**Account and Financial Management Journal e-ISSN: 2456-3374**
**Volume 8 Issue 10 October 2023, Page No.-3216-3221**
**DOI: 10.47191/afmj/v8i10.01, Impact Factor: 7.857**


# Impact of Monetary Development on Agricultural Productivity in South Asia

**Israel Idewele (PhD)[1], Dickson Ben Unche (PhD)[2], Ugwu Okereke J (PhD)[3], Ekwunife Faith Chinyere[4], Idih Ogwu Emmanuel (PhD)[5]**

[1]Department of Banking and Finance. Evangel University, Ebonyi State, Nigeria
[2]Department of Marketing, Evangel University, Ebonyi State, Nigeria
[3]Department of Banking and Finance, Ebonyi State University, Ebonyi State, Nigeria
[4]Department of Banking and Finance, Evangel University, Ebonyi State, Nigeria
[5]Department of Banking and Finance, Prince Abubakar, Audu University, Anyiba, Kogi State, Nigeria

**ABSTRACT:** The paper analyzes the effect of monetary advancement on farming efficiency in South Asia utilizing information for the period 1973-2015. Different factors included are physical capital, human capital, exchange transparency and salary level. It is discovered that all factors have cross-segment reliance and they are stationary at initial differences. It is discovered that long-run co-integration holds among factors. The assessed outcomes demonstrate that budgetary development has a transformed U-molded impact on agrarian profitability, which infers that horticultural efficiency first increments with the expansion in money related improvement and afterward it decreases when monetary advancement further increments. Farming profitability increments with the expansion in both physical and human capital. Horticultural profitability additionally improves with exchange receptiveness and salary level. It will also convey foreign technology which will improve agricultural productivity. Further, governments can extend agricultural productiveness by way of increasing financial levels as it will make bigger per capita earnings and farmers will be capable to adopt mechanized farming which will expand agricultural productivity.

**KEYWORDS:** Agricultural productivity; co-integration; monetary development; Finance; South Asia
JEL Classification : J43, Q14, Q18, O47

## 1. INTRODUCTION

The outcomes concerning the robustness evaluation show as terms of career has a negative effect about primal productivity. Further, industrialization has high quality while charcoal outflow or clownish labor forces have poor effects concerning arable productivity among the region. Financial development alleviates the financing constraints by means of rising country wide saving, financial institution deposit and investment things to do in agricultural region and consequently the agriculture output increases. Evidence suggests there is a high-quality affiliation between financial development and agricultural productivity [1]. The study has some vital implications. To amplify agricultural productivity, the governments in South Asia ought to promote robust and sound economic systems. Governments ought to make greater investments in each bodily and human capital so that the more infrastructure and knowledgeable in such that more infrastructure and labour pressure is handy to amplify agricultural productivity. Since alternate liberalization will increase agricultural productivity, governments need to further liberalize change as it will expand the export of agriculture merchandise which will decorate agriculture production. It will also convey foreign technology which will improve agricultural productivity. Further, governments can extend agricultural productiveness by way of increasing financial increase, as it will make bigger per capita earnings, and farmers will be capable to adopt mechanized farming, which will expand agricultural production. Like in other growing nations of the world, agriculture is the mainstay of the South Asian countries. It affords food and employment to the fast-growing population and makes a vast contribution to the average monetary growth. Despite growing emphasis on industrial development, agriculture significantly contributes to gross home product (GDP) in the region. It employs 55 % of the rural labour force. It is an essential source of foreign exchange income and covers all the food wishes of the area. This quarter also offers raw cloth to industries. Since agriculture is the spine of South Asia economies, it displays the overall performance of these economies.

## 2. LITERATURE REVIEW

In South Asia, agricultural productivity (the cost introduit per worker) was once typiquement much less than 1200 USD in 2015. The dismal performance of the agriculture region and

