nations. Furthermore, infrastructure development and FDI inflow show a positive and significant relationship. The result indicates that one per cent increase in infrastructure development will lead to more FDI inflow. This finding is in line with Aseidu (2002). This indicate the significance of well-developed infrastructure(mobile subscribers) in reducing costs and increasing efficiency and effectiveness in order to stimulate FDI into the selected five ECOWAS countries, which is in line with the UNCTAD theory and framework by Hymer(1977).
Table 4.3
FDI determinants Model of Long run estimates (FMOLS)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure</td>
<td>-0.010**</td>
<td>0.0023</td>
</tr>
<tr>
<td>Gdp per capita</td>
<td>2.76**</td>
<td>0.0198</td>
</tr>
<tr>
<td>Inflation</td>
<td>0.001***</td>
<td>0.0598</td>
</tr>
<tr>
<td>HC(Schoolenrol)</td>
<td>0.006***</td>
<td>0.017</td>
</tr>
<tr>
<td>Reer</td>
<td>1.84</td>
<td>0.6058</td>
</tr>
<tr>
<td>Trade openness</td>
<td>-0.010</td>
<td>0.2859</td>
</tr>
<tr>
<td>Corruption</td>
<td>-0.007**</td>
<td>0.0107</td>
</tr>
<tr>
<td>Adj R-squared</td>
<td>0.873</td>
<td></td>
</tr>
</tbody>
</table>

Notes: ***,** & * significance level at 1%, 5% and 10%.

Moreover, the coefficient of corruption (institutional quality) shows a negative sign and was statistically significant. The negative coefficient of corruption variable for the selected ECOWAS countries implies that if selected ECOWAS countries corruption perception index on average were to improve by one percent FDI determinant will increase by 0.007%. This signifies the importance of institutional quality (corruption). This result is in line with corruption perception index submission which indicates that ECOWAS region is the most corrupt region in the world.

Similarly, the dominant view which indicate that governance which is good and highly commendable tend to concede higher FDI (Laporta et al. and World Bank 2002, Shapiro and Tang, 2004; Gani, 2007) However, rise in insecurity and high spending are primarily induced by poor governance (Cuervo-Cazurra, 2008) Due to the fact that, investments cannot be protected in an environment that is riddled with poor governance (Globerman and Shapiro, 2003). In conclusion, corruption tends to increase direct costs in form of delay in bureaucracy and bribery which create artificial bottlenecks in order to create more accommodating conditions for rent seeking activities.

The result revealed school enrolment is significantly positive denoting a surge in economic growth by 0.006% units will spur school enrolment (human capital) The new growth theory justify the significant contribution of human capital accumulation in order to sustain output growth which includes investment in human capital as a significant factor for long run economic growth. Mainly in the literature negative coefficient estimate for human capital on economic growth is very common (Islam, 1995; Benhabib and Spiegel 1994; Pritchett 2001) The findings for inflation rate is significantly positive implying inflation variable increased by 1% consequently, FDI inward tend to increase by 0.001%.

5. Conclusion
This study used FMOLS technique, to explore the interlock between infrastructure (mobile subscribers), corruption (institutional quality) and human capital (school enrollment) for the inflow of FDI among ECOWAS-5 nations. The findings revealed that corruption (institutional quality), human capital (school enrollment) and infrastructure (mobile subscribers) and FDI are statistically significant for long run purpose and good infrastructural quality (mobile subscribers) is having statistically positive association with FDI.

However, FDI is assumed to be negatively related to corruption in the selected ECOWAS countries. The study established long run association with infrastructure (mobile subscribers), corruption and FDI in the ECOWAS countries. The findings for Corruption and FDI revealed a percentage change in Corruption, will lead to about 0.007 decrease in FDI. Moreover, the significant aftereffect of corruption, mobile subscribers and school enrollment on FDI in the long run implies that, international investors are driven by future expectations of profitability, good educational system, adequate infrastructural facilities and free corrupt society.
Government need to provide a balanced and secured macroeconomic framework, boost amassment of human capital, accelerate privatization procedure, enhance business climate and expand predictability by taking measures to aggress bureaucracy and corruption for economic growth. Additionally, a steady anticorruption strategic viewpoint should be sustained and also there should be declaration on the disadvantageous ramification that corruption impacts on variables that are not growth productive, and not withstanding vital for viable, unbiased, and perfect economic progression.

Reference


Influence of Awareness on SME’s Intention towards adoption of Islamic Finance in Pakistan

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ABSTRACT

A large number of SMEs in North Africa, Middle East and South Asia prefer Islamic financial products over their conventional counterparts. Similarly, in Pakistan SME owner-managers prefer Islamic finance as 20-25 percent of SMEs are not willing to take conventional finance. Despite higher demand, however, these firms are unable to access Islamic finance from financial institutions. There are several factors behind this dilemma on both supply and demand side. The present study discusses demand side issues pertaining to lack of adoption of Islamic finance by SMEs in Pakistan. Among various demand side factors, this paper has focused on the issue of financial knowledge or awareness of Islamic financial products. In Pakistan, due to financial illiteracy of SME owner-managers, they seldom are able to identify suitable available financing options for their business financial needs. Thus, this study intended to determine the importance of awareness factor in influencing intention of SMEs to adopt Islamic finance. A conceptual framework has been constructed based on Theory of Planned Behaviour (TPB) and research propositions are developed in order to elaborate role of awareness in influencing SME managers’ intention towards Islamic finance adoption. A preliminary analysis has been conducted through pilot study to check the internal consistency and reliability of instrument and found valid for further research. These both outcomes of the study are expected to lay foundation for more structured research on the issue of demand side factors of adoption of Islamic financial products.

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1. Introduction

Small and medium enterprises (SMEs) are widely known as engines of economic growth. These small and medium sized businesses are key contributors towards sustainable gross domestic product (GDP) across the world. SMEs operate predominantly in services and manufacturing sectors and create employment for both skilled and unskilled workers (Freeman & Nick, 2015). Moreover, without any doubt there is substantial demand of Islamic products and services not only among Muslims but also in
non-Muslims. Islamic banks are considered as good platform to increase access to financial inclusion as well as easy access to finance for SMEs to support economic development and growth (Abdesamed & Wahab, 2015).

The assets of Islamic banking growing at 20 percent of rate annually and as per statistics are set to reach $2.3 trillion by 2017. However, in spite of high growth rate this represents only 3 to 4 percent of total global banking assets and there are several reasons behind this shortfall such as: conservative behavior of Islamic banks, similar products and services offering conventional banks, lack of standardization and Sharia-compliance different interpretations. Conventional banks are now approaching SMEs as this sector is a huge opportunity for them to increase their profitability. Therefore, to diversify revenue streams and asset portfolio it’s necessary for Islamic banks to focus on this particular sector (albaraka.com).

A large number of SMEs including North Africa, Middle East and South Asia preferred Islamic banks instead of conventional banks, however these firms are unable to access financing services from Islamic banks. International Finance Corporation (IFC) studied MENA region including Pakistan and highlighted huge demand of Islamic finance by SMEs, approximately 1.5 million businesses (32 percent of SMEs) remain excluded from formal banking sector due to lack of Sharia-compliant products and services. Additionally, only 17 percent of Islamic banks are offering their products and services to SMEs and other banks share is 36 percent. In Pakistan, about 20 to 25 percent of SMEs are not taking any formal finance facility because they are seeking for Islamic finance only (IFC, 2014a). These small and medium firms have a deeper craving for Islamic products and services than corporate firms, because these firms operate by a single owner-manager who behave similar to an individual consumer. In financial market, conventional banks offering their services to fulfill SMEs business financial needs in limited capacity, thereby creating opportunity for Islamic banks. However, Islamic banks lack adequate focus on this portion to facilitate by providing SMEs their desired Sharia compliant products and services. It indicates the reluctant behavior of Islamic banks, it’s either because of unclear business strategy or high risk perception. Despite of enormous demand of Islamic finance among SMEs both supply and demand side issues creating hurdles towards development (Alam, 2015). Among others SMEs lack of awareness and less knowledge about Sharia-compliant products and services is also an impediment towards growth of SMEs and banks are also not supportive in this matter. For example, Islamic banks and conventional banks with Islamic windows provided products information in Urdu/English but explained in purely Shariah language which is not understandable for owner-manager of SMEs, the mid-tier officials of banks also admit this (IFC, 2014b; Aazim, 2016). In this regard, prior research have only investigated the awareness level and attitudes of individual consumer. There have been not enough studies done in examining SMEs awareness level towards Islamic financing, so, there is need to measure this factor. Although, several Islamic products and services offering by financial institution but due to lack of financial knowledge or awareness SMEs are not able to choose the suitable products and services as per their business financial needs, thus the study aims to analyze the aforementioned gap.

2. Literature Review

SMEs in Pakistan

At present, different definitions of small and medium enterprises are abound. In each country, institutions use different criteria to define SMEs such as; number of employees, net assets or sales. In Pakistan, most authentic and reliable source of information and data is central bank of Pakistan known as State Bank of Pakistan (SBP). Following table highlighted some definitions of SMEs announced by the core institutes of Pakistan.

<table>
<thead>
<tr>
<th>Institution</th>
<th>Category</th>
<th>Employees</th>
<th>Capital/Annual Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small and Medium Enterprises Development Authority (SMEDA)</td>
<td>Small</td>
<td>Up to 36</td>
<td>Up to 20 million</td>
</tr>
<tr>
<td>Federal Bureau of Statistics, Pakistan</td>
<td>Small</td>
<td>Less than 10</td>
<td>N/A</td>
</tr>
<tr>
<td>Medium</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>--------------</td>
<td>----------------------------</td>
<td></td>
</tr>
<tr>
<td>State Bank of Pakistan</td>
<td>Small</td>
<td>20 to 50</td>
<td>Rs 75 million to Rs 150 million</td>
</tr>
<tr>
<td>Medium</td>
<td>51-250</td>
<td>Above Rs 150 million and up to Rs 800 million</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Manufacturing &amp; Service MEs)</td>
<td>(Manufacturing &amp; Service MEs)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>51-100</td>
<td>(Trading MEs)</td>
<td></td>
</tr>
</tbody>
</table>

Source: Chughtai, 2014; SBP, 2016; SMEDA, 2013

Geographically, a large population of SMEs are placed in the province of Punjab followed by Sindh, Khyber Pakhtunkhwa (KPK) and Baluchistan. In Punjab, approximately 65 percent of SMEs are operating actively. Punjab and Sindh both provinces are facilitating SMEs in term of government services and schemes, presence of large industrial cluster as well as easy access to finance. Overall, the most preferable SMEs ownership pattern is sole proprietorship. The reason behind the liking is minimum regulatory requirements in establishment of such enterprises. A large population of sole proprietors are based in three major cities of Pakistan; Lahore, Karachi, and Faisalabad, who are contributing about 50 percent of total SME financing of country (IFC, 2014a).

Sector wise most of the enterprises are manufacturing based followed by trade/commerce and services. In terms of employment generation, value addition and export contribution manufacturing based SMEs have higher impact on economy. Same report explored that this particular sector dominate the enterprises with 49 percent of total population. In manufacturing sector the most valued sub-sectors are metal products, cotton weaving, jewelry making and wood furniture (Khan & Khalique, 2014).

Islamic Financing for SMEs in Pakistan

In Pakistan, Islamic banking institutes’ network consists of 6 full-fledged Islamic banks and 16 Islamic banking windows operating by conventional banks. As per Islamic banking bulletin of SBP, (2016) approximately 2,146 Islamic banks branches are working actively in 98 districts, similarly, 1,062 Islamic banking window branches under conventional banks functioning. Despite of large branch network SMEs still excluded or getting very small portion of financing from Islamic banks, as the share of corporate sector stands on 78.1 percent as compare to SMEs which is only 2.8 percent. Moreover, statistics shows that conventional banks are more supportive towards financing to SMEs instead of Islamic banks, overall SMEs getting only 7 percent of financing from Islamic banks (including windows) and remaining 93 percent facilitating by the conventional banks (SME finance review, 2016). This indicates reluctant behavior of Islamic banks towards SMEs and their limited outreach to SME sector. Islamic banks are not approaching SME sector appropriately because off these firms poorly structured operations, informal nature and non-professional behavior towards taking finance from financial institutions (SBP, 2015).

SMEs Attitude towards Islamic Financing in Pakistan

The attitude of SME owner-managers in Pakistan normally considered as negative because of less knowledge regarding financial products and services, size of firm and nature of business. However, with the passage of time upsurge in literacy level changed the attitude of SMEs and being reported positive, it effected mostly experienced family businesses and medium size firms (Bhutta et al., 2008; Saleem, 2014; Siddique, Saleem & Abbas, 2016). Moreover, towards Islamic financing SMEs shows positive attitude and overwhelming demand of Islamic finance, as mentioned above nearly 20 to 25 percent of SME population interested in Islamic financing. SME owner-managers are now more sensitized towards their benefits, the improvements in overall performance of Islamic banks with the help of SBP’s initiatives over the past 10 years has further consolidated this opinion (IFC, 2014a). Despite this positivity of SMEs towards Islamic finance several factors deter these firms to approach formal financial institutions for their business financial needs.
Researchers revealed that personal characteristics (gender, age, education, experience) and firm characteristics (firm size, ownership, firm type) affect the decision making of SMEs towards selection and adoption of Islamic finance products and services (Low, 2006; Xiang et al., 2011; Zabri et al., 2015). To understand the influence of attitudinal factors of SME owner-managers or entrepreneurs towards adoption of Islamic finance, scholars conducted several studies. Strong business support has impact on business firms’ attitude towards adoption of Islamic finance (Jalaluddin, 1999). Gait and Worthington, (2009) found religion as the primary motivation towards potential use of Islamic finance among business firms. Moreover, Haque, (2010) stated Shariah-compliance or factor of religion as important factor which drives Muslim owner-managers towards Islamic finance. Further, among other factors banks reputation, image, profitability and cost benefits, considered by SMEs owner-managers before selection of formal financial products and services. Social pressure effect the SMEs attitude, explored by researchers that family and friends recommendation influence the decision making of owner-managers to take Islamic financing (Amin, Abdul Rahman & Abdul Razak, 2014). Jaffar and Musa, (2013) highlighted the salient belief factors of owner-managers attitude; religion obligation, knowledge and awareness, cost benefits, business support and reputation towards adoption of Islamic financing. Andoh and Nunoo (2012) explored that financial literacy influence SMEs behavior as financially literate entrepreneurs show positive attitude towards formal financial products and services.

**H1** SMEs attitude have influence on their intention to adopt Islamic finance

**Awareness**

Awareness is the knowledge and understanding of an individual about something, e.g. place, person, product and services etc. It stimulate an individual to take some decision which based on his/her positive or negative attitude towards subject matter. The chances of positive attitude of a person increase or decrease with level of awareness (Ahmad & Bashir, 2014). According to Sarbo, (2016), the first step of an individual in product adoption process is awareness followed by knowledge, persuasion, decision and confirmation.

In Pakistan, lack of awareness among SMEs is a major concern for Islamic banking Industry. Major population of SMEs do not understand Islamic methods and Shariah compliance mechanism. Thus, SMEs are unaware about Islamic products and services they actually want to use for their business financial needs. According to KAP SBP, (2013) only 3 percent consumers have awareness regarding Islamic products and 5 percent of users have understanding of Islamic banking model (KAP SBP, 2013). However, report further exposed that corporate customers have a little more knowledge of Islamic methods, products and services than individual customers.

Researchers highlighted awareness as one of the key factors which influence individual’s attitude towards adoption of Islamic banking products and services in different contexts (Daud et al., 2011; Keong et al., 2012; Thambiah et al., 2011, 2012). Some studies also presented the positive relationship of attitude and awareness (Wahyuni, 2012; Echchabi & Abdel Aziz, 2012 b, Faisal et al., 2014).

In Pakistan, awareness level of consumer much better for the general products such as deposit accounts and current account, however, the awareness level is very low for specialized products such as Murabahah, Musarakah, Ijarah etc. (Khan & Asghar, 2012). In context of SMEs, Jaffar and Musa, (2016) and Tolba et al. (2014) explored the awareness and knowledge as influential factors towards adoption of financial products. However, mostly studies examined the awareness level of individuals in context of Islamic banking. Yet, insufficient research work created by academicians to measure SMEs awareness level in context of Islamic banking.

**H2** SMEs awareness have influence on their intention to adopt Islamic finance

**Subjective Norms**
According to Ajzen, (1991), this variable refer to the SMEs owner-manager perceived social pressures which influence their behavioral intention towards adoption of Islamic products and services, however, the social pressure vary in different contexts. Prior research explored the direct impact of subjective norms on behavioral intention to use Islamic products (Amin et al., 2011; Tolba et al. 2014).

**H3 SMEs subjective norm have influence on their intention to adopt Islamic finance**

**Perceived Behavioral Control**
Perceived behavioral control refers to SMEs owner-manager perception of ease or difficulty to perform the behavior of interest (Ajzen, 2006). Espel et al. (2009) stated that along with attitude variable, perceived behavioral control needs to be decomposed in three factors; first related to SMEs understanding of Islamic financing as better understanding increase the chances of Islamic financing usage/adoptions, second related to SMEs perception that how easy is to access Islamic financing, third one is SMEs beliefs regarding access of available options in market.

**H4 SMEs perceived behavioral control have influence on their intention to adopt Islamic finance**

Awareness of Individual customers’ extensively examined by scholars in context of Islamic finance. However, few studies focused on SMEs behavior towards Islamic finance and examined the awareness factor in context of Pakistan. Moreover, so far researchers applied behavioral intention theories just to examine the individual behaviors, though, some scholars have measured SMEs behavioral intention with application of Theory of Planned Behavior (TPB) but few provided the empirical evidences. TPB proposes three key determinants which influence the intention; attitude, subjective norms and perceived behavioral control. In this study, it is hypothesized that awareness influence the intention of SMEs towards adoption of Islamic financing.

**3. Proposed Research Model**
Current study proposed research model (Figure 1) is developed on the basis of theory of planned behavior (Ajzen, 1991) Figure 1. The model explains that SMEs behavioral intention towards adoption of Islamic finance is resulted from the attitude, awareness, subjective norms and perceived behavioral control. The proposed model integrates the factor of awareness with key variables of TPB model to assess SMEs behavioral intention within the context of Islamic finance.

**Figure 1: Proposed Research Model**
![Proposed Research Model](image)

**Research Design**
Current study uses quantitative method (i.e. survey questionnaire) for better understanding of SMEs behavioral intention towards Islamic finance in Pakistan. According to Bhattacherjee (2012) as compare
to other research methods survey research has inherent strengths. Moreover, it is suitable to identify trends or discover explanation for relationships among variables (Creswell, 2002). A 5 point Likert scale used and designed to examine that how strongly respondents agree or disagree with a statement (Sekaran, 2009).

**Reliability and Validity Analysis**

To collect data on attitude, awareness, subjective norms and perceived behavioral control self-administered structured questionnaire was used. The questionnaire was adapting from previous studies and finalized after required modifications, table 1.1 representing the summary of sources. The adapted scales are not used in context of Pakistan, thus, there is need to test these scales in SME sector which will help to create its ecological reliability and validity. Moreover, awareness have not been previously tested in SME sector, therefore, it requires validation in sector of SME setting too.

**Table 1**

<table>
<thead>
<tr>
<th>Construct</th>
<th>No of Items</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention</td>
<td>5 Items</td>
<td>Jaffar &amp; Musa, (2013); Tolba et al. (2014); and Hockerts, (2015)</td>
</tr>
<tr>
<td>Attitude</td>
<td>5 Items</td>
<td>Adam et al. (2016); Tolba et al. (2014); Jaffar &amp; Musa, (2013); Siddique et al. (2016)</td>
</tr>
<tr>
<td>Awareness</td>
<td>5 Items</td>
<td>Ringim &amp; Yussof, (2014); Jaffar &amp; Musa, (2013); and Tolba et al. (2014)</td>
</tr>
<tr>
<td>Subjective Norms</td>
<td>5 Items</td>
<td>Koropp et al. (2014); Koropp et al. (2013); and Tolba et al. (2014)</td>
</tr>
<tr>
<td>Perceived Behavioral Control</td>
<td>5 Items</td>
<td>Ahad et al. (2012); Tolba et al. (2014); and Jaffar &amp; Musa, (2013)</td>
</tr>
</tbody>
</table>

**Pilot Study**

In line with Gay, Mills, & Airasian, (2006) pilot study basically suggests going for a small scale study for the trial purpose before conducting the full study. Therefore, the sample size for pilot testing suggested should be smaller which could range from 15-30 respondents. However bigger sample size leads towards the stronger results. The survey questionnaires were distributed at major cities of Pakistan, Lahore and Karachi, a large population of SMEs are located in both cities. Questionnaire distributed by using stratified random sampling technique on 100 respondents, however, rate of return was 70% and 60 questionnaires researcher found useable. The reliability of measurement instruments were observed through internal consistency of Cronbach’s alpha values. Results of the pilot study are presented in Table 1.2.

