# ECONOMIC GLOBALIZATION AND VALUE-ADDED AGRICULTURE: SAARC EXPERIENCE

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## Abstract

*Economic globalisations impact most countries since it is here that they derive most of their income. However, their meagre earnings and value-added agriculture need to be optimised. The objective of this research is to analyze the effects of economic globalization on value-added agriculture in the member states of the South Asian Association for Regional Cooperation (SAARC). The study aims to evaluate the influence of factors such as fertilizer consumption, agricultural employment, exchange rates, and foreign direct investment on value-added agriculture in SAARC. The study is limited to these selected variables within the chosen area of focus. Multiple linear regression was adopted to quantify the influence in eight countries between 2002 to 2021. The analysis indicates that, except for the Maldives, also a SAARC member, employment in agriculture significantly impacts the value-added agriculture in this sector. Bangladesh and Sri Lanka are noteworthy contributors to fertiliser consumption and value-added agriculture. Foreign direct investment substantially impacts the value-added agriculture of Bangladesh, Nepal, and Pakistan. In addition, exchange rates significantly affect value-added agriculture, except in Bangladesh and the Maldives.*

**Keywords:** Agriculture Value Added, Economic Globalization, Fertilizer Consumption, Employment in Agriculture.

## Introduction

Agricultural Value Addition (AVA) has been dramatically impacted by Economic Globalization (EG), with research demonstrating both positive and negative consequences (Nugroho & Lakner, 2022). Additionally, globalisation has improved access to markets for agricultural products, promoting increased commerce and economic expansion. This has allowed farmers to benefit from higher crop prices and access to modern technologies and innovations that can improve productivity (Anderson K., 2010). AVA and EG elucidate that a sector's net output is determined by tallying all the outputs and deducting the intermediate inputs, followed by agronomy, forestry, hunting, fishing, and livestock production adjustments. EG denotes a historical process arising from technological advancement and human ingenuity, making this process simpler (Di Giovanni, Gottselig, Jaumotte, Ricci, & Tokarick, 2008; World Bank, 2021).

Moreover, globalisation can enhance the quality of life in rural communities by transforming rural agriculture into a more marketed and value-based (Mahadevan, 2003). Exchange rates (ER) and foreign direct investment (FDI) are essential in the global agriculture sector. Providing an income source outside primary agriculture in emerging countries is crucial in encouraging agricultural expansion and value addition (Ghazal, Qasim, & Sabah, 2021). A positively correlated pattern has been observed between the ratios of FDI inflows and actual GDP growth rate (Lv, Wen, & Xiong, 2010; Manamba Epaphra, 2017). Based on the study of the impact of EG on AVA in 17 developing nations, including India and Bangladesh, it is revealed that FDI and agricultural exports have significant benefits for AVA in these countries, while exchange rates have no impact. (Nugroho, Bhagat, Magda, & Lakner, 2021). According to a study conducted by Ganewatta, Waschik, Jayasuriya, and Edwards (2005), ER has little to no impact on the longer-term supply of value-added tea exporters in Sri Lanka.

Employment in agriculture (EA) refers to working age of employees engaged in any activity to produce agricultural goods or offer services for compensation or profit (World Bank, 2021). Numerous earlier studies have shown that EA affects AVA in South Asian nations significantly, both positively and negatively (Bogodage, Dharmadasa, Senaratne, & Samaraweera, 2021; Dolan & Sorby, 2003). Fertiliser consumption (FC) has been instrumental in boosting the AVA of South Asian countries and continues to play a crucial role today. Several previous studies conducted in Nepal, India, Bangladesh, and Pakistan confirmed that the use of the correct type, mixture & level of fertilisers increases agricultural productivity and output (Rajeb, Hossain, & Chakraborty, 2017; Takeshima, Adhikari, Shivakoti, Kaphle, & Kumar, 2017; Tewatia, 2012).

Globalization can facilitate the evolution of rural agriculture into a more commercialized and value-oriented sector, leading to better living conditions for rural communities in India. One of the means of increasing productivity in value-added agricultural activities is through the export of agricultural products and the value-added process (Mahadevan, 2003).