low productivity have improved poverty, malnutrition, underemployment and food shortages in South Asia. This requires an appreciation of what determines agriculture increase and productivity. The hypothesis has recognize various components which affect agribusiness increment and profitability, for example environment, learned human capital, capital use, agrarian synthetic substances, total national output, change transparency, farming expressions of trade and industrialization. One fundamental issue is financial improvement. Financial improvement licenses ranchers to make speculations and embrace new innovations in the farming area, which help to raise horticultural profitability. It bears money to poor farmers to buy information sources like seeds, manures and agrochemicals, which expand horticultural professional productivity. Consequently, low-priced and handy economic contributions are important to improve the efficiency of the agribusiness part. Broad query has been completed to investigate the effect of monetary improvement on money-related growth. However, solely restricted research is convenient concerning the effect of economic development on agribusiness development. In South Asia, few researches have been conducted which have examined the effect of horticulture. The principle has recognized a wide variety of elements which have an effect on agriculture and productivity, e.g. environment, knowledgeable human capital, capital use, agricultural chemicals, gross domestic product, alternate openness, agricultural phrases of trade and industrialization. One critical issue is financial development. Financial enhancement permits farmers to make investments and undertake new inventions in the agriculture sector, which assist to raise agricultural productivity. However, solely restricted research is reachable concerning the impact of monetary improvement on agriculture growth. In South Asia, few lookups have been conducted which have investigated the influence of agriculture. Credit score on the agriculture sector. These studies have been carried out for character countries, i.e. Pakistan ([2],[3] ;[4][5] ; [6] ; [8] ; [9]), and [10] ; [11]. However, these studies have no longer examined the have an impact on of financial improvement on the agriculture sector. Further, no locate out about has been carried out for different South Asian nations and South Asia as a entire region. This locate out about tries to fill this gap. The analyze about examines the affect of financial improvement on agricultural productiveness in South Asian places using the use of panel information for the size 1973 to 2015.

## 3. METHODS

Generally, productivity evaluation makes use of traditional Cobb-Douglas manufacturing functions with two inputs, avec assumption de steady returns to scale. The cob-douglas manufacturing characteristics can be written as : Yit AK itα Lβit eμit (1) The place Y is agricultural productivity, K represents capital and L stands for labour. The parameters α and ß are marginal effects of capital and labour on agricultural productiveness and they lie between 0 and 1, i.e. zero < α < 1 and 0 < ß < 1. i refers to quantity of countries, t is time period, and μ is stochastic error term. The paper examines the effect of monetary development on agricultural productivity by using considering monetary development as an essential determinant of agricultural productivity. If we contain financial development (F) in the model, then l'équation (1) becomes: Yit AK itα Lβit Fitγ eμit (2) The parameter γ must lie between 0 et 1, i.e. 0 < γ < 1 and it shows the marginal impact of financial development on agricultural productivity. After taking natural logarithm, the above equation becomes : yit β 0 α k it β lit γ fit μit (3) Besides financial development, some other economic factors affect agricultural productivity which includes trade openness and income level. Now the above equation in its augmented form can be written as follows : yit β0 β1 k it β2 lit β3 fit β4 toit β5 gdpit μit (4) where : yit - agricultural value added per worker (agricultural productivity) kit - physical capital lit - labour (human capital) fit - financial development toit - trade openness gdpit - per capita GDP (income level) μit - error term Theoretical explanation of these independent variables ; Infra-structure for agriculture, which Therefore, the contribution of bodily capital is seen as one of the fundamental engines of agricultural growth (Looney 1994 ; Janjua and Javed 1998). Labour : Labour will increase agriculture manufacturing (Iqbal et al. 2003 ; Chisasa and Makina ) is as follows : Physical capital : Physical capital offers 2015 ; Narayan 2016). However, over-utilisation of labour has an adverse impact on agricultural productivity (Tijani 2006). Financial development : is predicted to enlarge agricultural productivity as the provision of convenient credit score to farmers boosts agricultural productivity. Financial development alleviates the financing constraints by means of rising country wide saving, financial institution deposit and investment things to do in agricultural region and consequently the agriculture output increases. Evidence suggests there is a high-quality affiliation between financial development and agricultural productivity (Shahbaz et al. 2013). Trade openness: Trade openness will increase agriculture boom thru specialization, economies of scale, capability utilization and technology. Income level : Income level positively impacts agricultural productivity. The International locations which have a greater income level have skilled higher agricultural productiveness as a greater profits level approves farmers, to purchase extra agriculture inputs like extended seeds.

## 4. RESULTS AND DISCUSSION

For empirical analysis, records are accrued for 5 South Asian countries, i.e. Bangladesh, India, Nepal, Pakistan and Sri Lanka for the period 1973 to 2015. Agricultural productiveness is measured by agricultural value introduced

per worker. Physical capital is measured through gross constant capital formation ( % of GDP). Labour represents human capital and is measured by using the secondary faculty enrolment rate. Financial development is measured through domestic savings to the non-public region ( % of GDP). Trade openness is the sum of exports and imports ( % of GDP). Income is GDP per capita. Data is sourced from World Development Indicators (WDI) of the World Bank (World Bank 2018). The determinant suggests that financial improvement has a non-linear effect on agricultural productivity, it indicates an inverted U-shaped relationship between financial improvement and agricultural productiveness in South Asia.