**Table 2**

<table>
<thead>
<tr>
<th>Construct</th>
<th>No of Original Items</th>
<th>Cronbach’s Original Alpha</th>
<th>Item deleted</th>
<th>Cronbach’s Alpha if item deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention</td>
<td>5</td>
<td>0.816</td>
<td>Nil</td>
<td>0.816</td>
</tr>
<tr>
<td>Attitude</td>
<td>5</td>
<td>0.896</td>
<td>Nil</td>
<td>0.896</td>
</tr>
<tr>
<td>Awareness</td>
<td>5</td>
<td>0.798</td>
<td>Nil</td>
<td>0.798</td>
</tr>
<tr>
<td>Subjective Norms</td>
<td>5</td>
<td>0.910</td>
<td>Nil</td>
<td>0.910</td>
</tr>
<tr>
<td>Perceived Behavioral Control</td>
<td>5</td>
<td>0.783</td>
<td>Nil</td>
<td>0.783</td>
</tr>
</tbody>
</table>

The Cronbach’s alpha for all constructs used in current study are more than 0.7 as suggested by Nunnally and Beinstein (1994) as a minimum acceptable limit. As per Hair et al. (2010) who referred a Cronbach’s alpha value of more than 0.6 as a construct with acceptable reliability. Thus, results shows that the items of questionnaire are reliable and effective, so, based on alpha score proposed survey instrument fulfilled the basic requirement of valid instrument.
4. Conclusion
The purpose of the study to check the reliability and internal consistency of the instrument used in current study is achieved after checking Cronbach alpha score which are above the threshold of 0.60 (Hair et al, 2010). Thus, the instrument is valid for collection of main data as well as for further use within the SME sector in context of Pakistan.

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Reduction of Economic Burden on State Exchequer by Using Various International Legal Flexibilities under TRIPS Agreement 1994 of WTO

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ABSTRACT
During budget year 2016-17, public spending on procurement of medicines in Pakistan surged 29% touching an exorbitant figure of PKR 7.5 billion (Health Budget, 2016-17). Volume of provincial expenditure on medicine almost doubled rising to PKR 1.02 billion from 0.67 billion in last budget year 2015-16. Growing sum of public spending on medicine procurement has many factors such as poverty, money devaluation, indigenous production incapacity, and less developed standards of research and development. Apart from all enumerated above, global pharmaceutical patent protection regime under TRIPS Agreement, initiated by WTO, plays a pivotal role increasing public spending on procurement of medicines in developed and least developed countries. This work presents ways for reducing economic burden on state exchequer by exploiting maximum possible flexibilities under WTO regime to procure cost effective medicines. The work will be done in three parts; explaining Pakistan role and status in global pharmaceutical patent protection regime, existing challenges, and potentials for the country to save public spending on health using international legal agreements under WTO.

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1. Introduction
Economic fragility in Pakistan is one of the existence issues. Besides weak economic conditions, health remains a major challenge but gets very marginal support from public funding (Hestermeyer, 2008). Moreover, half of budget on health disappears in procurement of life saving medicines in public sector. Cost of medicines in Pakistan and around the world is increasing after adoption of TRIPS Agreement under WTO aspirations in 1994. The agreement obliges member states to protect global patents that ultimately give an edge to international pharmaceutical companies an advantage in setting and maintaining prices of medicines. Developing countries like Pakistan often struck themselves in two contrasting obligations. First is in the shape of Millennium Development Goals (MDGs) to ensure various global standards of life with a great focus on protection of health. Secondly, international obligations under TRIPS Agreement call for protection of global pharmaceutical patents which ultimately results in
high prices of essential lifesaving medicine. Resultantly, a tangible portion of very meagre public spending on health is dumped on procuring essential medicines.

Health budget of Pakistan has always been very small in comparison with other neighbouring countries. Moreover, increase in health budget is also at snails speed as budget for year 2016-17 was up for only 9 percent in comparison with last year. While at provincial level, it surged only 14 percent and districts added mere 8% to their existing spending on protection of health, one of the basic rights (Constitution of Pakistan, 1973). One may understand plight of health in Pakistan where half of its spending on health goes to procurement of medicines. During year 2016-17, as quoted already, half of the volume of total budget was consumed for medicines and rest of half supported all other expenditures on health including salaries, maintenance of hospitals, procurement of medical appliances and equipment, and emergency services.
Aforementioned statistics demonstrate public spending on procurement of medicine which constitutes a lion’s share out of total spending on protection of health in Pakistan. Issue of rise in public spending on procurement of medicine went serious after adoption and compliance of TRIPS Agreement in compliance with WTO standards. In year 2000, Pakistan was supposed to comply with international commitments under TRIPS Agreement and Patent Ordinance 2000 was promulgated by a presidential order and patent law in Pakistan went very aggressive in protecting global intellectual property standards in various fields of patents especially pharmaceutical patents (Mahmood, Kazmi, 2008).

Patents monopoly rights in the field of pharmaceutical products were not applied till 20th century for the reason that it may impact upon public health. Even prior to adoption and enforcement of Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), patent monopolies protection in the field of pharmaceuticals was only taken in the developed countries and by the way of international treaty its enforcement was anticipated. It made pharmaceutical industry content by introducing many provisions of patent protection by the Agreement, on the other side, the developing countries and NGOs looked at them as major blow to Right to Public Health and access to lifesaving drugs around the world (Rakesh, 2000). Advent of Trade Related Intellectual Property Rights Agreement which was signed in 1994.It has changed global setup on pharmaceutical patent and has drawn impact on developing and least developed countries. New challenges to comply with global technological standards of patent protection as intellectual Property rights are leading towards economic burden (Pogge, 2008, p76). Pakistan, one of the signatory of TRIPS Agreement and one of developing countries is facing many economic issues while protecting global patent protection standards. The situation has become intricate as adoption and enforcement of recent international instruments along with protecting national population from health challenges by ensuring availability of essential lifesaving medicines to populationis one of very significant national issues where Malaria, Cancer, TB, and other life-threatening issues need state attention (Abbas, 2013).

This paper will contribute in qualitative manner towards issue of over burden on state spending on procurement of medicines. Fundamental issue is scarcity of national funding on health and its better management through using international legal flexibilities provided in global pharmaceutical patent protection regime under WTO. This work will be divided in three parts. First part will introduce reader with domain of globalization of pharmaceutical patent protection. Second part will assess the impact of globalization under TRIPS Agreement and last part embarks on explaining international legal flexibilities those may be utilized to reduce economic burden on health budget by procuring cost effective medicines.

2. Compliance of WTO standards under TRIPS Agreement

United States of America (USA) remained the main force behind adoption and compliance of TRIPS Agreement in 1994. Further, enforcement of the agreement was contested by US to protect her national pharmaceutical industry. Some writer believe that giant pharmaceutical companies such as Pfizer, Sanofi Aventis, GSK, and other led influencing US government to enhance their profitability through protection of pharmaceutical patent globally. Persuading enforcement move, US government, started contacting Pakistan government through Dispute Settlement system of WTO for complying and amending its existing laws in accordance with TRIPS Agreement. Fundamental focus of US was pharmaceutical and agriculture sectors and it was claimed that existing intellectual property laws especially patent protection is not adequate and does only protect process patent ignoring product patent. Furthermore, US stance, in WTO, specifically claimed that level of protection provided by Pakistan is in contravention with Article 70.8 and 70.9 of national commitments towards TRIPS Agreement. Based upon arguments forwarded by US, it was declared that level of protection for intellectual property rights is not adequate. Moreover, representatives of Pakistan accepted the US stance of non-compliance of TRIPS obligations on state and ensured making Patent and Design Act in consistency with global intellectual property protection standards. Later on, an amendment was introduced in Patent and Design Act of Pakistan in 1997. This amendment basically introduced mailbox facility and also started granting exclusive rights of marketing in patents.
Pakistan’s efforts for making laws TRIPS-compliant were not appreciated by global pharmaceutical companies and it was alleged that nothing on ground is changed as the amendment was only theoretical giving no advantage to global patents. Moreover, law on patents remained same in case of grant of rights to process and not to product. Product patent were not introduced in Pakistan till 2000. Novel formation of molecules was also not considered under patent grant. Responding to all these criticism and political pressure from US government, Patent Ordinance 2000 was promulgated. This ordinance went a step ahead that what was required by TRIPS Agreement and global patent protection standards. The ordinance introduced product patent along with process patent, giving an extra edge to global patent holders on pharmaceutical products. Moreover, life of patent is set as 20 years without consideration to patent ever-greening and factors related to delay in entry of generic medicine to market. To sum up, this paper introduces various flexibilities provided under TRIPS Agreement that may ease prices of medicines procured by state funding reducing economic burden on exchequer.

3. Maintaining Lower Prices for Medicines; Statistics from Pharmaceutical Industry in Pakistan

After inception in 1947, Pakistan was not doing well in pharmaceutical industry with only one pharmaceutical establishment and later it developed with the pace of 5% annually. In Asia, Pakistan secures 10th position in pharmaceutical industry volume and per capita annual medicine distribution is at US 10. This figure is very small in comparison with average volume of USD 142 for other countries in region (Mehmood; Kazmi, 1988, p. 694). Pharmaceutical industry in Pakistan has maintained its unique feature of low prices for essential medicines. Apart from all pharmaceutical regulations, many studies reveal that health care has not been priority at state level. This is demonstrated through annual public spending on health (Zaidi;Aleem;Rashidine, 2013, p.635).

On the same analogy of developing countries, Pakistan faces many issues regulating pharmaceutical patents. In January 2010, problem of fake medicine was surfaced by interior minister declaring 50 percent of total volume in market as fake or unacceptable to standards of public health. Resultantly, government introduced very strict regulations by upgrading Drug Act. Many malpractices including fake medicine discourage international pharmaceutical companies in introducing their developed and effective products in pharmaceutical market of Pakistan. Apart from all these challenges, it is encouraging that trends of growth in Pharma-industry of Pakistan are positive with a prediction to reach total of PKR 290 billion in 2019. (Health Report, 2010).

4. Access to Medicine in Pakistan; Regulations for the Pharmaceutical Industry

Drug Act 1976 is fundamental legislation in Pakistan to regulate pharmaceutical industry. Fundamental state organ with an authority to regulate under different laws is Ministry of Health. Issues related to pharmaceutical regulation such as pricing, market competition, maintenance of standard medicines, control over fake drugs, and other ancillary matters are regulated under Drug Act of Pakistan by Ministry of Health. Registration of medicine also falls under preview of Ministry of Health and to the day, 40,000 medical brands have been registered and 14,000 out of them are molecules (Das, 2005, p.33-52). During 2009, Ministry of Health used its powers and cancelled 4,000 registrations of imported drugs resulting from objection raised by local pharmaceutical manufactures. This step was aimed at protecting prices of medicine’s (Muzaka, 2011, p.77).

Adoption of intellectual property rights globally and especially Pakistan’s compliance towards Bern Convention, World Intellectual Property Organisation and other international legal instruments obliges Pakistan to enforce global patent standards. TRIPS Agreement under WTO law enjoys a robust implementation mechanism and violation of it may get economic sanctions upon country. On the other hand, enforcement of global pharmaceutical patent standards leads towards high prices of essential medicines (Khwaja, 2009, p.264). Pakistan, as a state, has been subject of criticism from both state and international organisational level for non-compliance of international patent protection standards. Many efforts of making medicines affordable, accessible, and available for middle and poor sanctions of society
are criticised internationally. Pharmaceutical Report of 2010, on the other hand have presented a grim report on access to medicine in Pakistan. The report says that only rich and affluent class of Pakistan can afford essential medicine and rest of the population is depending on state level sources of medicine i.e., public hospitals. Moreover, as stated earlier that half of the medicines available in market are fake. This leaves poor faction of society without protection of health (Khan, 2005, p.27).

Legal infrastructure of regulating pharmaceutical patents in Pakistan suffers a paradoxical status. Protection of international standards on pharmaceutical patent protection leaves state contravening its commitments towards right to health under ICESCR. Measures supporting accessibility, availability, and affordability of drugs to poor factions of society attract WTO action against the state. (PPMA Report, 2013).

Careful interpretation of International instruments such as TRIPS Agreement reveals that a good deal of international legal flexibilities is embedded in the agreement itself. Moreover, this agreement does not obstruct member states’ obligations towards health (Mazuka, 2011, p.77). Next portion of this article will explain various flexibilities available in TRIPS Agreement to protect right to health and access to medicine.

5. Flexibilities under TRIPS Agreement
During negotiation at Uruguay Rounds of WTO-led campaign to adopt TRIPS Agreement, developing countries remained sceptical of future implication of the agreement. Fundamental concern was underdeveloped industry in developing counties. It is worth noting that current industrial progress in developed countries was achieved in the era of absence of strong intellectual property regime where countries imported industrial ideas from other jurisdictions without being blamed of violating intellectual property as it was national subject matter. Industrial progress of China is recent illustration where weak intellectual property regime let its industry flourish in very short time. Gap between industrial progress of developed and developing countries was very wide and based upon reservations forwarded by developing and least developed countries, various flexibilities were included in text of TRIPS Agreement.

Arguments led by developing and least developed countries during TRIPS negotiation based upon already existing obligations towards human rights regime and international commitments under MDGs. Developing countries clearly objected to enforcement of international standards of intellectual property on food, agriculture, and most significantly pharmaceutical products. All of these areas are closely knitted with protection of minimum standards of human rights. Moreover, in case of pharmaceutical patents, access to medicine is integral part of human right to health guaranteed by UDHR, ICESCR, WHO charter, MDGs, and various other international legal instruments. In result of reservations from developing countries many flexibilities were introduced in the agreement but effective utilisation of these flexibilities is not yet achieved. Many efforts are done in this regard and the most significant development related to access to medicine is Doha Declarations in 2001. It states:

‘We affirm that the Agreement can and should be interpreted and implemented in a manner supportive of WTO members’ right to protect public health and, in particular, to promote access to medicine for all. In this connection, we reaffirm the right of WTO members to use, to the full, the provisions in the TRIPS Agreement, which provide flexibility for the purpose.’ (Gopakumar, 2005)

The declaration recognises and stresses on interpretation of TRIPS Agreement in a way that it protects public health as a matter of human rights in member countries. Meaning of protection of health in this text is taken as access to medicine for the reason of impact of globalisation of pharmaceutical patent on availability and accessibility of essential lifesaving drugs (Das, 2005). In case of interpreting public health and right of state towards protection of public interest, dispute resolution body may consider standards provided by MDGs, WIPO, and UN Resolutions on elimination of malaria, TB, Hepatitis, and AIDS (Gopakumar, 2005). Moreover, further guidance may be attracted from ICESCR and its later
interpretations in various meetings of international community of states (ICESCR1967, Article 12).

6. Compulsory Licensing; Piercing Patent Monopoly for Access to Medicine
Pharmaceutical patent monopoly is not an absolute right rather international legal system provides certain ways of scrutinising its operation. Compulsory licensing is authority with state regulatory authority that makes it pierce patent monopoly and put product under monopoly open for market competition in case of any malpractice such as non-availability, violation of public interest, or any practice against state policy. Article 31 of TRIPS Agreement defines and codifies compulsory licensing in following way:

"Where the law of a Member allows for other use of the subject matter of a patent without the authorization of the right holder, including use by the government or third parties authorized by the government, the following provisions shall be respected:
(a) authorization of such use shall be considered on its individual merits;
(b) such use may only be permitted if, prior to such use, the proposed user has made efforts to obtain authorization from the right holder on reasonable commercial terms and conditions and that such efforts have not been successful within a reasonable period of time. This requirement may be waived by a Member in the case of a national emergency or other circumstances of extreme urgency or in cases of public non-commercial use. In situations of national emergency or other circumstances of extreme urgency, the right holder shall, nevertheless, be notified as soon as reasonably practicable. In the case of public non-commercial use, where the government or contractor, without making a patent search, knows or has demonstrable grounds to know that a valid patent is or will be used by or for the government, the right holder shall be informed promptly; (TRIPS Agreement 1994, Article 31)

Title of this article was suggested as using product under patent monopoly without authorisation of patent holder and this authorisation is only provided to state authority on various conditions. Moreover, this authorisation to state is not un-fettered and is subject to various conditions and limitations. Moreover, patent holder have certain control over negotiation and accruing benefit from state that must be adequate and sufficient against the patent rights. The issue arises when developing countries invoke power of compulsory licensing that brings a great deal of international pressure from international community led by developing nations. Writers on the topic have suggested a name for this pressure as ‘intellectual property politics’ (Cahoy, 2008).

Brazil, South-Africa, India, Thailand, and many other countries have tried to invoke their power of compulsory licensing to protect public interest of their population. All this was done to rationalise prices of medicine against deadly diseases where the population was not affluent enough to afford the treatment. Malaysia and Thailand used compulsory licensing to harmonise prices of drugs treating AIDS and other fatal diseases (Mohara, 2012). Compulsory licensing proved to be effective tool in Brazil and South Africa taking prices of essential medicines down enhancing availability, affordability, and accessibility of drugs. India has used various other methods including check on patentability to help local pharmaceutical industry and low cost of medicine.

Compulsory licensing has remained an effective tool to reduce prices of medicine but on the other hand some countries have not built capacity for production of life saving medicine. It is significant to note that Pakistan imports almost 90 percent of its raw material for pharmaceutical industry from different countries. (Pogge, 2008). Moreover, international intellectual property politics also hinders global and national developments for bring prices of essential medicine lower (Rashid, 2013). Various tactics such as diplomatic pressure fear of economic sanctions, foreign direct investment, and Free Trade Agreements marginalise operation of compulsory licensing (Jain, 2008).

Most significant is technical charter of intellectual property rights especially pharmaceutical patents where developing countries does not have enough legal experts to defend state’s prerogative of using
compulsory licensing and often lose their case in WTO dispute resolution system attracting economic sanctions (Braun). K. M. Gopakumar quotes Prof. Drahos stating:

“Over the years the steady drip of technical assistance leads to the formation of technocratic trust in the EPO’s system. A strong belief forms that the EPO’s system produce quality results and that belief in turn forms the basis of decision-making by patent examiners in under-resourced developing country patent offices. Technocratic trust thus fosters a circle of decision-making in which the EPO trains developing country examiners to make decisions in their own countries that predominantly benefit foreign companies, including European companies.” (Gopakumar 2005)

7. Principle of Human Rights Supremacy; critical analysis of Access to Medicine

Patent Ordinance 2000 of Pakistan may utilise using flexibilities under TRIPS Agreement for protecting public interest by convincing international regulatory authorities. Case of affordable medicine is already contested by various countries such as Brazil, South Africa, Thailand, Malaysia, and most significantly India. It is worth noting that Indian legislation on pharmaceutical patents accommodated local industry in growing to great extent with easing patentability criteria. All this was done in accordance with international patent commitment as deciding standards of patentability is sole prerogative of state.

Although WTO has been considered as ‘self-contained’ regime and human rights role in interpretation during various disputes is kept minimum. Many authors argue that international human rights regime is directly relevant to interpretation of public interest. These arguments rely on Statutes of International Court of Justice (ICJ) which describe sources of for settlement of international disputes and adjudication as ‘General principles of law recognised by civilised nations’. This brings human rights relevant to debate of sources of law in WTO dispute settlement. Monistic Theory of international law takes it to next level and states adopting this theory put international above national law. For this reason, universally accepted principles of human rights come relevant to interpretation under Dispute Resolution Body (DSB) of WTO (Marian, 2008). USA is one of the states those adopt international law primacy principle under Monistic Theory of International Law.

For the reason of human rights supremacy as an objective of national laws and also international law, one may claim that in case of conflict between global pharmaceutical patent protection under TRIPS Agreement of WTO and right to health under ICESCR, later will prevail (Vega, 1994). A majority of international community, except USA, is signatory to ICESCR and have made their internal laws consistent with obligation towards this document (Fourie, 1990). Right to protection of health and provision of adequate standards of treatment is integral part of ICESCR but it is unfortunate that US is not part to it. On the other hand, USA is party to ICCPR and persuing its enforcement most vigorously (Fourie, 1990). If analysed critically, access to medicine may be interpreted as integral part of right to life covered under ICCPR. Diseases like AIDS, Cancer, TB, Malaria, and other tropical infection cause threat to life. So, one may state that access to essential medicine forms part of both ICCPR and ICESCR. Moreover, it is duty of states to ensure affordability, availability, accessibility, and quality of medicine in their territories (Hoen, 2002).

8. Concluding Remarks

Although road towards using flexibilities under TRIPS Agreement is but but not impossible to travel through (Gopakumar, 2014). Neighbouring country, India has smartly dealt with concept of patentability granting a grace period for their pharmaceutical industry to grow before triggering its laws equal to global standards of patent protection. Moreover, academic campaign led by Amartya Sen justified state endeavours to ease patent monopolies bringing prices low on principles of human rights supremacy. Pakistan needs to learn from this lesson of using carrot and stick both in regulating pharmaceutical patents and prices of essential medicines. Utilising all available flexibilities under TRIPS Agreement will ultimately save major part of public spending on health. Besides very small budget of health in Pakistan, a good deal of resources may be saved to utilise them other than procurement of medicines. TRIPS
flexibilities will not only facilitate national pharmaceutical industry but will also bring prices of medicine lower in Pakistan.

Fundamental question is to harmonise national challenges with international requirements that will facilitate evolution of patent laws not revolution as adopted in 2000 by introducing a very strict ordinance (Palmer, Mavroidis, 1998). Additionally, paradox of public interest and strong patent protection in TRIPS Agreement may be contested in justifying efforts to facilitate lower prices of medicines in Pakistan (Dadupota, 2005). Preamble of TRIPS Agreement makes it clear that "special needs of the least-developed country Members in respect of maximum flexibility in the domestic implementation of laws and regulations in order to enable them to create a sound and viable technological base”. Article 8 of TRIPS Agreement further elaborate:

“1. Members may, in formulating or amending their laws and regulations, adopt measures necessary to protect public health and nutrition, and to promote the public interest in sectors of vital importance to their socio-economic and technological development, provided that such measures are consistent with the provisions of this Agreement.
2. Appropriate measures, provided that they are consistent with the provisions of this Agreement, may be needed to prevent the abuse of intellectual property rights by right holders or the resort to practices which unreasonably restrain trade or adversely affect the international transfer of technology.” (TRIPS Agreement, 1994)

Using above mentioned provision of TRIPS Agreement of WTO, following measures may be taken and justified by state of Pakistan to reduce a good deal of economic burden spent on procurement of costly patented medicines:

1- Patentability criteria are sole prerogative of state and it may be defined in a way suitable to public interest and access to medicine. Indian patent development and academic justification campaign is good illustration in this regard.