According to FAO (2017 EG helps to increase investment in infrastructure, and post-harvest minimum payments, to accommodate higher production. In addition, EG has allowed for increased value - added production in the agricultural sector to participate in global value chains, creating high-value agricultural products.

The study provides a comprehensive analysis of the impact of EG on AVA in the SAARC countries (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka) from 2000 to 2021 and it emphasizes the crucial role of (EG) factors, including FDI, EA, ER and FC in the global agricultural sector by addressing the gaps found in earlier studies by adding to the body of knowledge in three important areas.

Firstly, the study analyses the impact of economic globalization on agricultural value added (AVA) in SAARC countries from 2000 to 2021. It contributes to the current knowledge base by investigating the combined impact of EG variables on AVA in the Asian region which has shown a high AVA in recent decades and provides a country-specific analysis to allow for a nuanced understanding of the relationship between EG and AVA.

Secondly, multiple linear regression (MLR) is used in this study to analyse time series data, which gives a more precise and dynamic view of how EG influences AVA over time. This study can shed light on the long-term viability of agricultural methods and policies in the SAARC region by analysing the changes in EG and AVA over the past two decades.

Finally, this study examines a different set of variables and time frames, contributing to the field of knowledge by filling gaps in the literature. Overall, this study aims to provide a more in-depth understanding of the factors that contribute to the high AVA in the SAARC region and the role of EG in this achievement. Policymakers and investors can use the findings to promote sustainable growth in a SAARC country's food and agriculture sector.

*Research Objectives*

The main objective of this study is to analyze the impact of Economic Globalization on Agriculture value addition in SAARC countries. In particular, the study will investigate the relationship between various factors associated with Economic Globalization, including Fertilizer Consumption, Employment in Agriculture, Agriculture, Exchange Rates, and Foreign Direct Investment, and their impact on Agriculture value addition.
Despite the importance of this topic, there have been relatively few studies conducted on the impact of Economic Globalization on Agriculture value addition income in the SAARC region. As a result, there are several knowledge gaps in the literature, particularly regarding the specific factors that contribute to Agriculture value addition in the SAARC region.

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Secondly, multiple linear regression (MLR) is used in this study to analyse time series data, which gives a more precise and dynamic view of how EG influences AVA overtime.

Thirdly, the study uses a longer time frame of 21 years, which is comparatively higher than that of similar studies conducted using the panel regression technique in the global context. This allows for a more comprehensive analysis of the impact of Economic Globalization on Agriculture value addition.

Finally, the study's findings have important implications for policymakers and agricultural stakeholders, as they shed light on the factors that contribute to the development of the agriculture sector. The study's results can inform policy decisions related to trade, investment, and technology adoption in the agriculture sector, which can ultimately lead to higher agriculture value addition and economic growth.

By offering a more thorough and current evaluation of the influence of economic globalization on agriculture value addition income, this study seeks to close these gaps. This study can aid in the creation of policies and strategies to support sustainable agricultural development and enhance the livelihoods of farmers and rural communities in the SAARC region by identifying the primary drivers of agriculture value addition across various income categories and geographical areas.

## Literature Review

Numerous prior studies have shown that EG affects AVA both negatively and favourably. Several factors, including EG, primarily influence the type of AVA output produced in a nation. This literature review examines the impact of EG on AVA in the SAARC countries by analysing past studies, with a focus on various variables that contribute to this relationship.

### *Foreign Direct Investments*

The studies that have been undertaken to assess how EG influences AVA at utilising FDI have been discussed in this section. FDI is a critical factor in agricultural production through technology transfer and skills that benefit farmers in the host country (Nyiwul & Koirala, 2022). Furthermore, understanding the correlation between FDI and AVA can yield significant insights into optimising the advantages of FDI for the agricultural sector and, by extension, the economic growth of developing countries (Manamba Epaphra, 2017). Another study found that FDI and agricultural export values have significant effects that can increase AVA in developing countries (Nugroho et al., 2021). Dhungana (2013) stated that FDI in the agriculture sector had played an essential role in modernising India's food and retail sector and meeting the growing demand.