Consider the traditional panel data model:

$$y_{it} \quad \alpha_i \quad \beta'_{it}\, x_{it} \quad u_{it}$$

For $i = 1, \ldots, N$ and $t = 1, \ldots, T$ where ß is a $K \times 1$ vector of parameters, $x_{it}$*is* a $K \times 1$ vector reggressors and $\alpha_i$ is time-invariant individual nuisance parameters. The null hypothesis of no cross-section dependence may be expressed as:

$$H_0 : \rho_{ij} \quad \text{Corr}\, \mu_{it}, \mu_{jt} \quad 0 \text{ for } i \quad j$$

where $\rho_{it}$ is correlation coefficient between the disturbances in cross-section units *i* and *j*. The results of various cross-sectional dependence tests are provided in Table 1. $H_0$ is rejected at 1% significance level, which shows the presence of cross-sectional dependence.

**Table 1.** Cross-section dependence (CD) test

| Test | Statistics | *p*-value |
|---|---|---|
| Breusch-Pagan LM | 92.4053*** | 0.0000 |
| Pesaran scaled LM | 17.3083*** | 0.0000 |
| Pesaran CD | 3.45376*** | 0.0006 |

***statistically significant at 1% significance level; LM – Lagrange Multiplier test

**Source:** calculated by authors

$$\text{Where } \bar{y}_{t1} \quad 1/N \sum_{i=1}^{N} y_{i,t1}, \quad \bar{y}_t \quad 1/N \sum_{i=1}^{N} y_{i,t} \text{ and}$$

$\upsilon_{it}$ is the regression error, which is not assumed to be serially correlated. This test is based on the *t*-ratio of the ordinary least squares (OLS) estimate $\hat{\rho}_i$ . Pesaran (2007) suggests the following cross-section IPS-test (CIPS):

$$\text{CIPS} \quad \frac{1}{N} \sum_{i=1}^{N} \text{CADF}_i$$

where $\text{CADF}_i$ is the statistics of the $i^{th}$ cross-section unit provided by the *t*-ratio of $\hat{\rho}_i$ in the above re-gression.

If the residuals are serially correlated, more lags of $y_{it}$ and $\bar{y}_t$ need to be incorporated in the re-gression. For an *AR*(*p*) process, the following CADF regression will be estimated:

$$y_{i,t} \quad \alpha_i \quad \rho_i y_{i,t-1} \quad c_i \quad \bar{y}_{t-1} \quad \sum_{j=0}^{p} d_{i,j} \quad \bar{y}_{t-j} \quad \sum_{j=0}^{p} \beta_{i,j} \, y_{i,t-j} \quad \upsilon_{i,t}$$

Table 2 provides the panel unit root results of Pesa-ran (2007). The results reveal that all variables are not stationary at levels, but they are stationary at their first differences. This finding reveals the possibility of co-integration among variables.

*Panel co-integration test*

To find co-integration among variables, we apply Westerlund (2007) bootstrap panel co-integration test. The error correction test assumes the following data-generating process:

$$y_{i,t} \quad \delta_t' d_t \quad \alpha_i \quad y_{i,t-1} \quad \beta_i' x_{i,t-1}$$

$$\alpha_i (y_{i,t-j} \quad \gamma_{i,j} x_{i,t-j}) \quad \upsilon_{i,t}$$

where $y_{i,t}$ represents dependent variable and $x_{i,t}$ states for vector of independent variables. $d_t$ contains the de-terministic components.

**Table 2.** Pesaran panel unit root test results (Pesaran 2007)

| Level | | First difference | |
|---|---|---|---|
| $y_{it}$ | –2.125 | $y_{it}$ | –4.743*** |
| $k_{it}$ | –1.883 | $k_{it}$ | –5.543*** |
| $l_{it}$ | –1.915 | $l_{it}$ | –4.811*** |
| $f_{it}$ | –1.945 | $f_{it}$ | –5.701*** |
| $to_{it}$ | –2.121 | $to_{it}$ | –6.049*** |
| $gdp_{it}$ | –1.851 | $gdp_{it}$ | –5.787*** |

***null hypothesis is rejected at 1% significance level; for level and first difference series, critical values for 1% are –2.410 and –2.360, respectively; $y_{it}$ – agricultural value added per worker (agriculture productivity); $k_{it}$ – physical capital; $l_{it}$ – labour (human capital); $f_{it}$ – financial development; $to_{it}$ – trade openness; $gdp_{it}$– per capita GDP (income level)

**Source:** authors computation

deterministic term, when $d_t$= 1, $y_{it}$has a constant, and finally when d t 1, t ', $y_{it}$has both constant and trend term.