2- Regulation of price control may also be viewed technically and a due consideration may be given to public interest. Even public spending to procure costly medicine indirectly is paid from the taxes of those who are not affluent enough to buy those drugs.

3- Although, compulsory licensing is included in Patent Ordinance 2000 but it usage needs both technical and state level will. Regulatory authorities, IPO may keep a vigilant eye on various lifesaving drugs and advise state authorities in good time to invoke the power of piercing patent monopoly in public interest and later justifying in WTO forums. This need technical expertise at both pharmaceutical and legal levels.

4- Last but not least, Pakistan should be using vigilant system of using all flexibilities provided in international legal framework. Human Rights Supremacy is good argument but as WTO is self-contained regime, it possesses much flexibility.

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Determinants of Corporate Cash Holdings: Evidence from MNCs in Pakistan

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ABSTRACT

The purpose of this article is to investigate whether firm-specific variables (i.e. size, growth opportunities, profitability, capital expenditures, leverage, dividends, cash flow and working capital) affect the cash holdings of MNCs. Moreover, to investigate whether theories relevant to cash holdings provide any justification to narrate the cash holding behavior of listed MNCs on Pakistan Stock Exchange (PSX) for the period 2006-2016. Results indicate that profitability positively impacts cash holdings. Firm size positively impacts cash holdings in pooled Ordinary Least Squares, while it negatively impacts cash holdings in the fixed effects method; however the relationship is insignificant. Leverage, growth opportunities, dividends, working capital ratio and capital expenditures are significant and negatively related to corporate cash holdings. Finally, cash flows are unrelated to cash holdings. In short, results indicate that firm-specific variables significantly affect the cash holdings of MNCs. Moreover, (+/-) coefficients of different explanatory variables indicate that theories relevant to cash holdings provide some support to explain the cash holding behavior of MNCs in an emerging economy - Pakistan.

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1. Introduction

Cash is the oil that lubricates the economy. According to Keynes (1936) an individual or a firm holds cash for transactional, speculative and precautionary motives. Transactional motives include holding cash for the purchase of raw materials, for payment of salaries and wages, for taxes and dividends, and to use cash for other expenditures arising in the ordinary course of business. Speculative motives include holding cash to take the benefits of unexpected opportunities such as an unexpected decline in the price of raw materials, decline in indirect taxes, and reduction in import duties etc. Finally, precautionary motives include holding cash for unexpected needs such as increase in minimum level of wage rate, increase in tax rates, and increase in materials price due to shortages or increase in import duties etc. The Baumol model (1952) of cash treats cash as an inventory item where inflows and outflows can be predicted with certainty. Moreover, this model suggests that a firm could decide an optimal level of cash by weighing the advantages of reduction in opportunity cost with conversion cost. For instance, by investing cash into
marketable securities a firm bears conversion cost but it can save some opportunity cost. In contrast, when future cash flows are uncertain then a model for the demand of money proposed by Miller and Orr (1966) suggests that the cost-efficient cash balances can be determined by identifying an upper control limit (i.e. maximum balance) and a return point (i.e. target balance). Several empirical studies have explored the factors that affect the corporate cash holdings however their results are mixed. Moreover, a number of empirical studies have rather used the data from non-financial companies to examine the cash holding behavior of a specific economic group like MNCs. As for authors’ knowledge, no research yet have studied the cash holding behavior of listed multinational companies in Pakistan. Thus, inconsistent empirical results and a little research on multinational companies in Pakistan are few important reasons that have necessitated the need for this study. We are sure that results of this study will be of great use for corporate managers in determining a balance cash level by keeping in mind the impacts of firm-specific constructs on corporate cash holdings.

Remaining paper is structured as follows. Section 2 presents detailed literature review on the determinants of cash holdings. Section 3 provides data description and research methodology. Section 4 provides findings and results. Section 5 presents discussion on the findings. Lastly, section 6 presents the conclusions of the study.

2. Literature review
This section presents the results of previous studies regarding relationship between firm-specific variables and corporate cash holdings. The literature review reveals a number of motives to hold cash in corporations. For instance, by holding cash, corporations can avoid liquidating their assets unnecessarily (Ahrends, Drobetz, & Nomikos, 2017). Similarly, scholars have argued that factors like precautionary motives, brokerage costs, asymmetric information, and cash flow volatility in industry are important factors behind cash holdings (Ahrends et al., 2017; Miller & Orr, 1966; Myers & Majluf, 1984; Opler, Pinkowitz, Stulz, & Williamson, 1999). They suggest that brokerage costs lead corporations to have more liquid resources. Similarly, in case of asymmetric information, borrowing funds from the market proves more costly compared to internally available funds which could actually be ideal for meeting investment requirements. Additionally, they argue that if in firm’s industry, average volatility of cash flows is higher, it would lead firm to hold more cash. Ahrends et al. (2017) studied cash holdings of shipping companies belonging to various countries and found that those companies had higher cash holdings compared to similar companies in rest of heavy industries and that greater cash holdings were in fact attributable to higher marginal value to cash.

Roy (2018) examined role of corporate governance in determining cash holdings among India based organizations. Specifically, impact of audit related attributes, the role of board of directors, and ownership structure was assessed for 58 listed companies in India and the findings indicated that companies having stronger corporate governance were having lower cash holdings, whereas their counterparts had higher cash holdings. Roy (2018) also noted that companies also hold more cash to avoid uncertainty, to save them from raising higher funds from market, for making use of market opportunities as they come and for maintaining financial flexibility. In another study, Hsu (2018) analyzed the relationship between corporate social responsibility (CSR) practices and cash holdings for firms based in United States for the period 2005-2015. He found that firms with higher levels of CSR had significantly lower levels of cash holdings; and over the life-cycle, cash holdings portrayed a hump shape.

Certain scholars have attempted to relate expenditures in research and development, and intangible assets (like organizational capabilities and knowledge capital) to corporate cash holdings. They argue that firms that spend greater on research and development tend to hold more cash; and firms with higher level of intangibles are also inclined to greater corporate cash holdings (Falato, Kadyrzhanova, & Sim, 2014; Lei, Qiu, & Wan, 2018; Lyandres & Palazzo, 2016). Study of Lei et al. (2018) covering rich sample of forty five developed and developing countries indicates that investments and cash holdings are influenced by asset composition and its interaction with the financial development.
Opler et al. (1999) used the data of US firms during 1971-1994 to identify the variables that impact the cash holdings. They found that firms with volatile cash flows and strong growth opportunities hold relatively more cash. In contrast, firms that can easily approach to financial markets prefer to hold low cash. In sum, they reported their findings congruent with the prophecy of trade-off model of cash. Ozkan and Ozkan (2004) have analyzed the data of 1,029 UK firms during 1984-1999 to explore the factors affecting the cash holdings. They found a significant non-monotonic impact of managerial ownership on cash holdings. Moreover, results indicate that leverage, cash flows, growth opportunities, and liquid assets are some important variables that affect the cash holdings. Ferreira and Vilela (2004) used the data of companies in EMU countries to identify the factors that affect the cash holdings. They observed that investment opportunities and cash flows were directly; while liquidity, size and leverage were inversely linked to cash holdings. Moreover, they observed that strong investor protection and concentrated ownership are inversely linked to cash holdings. Furthermore, results indicate that capital market development is negatively linked to cash holdings.

Drobotz and Grüninger (2007) analyzed the data of non-financial Swiss firms during 1995-2004 for exploring the factors that affect the cash holdings. They found that firm size and tangibility are inversely while operating cash flows and dividends are directly linked to cash holdings. Moreover, they observed a non-linear relationship between leverage and liquidity. Furthermore, they observed that growth opportunities are unrelated to cash holdings. Harford, Mansi, and Maxwell (2008) observed that firms with weaker governance structures prefer to repurchase stocks rather than to increase dividends in order to avoid future payout commitments. Kim, Kim, and Woods (2011) analyzed the data of 125 restaurant firms in United States during 1997-2008 for investigating the variables affecting cash holdings. They observed a positive association between investment opportunities and cash holdings. In contrast, size, liquid assets except cash, capital expenditures and dividends are inversely linked to cash holdings. In sum, it is revealed that their findings are in agreement with the predictions of trade-off model of cash. Ramezani (2011) analyzed the data of US companies during 1990-2000 to explore the effects of financing constraints, managerial flexibility, and the value of the firm’s real options on cash holdings. Results indicate that financially unconstrained companies and the companies with the valuable real options tend to have greater cash holdings. In addition, increase in cost of capital is an important factor that encourages the firms to hold more cash. Finally, companies with increased market power, and the companies with lower operational flexibility tend to hold less cash.

Al-Najjar (2013) has analyzed the data of Chinese, Brazilian, Indian and Russian firms, in particular, to explore the effects of dividend policy and capital structure on corporate cash holdings. The study observed that dividend policy and capital structure have some role in determining the corporate cash holdings. Notably, he observed that similar variables in developed and developing countries, for example, firm size, dividend policy, and capital structure affect the cash holdings. Finally, results indicate that firms in countries with weak shareholder protection tend to hold more cash. Wasiuzzaman (2014) has used the data for publically traded firms in Malaysia for the period 2000-2007 for studying determinants of cash holdings. Results indicate that growth opportunities, cash flows, debt levels, dividends and substitutes of liquid assets are important variables that are positively linked to cash holdings. In contrast, results indicate that board independence is inversely related to corporate cash holdings. Moreover, firm size, cash flow volatility and board size have no significant affect on cash holdings. Mun and Jang (2015) have used the data for restaurants operating in America to explore the effects of working capital on profitability. In addition, they have analyzed the effects of cash level on profitability and working capital. A U-shape relationship was found between working capital and profitability. Furthermore, results indicate that cash is an important factor that affects the level of working capital. They found that interactive effects exist among working capital, profitability and cash.

Wu, Yang, and Zhou (2017) have analyzed the data of 1,873 firms listed on Shanghai and Shenzhen Stock Exchanges of China during 2000-2013. They observed that Chinese MNCs do not have cash
Holdings greater than those of domestic firms unless those multinational companies greatly rely on foreign sales. Moreover, the multinationals of non-state owned enterprises shows the insignificant differences in cash holdings for non multinationals. Furthermore, they observed that Chinese MNCs invested more but had lower profitability particularly in non-state owned enterprises sample. Finally, they found that the need of liquid cash for MNCs in China was different from companies in the United States. In sum, results of earlier empirical studies (in different countries of the world) on determinants of corporate cash holdings are mixed. Thus, mixed findings are an important reason that has evoked the need for this study.

3. Data description and methodology
3.1 Data description
The aim of this article is to explore the determinants of cash holdings of MNCs in Pakistan. To estimate the effects of explanatory (i.e. firm-specific) variables on cash holdings, the data was collected through annual reports of listed MNCs on PSX for the period 2006-2016. Data for shares’ market price was taken from annual diaries of PSX (formerly Karachi Stock Exchange). Total 31 MNCs were found listed on PSX during the study period. Data of some companies was found missing during the study period; that is why, final sample consists of 260 observations relevant to 28 MNCs during 11 years.

3.2 Measurements of variables
Variables used in this study and their measurements are taken from previous empirical studies on corporate cash holdings. Variables’ definitions are reported in Table 1.

Table 1: Variables’ definitions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
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<tr>
<td>Cash</td>
<td>$CASH_{it}$ Cash &amp; bank balance / Net assets. Net assets defined as taking the difference between total assets and cash &amp; bank balance.</td>
</tr>
<tr>
<td>Profitability</td>
<td>$PRO_{it}$ Profit before taxes / Net assets.</td>
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<tr>
<td>Firm Size</td>
<td>$SIZE_{it}$ Natural logarithm of total sales.</td>
</tr>
<tr>
<td>Leverage</td>
<td>$LEV_{it}$ Total liabilities / Stockholders equity.</td>
</tr>
<tr>
<td>Growth</td>
<td>$GRO_{it}$ Market price per share / Book value per share. Market price per share determined as (high price of the year + low price of the year / 2)</td>
</tr>
<tr>
<td>Dividend Yield</td>
<td>$DY_{it}$ Dividend per share / Market price per share.</td>
</tr>
<tr>
<td>Cash Flow</td>
<td>$CFLO_{it}$ Profit from operations + depreciation + amortization / Net assets.</td>
</tr>
<tr>
<td>Working Capital</td>
<td>$WC_{it}$ Net current assets - Current liabilities / Net assets. Net current assets are computed by taking difference between current assets and cash &amp; bank balance.</td>
</tr>
<tr>
<td>Capital Expenditures</td>
<td>$CE_{it}$ Long-term assets / Net assets</td>
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3.3 Methodology
Congruent with earlier empirical studies three panel data techniques such as OLS, fixed effects method and random effects method were used to explore the effect of explanatory variables on cash holdings of MNCs. Further, Hausman test (1978) was used to select either the random effects method or the fixed effects method was preferable to predict the effect. The basic regressions are presented as follow:

$$CASH_{it} = \beta_0 + \beta_1 PRO_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 GRO_{it} + \beta_5 DY_{it} + \beta_6 CFLO_{it} + \beta_7 WC_{it} + \beta_8 CE_{it} + \epsilon_{it} \ldots (OLS)$$

$$CASH_{it} = \beta_0 + \beta_1 PRO_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 GRO_{it} + \beta_5 DY_{it} + \beta_6 CFLO_{it} + \beta_7 WC_{it} + \beta_8 CE_{it} + \mu_{it} \ldots (FE)$$
\[ CASH_{it} = \beta_0 + \beta_1 PRO_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 GRO_{it} + \beta_5 DY_{it} + \beta_6 CFLO_{it} + \beta_7 WC_{it} + \beta_8 CE_{it} + \varepsilon_{it} + \mu_{it} \] \text{(RE)}

4. Results
4.1 Descriptive statistics

Descriptive statistics presented in Table 2 indicates that cash & bank balance on average represents 12.17 percent of net assets. Net assets are defined as total assets minus cash & bank balance. Table 3 presents the yearly averages of cash & bank balance during the study period. Results indicate that cash & bank balance vary from 8 percent to 18.3 percent. The variation in cash & bank balance may be due to policy decisions made by the companies’ management keeping in mind the needs of business during military (2006-2008) and political regimes (2009-2016). The mean of firm size, calculated as natural log of sales, is 16.06. The mean of leverage, measured as debt to equity ratio, is 260 percent. Mean value of market-to-book ratio (i.e. growth) is 5.51 times. The mean dividend yield is 2.85 percent. The mean cash flows are 22.24 percent of net assets. Mean working capital ratio is 10.12 percent of net assets, and finally capital expenditures represent 40.18 percent of net assets.

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<th>Table 2: Descriptive statistic</th>
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<tr>
<td>Variable</td>
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<tr>
<td>CASH_{it}</td>
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<th>Table 3: Yearly averages of cash &amp; bank balance</th>
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</thead>
<tbody>
<tr>
<td>Cash &amp; bank Balance</td>
</tr>
<tr>
<td>No. of obs.</td>
</tr>
</tbody>
</table>

4.2 Regression Results

Regression results on the relation between firm-specific variables and cash holdings are reported in Table 4. Results indicate that in all regressions, profitability is significant (positive) predictor of cash holdings. In pooled OLS method, firm size is directly related to cash holdings. In contrast, size is negatively related to cash holdings in the random effects and fixed effects method; however the relationship found is not significant. In all estimation methods, leverage, growth, dividends, working capital ratio and capital expenditures are significant (negative) predictors of cash holdings. Finally, cash flows have no significant affect on cash holdings. The Hausman test results favor to use fixed effects method’s estimates. In sum, regression results confirm that firm-specific variables significantly affect the cash holdings of MNCs.
Table 4: Effects of firm-specific variables on corporate cash holdings

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pooled OLS</th>
<th>Fixed Effects</th>
<th>Random Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>t-Statistic</td>
<td>Coefficient</td>
</tr>
<tr>
<td>$C$</td>
<td>0.1547</td>
<td>1.32</td>
<td>0.7066***</td>
</tr>
<tr>
<td>$PRO_{it}$</td>
<td>0.7145***</td>
<td>2.69</td>
<td>0.7547***</td>
</tr>
<tr>
<td>$SIZE_{it}$</td>
<td>0.0213***</td>
<td>3.10</td>
<td>-0.0212</td>
</tr>
<tr>
<td>$LEV_{it}$</td>
<td>-0.0721***</td>
<td>-7.37</td>
<td>-0.0377***</td>
</tr>
<tr>
<td>$GRO_{it}$</td>
<td>-0.0065***</td>
<td>-6.23</td>
<td>-0.0024**</td>
</tr>
<tr>
<td>$DY_{it}$</td>
<td>-0.9162***</td>
<td>-3.02</td>
<td>-0.8235***</td>
</tr>
<tr>
<td>$CFLO_{it}$</td>
<td>-0.0114</td>
<td>-0.04</td>
<td>-0.0429</td>
</tr>
<tr>
<td>$WC_{it}$</td>
<td>-0.6372***</td>
<td>-10.4</td>
<td>-0.7804***</td>
</tr>
<tr>
<td>$CE_{it}$</td>
<td>-0.4410***</td>
<td>-7.90</td>
<td>-0.3636***</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.6006</td>
<td>0.3605</td>
<td>0.4737</td>
</tr>
<tr>
<td>F-Statistic</td>
<td>47.17</td>
<td>57.90</td>
<td></td>
</tr>
<tr>
<td>Prob (F-Statistic)</td>
<td>0.0000</td>
<td>0.0000</td>
<td></td>
</tr>
<tr>
<td>Wald $\chi^2$</td>
<td></td>
<td></td>
<td>401.90</td>
</tr>
<tr>
<td>Prob (Wald $\chi^2$)</td>
<td></td>
<td></td>
<td>0.0000</td>
</tr>
<tr>
<td>Hausman Test ($\chi^2$)</td>
<td></td>
<td></td>
<td>95.42</td>
</tr>
<tr>
<td>Prob. ($\chi^2$)</td>
<td></td>
<td></td>
<td>0.0000</td>
</tr>
</tbody>
</table>

5. Discussion on empirical results

The results of regression suggest that profitability positively affects cash holdings. This positive effect is consistent with the argument that highly profitable companies hold more cash for permanent as well as seasonal needs. Moreover, profitable firms prefer to use cash to pay dividends in order to mitigate the agency problems that stems from the availability of free cash flow. The positive relationship confirms the findings of Mun and Jang (2015), Al-Najjar (2013). Firm size also positively affects cash holdings. The positive effect of size on cash holdings confirms the fact that large firms have more ability to generate profits due to economies of scale which in turn make them able to accumulate cash that can be used to finance permanent as well as temporary needs. The positive effect supports the findings of study by Ozkan and Ozkan (2004). Moreover, leverage negatively affects cash holdings. This negative effect is congruent to the predictions of pecking order hypothesis which suggests that profitable companies with sufficient liquid resources (i.e. cash holdings) borrow less compared to profitable companies with insufficient liquid resources. The negative relationship between leverage and cash holdings found consistent to the findings of Mun and Jang (2015), Al-Najjar (2013), and Opler et al. (1999).

Notably, capital expenditures (i.e. investment in real assets) and growth opportunities (i.e. market-to-book ratio) are inversely related to cash holdings. Although the negative relationship seems illogical however this may be due to the reason that profitable MNCs despite the availability of cash avoid unnecessary/unproductive investment in real assets in order to mitigate the agency problems that stems from the availability of free cash flow. The inverse relationship between growth opportunities and cash holdings confirm the findings of Ferreira and Vilela (2004). Alternatively, the inverse relationship between capital expenditures and cash holdings confirms the findings of Wasiuzzaman (2014). Dividends are negatively associated with cash holdings. This negative association is in line with the fact that distribution of cash to shareholders leads to reduction in liquid resources. Thus firms that distribute cash dividend hold less cash. The inverse relationship between dividends and cash holdings confirms the
findings of Al-Najjar (2013), Opler et al. (1999), and Ozkan and Ozkan (2004). Working capital ratio is negatively related to cash holdings. Working capital ratio is measured by taking the difference between current assets except cash & bank balance and current liabilities scaled by net assets. The mean value of working capital ratio is positive which indicates that MNCs prefer to finance current assets with short-term as well as long-term funds. Moreover, it indicates that availability of sufficient liquid resources diminishes the need for cash due to the reason that net current assets can be convertible into cash as needed. The negative relationship confirms the findings of Mun and Jang (2015), Opler et al. (1999).

In synopsis, results indicate that profitability, size, leverage, growth, dividends, capital expenditures, and working capital ratio are some important variables that significantly affect the cash holdings. Moreover theories relevant to cash holdings i.e. pecking order theory, trade-off model of cash holdings, and free cash flow theory surely provide some support to explain the cash holding behavior of MNCs in Pakistan.