### Exchange Rate

This section examines the studies on how ER affects AVA in SAARC countries. The ER between two currencies determines how much each is worth. ER affects the inputs, prices of agricultural commodities and, subsequently, the farmers' profits. Most international agricultural transactions are conducted in US dollars (Alberta). According to Nugroho et al. (2021), the ER of 17 developing countries, including India and Bangladesh, fluctuate so much that it does not affect AVA. A study in Sri Lanka by Ganewatta et al. (2005) found that exchange rate changes don't significantly impact the supply of value-added tea exports, this suggests that policymakers need alternative strategies to encourage tea producers to add more value to their products, such as investing in processing infrastructure or providing training and incentives for value-added production. Another study was investigated by Fiaz, Malik, Khurshid, and Ul (2021) in Pakistan, 'the study used both ARDL and NARDL approaches to investigate exchange rate effects on agriculture. NARDL found that negative movements have greater impacts than positive movements in the short and long run. Policymakers may need to use measures like currency hedging or exchange rate stabilization funds to mitigate risks and stabilize the sector.

### Employment in Agriculture

As countries develop, it has been observed that the proportion of the population working in the agriculture sector decreases. While in low-income countries, more than two-thirds of the population work in agriculture, in high-

income countries, less than five per cent of the population is thus engaged (Roser, 2013). A study conducted in South Asia asserted that increasingly favourable agricultural business conditions ought to attract private investment in agriculture, increasing agricultural outputs and demand for rural labour. There is clear evidence of increased private agricultural investment, especially since the late 1980s, many past researchers demonstrate that EA has positive and negative significant influences on AVA in South Asian countries. However, many past findings demonstrate that the percentage of women working in agriculture is a significant factor in determining the increase of AVA (Bogodage et al., 2021; Dev, 2000; Dolan & Sorby, 2003; S. Rahman, 2000).

### *Fertilizer Consumption*

Fertilisers have been crucial in raising AVA in South Asian countries, and they continue to do so. Many past findings in Nepal, India, Bangladesh, and Pakistan claim that suitable fertilisers boost agricultural productivity and output. Hence, using chemical fertilisers has become essential in raising AVA (Rajeb et al., 2017; Takeshima et al., 2017; Tewatia, 2012). Fertiliser consumption can significantly impact agriculture 167 value addition in SAARC (South Asian Association for Regional Cooperation) countries. 168 Agriculture is a crucial sector for these countries and contributes significantly to their GDP and 169 employment. In addition, fertilisers are vital in enhancing agricultural productivity by 170 providing essential nutrients to crops, leading to increased yields and improved quality(FAO, 2017).

## Methodology

The data collection had observations about time series data throughout, and multiple linear regression was used to analyse the data. Data from the SAARC nations (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka) were gathered to analyse the study's objectives. The timeframe for the data was from 2002 to 2021. The secondary data gathered from reliable sources was used to analyse the effect of EG on AVA in the SAARC countries. Stata statistical software was used to examine the data. AVA, FC, EA, ER, and FDI were the variables under which data were gathered. Data sources and variables are shown in *Table 1*Table **1 - Data sources and variables**

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| Variable | Definition | Measure | Source |
|---|---|---|---|
| AVA | Agriculture, forestry, and fishing, value added | (% of GDP) | The World Bank https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS |
| FC | Fertilizer Consumption | (Kilograms per hectare of arable land) | The World Bank https://data.worldbank.org/indicator/AG.CON.FERT.ZS |
| EA | Employment in Agriculture | (% of total employment) (modelled ILO estimate) | The World Bank https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS |
| ER | Exchange Rate | (LCU per US$, period average) | The World Bank https://data.worldbank.org/indicator/PA.NUS.FCRF |
| FDI | Foreign Direct Investment | (Net inflows % of GDP) | The World Bank https://data.worldbank.org/indicator/BX.KLT.DINV.WD.GD.ZS |

*Source: Compiled by authors*

All the variables that make up the mathematical model used in this study are listed.