The parameter $\alpha_i$ shows the speed of adjustment to the equilibrium $y_{i,t1}$ $\beta'_i$ $x_{i,t1}$ after a shock. In case , In case $\alpha_i$= 0, it indicates the absence of co-integration. Thus, the null hypothesis is no co-integration,

i.e. $H_0$: = for0 all *i*. However, the alternative hypothesis depends on the assumption of the homogeneity of $\alpha_i$. The first pair of tests, called group-means tests (*G* and *G* ) do not assume $\alpha_i$'s to be equal, thus alternative hypothesis is $H_1^G : \alpha_i 0$ for at least one *i*.

The second pair of tests, called panel tests (*P* and *P* ), require that $\alpha_i$ is equal for all *i* . In this case, the alter-native hypothesis is $H_1^P : \alpha_i \alpha 0$ for all *i*.

Table 3 provides the Westerlund co-integration test results. The two test statistics (*G* and *G* ) among four tests rejects the null hypothesis. It indicates that long run co-integration exists among variables.

To verify our co-integration results we have also applied the Fisher/Johansen test as proposed by Maddala and Wu (1999). If the probability value (*p*-value) from an individual co-integration test for cross-section *i* is $\pi_i$ then for the panel null hypothesis:

N
2 $\log \pi_i \quad \chi^2_{2N}1$

**Table 3.** Westerlund (2007) panel co-integration test

| | Value of test | *z*-value | Robust *p*-value |
|---|---|---|---|
| Group mean test ($G_a$) | –9.359 | 1.523 | 0.000*** |
| Group mean test ($G_t$) | –2.652 | –0.014 | 0.000*** |
| Panel test ($P_a$) | –5.564 | 1.543 | 0.700 |
| Panel test ($P_t$) | –4.676 | 0.583 | 0.300 |

***statistically significant at 1% level
**Source:** calculated by authors

cate co-integration among variables as null hypothesis is rejected. Trace statistics indicate two co-integration vectors while max-eigen test indicates one congregation vector at 1% significance level.

### 1.2. Estimation of the model

We have applied fully modified OLS (FMOLS) and dynamic OLS (DOLS) techniques to estimate the Model.

Estimated results are given in Table 5. The results reveal that physical capital has astatistically significant positive effect on agricultural productivity in both FMOLS and DOLS estimations. This implies that sustained capital formation plays a crucial role in boosting agricultural productivity in South Asian countries. The numerical value of the coefficient shows that when physical capital increases by 1%, agricultural productivity increases by 0.334% (0.229%) in FMOLS (DOLS) estimations. Like physical capital, human capital also has a statistically significant positive impact on agricultural productivity in South Asia. The marginal product of labour in the agriculture sector is 0.090 (0.097) in FMOLS (DOLS) estimations. The result endorses the theory that agricultural productivity increases with higher education.

The most important variable in the estimation is financial development. The coefficient of financial development is positive, which implies that financial development increases agricultural productivity in the region. The numerical value of the coefficient indicates that 1% increase in financial development increases agricultural productivity by 0.469% in DOLS estimation. To find the non- linear effect of financial development on agricultural productivity a squared term of financial development is included in the model.

The coefficient of quadratic terms implies that if financial development further increases, agricultural productivity starts decreasing. One possible justification could be that if financial development further increases then the amount of financial development is used for some other purposes like industrialization and not for agricultural production. Thus, there is an inverted U-shaped relationship between financial development and agricultural productivity in South Asia.
Trade openness has a positive effect on agricultural productivity. The coefficient of trade openness implies that 1% increase in trade openness increases agricultural productivity by 0.041% (0.044%) in FMOLS (DOLS). However, these results are statistically insignificant. Per capita income has a significant positive impact on agricultural productivity. The estimated value of coefficient implies that 1% increase in per capita income increases agricultural productivity by 0.452% (0.461%) in FMOLS (DOLS) estimations. High income means the high potential to sustain high-quality inputs in the agricultural sector which raises agricultural productivity. High values of $R^2$ and adjusted $R^2$ indicate that most of the variations in the model are due to independent variables. Economically speaking, in FMOLS (DOLS) model 87.6% (99.3%) variation in agricultural productivity is due to all independent variables.