6. Conclusion
We have explored the effects of firm-specific variables on cash holdings of listed MNCs in Pakistan. Results reported in Table 3 indicate that the amount of cash & bank balance vary from 8 percent to 18.3 percent of net assets during the study period. The variation in cash holdings may be due to the policy decisions made by the managers because of uneven business condition during military (2006-2008) and political regimes (2009-2016). The results of regression presented in Table 4 indicate that profitability is positively associated to cash holdings. The positive impact of profitability on cash holdings is consistent with the argument that highly profitable companies hold more cash for permanent as well as seasonal needs. Moreover, they may use cash to pay dividends to shareholders in order to mitigate the agency problem that stems from the availability of free cash flow. It was also found that firm size positively affects cash holdings. This positive effect confirms the fact that large size companies possess greater ability for generating profits because of economies of scale which in turn make them able to accumulate cash that can be used to meet permanent as well as temporary needs. Leverage is inversely related to cash holdings. The inverse relationship confirm the predictions of pecking order theory that profitable companies having sufficient liquid resources (i.e. cash holdings) borrow less compared to less profitable companies having insufficient liquid resources. Capital expenditures and growth are negatively related to cash holdings. Although the negative relationship seems illogical however this may be due to the reason that profitable MNCs despite the availability of cash avoid unnecessary investment in real assets in order to mitigate the agency problem. Dividends are inversely related to corporate cash holdings. The inverse relationship is in support of the fact that cash distribution to shareholders leads to reduction in liquid resources. Thus, firms distributing cash dividends hold less cash. Working capital ratio is negatively related to cash holdings. More importantly, the mean value of working capital is positive which indicates that MNCs prefer to finance current assets with short-term as well as long-term funds. Moreover, it indicates that availability of sufficient liquid resources diminishes the need for holding excess cash.

In short, the findings suggest that company profitability, size, leverage, growth opportunities, dividends, capital expenditures, and working capital ratio are some crucial variables which substantially impact the cash holdings of MNCs in Pakistan. The results of this research provide guidance to corporate managers in determining a balanced amount of cash, keeping in mind the positive or negative effects of explanatory variables. This study has explored the effects of firm-specific variables on corporate cash holdings however there is a need to explore the effects of governance variables on cash holdings of MNCs in Pakistan which is the task for future research.

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Investigating the Influence of Shareholder Mechanisms on the Perceived Performance of Listed Firms in Nigeria

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ABSTRACT

The current debate on the issues of shareholder rights to firm performance has grown as a topic of research both in the developed and emerging economy. There is serious concern regarding the effectiveness of the board transparency and accountability, company image and the rights of the shareholders in recent times. This paper investigated the influence of shareholders mechanisms on the perceived performance of listed firms in Nigeria. The study is guided by agency theory and supported by the stewardship theory. The questionnaire was used as an instrument for data collection. 247 questionnaires were administered with 117 duly completed and returned. Hence, the number of completed valid questionnaires is 114. However, data were analysed using Partial Least Square Structural Equation Modeling (PLS-SEM). Empirical findings showed that board transparency/accountability and shareholder right were significantly and positively related to perceived firm performance. While the company image did not show any significant link to perceived firm performance. Hence, based on the researches knowledge, this is the first of its kind to adopt primary data to investigate the influence of shareholders’ rights mechanisms on the perceived performance of listed firms in Nigeria. Therefore, the findings of this study provide researchers, policymakers, firms, stakeholders, and the agencies of the government with a better picture of the transparency and accountability and the right of the shareholder. The study recommends that listed firms in Nigeria should adhere to professional ethics and best business practices such as financial prudence and accountability to their board of directors.

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1. Introduction

Lack of code of best practices of many companies has become a topic of debate both in the developed and developing countries in the recent time. Since early 1990’s scandals to date, has exposed many multinational companies both in the developed and emerging economies as a result of manipulation of financial statement unexpected corporate failures by the managing directors (Nuhu & Ahmad, 2017;
Sanusi, 2012; Samaduzzaman et al, 2015). The findings of many studies have suggested that the malpractices at high profile firms, especially Enron, WorldCom, Tyco and many more corporate bodies in the United Kingdom and the US are as a result of losses of more than USD 7 trilling of contributors/investors (Lawal, 2016). Again, Lehman Brothers scandals alone stood at USD 14.5 trilling (Lawal, 2016; Nuhu and Ahmad, 2017).

In Africa, especially Nigeria has seen the collapsed of high notable leading financial services (Finbank, Savannah Bank, Habib Bank, Bank PHB, Lion Bank, Bank of the North, Inland Bank, Afribank, Oceanic Bank, African Continental Bank and Intercontinental Bank) (Nuhu and Ahmed, 2017). The scandals are as a result of the lack of a code of best practices and corruptions, reckless loan provision, and manipulation of the financial statement where is still found operating in the financial services firm in Nigeria (Sanusi, 2012). Hence, this was the period, Nigeria market capitalization fell/dropped from 12 trillion Naira to 9 trillion Naira (Lawal, 2012, 2016; Nuhu and Ahmad 2017). This prompted the issue of shareholder mechanisms representative into board members have become a topic of debate, but stills, the issues, challenges and problems it tried to addresses/resolve remain inconclusive (Nuhu and Ahmad, 2017).

The objectives of this paper are to reconcile the inconsistencies, inconclusive and mixed finding from previous studies, by bringing new research approach to investigate the causal/relationship between shareholder right mechanisms on the performance of quoted/listed companies in Nigeria. This study is structured into the following heading; introduction, study literature reviews follow by the methodology. Also, the paper further contains findings/results, conclusion, and recommendations.

2. Literature Review
Shareholder Rights and Firm Performance
From empirical investigation in recent time by many scholars, there is mixed argument and conflicting finding between the shareholders right (the owner) and the managers right (the agent) which has generated a lot of conflict between the principal (owner) and agent (employee) (Armour et al., 2017; Lawal, 2016; Nuhu & Hussaini, 2017). Despite numerous empirical investigations, the agency problem remains an unresolved issue in corporate governance. Hence, many types of research supported by numerous theories have been investigated to find the lasting solution to the conflict between the owner (principal) and the manager (agent). But, however, none of these studies could fully answer the question of why firms keep on diminishing that affect their shareholders’ capital (Ararat et al., 2016).

Lawal, (2016) argued that famousto the decline of family-owned businesses and the increase of pleased managers and managers. The independence of directors and managers was as a result of the advent of the high multi-divisional company operates rendering to the staff. In the study of Gómez-Bezares et al, (2016), examines the effect of integrating sustainability into corporate strategy on numerous parts of shareholder right creation and financial performance in the context of British capital market. The data from FTSE 350 companies from the period 2006–2012. Using t-statistics and F-tests from ANCOVA. The results support that company that found to have incorporated sustainability problems into their various business operations are mostly controlled by their leverage and resources, stronger that influence performance and shareholder right creation than other firms.

In another stream of research, evidence showed that the rights of shareholders are in inverse to the probability to firm diversify (Lawal, 2016; Nuhu & Hussaini, 2017). This is in line with the believed of agency theory viewpoint, (Lawal, 2016) study validates that restrictive CGcode enables managers to pursue corporate strategies that are not consistent with shareholder wealth maximization. Hence, the debate on the shareholder right will continue to be and remain an interesting area of research (Lawal, 2016). The study attempts to investigate the relationship between shareholders right and the perceived performance of financial services firms in Nigeria. Hence, the study hypothesized that:

**Hypothesis 1:**
There is a significant and positive relationship between shareholder rights and the perceived performance of financial services of listed firms in Nigeria.

**Board Accountability and Transparency and Firm Performance**

Since early scandals, researchers, policy makers, investors and corporate stakeholders have severally called for managing directors and management accountable and transparent to their shareholders (Naaraayanan & Nielsen, 2016; Nuhu and Hussaini, 2017). However, managing directors and management accountable and transparent to their shareholders is regarded as important and critical mechanisms to resolve the bottleneck between the shareholder and the agent (Keay, 2016; Nuhu & Hussaini, 2017). The recent studies have argued that managing directors and management accountable and transparent to their shareholders is in relation to a count head or the number of components that boards members must account and answerable to their owners (Keay, 2016).

In the work of Krishnamurti et al, (2016), their study population of 97 companies within eight Asian countries, while there studied is on the relationship between CLSA (Credit Lyonnais Securities Asia) transparency as independent variable and business performance measure with Tobin's Q which is dependent variable found that transparency dimension has a positive relationship and has a positive effect on firm performance.

Contrary, Amar (2001), found a negative relationship in examining the relationship between corporate management principles and business performance in the context of Credit Lyonnais Securities Asia (CLSA's) research population of 495 firms in 25 developing countries. However, none of these recent researches discussions about direct relations between accountability and transparency and firm performance. Hence, based on the literature, the study attempts to investigate the relationship between board transparency, accountability and the perceived performance of financial services firms in Nigeria. The following hypothesis has been developed. Therefore, the study hypothesized that:

**Hypothesis 2:**

There is a significant and positive relationship between board transparency, accountability and the perceived performance of financial services of listed firms in Nigeria.

**Corporate Image and Firm Performance**

This study defined behavior as corporate reputation and ethical behavior of the firms. Hence, business ethics has redirected the thought of recent studies that called for renewed attention due to corporate scandals in both developed and emerging economies like those of Enron, Arthur Andersen, Adelphia, Tyco International, and Worldcom, (Gómez-Bezares et al, 2016). In addition, the growing importance and called for governmental regulations and agencies, the amplified scrutiny of the many industries like media as well as increases worries and pressure from numerous stakeholders have put and placed the corporate business ethics challenge, particularly in the virtually all areas of firm’s improvement (Nuhu & Ahmad, 2016).

In contrary, others remain skeptical (Jensen, 2001) argued that ethical initiatives are wealth and investments without payoffs or gain and hence against the best interest of shareholders and stakeholders. But regrettably, there is very limited empirical study work that has explicitly answered and addressed these corporate ethical issues that the recent existing literature research has shown mixed results and inconsistencies (Garay et al., 2017). Therefore, the study attempts to investigate the relationship between corporate image and the perceived performance of financial services firms in Nigeria. The following study hypothesized that:

**Hypothesis 3:**
There is a significant and positive relationship between corporate image and the perceived performance of financial services of listed firms in Nigeria.

**Board Size and Firm Performance**

The issue of appropriate board size has been the subject of intense discussion when it comes to analyzing the efficiency of the internal governance mechanism, supported by agency theory (Tai, 2015). Board size is even more pronounced in single-tier governance systems configured in such a manner that ensures the representation of both executive and non-executive members (Lawal, 2016).

The size of every board of directors is a vital and important attribute for every successful board mechanisms or structures. Board size is determined on the basis of how it influences the communication, coordination, and control management activities of a firm (Nath, et al, 2015). The ideal size of the board has further become a controversial argument and debate in the recent CG trends. Johl et al contended that in Malaysia for instance, there is no specific ideal size for every company on the board. The Malaysia CG code does not specify the size of the board, but instead, every company board should decide its size in determining the impact on its numbers (Johl et al, 2015). While in Australia CG 2014 does not mention a specific number of people from the board of directors (Appuhami&Bhuyan, 2015).

On the other hand, Yermack (1996) study found a negative relationship between the board size and performance with the sample of 452 US firms during the period of 1984-1991. In the same trend, Bennedsen et al (2008), found a negative relationship between board sizes and firm performances using ROA with the sample of 6,850 Danish firms. Ammari et al (2014), investigated the board structure of 40 French firms listed (SBF 120) during the periods of 2002-2009 found a strong negative relationship. In the opposite trend, Zakaria et al (2014), examine Malaysian listed firms using the panel data regression model, found board size positively influences firm performance.

Many studies have been carried out in recent years to determine the empirical validity of the idea of an optimal or moderate board size and its effects on firm operations and financial performance. Overall, empirical studies on the nexus of board size and firm performance have yielded inconsistent outcomes ranging from positive (Appuhami, 2015) to negative (Nath et al, 2015). Lawal (2012), argues that more than two decades of empirical study is yet to justify the above assumptions as inconsistency and inconclusive findings continue to dominate empirical studies on the relationship between board size and firm performance. Therefore, the study hypothesized that:

**Hypothesis 4:**

*There is a significant and positive relationship between board size and the perceived performance of financial services of listed firms in Nigeria.*

**3. Theoretical Framework**

The main theory of the study is Agency and two supporting theories (managerial hegemony and stewardship theory). Agency theory is acknowledged by many researchers as the dominant theory as against numerous that affect virtually all the aspects of CG research (Aguilera et al., 2008; Nuhu&Hussaini, 2017).
4. Methodology
This study adopted primary data. A self-administered questionnaire was used for the data collection. The study used 287 board of directors of financial services listed in the Nigeria stock exchange as at January 2016. Therefore, the total population of the study is the total number of the individual directors on the boards of listed firms (287) of financial services in Nigeria. However, the study used Krijcie and Morgan (1970) table to determine the sample size which is 165. Salkind (1997) suggested that an additional of 50% or double of the sample result should be increased or added to the original sample size to elude/avoid a low response rate. Thus, the higher the respondent’s response rate, the better the results (Salkind, 1991). Hence, 50% of 165 is 82.5 (83 approximately).

The total number of 248 copies of the questionnaire was administered with the assistance of members of staff of the Nigeria Stock Exchange (NSE) and Securities and Exchange Commission (SEC). The questionnaire was adapted from prior researchers. Although, the study used close-ended format questions (questionnaire) that is based on a 5-point Likert scale. In the end, 128 copies of the questionnaire were duly completed and returned. This represents the response rate of 51.61 percent (52%). While 14 out of 128 copies of the questionnaire were invalid. Therefore, the total number of 116 (47%) copies of the questionnaire was used for analysis after carrying out data screening. Thus, Statistical Software for Social Sciences (SPSS) using version 22 for data screening and preliminary analysis. While Smart PLS 2.0 (Partial Least Squares) software was used for the final analysis (Hair, 2014; Nasiru & Keat Ooi, 2015; Nuhu & Hussaini, 2017).

5. Results
This study adapted measurements from the work of Ammann, et al. (2011) for corporate image; Okpara (2011) for Shareholders’ rights; Khongmalai, et al. (2010) board transparency and accountability; Ammann et al (2011) and Khongmalai et al (2010) Board Size; Rettab et al (2009) firm performance. However, the total of 114 copies of the questionnaire was duly returned and usable. Hence, Smart PLS was used to test model/hypotheses.

6. Measurement Model
The convergent and the discriminant validity were used to test the adequacy of the study items and variables. The convergent validity, construct reliability, indicators reliability, were assessed as suggested by Hair, (2014). Hence, the indicators reliability and the loadings of the items were carryout and they all met the threshold of 0.7 as suggested by Hair et al., 2014. The validity and reliability, composite reliability, and average variance extracted were carried out giving the composite reliability above 0.7. The average variance extracted also above the 0.5 thresholds as suggested by Hair et al., 2014. Accordingly, the minimum/lowest composite reliability of this study is 0.756. While the lowest/minimum average variance extracted for the study is 0.616. See Table 1 below:
Table 1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Code</th>
<th>Loading (items)</th>
<th>Average Variance Extracted (AVE)</th>
<th>Composite Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Size</td>
<td>BS1</td>
<td>0.930</td>
<td>0.850</td>
<td>0.919</td>
</tr>
<tr>
<td></td>
<td>BS2</td>
<td>0.914</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate Image</td>
<td>CI4</td>
<td>0.937</td>
<td>0.797</td>
<td>0.940</td>
</tr>
<tr>
<td></td>
<td>CI5</td>
<td>0.945</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CI6</td>
<td>0.846</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CI7</td>
<td>0.839</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporate Transparency, Accountability</td>
<td>CTA2</td>
<td>0.918</td>
<td>0.783</td>
<td>0.878</td>
</tr>
<tr>
<td></td>
<td>CTA6</td>
<td>0.851</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shareholders Right</td>
<td>SR3</td>
<td>0.922</td>
<td>0.616</td>
<td>0.756</td>
</tr>
<tr>
<td></td>
<td>SR4</td>
<td>0.618</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm Perceived Performance</td>
<td>FP5</td>
<td>0.924</td>
<td>0.832</td>
<td>0.908</td>
</tr>
<tr>
<td></td>
<td>FP6</td>
<td>0.901</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Again, the study assessed cross-loadings, inter-construct and correlation matrix. The square root of the average variance extracted across the diagonal was examined, the discriminant validity was also assessed for the constructs. Hence, the items that are below the threshold of 0.5 were deleted as suggested (Hair et al., 2014). In Table 2, the results show cross-loading of the items (see shadowed lines) which are higher on each respective construct that shows discriminant validity. Hence, Table 3, the square root of each construct of the average variance extracted must be higher than any other figure in the construct (Fornell and Larcker, 1981). Therefore, the study model has successfully met and satisfied the threshold of validity and reliability as recommended by Hair, 2014. The next step was to assess the structural model.

Table 2

| Variables Correlations; Average Variance Extracted (AVE); Mean and Standard Deviation. |
|-----------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Variables                                     | BS              | CI              | CTA             | SR              | FP              | Mean            | Std. Dev        |
| Board Size (BS)                               | .850            |                |                 |                 |                 | 2.78            | .558            |
| Corporate Image (CI)                          | -.087           | .797            |                 |                 |                 | 2.92            | .569            |
| Corporate Transparency and Accountability (CTA)| .513            | -.094           | .783            |                 |                 | 2.92            | .569            |
| Shareholder Right (SR)                        | .054            | .178            | .014            | .616            |                 | 3.5             | .669            |
| Firm Performance (FP)                         | .323            | .098            | .424            | .706            | .823            | 2.74            | .522            |

Note: The shaded numbers in bold are the square roots of Average Variance Extracted (AVE) across the diagonal and off-diagonally of the correlation among the variables.
7. Structural Model
The first step in the structural model is to test the predictive power of the construct (independent variables) and the explanatory power of the study (entire model) model. Hence, the explanatory power was examined through squared multiple correlations (i.e. $R^2$) of the firm perceived performance as the dependent variable. Therefore, figure 1 shows 67.7% (i.e. $R^2$) and 0.677 for variation in the firm perceived performance are assessed by the independent variables.

In line with the threshold or recommendation by Falk and Miller (1992), the results show that the study model has an acceptable $R^2$ statistic greater than 10%. Hence, the study observed formulated hypotheses with the standardized parameter estimates on the study constructs conforming to p-value and t-values that indicate the significance level. Furthermore, to obtain t-values, partial least squares (PLS) was performed with 5,000 bootstrapping procedures in the number of cases that represent the total number of the valid observation with no sign of changes option. The findings have shown support for the three hypotheses formulated in the path coefficients that show positive and significant at 0.01 (1%) and 0.05 (5%) level of significance. While one hypothesis is not supported. Interestingly, the effect sizes ($f^2$) of the three supported hypotheses were small at 0.474 and 1.290 respectively (Cohen, 1988).

Figure 1: The Measurement Model

Figure 2: The Structural Model
8. Discussion

The study investigated the relationship between shareholder mechanisms and the perceived performance of the financial services of listed firms in Nigeria. Hence, it shows that shareholder mechanisms positively relate to firm perceived performance. In overall, the findings/results of the study showed that the empirical analysis supports the role of shareholder mechanisms in improving firm perceived performance (Nuhu & Hussaini, 2017). Therefore, there is a strong positive, statistically significant relationship between corporate transparency and accountability on the perceived performance of financial services listed firms in Nigeria. The result of one hypothesis three is not supported as there is no relationship between corporate behaviour and the perceived performance of financial services listed firms in Nigeria (β=.012; T value=0.179).

Therefore, the hypothesis two supported (β=.414; T value=8.481). The results of this hypothesis two are consistent with the prior findings (Zehir et al, 2016) who showed that corporate transparency and accountability influence the firm performance. This result is also consistent with the prior studies (Gibson, 2000). Hence, there is also the statistically significant positive relationship between Shareholder Rights and the performance of listed financial services firms in Nigeria. Hence, this is consistent with the hypothesis number three. The results supported with β=.698; T value=11.949. The finding is in line with findings of Gómez-Bezares et al., (2016).

However, the overall results show three hypotheses are significant and positive related to perceived firm
performance show by t-values and p-values results (significant at p<0.01 and p<0.05) while one hypothesis not supported. Hence, this study showed that corporate governance mechanisms (corporate transparency and accountability and shareholder right) influence the performance of financial services in Nigeria. However, the findings were expected to be significant and positive to perceived firm performance (Jizi, 2017; Lawal, 2016; Nuhu & Hussaini, 2017) argued in their findings that poor CG performance is mostly caused that leads to changes and reform of many corporate governance characteristics particularly in the area of transparency, and accountability as well as shareholder right (interest).

9. Conclusion and Future Researchers
In this study, the various related constructs of shareholder mechanisms that enhance firm perceived performance were analyzed. Consequently, the findings of the study confirmed that the transparency and accountability, investor/shareholder rights are significant except corporate behaviour that showed no significant relationship. Hence, there is a need to use more than one theory in a single study (Lawal, 2016; Nuhu & Hussaini, 2017). Mix findings of the prior studies are as a result of relying on one theory (Nuhu & Hussaini, 2017).

This study has also improved in the area of methodology over previous researchers by the use of primary data (questionnaire) as suggested by recent studies (Lawal, 2016; Nuhu & Hussaini, 2017; Johl et al, 2015). Many studies on CG have relied strongly on particular methodological changes. The time is a good fit for methodological changes that took into consideration for primary investigation (Lawal, 2016). Again, another advancement for primary data measurement is by using the "Structural Equation Modelling-Partial Least Square (SEM-PLS) for primary data analysis" (Hair, 2014). This statistical software has demonstrated a lot of guarantees (Hair et al, 2013). Hence, the partial least squares structural equation modeling has been recommended as a rigorous application that gives accurate and better results with a higher acceptance by researchers (Hair et al, 2014).