### *Equation 1*:

$$AVA_t = \beta_0 + \beta_1(FC_t) + \beta_2(EA_t) + \beta_3(ER_t) + \beta_4(FDI_t) + \varepsilon_t$$

In SAARC countries, *Equation 1* has been established. The equation models the impact of four independent variables on the dependent variable $AVA_t$. In *Equation 1*, $AVA_t$ represents the value of the dependent variable at time t, and $\varepsilon_t$ represents the residual error term for time t. The coefficients $\beta_0$, $\beta_1$, $\beta_2$, $\beta_3$ and $\beta_4$ represent the intercept and slopes of the regression line, which describe the impact of the independent variables on the dependent variable $AVA_t$.

The study found that forest loss is linked to the growth of the urban population and the exportation of agricultural products, as indicated by both multiple linear regression and regression tree methods of analysis (Defries, Rudel, Uriarte, & Hansen, 2010). In other words, an increase in urban population and agricultural exports is positively correlated with the loss of forests.

The following variables had missing values filled in using Stata's "ipolate" and "epolate" functions: 2002 in the AVA variable for the Maldives, 2021 in the FC variable, and 2020 and 2021 in the EA variable for all SAARC countries. However, there were no missing values in the FDI or ER variables.

**Key Findings and Discussion**

*Table 2* provides descriptive statistics for five variables (AVA, FC, EA, ER, FDI) for SAARC countries. The table shows the number of observations (Obs), mean, standard deviation (SD), and minimum and maximum values for each variable in each country. From 2002 to 2021, there were 160 total observations included here, with 20 observations corresponding to each SAARC country. The table shows that Maldives has the lowest mean AVA at 5.77, while Nepal has the highest mean AVA at 27. Furthermore, Afghanistan has the lowest FC mean at 6.39, Bangladesh has the highest FC mean at 246.0 and Sri Lanka has the second-highest FC mean at 242.42. The EA mean value is highest in Nepal at 68.94 and lowest in Maldives at 12.53. Sri Lanka has the highest ER at 130.10 and the Maldives has the lowest at 14.17. Finally, FDI mean values vary widely, with Maldives having the highest at 8.36 and Nepal having the lowest at 0.26.

Furthermore, SD measures the variability or spread of the data from the mean, with a larger SD indicating more variability. According to the results, SD varies across the countries and variables. For example, SD for FDI is generally low for all countries, indicating relatively low variability in this variable. On the other hand, the SD for FC is generally higher.

*Table 2 - Descriptive Statistic for South Asia Countries*

| Countries | | Variables | | | | |
|---|---|---|---|---|---|---|
| | | AVA | FC | EA | ER | FDI |
| **Afghanistan** | Obs. | 20 | 20 | 20 | 20 | 20 |
| | Mean | 27.50113 | 6.397836 | 52.726 | 57.50669 | 1.080803 |
| | SD | 4.893328 | 5.061035 | 8.21189 | 11.2558 | 1.273452 |
| | Min | 20.63432 | 1.77786 | 41.24 | 46.45246 | 0.0643889 |
| | Max | 38.62789 | 20.45253 | 64.42 | 77.73795 | 4.352575 |
| | Obs. | 20 | 20 | 20 | 20 | 20 |
| | Mean | 15.94512 | 246.0061 | 46.0165 | 73.573 | 0.8807268 |
| **Bangladesh** | SD | 2.782817 | 57.73296 | 6.314542 | 9.014947 | 0.4340345 |
| | Min | 11.63286 | 160.2669 | 36.12 | 57.888 | 0.0955794 |
| | Max | 20.58413 | 325.8039 | 59.9 | 85.08376 | 1.735419 |
| | Obs. | 20 | 20 | 20 | 20 | 20 |
| | Mean | 17.07867 | 12.3801 | 59.506 | 55.59772 | 1.150156 |
| **Bhutan** | SD | 2.984799 | 4.514534 | 3.384615 | 11.36862 | 1.649614 |
| | Min | 13.96398 | 6.942308 | 55.1 | 41.34853 | -0.675563 |
| | Max | 23.20139 | 23.96 | 65.3 | 74.09957 | 6.321598 |
| | Obs. | 20 | 20 | 20 | 20 | 20 |
| | Mean | 17.17827 | 160.1623 | 49.36 | 55.59666 | 1.730501 |
| **India** | SD | 0.9658713 | 32.68549 | 5.817281 | 11.36681 | 0.6978698 |
| | Min | 16.03163 | 100.3291 | 41.13999 | 41.34853 | 0.6058893 |
| | Max | 19.592 | 232.3603 | 58.6 | 74.09957 | 3.620522 |
| | Obs. | 20 | 20 | 20 | 20 | 20 |