**Table 4.** Fisher/Johansen panel co-integration test

| Hypothesized | Fisher statistics* (from trace test) | *p*-value | Fisher statistics* (from eigen test) | max-*p*-value |
|---|---|---|---|---|
| None | 80.91 | 0.000 | 47.61 | 0.000 |
| At most 1 | 40.85 | 0.000 | 21.77 | 0.016 |
| At most 2 | 23.52 | 0.009 | 12.04 | 0.282 |
| At most 3 | 16.64 | 0.082 | 11.52 | 0.318 |
| At most 4 | 11.69 | 0.306 | 11.79 | 0.299 |

*probabilities are computed using asymptotic Chi-square distribution
**Source:** calculated by authors

**Table 5.** Fully modified OLS (FMOLS) and dynamic OLS (DOLS) estimations (period 1973–2015)

| Variables | FMOLS | DOLS |
|---|---|---|
| *Physical capital* | 0.334*** | 0.229** |
| | (10.266) | (2.322) |
| *Human capital* | 0.090*** | 0.097 |
| | (3.165) | (1.289) |
| *Financial development* | 0.023 | 0.469*** |
| | (1.036) | (3.209) |
| *Square of financial development* | –0.079*** | –0.102*** |
| | (–2.898) | (–4.585) |
| *Trade openness* | 0.041 | 0.044 |
| | (1.416) | (–1.178) |
| *Income level* | 0.452*** | 0.461*** |
| | (35.267) | (8.003) |
| $R^2$ | 0.876 | 0.993 |
| Adjusted $R^2$ | 0.870 | 0.986 |
| Standard error of regression | 0.193 | 0.060 |

***, ** significant at 1 and 5% significance level, respectively; values in parentheses are *t*-values
**Source:** calculated by authors

### 4.3 Robustness analysis

We have also included some other variables in our model, i.e. agricultural terms of trade, industrialization, carbon emission and rural labour force. Table 6 affords the estimated results. All preceding variables have not solely maintained their signs, however their magnitude tiers have additionally increased.

Financial development has become statistically significant in both FMOLS and DOLS estimations. Moreover, alternate openness has alsoend up statistically significant. Agricultural terms of exchange has a terrible influence on agricultural productivity. In different words, when agriculture export charge increases, relative to agriculture import price, agriculture manufacturing decreases. The intuition is that agriculture exports end up pricey and agriculture imports turn out to be more cost effective which discourages agriculture production. Economically speaking, 1% expand in agriculture phrases of change decreases agricultural productivity with the aid of 0.217% (0.003%) in FMOLS (DOLS).

Industrialization will increase agricultural productivity as the coefficient of industrialization is superb and statistically full-size in each FMOLS and DOLS estimations.

The cost of the coefficient implies that 1% amplify in industrialization will increase agricultural productivity through 0.730% (0.245%) in FMOLS (DOLS) estimations. The intuition is that the industrial zone uses uncooked material from the agriculture sector. If there is any decline in the industrial sector, it adversely affects agricultural manufacturing in the region. Carbon emission has a big terrible effect on agricultural productivity, which shows that when environmental quality deteriorates then agricultural productiveness additionally decreases. The estimated price of the coefficient implies that 1% make bigger in carbon emission decreases agricultural productivity by using 0.215% (0.099%) in FMOLS (DOLS) estimations. The coefficient of the rural labour pressure is negative and statistically significant.

**Table 6.** Fully modified OLS (FMOLS) and dynamic OLS (DOLS) estimations for robustness analysis (period 1973–2015)

| Variables | FMOLS | DOLS |
|---|---|---|
| *Physical capital* | 1.560*** | 0.271*** |
| | (34.411) | (5.354) |
| *Human capital* | 0.389*** | 0.112* |
| | (12.551) | (1.703) |
| *Financial development* | 0.081** | 0.518*** |
| | (2.169) | (3.203) |
| *Square of financial development* | –0.093*** | –0.104*** |
| | (–3.175) | (–3.644) |
| *Trade openness* | 1.451*** | 0.062*** |
| | (37.810) | (2.691) |
| *Income level* | 0.451*** | 0.522*** |
| | (32.956) | (6.996) |
| *Agricultural terms of trade* | –0.217*** | –0.003 |
| | (–6.608) | (–0.205) |
| *Industrialisation* | 0.730*** | 0.245** |
| | (17.291) | (2.220) |
| *Carbon emission* | –0.215*** | –0.099*** |
| | (–9.921) | (–3.048) |
| *Rural labour force* | –1.644*** | –1.211*** |
| | (–4.739) | (–3.983) |
| $R^2$ | 0.530 | 0.998 |
| Adjusted $R^2$ | 0.497 | 0.990 |
| Standard error of regression | 0.379 | 0.051 |