The findings of this paper provide policymakers, the board of director, stakeholders, and the government agencies with a better picture of the transparency and accountability and the right of the shareholder. The study recommends that listed firms in Nigeria should adhere to professional ethics and best business practices such as financial prudence and accountability to their board of directors. Future studies should also, therefore, extend to other variables example board meeting, CEO duality, and board diversity among others. Further studies should strength the use of primary statistical techniques (AMOS-Structural Equation Modeling).

References


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An Empirical Analysis of Economic Performance of Asian Economies: The Role of Electronic Government

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ARTICLE DETAILS

ABSTRACT

Information and communication technology (ICT) plays a key role in explaining the growth patterns of an economy. Many of Asian economies have exhibited high growth patterns in recent years. What explains economic performance of Asian economies? Does implementation of ICT in public sector matters for the growth of Asian economies? To answer this question, this study analytically explores and empirically tests the linkages of ICT in public sector with economic performance reusing the panel data of 34 Asian economies over the period 2003-2015. For empirical analysis, this study uses Fixed Effects, Random Effects, and System Generalized Method of Moments (SGMM) estimation techniques. The empirical results show that e-government plays a positive and significant role in economic performance of the Asian economies. This finding remains robust even after controlling the effects of trade, government consumption and inflation.

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1. Introduction

Asia is a fast growing region of the world and its dynamic economies lead global growth. However, high growth patterns of Asian economies are not homogenous across the region. Asian economies such as China, India and Bangladesh are fast growing while some economies such as Pakistan, Kiribati, Nepal and Fiji are exhibiting slow growth rates. What are the fundamental factors of large differences in economic performance across Asian economies? Why do some economies produce high and sustained growth and others do not? This question has received much attention of the economist and policy makers and many causes of growth have been identified but still much of growth remains unexplained. Recently, researchers have focused on information and communication technology as a potential cause of growth differences.

The literature on causes of growth has largely shown favorable effects of ICT. For example, Levine (1997) asserts that ICT facilitates information access that improves investment and growth. Quah (2002) points out that ICT improves broad based education, labor skills and consumer sophistication. Moreover,
increasing use of ICT enhances labor productivity and as a result economic growth increases.

Recently, the concept of e-government and its linkages with economic development have attracted the attention of economists and policy makers. E-government is defined as the use of information and communication technology by government for “delivering and sharing” of information and better services to the people (Chen et al. 2009; Krishnan and Teo, 2012). E-government adoption increases economic development through increasing accountability and transparency (Bhatnagar, 2003; OECD, 2005; UNDP, 2006).

Theory suggests a number of mechanisms through which e-government increases economic development. First e-government enhances the quality of services and responsibilities of public sector(Al Kibsi et al., 2001; Von Haldenwang, 2004; and West, 2004). Second, it strengthens the role of public and democracy (Von Haldenwang, 2004; and West, 2004). Third, it helps to mitigate corruption and other malpractices in the society by assuring transparency and accountability(Tirole, 1996; Haigh, 2004; Mishra, 2006; Haigh and Griffith, 2008; Krishnan and Teo, 2012).

In spite of significant importance of e-government for various economic and social indicators, the empirical literature has virtually ignored the relationship of economic performance and e-government for Asian economies. Does e-government explains growth performance of Asian economies. To our knowledge, this question is not yet addressed. There are some country specific studies which cannot be generalized for the region of Asia. This study contributes into the empirical literature on causes of growth in Asian economies by providing empirical evidence of the links of growth with e-government. The empirical analysis is based on panel data of Asian economies and the results are obtained using Fixed Effects, Random Effects, and System Generalized Method of Moments (SGMM) estimation techniques.

Rest of the paper is organized as follows: Second 2 provides relevant literature and explains the links of e-government with economic growth. Section 3 describes the data and Section 4 explains empirical framework used for the study. Section 5 provides a discussion on empirical findings. Section 6 concludes the paper.

2. E-government and Economic Performance

Information and communication technology (ICT) is a potential source of economic efficiency and research has largely shown its positive effects on economic performance (Quah, 2002; Levine, 1997). The research on ICT has been recently focusing on ICT implementation in public sector which is referred as e-government. For instance Maetal., (2005) shows that an initiative of e-government in China is causing economic development through increasing transparency and decentralization of administration.

What are the potential links which explain the impact of e-government on economic growth? E-government boosts economic growth through various channels. Lack of transparency in public services is one of the potential sources which inhibit economic performance of an economy. In this regard, e-government helps to overcome this barrier by combating corruption. An implementation of e-government enhances transparency and accountability and probability of corruption decreases.

In the presence of e-government interactions between government officials and citizens tend to decrease, thereby lowering the discretionary power of government officials. E-governments helps to eliminate information asymmetries by increasing quality and quality of information which enables the citizens to question the arbitrary and unfair decisions by public officials, thereby increasing accountability, transparency and lowering corruption. Thus e-government helps to eradicate many opportunities of corruption (OECD, 2005; Piatkowski, 2006). Consequently, e-government enhances economic growth by lowering corruption. In a recent study, Majeed and Malik (2016), in a sample of 143 economies, found evidence that e-government helps to reduce corruption. According to World Bank (2001), corruption is the largest single obstacle to economic development and growth process of an economy. Therefore, to
have a sustainable and rapid economic growth elimination of corruption and its roots is fundamental.

Another mechanism through which e-government promotes economic growth is the quality of relationships between government and citizens. An implementation of ICT tools in public sector improves relations between government officials and citizens. For example Welch et al. (2005) argued that availability of government websites improves the citizens’ satisfaction from government and they trust on government. Similarly, Tolbert and Mossberger (2006) suggested that government can build citizen’s trust on government through efficient provision of services using e-government. However, some studies argue that e-government does not help to build citizen’s trust on government. For example, using the survey data of 214 government website users for Singapore Teo et al. (2008) found that trust is built by the effectiveness of government policies rather than the use of technology.

Another mechanism through which e-government can enhance economic performance is reduction in climate degradation. In the presence of e-government movement of people and transport tend to reduce, thereby reducing the burden on environment. For example, using a sample of 105 countries from 2004-2008, Krishnanet al. (2013), found that the effect of e-government on economic growth is mediated by reduction in corruption and environmental degradation.

E-government can facilitate growth related activities by overcoming information asymmetries between economic agents and government for economic interactions. An improvement in quality of information and diffusion of knowledge facilitates production activities. Another way through which e-government can increase economic growth is the productivity of public officials. ICT tools help to increase productivity of labor and other inputs, thereby cost of production falls and production increases. For example, Mahyideen et al. (2012), in a sample of 5 ASEAN economies over the period 1976-2010, found that ICT improves economic growth by improving the productivity of labor and other inputs and lowering the cost of production. Using a panel data of 217 countries, Choi and Yi (2009) found that one percent increase in internet subscription leads to 0.05 percent increase in economic growth. Similarly, using the panel data of OECD countries from 1996 to 2007, Czernichet al. (2011) supported the positive association between broadband and growth

Bhuiyan (2010) asserts the importance of e-government for Kazakhstan. He argues that e-government is contributing into development process of Kazakhstan by lowering the red tape cost, increasing control for corruption, reducing administrative and monitoring costs, lowering disguised employment, improving local and international relations, strengthening social cohesion and fostering economic growth. Using a panel data of 44 African countries from 1988-20017, Andrianaivo and Kpodar (2011) found positive impact of ICT infrastructure on economic growth.

One strand of the literature opposes the development of ICT infrastructure in the case of developing economies. The basic argument is that developing economies need to take care of the provision of basic health services, electricity and clean water instead of diverting scarce resources from basic services toward the provision of ICT infrastructure (see Ngwenyamaet al., 2006; Morawczynski and Ngwenyama, 2007). The success of ICT infrastructure largely depends on the availability of complimentary factors such as technical staff, finance to maintain various costs associated with ICT systems. For example, maintenance cost and upgrading costs are the intrinsic features of ICT systems. Similarly, some research studies have shown reservations in adopting e-government in the case of developing economies. Kumar et al. (2007) proposed that the factors which affect adoption of e-government are different from other technologies. The e-government adoption is driven by socio-economic, traditional, culture, normative and human issues. The adoption of e-government needs a huge amount of investment on ICT and broadband and sometime it precludes the investment on other important sectors like education, health among others.

We can conclude from the literature review that literature on e-government and economic growth is emerging in recent years. Most of the studies provide theoretical links and do not provide empirical
analysis. In addition the literature largely focuses on developed economies or country specific studies. The empirical literature generally focuses on ICT rather than implementation of ICT in public sector. The concept of e-government is rather border then the mere use of internet in empirical analysis. E-government is a broader measure that includes all information and communication technologies, web structure, and skilled labor that helps in the functioning of e-government. Asia is a fast growing region as it is leading world economic growth. Does e-government explain economic growth of Asian economies? To our knowledge this question is not addressed. This study contributes in the literature on ICT and growth using a panel data of Asian economies. Moreover, this study takes care of the issue of endogeneity. This study tests the following research hypothesis.

H0: E-government does not explain economic growth of Asian economies.
H1: E-government causes positive effect on the growth of Asian economies.

3. Empirical Model

The empirical model for this study is based on Cobb-Douglas production function of Mankiw, Romer and Weil (1992). The production function comprises three inputs that are labor, physical capital and human capital.

\[ Y_{it} = A_{it} L_{it}^{\alpha} K_{it}^{\beta} H_{it}^{\gamma} \] (1)

Where \( i \) refers to cross sectional units that are Asian countries in our sample \( t \) represents time period of the study. By taking the natural log of the equation 1 we have equation 1.1

\[ \log y_{it} = \log A_{it} + \gamma_1 \log L_{it} + \gamma_2 \log K_{it} + \gamma_3 \log H_{it} \] (1.1)

Where \( A \) is a given state of technology in a country, \( y \) stands for real per capita GDP growth, \( L \) stands for labor force participation, \( K \) stands for capital stock, and \( H \) stands for human capital. Technological growth is a key driver of economic performance of an economy. Following Czernich et al. (2009) we have assumed that technology evolves exponentially over time which can be shown as follows:

\[ A_{it} = A(0)e^{\theta_{it}} \] (2)

Taking log of equation 2 gives us

\[ \log A_{it} = \log A_0 + \theta_{it} \] (2.1)

\( \theta \) shows technological growth of a country. Suppose that e-government boosts up the technological progress in a country through ICT by facilitating spillover of knowledge, R&D and production of new technologies, so \( \theta \) can be defined as:

\[ \theta_{it} = \alpha_1 + \alpha_2 E_{government_{it}} \] (3)

Substitution equation 3 in equation 2.1

\[ \log A_{it} = \alpha_0 + \alpha_1 + \alpha_2 E_{government_{it}} \] (3.1)

Where \( \alpha_0 + \alpha_1 = \gamma_0 \)

\[ \log A_{it} = \gamma_0 + \gamma_1 E_{government_{it}} \] (2.2)

By substituting equation 2.2 in equation 1.1 we have equation 1.3

\[ \log y_{it} = \gamma_0 + \gamma_1 E_{government_{it}} + \gamma_2 \log L_{it} + \gamma_3 \log K_{it} + \gamma_4 \log H_{it} + e_{it} \] (1.3)

Following Barro (1991), in order to check convergence hypothesis, we have incorporated initial GDP per capita into equation 1.3 as a determinant of economic growth.
logy_{it} = \gamma_0 + \gamma_1 y_{it-1} + \gamma_2 E_{government_{it}} + \gamma_3 loglabor_{it} + \gamma_4 logcapital_{it} + \gamma_5 loghuman - capital_{it} + \gamma_5 logX_{it} + e_{it} \quad (1.4)

Equation 1.4 is the final equation which is estimated using panel data estimators. X_{it} is a matrix of control variables which includes trade openness, government final consumption and inflation.

4. The Data Description

To estimate the impact of e-government on economic growth, this study uses unbalanced panel data of Asian economies. All countries belonging to Asia were short listed for empirical analysis. However, some of the countries do not have observations on e-government and therefore after data screening we are left with 34 economies. Economic performance is measured using natural of GDP per capita at 2005 constant prices. Following the literature of endogenous growth models, this study uses following control variables: initial GDP per capita, physical capital formation, human capital formation, labor force and e-government. The effect of trade openness, government final consumption and inflation is also incorporated during sensitivity analysis of the baseline findings.

The index of e-government is based on three components. The first component is ‘web connection and online service’. This component measures the extent of web content approachability of an economy. Moreover, it measures evolving online presence in websites which expands information provision through arranging multimedia contents, online transaction service and interactions of citizens with government. The second content is ‘telecommunication service’. This component comprises fixed telephone, mobile telephone, number of personal computers and the number of internet users. Finally, the fourth component is ‘human capital’. This component is based on the rate of adult literacy and gross enrollment of primary, secondary and tertiary education. The index of e-government is developed using weighted average of these three components and it ranges from 0o to 1. The value of 0 implies absence of e-government and the value of 1 implies full presence of e-government.

Table 4.1 reports summary statistics of the data used for empirical analysis. The lowest value of GDP per capita is 696 which belongs to Afghanistan while the highest value of GDP per capita is 55838 which belongs to Singapore. The quality of e-government on average in Asian country is 0.40 which is relatively low. However, there are differences across Asian countries. Some countries have zero level of e-government such as Kiribati and some have the highest values such as Korea has 0.8785. Table 4.2 reports correlation matrix of the variables used for empirical analysis. E-government has positive and high correlation with GDP per capita. Moreover, all components of e-government have positive correlation with GDP per capita.

<table>
<thead>
<tr>
<th>Table 4.1: Summary Statistics of the Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>Y</td>
</tr>
<tr>
<td>Labor</td>
</tr>
<tr>
<td>Capital</td>
</tr>
<tr>
<td>Human Capital</td>
</tr>
<tr>
<td>E-government</td>
</tr>
<tr>
<td>Inflation</td>
</tr>
<tr>
<td>Trade</td>
</tr>
<tr>
<td>Government Exp</td>
</tr>
<tr>
<td>Urban</td>
</tr>
<tr>
<td>Fix_telephone</td>
</tr>
<tr>
<td>Online service</td>
</tr>
<tr>
<td>Telecom Infra</td>
</tr>
</tbody>
</table>
Table 4.2: Correlation Matrix

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Y</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Labor</td>
<td>-0.0756</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Capital</td>
<td>-0.1736</td>
<td>0.0876</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. HC</td>
<td>0.6434</td>
<td>-0.1378</td>
<td>-0.0055</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. E-gov.</td>
<td>0.7232</td>
<td>-0.1286</td>
<td>0.0310</td>
<td>0.7338</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Inflation</td>
<td>-0.2926</td>
<td>0.0718</td>
<td>-0.0711</td>
<td>-0.0541</td>
<td>-0.2866</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Trade</td>
<td>-0.1163</td>
<td>0.0560</td>
<td>-0.0815</td>
<td>-0.0465</td>
<td>-0.0349</td>
<td>0.0968</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Gov-Con</td>
<td>-0.1438</td>
<td>-0.2859</td>
<td>0.1435</td>
<td>-0.2505</td>
<td>-0.4197</td>
<td>-0.0237</td>
<td>0.0083</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Urban</td>
<td>-0.0019</td>
<td>0.0525</td>
<td>0.0073</td>
<td>0.2510</td>
<td>0.1064</td>
<td>0.1060</td>
<td>-0.0172</td>
<td>-0.1547</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Fix_tele</td>
<td>0.7905</td>
<td>-0.1547</td>
<td>0.0291</td>
<td>0.7531</td>
<td>0.8852</td>
<td>-0.3268</td>
<td>-0.1849</td>
<td>-0.3120</td>
<td>0.0533</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. online</td>
<td>0.5652</td>
<td>-0.1745</td>
<td>0.0634</td>
<td>0.4795</td>
<td>0.8854</td>
<td>-0.2949</td>
<td>-0.1068</td>
<td>-0.3990</td>
<td>0.0906</td>
<td>0.7226</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>12. Telecom</td>
<td>0.8106</td>
<td>-0.1563</td>
<td>-0.0179</td>
<td>0.6792</td>
<td>0.9106</td>
<td>-0.3509</td>
<td>-0.1218</td>
<td>-0.3121</td>
<td>0.0399</td>
<td>0.9301</td>
<td>0.7898</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

To test the presence of multicollinearity among independent variables, the VIF (Variance Inflating Factor) test is used (Table A2). The values of VIF for individual indicator and mean value for all indicators are less than 10 implying that there is not a serious issue of multicollinearity in our model. The lowest value of VIF is 1.03 while highest value of VIF is 2.34 and average value of VIF is 1.93. The functional form of the model is tested applying Link test (Table A3). The results reported in Table conform that functional of the model is correct as P-value of hat square is 0.11. Figure 1 presents a graphical relationship between e-government and economic growth of Asian countries. It is quite clear from figure that the relationship is positive and linear implying that e-government is positively associated with GDP per capita in the Asian region.

![Figure 1: Economic Growth and E-government](image)

### 5. Empirical Findings

The empirical results are estimated using fixed effects model. The fixed effects model is superior to OLS because it controls country specific time invariant characteristics. Furthermore, it also captures unobserved heterogeneity by estimating intercept for each cross sectional unit in the panel data. Baltagi (2008) argues OLS yields biased parameter estimates when panel data set comprises time invariant characteristics while fixed effects model gives unbiased results. Since Asian economies are heterogeneous and comprise time invariant characteristics, fixed effects model is more appropriate as compared to OLS.

Table 5.1 provides fixed effects results for e-government and economic growth of Asian economies. Column (1) indicates that the effect of e-government on economic growth is positive and significant. In
particular, one unit increase in e-government causes 0.14 percent increase in GDP per capita growth in developing economies. This effect remains robust in remaining regression results reported in Table 5.1.

Table 5.1: E-government and Economic Growth: Fixed Effects Models

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Empirical Results of Fixed Effects Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>$Y_{t-1}$</td>
<td>0.800***</td>
</tr>
<tr>
<td></td>
<td>(0.0304)</td>
</tr>
<tr>
<td>Labor</td>
<td>-0.355***</td>
</tr>
<tr>
<td></td>
<td>(0.132)</td>
</tr>
<tr>
<td>Capital</td>
<td>0.0468**</td>
</tr>
<tr>
<td></td>
<td>(0.0218)</td>
</tr>
<tr>
<td>Human Capital</td>
<td>0.0893***</td>
</tr>
<tr>
<td></td>
<td>(0.0336)</td>
</tr>
<tr>
<td>E-government</td>
<td>0.144*</td>
</tr>
<tr>
<td></td>
<td>(0.0764)</td>
</tr>
<tr>
<td>Trade</td>
<td>0.0560*</td>
</tr>
<tr>
<td></td>
<td>(0.0330)</td>
</tr>
<tr>
<td>Gov. Consumption</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>Constant</td>
</tr>
<tr>
<td></td>
<td>(0.615)</td>
</tr>
<tr>
<td>Observations</td>
<td>168</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.899</td>
</tr>
<tr>
<td>Number of country</td>
<td>34</td>
</tr>
</tbody>
</table>

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

To assess the robustness of growth effect of e-government, we include additional growth determinants one by one. In columns (2-4) we have incorporated trade, government consumption and inflation, respectively. The growth impact of trade turns out to be positive and significant implying that trade is an important source of economic performance of Asian economies. This finding is consistent with a number of empirical studies on trade and growth (see Majeed, 2015). Column 3 includes government consumption as an additional control variable. The role of government consumption turns out to be insignificant. Column 4 includes inflation as an indicator of macroeconomic instability. The effect of inflation also turns out to be insignificant.

The advantage of fixed effects model is that it captures time invariant characteristics of crosssectional units. However, it does not control the effects of random shocks in error terms. Moreover, fixed effects may worsen the problem of multicollinearity due to dummy variables trap. We also use random effects model. Table 5.2 reports empirical results of growth and e-government using random effects model. Column 1 indicates that the effect of e-government on economic growth of Asian economies is positive and significant. The parameter estimate on e-government indicates that one unit increase in adoption of e-government cause 0.13 percent increase in economic growth. This effect remains robust in remaining columns of Table 5.2.
Table 5.2: E-government and Economic Growth: Random Effects Models

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Empirical Results of Random Effects Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td>$Y_{t-1}$</td>
<td>0.966***</td>
</tr>
<tr>
<td></td>
<td>(0.0103)</td>
</tr>
<tr>
<td>Labor</td>
<td>-0.0144</td>
</tr>
<tr>
<td></td>
<td>(0.0499)</td>
</tr>
<tr>
<td>Capital</td>
<td>0.0329*</td>
</tr>
<tr>
<td></td>
<td>(0.0168)</td>
</tr>
<tr>
<td>Human Capital</td>
<td>-0.00598</td>
</tr>
<tr>
<td></td>
<td>(0.0217)</td>
</tr>
<tr>
<td>E-government</td>
<td>0.129**</td>
</tr>
<tr>
<td></td>
<td>(0.0578)</td>
</tr>
<tr>
<td>Trade</td>
<td>0.0105</td>
</tr>
<tr>
<td></td>
<td>(0.0144)</td>
</tr>
<tr>
<td>Gov. Consumption</td>
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<tr>
<td></td>
<td>(0.0125)</td>
</tr>
<tr>
<td>Inflation</td>
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<tr>
<td></td>
<td>(0.000528)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.258</td>
</tr>
<tr>
<td></td>
<td>(0.227)</td>
</tr>
<tr>
<td>Observations</td>
<td>168</td>
</tr>
<tr>
<td>Number of country</td>
<td>34</td>
</tr>
</tbody>
</table>

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Since our endogenous growth model has a lag dependent variable on the right side, fixed effects and random effects methods may give biased results. In this case system GMM is more efficient and reliable. Furthermore, it addresses the issue of endogeneity in the model using instruments for endogenous variables (Baltagi, 2008). Since installation of e-government requires huge cost, it may depend on GDP per capita. In this situation reverse causality problem will arise.Comin and Hobijn (2004) point out that twenty famous technologies of the world were initially adopted by developed countries. It implies that developed economies have enough resources to manage the costs of these technologies. To maintain causality from e-government to GDP per capita growth, we use Arrelano-Bond (AB) model. We use both internal and external instruments to address the issue of endogeneity. Internal instruments are own lag variables of endogenous variables while external instruments are fixed telephone lines and initial urban population.Fixed telephone lines as instrument for broadband was used by Czernichet et al. (2011). Since broadband access depends on cable, TV and fixed telephone lines, it is highly correlated with fixed telephone lines. Urban density theory suggests that fixed costs of ICT infrastructure decrease as urbanization increases because the availability of complimentary tools of ICT becomes widespread and knowledge spill overs (Anderson, 2008).

