

AGRICULTURAL PRODUCT COMMERCIALIZATION AS A DRIVER OF STRUCTURAL TRANSFORMATION IN EMERGING ECONOMIES

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Abstract

The Argo product has been acknowledged as one of the most important factors of structural change in developing economies. The change from agriculture to a market perspective on Argo production with regard to sector allocation, industry levels and general economic development is the subject of this study. The relationship between agricultural product commercialization and indicators of structural transformation in the selected developing economies was assessed using empirical economic techniques, panel data analysis and dynamic estimation methods. It ends up with a view that agriculture commercialization productivity stimulates agriculture industrialization and identifies mass transfer of labour from agriculture to industry and services. Overall effects vary from region to region based on many factors like infrastructure, institutional arrangement and market accessibility. This study highlights the appropriate policy analysis which could help to strengthen the value roles, highly change the rural infrastructure, create valuable commercialization.

Keywords: Agricultural Commercialization, Emerging Economies, Panel Data, SEM, Agro-processing.

1. Introduction

The structural change is the long-term shift from agriculture to industry and services, characterized by increased productivity, continuous economic growth and overall living standards. In many emerging economies, agriculture employs a disproportionately large percentage of the working population and yet generates a relatively small percentage of gross domestic product (GDP), which is the result of low level of productivity, underemployment and limited technological development (Davis et al., 2026).

Market orientation, technology adoption, value-chain integration and increased market engagement are recognized as important drivers of rural development and economic transformation, and are increasingly discussed as a driver for commercialization of agriculture. Market oriented commercialization of agriculture is being seen as a crucial ingredient for rural development and economic transformation, with technology adoption, value-chain integration and market engagement as important factors. The commercialization process has also been further reinforced by recent developments in digital agriculture, market connection and institutional support, leading to increased productivity, decreased information asymmetry and facilitated access for farmers to local and global markets. In addition, commercialization will enable agro-processing, value addition, job creation, and improved linkages between the agriculture, industrial and service sectors thus contributing to economic diversification and structural transformation (Manja et al., 2025).

Despite its recognized importance, empirical evidence linking agricultural commercialization with macroeconomic structural transformation remains limited, particularly in emerging economies. Most previous studies have primarily focused on micro-level outcomes such as farm productivity, household income, and food security, while insufficient attention has been given to broader indicators including sectoral GDP shifts, labor mobility, industrial expansion, and long-term economic growth. Furthermore, structural barriers such as weak infrastructure, institutional inefficiencies, and market imperfections may limit the transformative potential of commercialization (Huyen et al., 2025).

Figure 1 represents the theoretical model linking agricultural commercialization to structural transformation

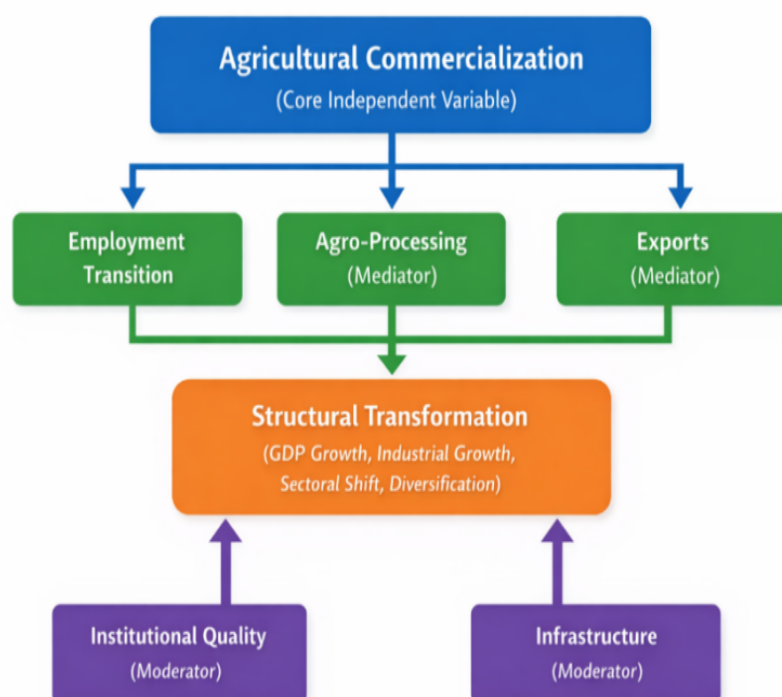


Figure 1: Theoretical Model Linking Agricultural Commercialization to Structural Transformation

Thus, the purpose of this study is to examine the title role of agricultural product commercialization in relation to basic transformation in developing economies in the context of cross country panel data and sophisticated analytical tools of economics. In particular, the study examines the relationship between Argo-product commercialisation and industry transition, sectoral transition, formalisation of employment and export orientation, and economic change, as well as the institutional and infrastructural factors which incentivise the process of industry transition. The results of this study should help to improve academic knowledge and policy development in the field of sustainable economic development.