***, **,* significant at 1, 5 and 10% significance level, respectively; values in parentheses are *t*-values
**Source:** calculated by authors

The rural labour force has adverse effects on agricultural productivity. The intuition is that when more labour force is working on a small area of land, then agricultural productivity decreases as land cannot produce beyond its capacity.

## 5. CONCLUSION

The study examines the effect of monetary development on agricultural productiveness in South Asia. The other variables included are physical capital, human capital, exchange openness and earnings level.The effect of the robustness analysis exhibits that phrases of trade a negative effect on agricultural productivity. Further, industrialization has wonderful while carbon emission and rural labour force have terrible outcomes on agricultural productiveness in the region. The estimated results show that financial development has an inverted U-shaped effect on agricultural productivity. It implies that agricultural productivity first of all increases with the increase in monetary development and then it declines when financial development in addition increases. Agricultural productiveness increases with the make bigger in each bodily and human capital. Agricultural productiveness also improves with alternate openness and income level. To amplify agricultural productivity, the governments in South Asia ought to promote robust and sound economic systems. Since alternate liberalization will increase agricultural productivity, governments need to further liberalize change as it will expand the export of agriculture merchandise which will decorate agriculture-production. Further, governments can extend agricultural productiveness by way of increasing financial increase as it will make bigger per capita earnings and farmers will be capable to adopt mechanized farming which will expand agricultural productivity. Industrialization additionally will increase agricultural productivity; therefore governments need to take steps to raise the industrial region to expand agricultural productivity in the region. Moreover, governments need to undertake measures to decrease carbon emissions to amplify agricultural productiveness as it negatively affects agricultural productivity.

## REFERENCES


1. Shahbaz M., Shabbir M.S., Butt M.S. (2013) : Effect of financial development on agricultural growth in Pakistan : New extensions from bounds test to level relationships and Granger causality tests. International Journal of Social Economics, 40 : 707-728.
2. Iqbal M., Ahmad M., Abbas K., Mustafa K. (2003): The Impacts of Institutional Credit on Agricultural Production in Pakistan. The Pakistan Development Review, 42 : 469-485.
3. Abedullah Mahmood N., Khalid M., Kouser S. (2009) : The role of agricultural credit in the growth of livestock sector : A case study of Faisalabad. Pakistan Veterinary Journal, 29 : 81-84.
4. Bashir M.K., Mehmood Y., Hassan S. (2010) : Impact of agricultural credit on productivity of wheat crop : Evidence from Lahore, Punjab, Pakistan. Pakistan Journal of Agri-cultural Sciences, 47 : 405-409.
5. Ayaz S., Hussain Z. (2011): Impact of institutional credit on production efficiency of farming sector: A case study of District Faisalabad. Pakistan Economic and Social Re-view, 49: 149–162.
6. Akram W., Hussain Z., Ahmad N. Hussain I. (2013): Does agriculture credit affect production efficiency? Frontier production function approach. Pakistan Economic and So-cial Review, 51: 179–190.
7. Ahmad N., Jan I., Ullah S., Pervez S. (2015) : Impact of agricultural credit on wheat productivity in District Jhang, Pakistan. Sarhad Journal of Agriculture, 31 : 65-69.
8. 8.Sidhu R.S., Vatta K., Kaur A. (2008) : Dynamics of institutional agricultural credit and growth in Punjab : Contribution and demand-supply gap. Agricultural Economics Research Review, 21 : 407-414.
9. Narayanan S. (2016) : The productivity of agricultural credit in India. Agricultural Economics, 47 : 399-40
10. Looney R.E. (1994) : The impact of infrastructure on Pakistan's agricultural sector. The Journal of Developing Areas, 28 : 46-86.
11. Janjua M.Y., Javed T. (1998) : Fixed investment in Pakistan's agriculture sector : The role of exogenous shocks. Journal of Economic Cooperation among Islamic Countries, 19 : 95-112.
12. World Bank (2018) : World Development indicators. World Bank. Available athttps ://databank.worldbank.org/data/Reports.aspx ?source=world-development-indicators