Table 5.3 reports the results of e-government and economic growth suing AB model. All columns of the model indicate that the impact of e-government on economic growth is robustly positive and significant. Thus baseline findings remain intact.
Table 5.3: E-government and Economic Growth: Arrelano Bond

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>Empirical findings of Arrelano Bond Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td>(2)</td>
</tr>
<tr>
<td></td>
<td>(3)</td>
</tr>
<tr>
<td></td>
<td>(4)</td>
</tr>
<tr>
<td>$Y_{t-1}$</td>
<td>0.924*** 0.921*** 0.924*** 0.934***</td>
</tr>
<tr>
<td></td>
<td>(85.59) (84.02) (85.16) (75.73)</td>
</tr>
<tr>
<td>Labor</td>
<td>-0.0555 -0.115 -0.0548 -0.0727</td>
</tr>
<tr>
<td></td>
<td>(-0.695) (-1.305) (-0.544) (-0.870)</td>
</tr>
<tr>
<td>Capital</td>
<td>0.0592*** 0.0549** 0.0592** 0.0590**</td>
</tr>
<tr>
<td></td>
<td>(2.603) (2.407) (2.545) (2.496)</td>
</tr>
<tr>
<td>Human Capital</td>
<td>0.0409** 0.0272 0.0410** 0.0187</td>
</tr>
<tr>
<td></td>
<td>(2.224) (1.339) (2.006) (0.837)</td>
</tr>
<tr>
<td>E-government</td>
<td>0.312*** 0.356*** 0.312*** 0.307***</td>
</tr>
<tr>
<td></td>
<td>(4.721) (4.966) (4.654) (4.467)</td>
</tr>
<tr>
<td>Trade</td>
<td>0.0194 (1.548)</td>
</tr>
<tr>
<td>Gov. Consumption</td>
<td>0.000165 (0.0117)</td>
</tr>
<tr>
<td>Inflation</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.413 0.659* 0.409 0.487</td>
</tr>
<tr>
<td></td>
<td>(1.165) (1.703) (0.835) (1.316)</td>
</tr>
<tr>
<td>Observations</td>
<td>157 157 157 157</td>
</tr>
<tr>
<td>Number of country</td>
<td>33 33 33 33</td>
</tr>
</tbody>
</table>

Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

5. Conclusion
The use of ICT is growing in all spheres of life and its usage has changed the way people communicate, work and live. ICT lowers information barriers, reduces transaction costs, and increases efficiency of the workers. The available literature on ICT has identified merits of ICT for growth and development. Does ICT implementation in public sector help to boost the growth of an economy? This question has received less attention. In particular, the region of Asia which is a fast growing region has been ignored in empirical literature on growth and ICT.

This study contributes in ICT and growth literature by empirically investigating the growth effects of ICT implementation and adoption in public sector using a panel data of Asian economies from 2003 to 2015. To measure ICT in public sector, this study uses a novel measure of e-government from the United Nations that covers mulitidimensions of e-government. Estimation techniques take care of the country specific fixed and random effects. Moreover, to address the potential problem of endogeneity System GMM method of estimation is used.

The empirical results of study show that e-government contributes positively and significantly in the growth performance of Asian economies. The parameter estimate on e-government suggests that one unit increase in e-government increases economic growth of Asian economies by 0.14 percent. This finding remains robust to different specifications, alternative econometric techniques and endogeneity problem. This finding implies that government of Asian economies aiming at high and sustainable growth needs to adopt ICT infrastructure in public sector to fulfill its responsibilities. Another robust finding of our analysis suggests that human capital is a strong and robust determinant of growth in Asia. This finding implies that investment in human capital is critical in Asian economies. Moreover, investment in human capital can offset the loss of employment created by the adoption of e-government.
Though empirical findings are aligned with prior theoretical expectations, this analysis has certain limitations. First, Asian economies are quite heterogeneous in terms of socioeconomic and cultural factors and therefore, adoption of e-government for some economies may not ensure economic prosperity. Second, adoption of e-government requires huge implementation costs which may not be feasible for Asian economies at lower level of economic development. The data set for all Asian counties were not available, therefore, these findings cannot be generalized for the whole region and developing world. In addition, the sensitive analysis for this study is very limited.

Future research needs to extend this study for different sub-regions in the Asia. The sensitivity analysis needs to be extended using more factors of growth. This study mainly focuses on positive aspects of e-government ignoring its potential downsides. For instance, the consequences for income distribution need to be studied. Similarly effects on labor market needs to be analyzed.

References


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**Appendix:**

**Table A1: Summary of Variables**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definition</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Growth</td>
<td>Natural log of the GDP per capita at 2005 constant prices.</td>
<td>[1]</td>
</tr>
<tr>
<td>E-government</td>
<td>Extent of online availability of the government, telecom infrastructure, and human capital.</td>
<td>[2]</td>
</tr>
</tbody>
</table>
Online service  Extent of the online availability of the government.  [2]
Telecom service  Extent of telecom infrastructure of the government.  [2]
Human capital  Gross secondary school enrollment of total population.  [3]
Physical capital  Gross fixed capital formation in percentage of GDP.  [3]
Labor force  Share of labor force participation in total population.  [3]
Government  Government spending in the share of Gross domestic product at 2005 constant prices  [1]
Consumption  2005 constant prices
Urban population  Natural log of Urban population  [3]
Fix_Telephone  Fixed telephone lines per 100 inhabitant  [4]


Table A2: Variance Inflating Factor

<table>
<thead>
<tr>
<th>Variable</th>
<th>L.Y</th>
<th>E-government</th>
<th>Labor</th>
<th>Capital</th>
<th>Human Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIF</td>
<td>2.34</td>
<td>3.09</td>
<td>1.03</td>
<td>1.14</td>
<td>2.04</td>
</tr>
<tr>
<td>1/VIF</td>
<td>0.427350</td>
<td>0.323235</td>
<td>0.971980</td>
<td>0.876506</td>
<td>0.491118</td>
</tr>
<tr>
<td>Mean VIF</td>
<td>1.93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table A3: Linktest

<table>
<thead>
<tr>
<th>Y</th>
<th>Coef.</th>
<th>Std. Err.</th>
<th>T</th>
<th>P&gt;t</th>
<th>[95% Conf. Interval]</th>
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</thead>
<tbody>
<tr>
<td>_hat</td>
<td>1.075286</td>
<td>.0476114</td>
<td>22.58</td>
<td>0.000</td>
<td>.9812796</td>
</tr>
<tr>
<td>_hatsq</td>
<td>-.0042897</td>
<td>.0027076</td>
<td>-1.58</td>
<td>0.115</td>
<td>-.0096357</td>
</tr>
<tr>
<td>_cons</td>
<td>-.3242146</td>
<td>.2062253</td>
<td>-1.57</td>
<td>0.118</td>
<td>-.7313953</td>
</tr>
</tbody>
</table>

Figure A1: Marginal Effect of E-government on GDP per Capita of Asian Economies

![Figure A1](image-url)
Human Capital, Governance and Poverty Reduction: A Panel Data Analysis

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Abstract

The objectives of the study are to examine the influence of Human Capital and Governance on Poverty. For this purpose, the study considers 44 developing countries and chooses time span from 2004 to 2017. The data on all variables are collected through World Development Indicators. The study utilized the index for human capital and three governance indicators i.e. Political Governance, Economic Governance and Institutional Governance developed by World Bank Organization. Generalized Method of Moment (GMM) is employed on the panel data for estimation of econometric results. The results conclude that Human Capital and High Technology Exports are found to be significant causes of reduction in Poverty in Developing countries. Moreover, not only Political Governance, Institutional Governance, Economic Governance but also Overall Governance are reducing poverty in developing countries. Gross Fixed Capital formation and Trade Openness are found to be statistically insignificant. On the other side, Savings for Natural Resource Depletion is examined as increasing poverty in developing countries.

1. Introduction

No society can surely be flourishing and happy, of which by far the greater part of the numbers are poor and miserable (Smith, 1776). In pursuance of economic development poor section of the society is neglected not only in context of living standards but also in human capital development. Poor people are unable to meet even their necessities such as health, education, shelter and essential nourishment. There has been continuing debate over the issue of poverty. Many researchers investigated the determinants of poverty in different context. After investigating the traditional factors of poverty, researchers switched to other most important factors such as health and education which are considered as the main ingredients of human capital.

Recent figures of World Bank reveal that there are 769 million people in the world who live below international poverty line of US$1.90. The importance of this issue can be accessed from the commitment of major international organizations. As United Nations puts the poverty at top so the first sustainable goal is “End poverty in all its forms everywhere”. According to UN, poverty is more than the lack of...
income and resources to ensure a sustainable livelihood. The manifestations of poverty include hunger and malnutrition, limited access to education and other basic services, social discrimination and exclusion as well as the lack of participation in decision-making. Economic growth must be inclusive to provide sustainable jobs and promote equality rather than just increase the level of GDP and most especially GDP per capital. Hassan and Birungi (2011) confirm the negative impact of human and social capital on poverty reduction through household income and its impact on household welfare. Human capital augmented with quality education affects national income which significantly reduces the poverty (Afzal et al., 2011).

Factors such as health, nutrition, and formal education, which an individual embodies and which provide future returns, are components of what is coined as “human capital”. At the same time, as mentioned above, one should recognize that these factors are consumables as well. As such, an increase in a person’s income will in turn lead to an increase in the demand for these components of human capital given that they are normal goods.

The emergence of institutional economics opened the new door of investigation into the issue of poverty. Initially, corruption was considered as indicator of governance and its impact on poverty was investigated along with interaction term of growth and investment by Mauro (1995); Knack and Keefer (1996). Studies suggest that investment in human capital is the precondition for developing countries to absorb modern technology and improve productivity, which in turn leads to higher income and improved economic performance (Barro, 1991; Mankiw et al., 1992; Romer, 1990).

This paper presents the effect of Human Capital and Governance on poverty considering developing countries. The empirical findings of this examination will assist the concerned authorities to formulate the public policies and programs for poverty reduction through human capital development.

This paper is organized as follows. In the next section, a review of selected literature on the relationship between human capital, governance and poverty is presented. This is followed by the baseline econometric model to be estimated. After this, data and methodological issues are discussed. Empirical results are reported in subsequent section of results and discussion. The final section gives concluding remarks and policy recommendations.

2. Literature Review
Gupta, Davoodi and Alonso-Terme (2002) investigated the impact of corruption on the income inequality and poverty. Regression results of the study showed the positive impact of corruption on income inequality and poverty and policy to curtail the corruption had been suggested. Quang Dao (2007) examined the effect of different components of human capital on severity of poverty and income distribution in developing countries. Least square estimation confirmed the dependence of poverty and income distribution on multiple factors of human capital such as gender parity in schools, prevalence of child malnutrition, birth attended by skilled professionals and primary school completion. Tebaldi and Mohan (2010) used the panel data of countries to determine the impact of institutions on income distribution and poverty. Results of panel regression showed that control of corruption, political stability and government effectiveness contributed to economic growth which in turn affect the income distribution positively and reduce poverty.

Bakhtiari and Meisami (2010) explored the influence of health and education as the main ingredients of human capital on income distribution and poverty in Islamic countries. Results of panel data revealed the significant impact of health and education on poverty. The study suggested the improvement in health and education infrastructure for improving income distribution and poverty reduction. Janjua and Kamal (2011) pointed out the education as key factor in poverty reduction. Results of GLS estimation showed that income growth contributed to poverty alleviation but income distribution did not play a significant
role in poverty reduction. Gounder and Xing (2012) highlighted the economic (household income) and social factors (health and education) of poverty in terms of monetary and non-monetary context. 2SLS and logistic regression was used on data from Household Income and Expenditure Survey, 2002/03 of Fiji. Findings pointed out the significant impact of education on not only household income but also on household activities to improve the health status as non-monetary measure of poverty.

Dias and Tebaldi (2012) analyzed the relationship among institutions, human capital and growth for the period of 1965 – 2005. Empirical results of dynamic panel data estimated through GMM showed that human capital and as well as physical capital instead of levels determined long run economic growth. Perera and Lee (2013) examined the impact of economic growth and institution quality on poverty and income inequality in Asia for the period of 1985 – 2009. Results of GMM estimation showed that economic growth leads to low poverty although improvements in the level of corruption, democratic accountability, and beauracratic quality appear to increase poverty levels but improvements in political stability and law and order situations reduce the poverty levels.

Akanbi (2015) examined the empirical relationship between governance, physical infrastructure and levels of poverty in Sub-Saharan Africa. Empirical results of 2SLS estimation revealed that governance and infrastructure are significant determinants of the poverty in the region. Muhammad, Egbetokun, Memon, and Hyder (2015) explored the role of governance in the relationship between human capital and economic growth. Empirical results of fixed effect model estimation showed in most of the cases it has been found that the relationship between human capital and economic growth is insignificant for countries with low level of governance. Ayodeji and Adebayo (2015) identified the reasons of poverty in Nigeria and theoretical and conceptual framework has been presented to describe the relationships among government policies, human capital, economic development and poverty reduction.

Faria, Montesinos-Yufa, Morales, Navarro, (2016) attempted to separate the role of human capital and economic institutions in development process. Findings of the study showed that economic institutions and policies are strongly linked to development. Human capital measured by cognitive skills showed a strong effect on institutions. Zghidi, Sghaier and Abida (2016) investigated the causal link between remittances, economic freedom and economic growth in North African countries. GMM results estimated for four countries showed positive relationship between remittances and economic growth. Effects of remittances were more pronounced in presence of the economic freedom variable.

Oyinlola and Adeedje (2017) examined the role of financial development in human capital growth relationship. Results of GMM estimation revealed the presence of positive direct impact of both human capital and financial development on inclusive growth. Akobeng (2017) investigated the effect of GFCF on poverty and explored whether the GFCF and poverty relationship can be strengthened in the presence of institutions. Results of GMM estimation showed that GFCF appeared to be negatively signed and are significant across the poverty measures. The interaction of GFCF and institutional democracy is negative and significant.

3. Data, Models and Methodology

3.1 Data and Methods
The study utilizes panel data of 44 developing countries (see table 1) over the period from 2004 to 2017. The Data used in this study is taken from three sources like World Development Indicators and World Governance Indicators managed by World Bank Organization and Penn World Table 8.0. Units of measurements, data sources and variable definition are given in table 1 in more details.

The results of the study are measured at three stages. At first stage, descriptive statistics are calculated; secondly, correlation analysis is done to check problem of Multicollinearity and lastly, GMM methods is applied for econometric results of all the models to examine the impact of human capital and Governance on poverty reduction. GMM method is much suitable to solve the problem of endogeneity present in the
models. More technically, OLS does not account for un-modeled and un-observed country-specific variations. Therefore, OLS coefficients might be distorted due to significant correlations between un-observed country specific factors. In this way simple OLS can provide bias coefficients.

Table 1

<table>
<thead>
<tr>
<th></th>
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<td>Kyrgyzstan</td>
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<td>Serbia</td>
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<td>4</td>
<td>Belgium</td>
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<td>Lithuania</td>
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<td>Netherlands</td>
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<td>Costa Rica</td>
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<td>Panama</td>
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<td>Czech Republic</td>
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<td>Denmark</td>
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<td>Ireland</td>
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<td>Dominican Republic</td>
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<td>Italy</td>
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<td>Poland</td>
<td>44</td>
<td>United Kingdom</td>
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</tbody>
</table>

Note: Author’s own compilation

3.2 Model Specification

Keeping in view the objectives of the study that is to see the effect of Human Capital and Governance on Poverty, the study specifies following models with few variations.

3.2.1 Model 1

\[ HCl_{it} = \beta_1 + \beta_2 HC_{it} + \beta_3 GCF_{it} + \beta_4 SNRD_{it} + \beta_5 TOP_{it} + \beta_6 TECH_{it} + \epsilon_{1t} \]

3.2.2 Model 2

\[ HCl_{it} = \beta_1 + \beta_2 HC_{it} + \beta_3 GCF_{it} + \beta_4 SNRD_{it} + \beta_5 TOP_{it} + \beta_6 TECH_{it} + \beta_7 PGOV_{it} + \epsilon_{2t} \]

3.2.3 Model 3

\[ HCl_{it} = \beta_1 + \beta_2 HC_{it} + \beta_3 GCF_{it} + \beta_4 SNRD_{it} + \beta_5 TOP_{it} + \beta_6 TECH_{it} + \beta_7 EGOV_{it} + \epsilon_{3t} \]

3.2.4 Model 4

\[ HCl_{it} = \beta_1 + \beta_2 HC_{it} + \beta_3 GCF_{it} + \beta_4 SNRD_{it} + \beta_5 TOP_{it} + \beta_6 TECH_{it} + \beta_7 IGOV_{it} + \epsilon_{4t} \]

3.2.5 Model 5

\[ HCl_{it} = \beta_1 + \beta_2 HC_{it} + \beta_3 GCF_{it} + \beta_4 SNRD_{it} + \beta_5 TOP_{it} + \beta_6 TECH_{it} + \beta_7 GOV_{it} + \epsilon_{5t} \]

Where HCI is Poverty Head Count Ratio, HC is Human Capital Index, GCF is Gross Capital Formation, SNRD is Adjusted Saving, TOP is Trade Openness, TECH is High Technology Exports, PGOV is political governance, EGOV is Economic Governance, IGOV is Institutional Governance and GOV is overall governance.
Table 2: Description of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description/ Measurement</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCI</td>
<td>Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>HC</td>
<td>Index of human capital per person based on years of schooling and return to education.</td>
<td>Penn World Tables 8.0</td>
</tr>
<tr>
<td>GCF</td>
<td>Gross fixed capital formation (constant 2010 US$)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>SNRD</td>
<td>Adjusted savings: natural resources depletion (% of GNI)</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>TOP</td>
<td>Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product.</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>TECH</td>
<td>High-technology exports (% of manufactured exports) High-technology exports are products with high R&amp;D intensity, such as in aerospace, computers, pharmaceuticals, scientific instruments, and electrical machinery.</td>
<td>World Development Indicators</td>
</tr>
<tr>
<td>PGOV</td>
<td>A composite index construct by Principal Component Analysis (PCA) based on the data of two governance indicators i.e. Voice and Accountability (VA) and Political Stability and No Violence (PSNV).</td>
<td>World Governance Indicators</td>
</tr>
<tr>
<td>EGOV</td>
<td>A composite index construct by Principal Component Analysis (PCA) based on the data of two governance indicators i.e. Government Effectiveness (GE) and Regularity Quality (RQ).</td>
<td>World Governance Indicators</td>
</tr>
<tr>
<td>IGOV</td>
<td>A composite index construct by Principal Component Analysis (PCA) based on the data of two governance indicators i.e. Rule of Law (RL) and Control of Corruption (CC).</td>
<td>World Governance Indicators</td>
</tr>
<tr>
<td>GOV</td>
<td>A composite index construct by Principal Component Analysis (PCA) based on the data of all six World Governance Indicators.</td>
<td>World Governance Indicators</td>
</tr>
</tbody>
</table>

Note: Author’s own compilation.

4. Results and Discussion

As per objectives of the paper which is to identify the impact of human capital and globalization on poverty. So, to capture the effects of human capital by including three dimensions and overall governance on poverty, five models are estimated by using GMM estimation. The descriptive statistics for the variables used in the paper are presented in the table 3.
Table 3: Summary Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Max</th>
<th>Min</th>
<th>Std. Dev.</th>
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<td>HCI</td>
<td>2.8842</td>
<td>28.0000</td>
<td>0.0000</td>
<td>4.9426</td>
</tr>
<tr>
<td>HC</td>
<td>2.9049</td>
<td>3.7342</td>
<td>1.5209</td>
<td>0.4925</td>
</tr>
<tr>
<td>GCF</td>
<td>22.3179</td>
<td>43.6198</td>
<td>11.4413</td>
<td>5.4747</td>
</tr>
<tr>
<td>SNRD</td>
<td>1.7904</td>
<td>17.5182</td>
<td>0.0000</td>
<td>2.7574</td>
</tr>
<tr>
<td>TOP</td>
<td>92.4159</td>
<td>216.1867</td>
<td>22.1059</td>
<td>40.6716</td>
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<tr>
<td>TECH</td>
<td>19.9207</td>
<td>1747.509</td>
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<tr>
<td>VA</td>
<td>0.5329</td>
<td>1.8009</td>
<td>-1.4948</td>
<td>0.7984</td>
</tr>
<tr>
<td>PSNV</td>
<td>0.1930</td>
<td>1.6202</td>
<td>-2.81</td>
<td>0.7888</td>
</tr>
<tr>
<td>GE</td>
<td>0.4575</td>
<td>2.3539</td>
<td>-1.0538</td>
<td>0.9015</td>
</tr>
<tr>
<td>RQ</td>
<td>0.5554</td>
<td>1.9251</td>
<td>-1.2962</td>
<td>0.8347</td>
</tr>
<tr>
<td>RL</td>
<td>0.3510</td>
<td>2.1003</td>
<td>-1.3715</td>
<td>0.9951</td>
</tr>
<tr>
<td>CC</td>
<td>0.3143</td>
<td>2.4699</td>
<td>-1.3733</td>
<td>1.0274</td>
</tr>
</tbody>
</table>

Sources: Authors’ own calculation based on the data taken from the sources mentioned above.