| Countries | | AVA | FC | Variables EA | ER | FDI |
|---|---|---|---|---|---|---|
| **Maldives** | Mean | 5.767525 | 76.55859 | 12.534 | 14.17813 | 8.363178 |
| | SD | 0.8813878 | 51.52002 | 3.629168 | 1.290119 | 3.774624 |
| | Min | 4.603988 | 6 | 7.74 | 12.8 | 2.755601 |
| | Max | 8.004879 | 193.5231 | 18.5 | 15.39084 | 17.13262 |
| | Obs. | 20 | 20 | 20 | 20 | 20 |
| **Nepal** | Mean | 28.91081 | 43.83422 | 68.9465 | 89.0516 | 0.2657441 |
| | SD | 4.826279 | 37.68897 | 3.46911 | 17.9304 | 0.2310492 |
| | Min | 21.31989 | 1.364865 | 62.97999 | 66.41503 | -0.0983749 |
| | Max | 36.1503 | 116.6796 | 74.19 | 118.3452 | 0.6774399 |
| | Obs. | 20 | 20 | 20 | 20 | 20 |
| **Pakistan** | Mean | 22.76302 | 132.4045 | 41.467 | 94.28194 | 1.199847 |
| | SD | 1.020893 | 17.97878 | 2.668107 | 33.82545 | 0.9806796 |
| | Min | 20.67787 | 97.78475 | 35.92 | 57.752 | 0.3828265 |
| | Max | 25.12918 | 157.9165 | 44.7 | 162.9063 | 3.668323 |
| | Obs. | 20 | 20 | 20 | 20 | 20 |
| **Sri Lanka** | Mean | 9.903575 | 242.4209 | 31.4045 | 130.1005 | 1.193066 |
| | SD | 2.415107 | 71.85458 | 5.1809 | 31.16454 | 0.3844571 |
| | Min | 7.256247 | 117.3936 | 23.94 | 95.66206 | 0.5083467 |
| | Max | 14.27932 | 406.3321 | 40 | 198.7643 | 1.863973 |

*Note: Obs., Mean, SD, Min. and Max. represent Observations, Standard Deviation, Minimum value, and Maximum value, respectively. Source: Authors' calculation based on data from the world bank.*

Finally, the analysis provides valuable insights into the variation in key economic indicators across the SAARC Counties that can assist policymakers and researchers in making informed decisions to promote regional economic growth and development.

*Figure 1* Illustrates the dependent variable and years of the fitted values for FC, EA, ER, and FDI for the SAARC nations displayed in the following graphs. The green dots represent each value from 2002 to 2021. Data points with outliers for some nations and a regression line that kept below the 95% confidence interval were included.
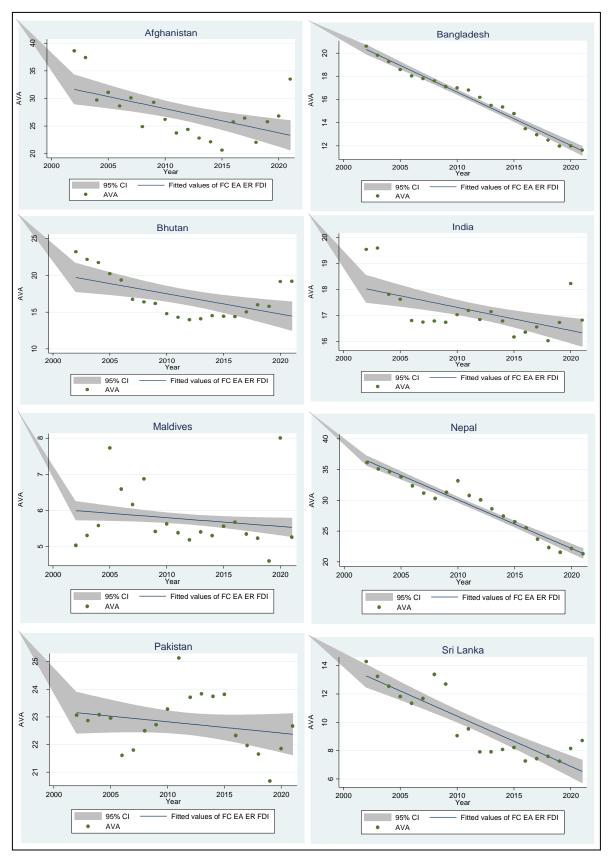
*Figure 1-Scatter plots for Dependent variable in SAARC Countries*