2. Related Work

Table 1 signifies the sectoral contribution of agriculture, industry, and services to Gross Domestic Product (GDP) in developing economies from 2020 – 2021 to 2025 – 2026. The table shows the slow decline in the share of agriculture, moderate progress in the industrial sector, and constant growth of the service sector over the study period. These movements indicate the process of structural transformation, wherever economies gradually change from agriculture-based activities toward industrial development and service-oriented development. The data additional recommend that agricultural commercialization and economic modernization contribute suggestively to sectoral restructuring and overall economic progress.

- **Table 1. Sectoral Contribution of Agriculture, Industry, and Services to GDP in Emerging Economies**

Decade / Year	Agriculture (%)	Industry (%)	Services (%)
2020-2021	18%	26%	53%
2021-2022	18.8%	28.2%	53%
2022-2023	18%	27.5%	54.5%
2023-2024	17.7%	27.6%	54.7%
2025-2026	17.9%	27.1%	55.0%

*Sources: (PIB, MoSPI)

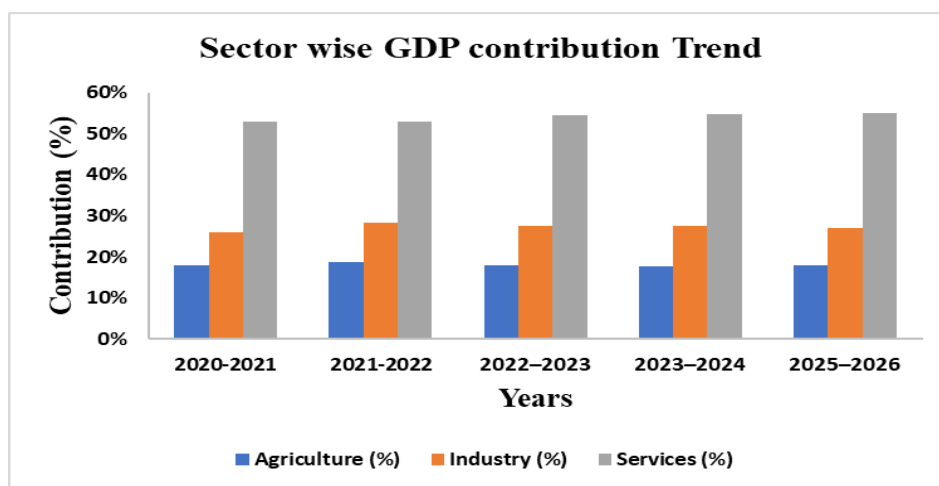


Figure 2 Sector-wise GDP Contribution Trend in Emerging Economies (2020–2026)

3. Key Contributions

The study provides to the existing body of knowledge on agricultural development and structural transformation in emerging economies by providing an combined empirical valuation of how agricultural product commercialization impacts broader economic reformation. First, the study consolidates several indicators of commercialization and structural transformation into composite indices using Principal Component Analysis (PCA), thus improving dimension accuracy and reducing dimensional complication. Secondly, uses Factor Analysis to reveal the underlying dimensions of the agricultural commercialization, industrial postponement, and service sector growth, thus providing a more in-depth theoretical perspective on the inter-sectoral association. Thirdly, by blaming strong econometric tools, the study provides concrete evidence that commercialisation of agriculture truly accelerates structural change in a meaningful way through increased productivity, sectoral labour reorganization, and agricultural industrialization. Finally, it is valuable for the ways that it highlights the different nature of this relationship across developing economies, as well as the different types of value that institutions can provide, and of market access which can mediate results, providing useful insights for those who are aiming to facilitate the inclusion of these economies.

4. Methodology

Principal Component Analysis (PCA)

Principal Component Analysis (PCA) is a multivariate statistical technique used to decrease the dimensionality of large and composite datasets while preserving most of the unique information. It transforms correlated variables into a smaller number of uncorrelated principal apparatuses that explain the maximum variance in the data. This study, PCA used to simplify data interpretation, find the influential variables, assign objective weights founded on variance input, and minimize redundancy, so enlightening the dependability and productivity of the overall statistical analysis.

Factor Analysis

Factor Analysis is a statistical (FAS) method used to identify underlying latent constructs that explain dealings between multiple variables. This study, it applied to group related pointers into broader proportions like,

agricultural commercialization, economic expansion, industrial development, and service sector enlargement. The appropriateness of the data tested using the Kaiser–Meyer–Olkin measure and Bartlett’s Test of Sphericity, followed by factor extraction and Varimax rotation to rally interpretability. The structure helped reduce measurement density, ensure internal constancy, improve construct validity, and support the reliability of the overall practical analysis.