The mean for head count index is 2.88 with the maximum and minimum values of 28 and 00 respectively. Human capital has mean value of 2.90 with maximum and minimum value of 3.73 and 1.52 respectively. Among governance indicators having the range of -2.5 to +2.5, voice and accountability and regulatory quality have maximum value of mean 0.53 and 0.55 respectively with maximum 1.80, 1.92 and minimum -1.49, -1.37 values.

Table 4 illustrates the bivariate correlation of the variables. There is a strong significant negative association between index of human capital per capita and head count index as poverty measures with correlation coefficient of -0.502 for the poverty headcount. The association between all six indicators of governance and the poverty measure significantly negatively correlated with correlation coefficients of -0.423, -0.551, -0.526, -0.542, -0.551 and -0.486 respectively. Table 5 presents the results of GMM estimation for 5 different models in which impact of human capital is determined in the presence of different dimensions of governance.

GMM estimation results of model 1 in which human capital along with other economic variables is used as main determinant of poverty shows the negative and significant impact on head count index as measure of poverty although GFCF, savings of natural resource depletion have positive and significant impact on poverty but trade has insignificant impact on poverty although it is positive. The impact of high technology exports on poverty is negative in first model. The signs of coefficients are logically and economically valid. As the human capital per person increased meaning when people acquire more knowledge and skills the income levels are enhanced that lower the proportion of the population living on or below the poverty line.

In second model in which political governance is used along with the same variables used in first model, signs of coefficients remain the same and political governance affects the poverty negatively and significantly at 1% level with the value of coefficient -0.712 with the introduction of political governance in the model there is a slight change in the value of coefficient for human capital and improvement in the value of R-squared. Empirical results of model 3 in which political governance is replaced with economic governance show the significant and negative impact of economic governance on the poverty the value of coefficient -0.892 with the improvement in the coefficient for human capital although the impact of the other variables on the poverty remain same throughout the models.

Economic governance is replaced with institutional governance in fourth model and its results show the negative and significant on poverty although coefficient for human capital is slightly reduced but still more than the coefficients in model 1 and 2. In fifth model all six governance indicators are combined to
form overall governance and its impact through human capital on poverty is estimated. Results show the negative and significant impact of governance on poverty and impact of other variables including human capital remain the same throughout the other models. Although the impact of human capital on poverty is slightly different with the introduction of different dimensions of governance but results prove that governance does matter for human capital to have a negative impact on poverty.

Good governance is very useful for effective public policies relating to health, education and skill development which boost the level of human capital which in turn increase the income levels and reduced poverty by raising the living standards. Results estimated in the paper are consistent with the economic theory and are aligned with the results estimated by the other researchers (Tebaldi and Mohan, 2010; Janjua and Kamal, 2011; Akanbi, 2015; Perera and Lee, 2013).
Table 4: Correlation Matrix

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. HCI</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. HC</td>
<td>-0.502</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. GCF</td>
<td>-0.043</td>
<td>0.202</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. SNRD</td>
<td>0.315</td>
<td>-0.024</td>
<td>0.018</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. TOP</td>
<td>-0.193</td>
<td>0.284</td>
<td>0.135</td>
<td>-0.271</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>6. TECH</td>
<td>-0.010</td>
<td>0.003</td>
<td>0.264</td>
<td>-0.045</td>
<td>0.092</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. VA</td>
<td>-0.423</td>
<td>0.569</td>
<td>0.009</td>
<td>-0.399</td>
<td>0.161</td>
<td>0.020</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>8. PSNV</td>
<td>-0.551</td>
<td>0.611</td>
<td>0.086</td>
<td>-0.311</td>
<td>0.336</td>
<td>0.004</td>
<td>0.768</td>
<td>1</td>
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</tr>
<tr>
<td>9. GE</td>
<td>-0.526</td>
<td>0.590</td>
<td>0.052</td>
<td>-0.360</td>
<td>0.238</td>
<td>0.018</td>
<td>0.871</td>
<td>0.760</td>
<td>1</td>
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<td></td>
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<tr>
<td>10. RQ</td>
<td>-0.542</td>
<td>0.594</td>
<td>0.126</td>
<td>-0.442</td>
<td>0.290</td>
<td>0.012</td>
<td>0.851</td>
<td>0.759</td>
<td>0.930</td>
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</tr>
<tr>
<td>11. RL</td>
<td>-0.551</td>
<td>0.582</td>
<td>0.028</td>
<td>-0.400</td>
<td>0.242</td>
<td>-0.007</td>
<td>0.889</td>
<td>0.783</td>
<td>0.971</td>
<td>0.948</td>
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</tr>
<tr>
<td>12. CC</td>
<td>-0.486</td>
<td>0.511</td>
<td>-0.019</td>
<td>-0.310</td>
<td>0.171</td>
<td>-0.0184</td>
<td>0.868</td>
<td>0.750</td>
<td>0.957</td>
<td>0.898</td>
<td>0.963</td>
<td>1</td>
</tr>
</tbody>
</table>

Sources: Authors’ own calculation based on the data taken from the sources mentioned above.
Table 5: GMM Estimation Results

<table>
<thead>
<tr>
<th>Dependent variable: Poverty Head Count Index: Dependent Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Gross Fixed Capital Formation</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Savings for Natural Resource</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Trade Openness</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>High Technology Exports</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Political Governance</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Economic Governance</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Institutional Governance</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Overall Governance</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Observations</td>
</tr>
<tr>
<td>R-squared</td>
</tr>
<tr>
<td>Durban-Watson stat</td>
</tr>
</tbody>
</table>

Sources: Authors’ own calculation based on the data taken from the sources mentioned above.

5. Concluding Remarks
The ultimate objective of the paper was to estimate the impact of human capital on pervert ratio in developing countries in the presence of governance level in selected countries. Panel GMM approach is exploited to meet the objective of study by using data for 44 developing countries. The central opinion of this paper after GMM estimation is that human capital and globalization are key instruments to reduce poverty. Additionally, governance measures such as political governance (voice and accountability and Political stability and no violence), economic governance (government effectiveness and regulatory quality) and institutional governance (rule of law and control of corruption) interact with the human capital to reduce poverty.

The results of correlation matrix show that there is no Multicollinearity in the models. Multicollinear variables are added in separate models like Political Governance, Economic Governance, Institutional Governance and Governance. The results conclude that Human Capital and High Technology Exports are found to be significant causes of reduction in Poverty in Developing countries. Moreover, not only
Political Governance, Institutional Governance, Economic Governance but also Overall Governance are reducing poverty in developing countries. Gross Fixed Capital formation and Trade Openness are found to be statistically insignificant. On the other side, Savings for Natural Resource Depletion is examined as increasing poverty in developing countries.

An effective poverty reduction strategy should be formulated while keeping in mind the human capital development through health and education and improving the governance infrastructure. Further, people should be more productive and economically active which is only possible through inclusive growth that may prove as recipe for poverty reduction in developing countries. A successful poverty reduction strategy should be a development strategy that must depend on participation of poor in economic growth. Future research may look at the issue of quality, accessibility and affordability of human capital and poverty reduction relationships.

References
Gender Inequality in Education and Household Poverty in Pakistan: A Case of Multan District

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ARTICLE DETAILS

ABSTRACT

Present study is intended to explore the impact of gender inequality in education on poverty by employing logistic regression on primary source of data collected through a field survey of Multan district. The study concluded that gender inequality in education has adverse impact on household poverty. The probability of household poverty falls with the increase in female-male primary, secondary and tertiary enrolment. The improvement in female-male literacy ratio also rejects probability of a household being poor. Household size and number of children less than five years age have positive association with probability of poverty while the variables, qualification of household head, age of household, professional or technical skills of household head and ownership of house are negatively associated with household poverty. The study suggested that eliminating gender inequality in education in all level may be helpful in empowering women, creating productive employment opportunities in both formal and informal sectors and alleviating poverty.

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Keywords
Gender Inequality, Education, Poverty, Logistic Regression, Multan.

JEL Classification:
C25, D60, J10, I10, I30

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1. Introduction

Gender refers to difference in roles and responsibilities of women and men in a society. This difference is determined by society, culture, prevailing religious thoughts, moral and legal norms (Anderson, 1988; Alam, 2011). Gender inequality represents dissimilarity in women and men’s status in recognizing their full human rights. It is the difference in Social class, achieved ethnic and racial status by women and men and discriminative relative power of men and women in our society. Men and women both are essential constituents of every society. The society cannot flourish adequately until and unless both contribute
actively and efficiently in its development process. According to Klien and Nestvogel (1992), there is adequate evidence that when women and men achieved equal opportunities, their well-being got enhanced, the poor escaped quickly from poverty and ultimately economies grew faster. But when the burden of any one was shifted to the other, the growth and efficiency of both was hampered. In underdeveloped areas women had been leading disadvantageous and dependent life and their very minute economic contribution have been resulted in gender inequalities. (Oakley,1972; Alam, 2011).

Gender inequality is primarily the consequence of human behaviour that denies individual their human rights(North, 1990). The deprivation of women from basic freedoms infers extraordinary costs for society in terms of lower human capital, lower growth and bad governance (Sen, 1999; World Bank, 2001; Klasen, 2002). Gender inequality also inflicts costs on households, communities and countries. In an increasingly globalized world, gender inequality is a major predicament for development which makes countries less competitive due to rising cost of not reducing gender inequality. Inequality in access to opportunities and resources, women’s minor representation in business and politics and violence and power imbalances create discrimination between men and women which impede the progress of women as well as society. It is obvious that hostage of the talents, energies and aspiration of half of the society hampers human development.

Gender disparity in education is present nearly in entire poor countries as well as among the poor within these countries. The low income countries of the world has exhibited substantial rise in gender inequality in education over the last three decades (World Bank, 2001). Gender inequality has now become an important concept for the empirical analysis and is essential for poverty alleviation as it has adverse influences on several valuable development goals. Poverty influences the girl's access to education in many ways. In accordance with the recent evidence from West Africa, poverty contributes a lot in gender inequality in access to education (Okoijie, 1998; Okoijie, 2002; Appleton, 1996; Atolagbe, 1999).

Education is worldwide accepted basic need for every human in everyday life and the perfect imperative tool for human resource development (King and Lillard, 1983). It has been considered a vital constituent of women’s empowerment and opportunities. It has become a universally accepted human right. Female’s education plays an important role in poverty alleviation in developing countries by increasing their productive activities due to improvement in their health by reducing fertility and various other human development outcomes like child survival, health and schooling (King and Hill, 1993; Strauss and Thomas, 1995; World Bank, 2000; PIHS, 2001-02; Schultz, 2002; World Bank, 2007).

Pakistan reveals substantial gender inequality in education in both rural and urban areas. The progress regarding gender parity index (GPI) for primary and secondary education is slow. The MDG target of attaining gender equality in primary and secondary education in 2005 has already been missed. The target seems to be unachievable with the current pace of progress. GPI for primary education in 1990, 2001, 2005, 2008, 2010 and 2011 was 0.73, 0.82, 0.85, 0.88, 0.88, and 0.90 respectively. The GPI in primary education for the year 2012-13 is 0.89 with a one percent decline as compared to year 2011-12 and it was further declined by one percent from 0.89 to 0.88 in 2013-14. GPI for secondary education is consistently stagnant at 0.8 since 2006-07. According to global gender gap report 2012-13, gender parity index for literacy was 0.59, GPI for primary education was 0.82, GPI for secondary education was 0.76 and gender gap index for tertiary education was 83 in 2012-13. Rigorous efforts are required to achieve the GPI targets for primary and secondary education by 2015. GPI for youth literacy has increased from 51 in 1990-91 to 0.65 during the year 2001-02 and to 0.78 in 2005-06. It was further improved from 0.78 percent in 2005-06 to 89 percent in 2012-13 and again declined from 89 percent to 84 percent in 2013-14. The progress of this indicator is also slow and the MDG target of 2015 is not likely to be achieved for this indicator also. The reasons of girls’ low enrolment and high dropout rates are cost of attending school, availability and quality of school facilities such as safe drinking water, separate toilets and boundary wall, distance to school and parents attitude and ignorance (PIHS, 1990-91, 2001-02; PSLM; 1990-91-2008-08; Pakistan MDGs Report, 2010;Global Gender Gap Report, 2013; Pakistan Economic Survey, 2014-15).
Poverty has emerged as a core issue and a central challenge for development to the government of Pakistan since it has been placed among the millennium development goals. Poverty is a complex, dynamic, gender and location specific multidimensional phenomena. Persistence of poverty may vary by social group and region. It is not easy to describe and quantify the poverty because it is qualitative in nature (Chaudhry et al., 2009). Poverty is the helplessness in achieving minimum living standard (World Bank, 1990). Poverty is the absence of access to achieve various commodities (World Bank, 2000). The definition of World Banks indicates the broader concept of poverty which includes not only food and non-food items but also some essentials of human development such as key assets and social determinants.

According to World Development Indicators (2012), 60.2 percent population is living below $2 a day and 21 percent population is living below $1.25 a day at international poverty line in local currency in Pakistan. Poverty rates have never been found stable in Pakistan. Inconsistent and unsuitable poverty alleviation policies have been resulted in ever changing poverty trends in Pakistan. The poverty incidence is greater among women than the poverty incidence among men in Pakistan (Ministry of labour and manpower Pakistan, 2009).

The above observations about gender inequality in education and poverty provide an uneven agenda for the present study. As distinct from national poverty, the present study on poverty in Multan District views the problems with the emphasis on different roles, rights and resources that men and women have in society and are important in determining the nature and scope of their educational inequality and poverty. Present study is an attempt to investigate the impact of various indicators of gender inequality in education on poverty.

2. Literature Review
The relationship among gender inequality in education and poverty is much debated at national and international level. There are many evidences from all over the world regarding the link between gender and poverty. Feminization of poverty has become a worldwide phenomenon. Poverty may affect girls' access to achieve education in various ways. Gender inequalities in enrolment are greater among poor than among the non-poor countries. The causes of gender inequality in education are created by household's decisions. The main reasons for low investment in girls’ education are societal favorites like customs and culture, no future benefit of girls’ education to parents, early marriages, low or no returns from education of girls (Gertler and Alderman, 1989; Dollar and Gatti, 1999). Pakistan has a male dominated society having gender as an organizing principle of the society. Gender discrimination is a universal phenomenon and we cannot fully quantify the extent of gender discrimination. There are evidences from literature that females are more poor and vulnerable than males and are suffering from poverty of opportunity in terms of less access to health, education and earning in developing countries like Pakistan. There are several studies examining the issue of gender inequality in education and its consequences on household welfare. The following studies have explored the relationship between gender inequality in education and poverty.

A micro study was conducted by Malik (1996). He explored the various rural and household specific determinants of rural poverty in Pakistan using primary data obtained from a village of Punjab in 1990 and calculated FGT index for various determinants of poverty. It is concluded that the households with higher level of education, a smaller number of dependents, smaller family size, a larger area to cultivate, greater participation in non-farm work and access to resources have low probability of being poor. The study highlighted that various non-farm activities enables the landless rural household to generate income and thus to escape poverty.

Klasen (1997) explored poverty and inequality in South Africa using a household survey data. The author used income-based definition of poverty and developed a deprivation index having components such as
education, employment, access to services, income, health, wealth and perceptions of satisfaction. The results suggest that poverty has strong association with poor education and lack of employment opportunities. The poor are facing low or no access to education, deficiency of better health care facilities and undersupplied basic infrastructure and are reliant on social transfers (remittances and pensions) and disability grants. Poverty rates in rural areas are higher as compared to urban areas and among female headed households and children.

Klasen (1999) examined the effects of gender inequality in education and employment on growth. This study concluded that gender inequality in education negatively effects growth of the economy by letting down the human capital’s quantity and quality. The estimates denote that there are 0.4 to 0.9 percent variations in growth rates due to gender inequality in education between South Asia and Middle East and, East Asia and Sub Saharan Africa. The progress in growth rates is prevented due to increase in fertility and child mortality rates caused by increase in gender inequality.

The higher level of income and earnings are connected with advanced level of education. Nasir (2002) investigated the relationship between the variables of human capital and earnings of regular wage employees. The study used HIES data of 1995-96 containing the information about completed year of schooling and Human capital model was estimated which was earlier adopted by Mincer (1974) and Becker (1964). The results showed that there is eight percent return on an additional year of education of the wage earner. The variable of experience indicated that each additional year of working in labour market resulted in wage increase of both male and female workers. The wages of male workers were found 10 percent greater than female workers for their experience, skills and competencies. Females earn less than males because of lack of education and experience.

Chaudhry et al. (2006) explored the issues of poverty and its related concepts in rural agricultural economy. In this study an attempt has been made to analyze the macro variables earlier used by kemal (2001). The study concluded that unemployment, inflation and economic growth have significant association with poverty alleviation in rural areas of Pakistan. Results indicated that in rural areas incidence of poverty was forty percent and in urban areas it is thirty two percent. In rural areas, poverty incidence is more pervasive as compared to urban areas. The main variables such as inflation, employment and growth rate strongly influence rural poverty. It is suggested that poverty alleviation in rural areas is impossible without creation of investment opportunities, entrepreneurship and sustainable livelihood in the economy.

De Silva (2008) investigated the correlates of poverty in Sri Lanka. The study analyzed that the level of education was an extreme negative correlate of poverty. Poverty was declined with the increase in education years. Household probability of falling into poor was 43 percent for the illiterate household. Tertiary education had strong poverty reducing impact followed by lower levels of education. Household size is also an important correlate of poverty. Household head’s gender was also associated with the standard of living or household welfare. The result of the quintile regression indicated that household of rural areas are poor. However, the inequality was found higher in urban areas as compared to rural areas. A micro study was conducted by Chaudhry and Rahman (2009). They explored the relationship between gender inequality in education and rural poverty. Authors made logistic regression analysis of survey data gathered through a survey of rural areas of Muzaffargarh district. The study found the negative or adverse relationship of gender inequality in education with rural poverty in Pakistan. The indicators of gender inequality in education such as female to male enrolment ratios, female to male literacy ratio, female to male ratio of total years of schooling, female to male ratio of earners and household head’s educational level have negative impact on rural poverty. The study suggests that gender equality in education is necessary for increase in level of employment and mainstreming gender into poverty reduction policies may reject poverty in developing countries like Pakistan.

Chaudhry et al. (2009) explore relationship between household’s demographic and socioeconomic
characteristics with rural poverty. The empirical analysis of the study consists of a poverty profile and an econometric approach. They used primary data collected from rural area of Muzaffargarh district for poverty analysis. It is concluded that household size, participation rate, dependency rate, landholding, livestock, female head of household, age of the household head and residence in katcha house (house made of mud) play a significant role with the probability of being poor household and affects the incidence of poverty. It was suggested that landless households should be allotted land. Efforts should be made to alleviate poverty by improving demographic characteristics in rural areas of Pakistan.

Chaudhry (2009) analyzed various factors influencing rural poverty in Southern Punjab (Pakistan). The study concluded that it is possible to alleviate poverty by decreasing dependency ratio, controlling the size of households, improving the levels of education and increasing female participation in earnings and other economic activities. Logistic regression analysis of the primary source of data was made. It was found that household’s chances of poverty increases with the increase in size of the household and the dependency rate of household. The relationship between education and poverty is negative because it is education which helps in achieving and availing employment opportunities and hence rejects poverty.

Poverty is a big obstacle in the way of economic development of an economy. Chaudhry et al. (2010) and Awan et al. (2011) explored the relationship between different levels of education with poverty incidence in Pakistan. These studies found the opposite or inverse association between education and poverty. With the increase in level of educational attainment, the chances of escaping poverty increases because with the increase in education level earning potential of individual also increases. Regarding the feminization of poverty, the study concluded that risk of poverty is less for male as compared to female. The study suggested that evasive action is needed to be taken to provide affable employment environment for the female, equal educational and training opportunity and resources targeted at education sector especially in higher education will be helpful for poverty eradication and wellbeing of the society.

Alam (2011) examined the effects of gender discrimination on gender development and poverty alleviation. The study is based on information collected from 50 respondents out of which 25 respondents are males and 25 are female. The survey was conducted in Hazar Khuani Peshawar. The results indicate that gender disparity exists in the targeted area which affects poverty alleviation and gender development in many ways. It is concluded that females have unequal status, unequal opportunities in education, no permission to work outside home and no or low share in income or earnings of a family. Male members of the family were decision makers. Females were more vulnerable to poverty because of unjust distribution of resources. Gender inequality is a hindrance in alleviation of poverty and education of females supports poverty alleviation. It is suggested that provision of equal social rights, equal education and skill enhancement opportunities to men and women may be helpful for gender development and poverty alleviation.