The MLR results in *Table 3* present the impact of EG on AVA in SAARC countries. The independent variables used in the model are FC, EA, ER, and FDI.

*Table 3* shows the estimated coefficients and their standard errors for each independent variable in each country. The coefficient estimates represent the effect of a unit change in the respective independent variable on AVA. The standard error represents the variation in the coefficient estimate due to chance.

Agriculture has immense potential to contribute to Afghanistan's economic growth and development, with a potential 7.5% increase in economic growth by 2024. It employs 45% of the workforce and 22.8% of self-employment and family businesses (Attal, 2022). With agriculture serving as the bedrock of Afghan livelihoods, the sector's significance cannot be overstated in the country's economy. With agriculture serving as the bedrock of Afghan livelihoods, the sector's significance cannot be overstated in the country's economy. A past study shows agriculture contributes to at least 25 per cent of the GDP and sustains 80 percent of all means of livelihood (FAO). The present study identified that EA and ER have a positive and statistically significant effect on the sector's growth, while FC is insignificant with AVA. This finding underscores the importance of labour and ER policies in boosting agricultural growth in Afghanistan.

The finding that FC has a negative impact on AVA is a cause for concern in Bangladesh, as fertilizer use is often promoted as a key strategy to increase crop yield and improve soil fertility. Further investigation is needed to understand why increasing FC leads to a decrease in AVA in Bangladesh, as this finding contradicts the general belief that higher fertilizer use is beneficial to the agricultural sector. On the other hand, the finding that increasing EA and ER both increase AVA is consistent with what might be expected, as labor and exchange rate policies are known to impact the sector's growth. However, it is important to consider the broader socioeconomic context in which agriculture operates when assessing the impact of these policies. The finding that FDI is statistically significant in impacting AVA also raises questions about the role of foreign investment in the agricultural sector. While foreign investment can bring much needed capital, technology, and expertise to the sector, it can also lead to the concentration of resources and power in the hands of a few large corporations, leading to a decline in smallholder farming. Finally, the study's conclusion that more extension contact reduces chemical fertilizer use, leading to increased profits and yields in agriculture, underscores the importance of promoting sustainable farming practices. Extension services play a critical role in disseminating information and knowledge to farmers, and efforts should be made to enhance their effectiveness and reach (M. M. Rahman & Connor, 2022).

Bhutan's agricultural sector has the potential for diversification, but poor and marginalized farmers face challenges such as limited infrastructure, information, credit, and technological knowledge. This situation limits their ability to diversify and hinders their economic growth. (Tobgay, 2006). The present study found the significant impact of EA on AVA in Bhutan and highlighted the importance of promoting policies that enhance employment opportunities in the agricultural sector. The creation of employment opportunities can lead to value addition, which can, in turn, lead to higher incomes and improved livelihoods. This finding underscores the critical role of the agricultural sector in promoting sustainable development and reducing poverty. And also past study indicates that by investing in the agricultural sector and creating more employment opportunities, value addition can be increased, leading to higher incomes and improved livelihoods (Tobgay, 2006). Furthermore, the positive significant impact of ER on AVA also highlights the importance of ER policies in promoting the agricultural sector's growth. The ER can impact the cost of production and the competitiveness of agricultural products in the global market, affecting farmers' profitability and the sector's overall growth. Therefore, ER policies should be carefully crafted to promote the agricultural sector's growth and competitiveness.

With nearly 70% of the population dependent on agriculture in India, the sector's significance cannot be overstated. The sector's contribution to the country's economy is significant, with it being a major source of income and employment for millions of people. However, the sector faces several challenges such as inadequate infrastructure, limited access to credit, and technological know-how, which hinder its growth and development (Kumar & Raghavendra, 2019). The study's findings emphasize the need to prioritize investments in the agriculture sector to create more employment opportunities, enhance productivity, and increase the sector's contribution to the economy. The creation of employment opportunities can lead to value addition, which can, in turn, lead to higher incomes and improved livelihoods. This underscores the critical role of the agricultural sector in promoting sustainable development and reducing poverty in India. Furthermore, the present study identified that the significant impact of EA on AVA highlights the importance of promoting policies that enhance employment opportunities in the

agricultural sector. The creation of employment opportunities can improve the sector's overall productivity, which can, in turn, enhance its contribution to the country's economy. This finding underscores the need to prioritize investments in the agricultural sector to create more employment opportunities and enhance its overall productivity. The present study also highlights that ER significantly impacts AVA in India. However, earlier studies show that discriminatory trade policies and an overvalued ER, challenges the sector. Policy makers must address these issues and implement effective trade policies, prioritizing local farmers' needs to ensure sustainable growth in the Indian agricultural sector (Pardeep, 2011).

The finding that none of the independent variables has a significant impact on AVA in the Maldives raises questions about the effectiveness of current agricultural policies and practices in the country. It is important to note that agriculture is a critical sector for food security in the Maldives, which relies heavily on imports for its food supply. Therefore, the lack of significant impact on AVA could potentially lead to food security issues in the future. The emphasis on agricultural policies and farmer training in past studies highlights the need for investment in the sector to promote sustainable farming practices and enhance productivity. The absence of a statistically significant impact on AVA in the present study could also be attributed to the need for further research and data collection on the agricultural sector in the Maldives (Shafeeqa & Abeyrathne, 2022). Overall, the present study's findings highlight the need for policymakers in the Maldives to review and adjust current agricultural policies and practices to ensure sustainable growth in the sector. Investing in appropriate resources, such as training and infrastructure, could help improve the sector's performance and increase AVA. Further research could also help identify other factors that could impact AVA in the Maldives and guide policymakers in making informed decisions about the sector's future.

While the earlier studies in Nepal highlighted the significance of physical capital in promoting AVA (Tuladhar, Sapkota, & Adhikari, 2014), the present study suggests that a broader approach is required to promote sustainable agricultural practices and achieve economic growth. By considering all the independent variables, policymakers can identify the most effective interventions to enhance the agricultural sector's performance. However, it is important to note that the impact of these variables may vary across different regions and farming systems within Nepal, and a tailored approach may be required to ensure sustainable and equitable agricultural development. Additionally, the role of social and cultural factors in shaping agricultural practices and outcomes should not be overlooked, and a comprehensive approach that takes into account both physical and socio-cultural factors may be needed to promote sustainable agricultural development in Nepal.

The present study further reveals that employment in agriculture has a significant impact on AVA in Pakistan. On the other hand, past studies emphasise the significance of the agriculture sector as a significant source of employment and GDP contribution in Pakistan, primarily based on major crops such as wheat, rice, and sugarcane (Shafique, 2017). Both studies emphasise the crucial role of agriculture in Pakistan's economy and the need for policymakers to consider various factors such as employment opportunities, making a skilled workforce available for value addition, and crop diversification when formulating strategies for sustainable agricultural growth. In addition, past studies examined the impact of trade openness and FDI on the agriculture sector in Pakistan. They found a positive association between agriculture, trade openness, and FDI but a negative one with gross fixed capital formation. The present study found FDI to be statistically significant in AVA in Pakistan. Both studies highlight the importance of FDI in promoting sustainable agriculture and economic growth in Pakistan (Rasheed, Shafi, & Zafar, 2021).