3. Data and Methodology

For the present study the researcher has used primary data for empirical analysis. The primary data is a one shot exercise collected by conducting the field survey of rural and urban areas of Multan District. Multan is an ancient city and famous as city of saints for its Sufi heritage. It is rich in agriculture and industry. It is Pakistan's 6th most populous metropolitan city. According to 1998 Census, It has a population of 3116851 persons out of which 1802103(57.82 percent) is rural population and 1314728 (42.18 percent) is urban population. The area of the district is 3721 square kilometers. The survey was conducted in 2015. A sample of 600 household was randomly selected from the entire district of Multan. Out of a sample of 600 households, 240 Households (40 percent of the sample) were selected randomly from urban areas and 360 households (60 percent of the sample) were randomly drawn from rural areas of Multan district.

Poverty theorists have observed that alleviation of absolute poverty is more applicable than the relative poverty to solve the problems of developing countries. In the present study we have used Head Count
Ratio which is a well-known method to calculate the incidence of poverty. Here poverty is a dependent and dummy or categorical variable having value 1 if household is poor and 0 if the household is non-poor. Poverty line is 1.25 dollars per person per day which is the World Bank poverty line adopted for developing economies. The poverty line of $1.25 is the simple average of the national poverty lines of fifteen very poor countries as suggested by World Bank for poverty analysis in developing countries.

Poverty status regressions are mostly applied by using a Probit or Logit Model. In Probit or Logit model a dummy or a categorical variable is used such as whether a household is poor or not. We have carried out empirical analysis of the impact of gender inequality in education on household poverty by employing Logit Model. The probability of being poor depends on a set of variables x so that

$$\text{Prob (Y = 1)} = F (\beta'X)$$
$$\text{Prob (Y = 0)} = 1 - F (\beta'X)$$

Using the logistic distribution we have

$$\text{Prob (Y = 1)} = \frac{e^{\beta'X}}{1 + e^{\beta'X}} = \Lambda (\beta'X)$$

Where 'Λ' represents the logistic cumulative distribution function. Then the probability model is the regression:

$$E [Y/X] = 0 [1 - F (\beta'X)] + 1 [F (\beta'X)] = F (\beta'X)$$

Table 1: The List of the Variable of the Model (Investigating the Impact of Gender Inequality in Education on Household's Poverty)

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Hypothetical relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>POVT</td>
<td>Poverty: =1 if household is Poor, 0 if Non-Poor (The household is considered poor if Per Capita income is less than 1.25$ per person per day, International Poverty line)</td>
</tr>
<tr>
<td><strong>Independent variables</strong></td>
<td></td>
</tr>
<tr>
<td>FSIZ</td>
<td>Family Size (Number of members in a household)</td>
</tr>
<tr>
<td>GPIPE</td>
<td>It is the ratio of girls to boys in a household enrolled in primary education also known as Gender parity index For Primary Education</td>
</tr>
<tr>
<td>GPISE</td>
<td>It is the ratio of girls to boys in a household enrolled in secondary education also known as Gender Parity Index For Secondary Education</td>
</tr>
<tr>
<td>GPITE</td>
<td>It is the ratio of girls to boys in a household enrolled in Tertiary education also known as Gender Parity Index For Tertiary Education)</td>
</tr>
<tr>
<td>GPIYL</td>
<td>Female male literacy ratio (adults, age 15 years and above)</td>
</tr>
<tr>
<td>ADTS</td>
<td>Average Distance to School from a household (KM)</td>
</tr>
<tr>
<td>AGEHH</td>
<td>Household Head’s age in years</td>
</tr>
<tr>
<td>QUHH</td>
<td>Qualification of Household Head, Completed years of Education</td>
</tr>
<tr>
<td>HOWN</td>
<td>Ownership status of House: 1 if own, 0 if rented</td>
</tr>
<tr>
<td>MTSHH</td>
<td>Marital status of Household Head: 1 if married, 0 if unmarried</td>
</tr>
<tr>
<td>PQSH</td>
<td>Household head's Technical/Professional Qualification or skill: 1 if yes 0 if No</td>
</tr>
<tr>
<td>NOCH</td>
<td>Number of children in a household (less than or equal to 5 years age)</td>
</tr>
</tbody>
</table>

In the present study I have made an attempt to analyze the impact of gender inequality in education on household poverty in Pakistan using a new household level source of data from Multan district.

4 Results and Discussion

4.1 Summary of the Findings of the Field Survey of Multan district

The field survey indicates that there are 6 percent female headed and 94 percent male headed households. Average household size is found to be 6.1 percent. It has been observed that there are 37 percent poor households (222 out of 600 households) and 63 percent non-poor households (378 out of 600 households).
and out of 37 percent poor households 29 percent urban and 71 percent rural households are poor. The households with literate head are 61 percent (366 households) and illiterate heads are 39 percent. Among the literate 61 percent heads, 18 percent heads possess technical or professional education and others possess general education. Out of 600 households, 88 percent possess their own house or residence and 12 percent household live in rented house. The households where exists the gender inequality in primary enrolment were almost 71.17 percent while, 28.83 percent households represented gender equality in enrolment in primary education. Gender inequality in enrolment in secondary education was found in 74.50 percent households while, the households indicating gender inequality in tertiary education enrolment were almost 81.84 percent. Gender equality in adult’s literacy ratio was found to be in only 39.33 percent households. Household data indicates severe gender inequality in adults’ literacy as well as in all levels of enrolment.

4.2 Results of Correlation Analysis of the Variables
Correlation analysis has been made in order to find the multicollinearity among the variables. The results of the correlation co-efficient of the independent variables used in gender inequality in education and poverty model are shown below in table 8.2. The results show that the values of correlation co-efficient are less than 0.45 indicating that there is no multicollinearity among the variables. If the value of co-efficient is equal to or less than 0.80 then there will be severe multicollinearity among the variables.

Table 2 Correlation Co-efficient of the Independent Variables

<table>
<thead>
<tr>
<th></th>
<th>FISZ</th>
<th>GPIPE</th>
<th>GPIPE</th>
<th>GPISE</th>
<th>GPITE</th>
<th>GPIYL</th>
<th>ADTS</th>
<th>AGEHH</th>
</tr>
</thead>
<tbody>
<tr>
<td>FISZ</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPIPE</td>
<td>0.2575</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPIPE</td>
<td>0.3950</td>
<td>0.2333</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPISE</td>
<td>0.2244</td>
<td>0.0919</td>
<td>0.3110</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPITE</td>
<td>0.1425</td>
<td>0.1836</td>
<td>0.4586</td>
<td>0.4265</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GPIYL</td>
<td>0.0890</td>
<td>-0.1724</td>
<td>0.0265</td>
<td>0.1697</td>
<td>-0.0241</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADTS</td>
<td>0.3559</td>
<td>-0.0137</td>
<td>0.0794</td>
<td>0.1291</td>
<td>0.0469</td>
<td>-0.0334</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>AGEHH</td>
<td>0.0110</td>
<td>0.0955</td>
<td>0.2468</td>
<td>0.2042</td>
<td>0.4057</td>
<td>-0.0164</td>
<td>-0.0916</td>
<td></td>
</tr>
<tr>
<td>QUHH</td>
<td>0.1222</td>
<td>0.0790</td>
<td>0.0552</td>
<td>0.0794</td>
<td>0.1080</td>
<td>-0.0990</td>
<td>0.1562</td>
<td></td>
</tr>
<tr>
<td>HOWN</td>
<td>-0.0218</td>
<td>0.0156</td>
<td>-0.0110</td>
<td>0.0932</td>
<td>0.2281</td>
<td>-0.0699</td>
<td>-0.0326</td>
<td></td>
</tr>
<tr>
<td>PQSH</td>
<td>0.0541</td>
<td>0.0285</td>
<td>0.0554</td>
<td>0.0065</td>
<td>0.0668</td>
<td>-0.0255</td>
<td>-0.0364</td>
<td></td>
</tr>
<tr>
<td>MTSHH</td>
<td>0.2815</td>
<td>0.0437</td>
<td>-0.0649</td>
<td>-0.1736</td>
<td>-0.1462</td>
<td>0.0618</td>
<td>-0.0572</td>
<td></td>
</tr>
</tbody>
</table>

4.3 Results of the Logistic Regression Estimates of the Impact of Gender Inequality in Education on Poverty
The results in table 8.3 indicate that constant has significant positive effect on household poverty. Co-efficient value of Constant indicates the effect of all those variables which may have some impact on poverty but these have not been included in the model. Pseudo R-Square (coefficient of determination) represents the proportion of explained variations in poverty due to the variations in independent variables. The value of Pseudo R-Square (coefficient of determination) is 0.3150 which indicates that 31 percent variations in poverty have been explained by the independent variables. The probability chisquare value is 0.000 provides the evidence that at least one of the coefficients for an explanatory variable is non-zero and proves that overall logistic model is good and significant at 1 percent level of significance.

Household size has significant positive impact on poverty. The co-efficient of household size is significant at one percent level and the odds ratio 1.44 confirms the positive relationship between household size and poverty. It is an important factor that determines poverty. The greater the household size, the lesser will be the per-capita income as it has diluting effect on household income. Household size
represents a complex mechanism in poverty status. On one hand participation of all family members in earning activities may pull the household out of poverty and on the other hand surplus labour force in a household brings down the marginal productivity, increases unemployment and ultimately pushes the household into poverty (Rodriguez, 2003; Sabir et al, 2006). Marginal effect of household size shows that probability of poverty increases by 5.4 percent with the increase of one member in a household. The results are also consistent with Javed and Asif (2011).

The variables of gender inequality in education such as female-male primary, secondary and tertiary enrolment ratios negatively affect the probability of household’s poverty. The variables are significant at one percent level and odds ratios are 0.50, 0.54 and 0.05 respectively. The odds ratios are less than one and confirm the negative relationship between female-male enrolment ratios of primary, secondary and tertiary education and probability of poverty. Greater the values of these enrolment ratios, the lesser will be the gender inequality in enrolment and the probability of poverty of household being poor decreases. Marginal effects of the enrolment ratios indicate that probability of household poverty falls by 9.9 percent, 9.4 percent and 45.6 percent with the one unit increase in female-male enrolment ratios of primary, secondary and tertiary education respectively. The results specify that gender equality in primary enrolment is found to be more effective for poverty alleviation as compared to gender equality in secondary enrolment. However, there is little difference between the marginal effect co-efficient values of primary and secondary enrolment. Similarly, gender equality in tertiary enrolment is more effective than the gender equality in primary as well as secondary enrolment. Tertiary education is most effective for poverty alleviation as the co-efficient value of marginal effects 45.6 percent predicts that probability of household being poor decreases by 45.6 percent with the increase in female-male tertiary enrolment ratio by 100 percent. Hence, elimination of gender inequality in primary, secondary and tertiary enrolment is necessary for poverty alleviation. Gender inequality in education may have adverse impacts on poverty and other development goals. It may prevent the reduction in child mortality, fertility, and under nutrition, as well as reduce the educational gains of the next generation. The results are consistent with chaudhry, 2007; chaudhry and Rahman 2009).

Table 3 Logistic Regression Estimates of the Impact of Gender Inequality in Education on Poverty

<table>
<thead>
<tr>
<th>Explanatory Variables</th>
<th>Coefficient</th>
<th>Z-stat.</th>
<th>Prob.</th>
<th>Odds ratio</th>
<th>Marginal Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.102</td>
<td>1.82</td>
<td>0.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Household Size</td>
<td>0.362*</td>
<td>5.94</td>
<td>0.00</td>
<td>-1.44</td>
<td>-0.05</td>
</tr>
<tr>
<td>Female-male Ratio of Enrolment in Primary Education</td>
<td>-0.684*</td>
<td>-3.41</td>
<td>0.00</td>
<td>0.50</td>
<td>-0.09</td>
</tr>
<tr>
<td>Female-male Ratio of Enrolment in Secondary Education</td>
<td>-0.616*</td>
<td>-2.66</td>
<td>0.00</td>
<td>0.54</td>
<td>-0.09</td>
</tr>
<tr>
<td>Female-male Ratio of Enrolment in Tertiary Education</td>
<td>-2.970*</td>
<td>-4.70</td>
<td>0.00</td>
<td>0.05</td>
<td>0.45</td>
</tr>
<tr>
<td>Female-male (age 15 years and Above) Literacy Ratio</td>
<td>-0.928*</td>
<td>-3.54</td>
<td>0.00</td>
<td>0.40</td>
<td>0.14</td>
</tr>
<tr>
<td>Average distance to School from a Household (Kilo Meter)</td>
<td>0.008</td>
<td>0.21</td>
<td>0.83</td>
<td>1.01</td>
<td>0.00</td>
</tr>
<tr>
<td>Age of Household Head (Years)</td>
<td>-0.039*</td>
<td>-3.49</td>
<td>0.00</td>
<td>0.96</td>
<td>0.00</td>
</tr>
<tr>
<td>Qualification of Household Head (years of Education)</td>
<td>-0.047*</td>
<td>-2.47</td>
<td>0.01</td>
<td>0.95</td>
<td>0.00</td>
</tr>
<tr>
<td>Ownership of House (Own House=1)</td>
<td>-0.691*</td>
<td>-2.07</td>
<td>0.03</td>
<td>0.50</td>
<td>0.10</td>
</tr>
<tr>
<td>Head’s Technical/Professional qualification (Yes=1)</td>
<td>-0.835***</td>
<td>-1.84</td>
<td>0.06</td>
<td>0.43</td>
<td>0.12</td>
</tr>
<tr>
<td>Marital Status of Household head (Married=1)</td>
<td>0.111</td>
<td>0.31</td>
<td>0.73</td>
<td>1.12</td>
<td>0.01</td>
</tr>
<tr>
<td>Number of Children (Less than 5 years age)</td>
<td>0.310*</td>
<td>0.34</td>
<td>0.02</td>
<td>1.36</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Pseudo R2 = 0.3150  LR chi2(12) = 254.81
Log likelihood = -275.863 Prob> chi2 = 0.0000
Test that all slopes are zero: G = 257.218, DF = 12, Number of Observations = 599
P-Value = 0.000

Source: Author’s calculations by using Stata and Minitab

*=1 percent, **=5 percent and ***=10 percent level of Significance
Female-male literacy ratio of adults (age 15 years and above) has also negative relationship with the probability of poverty. The odds ratio 0.40 confirms the negative impact of the ratio of female-male literacy on probability of poverty. Marginal effect of the variable shows that increase in literacy ratio by one unit reduces the probability of poverty by 14.6 percent.

Gender equalities in education are particularly important in the sense that female education has positive association with many development outcomes including reduction in fertility and child mortality (Schultz, 2002). Education level attained by household members reduces ethnocentricity, and thus increases one’s flexibility of accepting new customs and norms and results in increase in female labour force participation especially in urban areas, which may reflect their higher wage premiums and higher opportunity cost of being inactive. However, research reveals low demand for girls’ education in many economies results in significant gender gaps in access to education (Hill and King, 1995; Filmer, 1999; Winter and Macina, 1999 and Lincove, 2006). The negative relationship between female-male literacy ratios with the probability of household being poor has been similarly observed by Ogawa and Akter (2007), Chaudhry and Rahman (2009) and World Bank (2010a).

The variable of distance to school has expected positive co-efficient sign but insignificant impact on probability of household being poor and marital status of household head also has positive but insignificant impact on household’s poverty. This result is consistent with Chaudhry and Rahman, 2009).

Age of the household head has significant negative impact on household’s poverty. The variable is significant at one percent level. The greater the age of household, the lesser will be the probability of household’s poverty. Odds ratio of 0.96 represents the negative impact of head’s age on poverty. Marginal effect of the variable indicates that probability of poverty falls by 0.5 percent with the one year increase in the age of the household head. Poverty mainly affects people who are under or above productive ages. Generally, young people have low income because their early experience in the labor market starts with low income and fewer hours of work. As individuals age, there is gradual gain in education, work experience and labor network (Khatun, Razia, 2015).

Educational qualification of household head negatively affects household’s poverty. The variable is significant at one percent level and odds ratio 0.95 confirms the negative impact of that variable on probability of poverty. The value of marginal effect indicates that other variables remain same, the probability of poverty falls by 0.7 percent with the increase in an additional year of education of the head keeping other variables constant. Probability of household being poor also decreases if the household has some technical and professional qualification. Greater the technical skills and competencies lesser will be the chances of household being poor. The variable is significant at 10 percent level of significance and odds ratio of 0.95 confirms the negative association of this variable with probability of poverty. Marginal effect of the variable shows that other variables remaining constant, the probability of that household’s poverty falls by 12.9 percent if its household head possess professional qualification or technical skill. Although the educational level of other earning family members also is of great importance but that of head plays more influential role in shaping family members by being exemplary and willing to invest in education. The educational qualification level of household head contributes to competency, working efficiency, diversifying income, becoming visionary in creating conducive environment to educate the dependents with long term target to ensure better living condition of the family members. Thus being educated reduces the chance of becoming poor in the sample households. The results are consistent with Fitsum and Holden (2003), Chaudhry (2009) and Javed and Asif (2011).
The probability of household’s poverty also falls if the household possesses its own house. Ownership of a house rejects the probability of being poor. The variable is significant at one percent level and odds ratio is 0.50 which confirms the negative relationship. The probability of household poverty falls by 10.5 percent if the household has ownership of house. Poverty is more prevalent among non-owners of house: they tend to be income poor, assets poor and consumption poor. It is obvious that the ownership of house relates to income, assets and consumption (Ahmad, 2004).

The number of children less than 5 years of age has significant positive impact on household poverty. Greater the number of children of the mentioned age greater will be the dependency rate and greater will be the chances of household to fall in poverty. The variable is significant at 1 percent level of significance and odds ratio is greater than one (1.36) which confirms the positive impact of the variable on probability of being poor. Marginal effect of the variable shows that probability of household’s poverty increases by 4.7 percent with the increase of one more child of the mentioned age in a household. With the increase in children dependency ratio of a household, poverty level also increases. Our results are consistent with Chaudhry et al. (2009), Chaudhry and Rahman (2009).

5. Conclusions and Policy Suggestions
Gender inequality in education has adverse impact on household’s probability of poverty. The households with greater gender inequality in education are more likely to be poor. Female-male literacy ratio has negative association with household’s probability of being poor. The increase in adult female-male literacy ratio and the ratios of females and males enrolment in primary, secondary and tertiary education (indicators of gender inequality in education) have negative association with probability of poverty. The gender inequality in enrolment and literacy has been found to be higher in poor families and lower in rich families. Human capital equality in a household (the equality in female-male level of education) is an important determinant of household poverty. International development institutions are also recognizing the importance of female education in achieving number of development goals (Schultz, 1994). Other variables such as age of household head, qualification of household head, head’s technical/professional qualification and ownership of house were found to have negative association with poverty. Household size and number of children less than 5 years of age positively affects the probability of poverty. The results specify that gender equality in primary enrolment is found to be more effective for poverty alleviation as compared to gender equality in secondary enrolment. However, there is little difference (0.5 percent) between the marginal effects co-efficient values of primary and secondary enrolment. Similarly, gender equality in tertiary enrolment is more effective than the gender equality in primary and secondary enrolment. Tertiary education is most effective for poverty alleviation as the co-efficient value of marginal effects 45.6 percent predicts that probability of household being poor decreases by 45.6 percent with the increase in female-male tertiary enrolment ratio by one or in other words 100 percent. It is concluded that elimination of gender equality in enrolment and literacy educational is essential for poverty alleviation.

On the Basis of these conclusions, we suggest some recommendations for policy makers. Government may take various steps to eliminate all forms of discrimination against women by incorporating the principle of gender equality in their legal system and by establishing public institutions and tribunals to ensure the effective protection of women against discrimination.

It is impossible to alleviate poverty without the creation of productive employment opportunities. Promotion of productive employment should be amongst the major goals of policy in its own right. It assumes particular significance in the context of the persistence of poverty at a high level and the observed increase in income inequality. Labour is the only income generating asset of the poor. Therefore, productive employment and an increase in the returns to employment can be helpful to achieve a higher rate of poverty reduction and to discontinue the rise in inequality. Female employment is necessary to
enhance the level of income and alleviate poverty prevailing in low income households.

Since female literacy is essential for poverty alleviation, Government may provide free primary and secondary education to boys and especially girls. Monthly stipend may also be awarded to the students belonging to poor family. In village areas distant schools are hurdle in the way increase in female and males’ enrolment. Government may provide conveyance facility to the students especially female students of village areas. There is a need to increase the public expenditures on female education in order to achieve gender equity at all levels. For the elimination of gender inequality in education at all levels and to achieve the targets of Millennium Development Goals, Pakistan had made commitment to achieve overall gender equality in access to education till 2015. There is an ardent need to develop education and other infrastructural facilities without gender bias.

References


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Line Spacing: fixed – Single
Heading: Times New Roman; Size-12; Bold;
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This section may cover overall background and description of the study, narrow down to research objectives, motivation of the topic, importance/significance, proposed tasks and novelty. Abbreviations should be described in parentheses when first time they appear in the text.

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This sections may critically describe/evaluate literature relevant to research problem, establish context, compare and contrast the most recent developments in literature and trends. Search gaps after concentrating on thought leaders’ work and linking the research with relevant theories.

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equations, statistical tool and its justification.

Data analysis
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Discussion and recommendations
It may be broken into meaningful sections, i.e. hypotheses supported/rejected, alternative explanations, conclusion, theoretical/methodological contribution, practical implications, recommendations, future study directions and limitations.

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Present them in order (suitable heading and specific number; Arabic numerals) wherever appropriate in the text. High-resolution (black and white only) graphs must be provided in the main text of the paper.

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Appendix
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