Past and present studies highlight the significance of employment in Sri Lanka's agriculture sector, which accounts for nearly a quarter of the country's total employment. The present study emphasises the importance of EA for enhancing AVA in Sri Lanka, highlighting the need for sustainable agricultural practices to create more job opportunities and boost the sector's contribution to the economy (TRADING ECONOMICS, 2023). Both prior and current investigations underscore the substantial influence of currency ER on the agricultural industry in Sri Lanka. Whereas the former paper assesses the performance of the agricultural sector under policy modifications, the latter study concentrates on the correlation between currency ER and AVA. These studies indicate that currency ER modifications have played a vital role in advancing agriculture exports and economic growth in Sri Lanka while revealing the detrimental effects on local food production and small-scale farmers. These findings can offer valuable guidance to Sri Lankan policymakers on balancing the advantages and drawbacks of currency ER reforms for the agriculture sector (Yamaguchi & Sanker, 2006). Furthermore, according to the present study, FC has a significant positive impact on AVA.

*Table 3-MLR Model Results for South Asian Countries*

| Variables | Afghanistan | Bangladesh | Bhutan | India | Maldives | Nepal | Pakistan | Sri Lanka |
|---|---|---|---|---|---|---|---|---|
| | AVA | AVA | AVA | AVA | AVA | AVA | AVA | AVA |
| FC | -0.0683862 | -0.0220137*** | -0.0999673 | 0.0098566 | -0.001972 | 0.0779865** | -0.0168048 | 0.0084255** |
| | (.2540364) | (0.0047102) | (0.0609011) | (0.0091569) | (0.0036107) | (0.03482) | (0.010621) | (0.0032391) |
| EA | 1.116679*** | 0.3044572*** | 1.436848*** | 0.3071219*** | -0.1306081 | 1.836714*** | 0.4575733*** | 0.5034003*** |
| | (.3121426) | (0.0336425) | (0.1615178) | (0.1038559) | (0.148711) | (0.1939111) | (0.1151445) | (0.0889136) |
| ER | 0.5713991*** | 0.0406485 | 0.3258371*** | 0.0972634** | -0.4394883 | -0.102046* | 0.0208431* | 0.0260531* |
| | (0.1619719) | (0.0313764) | (0.076833) | (0.0452597) | (0.2892196) | (0.0560251) | (0.009853) | (0.0148671) |
| FDI | -1.157361 | 0.5035531** | 0.036958 | -0.3462324 | -0.0265401 | 3.495539** | -0.6797446*** | 0.5715101 |
| | (0.9961337) | (0.2255491) | (0.1231259) | (0.2192266) | (0.0572102) | (1.327205) | (0.1336281) | (0.7000757) |
| Constant | -62.54778 | 3.916436 | -85.34309 | -4.368282 | 14.00862 | -92.98421 | 4.86432 | -12.01935 |
| Observation | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| No. of years | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| $R^2$ Squared | 0.6204 | 0.9797 | 0.7895 | 0.6336 | 0.1236 | 0.9748 | 0.6715 | 0.8835 |

*Note: The symbols \*, \*\*, and \*\*\* represents 10%, 5%, and 1% significance level, respectively.*
*Parentheses represent the robust standard error.*

**Conclusion**

The present study determined the impact of EG factors FC, EA, ER, and FDI on AVA in SAARC countries. The MLR adopted in this research covered eight countries and territories for around 20 years, from 2002 to 2021. The analysis of the impact of EG factors on AVA in SAARC countries reveals some unique insights. Afghanistan, Bhutan, and India benefit from investing in EA and ER to increase AVA. In contrast, Bangladesh should be cautious about FC as it harms AVA. However, they could leverage EA and FDI to enhance AVA. The findings suggest Nepal should focus on all independent variables to increase AVA. Pakistan can capitalise on EA and ER to enhance AVA while being careful about FDI, which has a negative impact. Finally, Sri Lanka should invest in FC, EA, and ER to increase AVA.

Overall, it is recommended that policymakers in these SAARC countries utilise these insights to guide their investment and policy decisions, which could positively impact value addition in agriculture. Furthermore, future research could examine the impact of other factors, such as technology, infrastructure, and government policies, on agriculture value addition in these countries.

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