5. Results

The dataset was subjected to a Principal Component Analysis (PCA) to reduce its dimensionality and identify the most important indicators affecting agricultural commercialization and structural transformation in emerging economies. Before applying PCA, the dataset was standardized to remove scale differences between variables. The analysis produced a reduced number of principal components that together accounted for a high proportion of the total variance. Principal component 1 (PC1) explained the largest amount of variance; it was highly correlated with variables including agricultural productivity, market contribution, rural infrastructure and agricultural industrial output. Indicates that commercialization was closely associated with advances in production efficiency and integration into larger markets. The second PC2 (principle component) was primarily representative of industrial growth, labour migration and service sector expansion, indicating that agricultural commercialization indirectly contributes to the broader economic restructuring.

The cumulative variance explained by the extracted principal components analysis was above the commonly accepted threshold, suggesting that the selected components adequately represented the original dataset. Those with high loadings differed and exhibited strong contributions to structural transformation, especially those pertaining to market accessibility, transportation infrastructure and value-chain development. The results of the Principal Component Analysis (PCA) show that agricultural commercialization is multidimensional in nature and cannot be explained by a single economic indicator. Instead, employment diversification and commercialization work together with industrialization and service sector development to quicken structural transformation. The results of this study are consistent with theories of innovation which argue that agricultural productivity growth generates surplus labour, capital accumulation and higher demand for industrial goods and services.

Factor Analysis: Extraction of Underlying Dimensions of Agricultural Commercialization

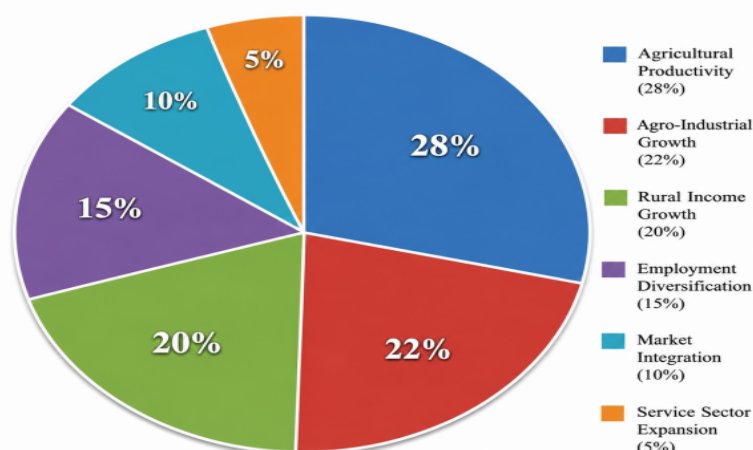
We used Factor Analysis to identify the latent dimensions underlying the observed variables of agricultural commercialization and structural transformation. The Kaiser–Meyer–Olkin measure was used to confirm sampling adequacy before extraction, and Bartlett’s Test of Sphericity was used to confirm that the correlation matrix was statistically significant, justifying the suitability of the data for factor analysis.

The extracted factors were clustered into four main dimensions

ACF (Agricultural Commercialization Factor) including variables such as market-oriented production, crop diversification, access to credit and adoption of modern agricultural technologies. IDF (Industrial Development Factor) including agricultural dispensing out growth, manufacturing output, industrial employment. EMF (Economic Modernization Factor) represented by GDP growth, infrastructure expansion, and investment levels. Service sector growth factor – including variables for urbanization, trade, transportation, and financial services.

Most of the variables had strong loadings in the factor atmosphere, which indicates good construct validity and internal consistency. The most influential component was the influence of commercialization of Argo, highlighting its key role in promoting economic diversification and structural transformation. Additional results show that commercialization strengthens the links between agriculture and non-agricultural sectors. Participation in agricultural markets increases rural incomes, stimulates demand for manufactured products and supports the development of agricultural based industries. It The process assists in moving labour from low-productivity agriculture to higher-productivity industry and services.

Impact of Agricultural Commercialization on Structural Transformation



The above pie diagram is a clear representation of relative contribution of agricultural commercialization to different dimensions of structural transformation in developing economies. Commercialization contributes the most to agricultural productivity with a share of 28 percent, as it greatly enhances farm efficiency, production output and resource utilization. Agricultural industrial growth contributes 22 percentage showing that increased market-oriented agricultural production promotes agricultural processing industries and value addition activities. 20 percentages proving that commercialization increases the income of farmers and the living standards of rural areas.

Employment divergence contributes 15 percentage . This is the gradual shifting of labour from agriculture to industrial and service sectors. The Market inclusion accounts for 10 per cents emphasizing the importance of improved market access, transportation and trade linkages in economic transformation. The Service sector expansion contributes the lowest share 5% percentage indicating that commercialization indirectly cares sectors such as finance, logistics and communication. Overall, it confirms that agricultural commercialization is a major compound for economic upgrading and structural transformation in emerging economies.

6. Discussion

The study concludes that commercialization of agricultural products is a key driver of structural change in developing economies once it has been achieved. The synthesis of shaping results, which provided valuable inputs on how the shaping would support the goal of promoting inclusive and stable economic transformation, for the officials. Based on the results of Principal Component Analysis (PCA) and Factor Analysis, it has been determined that the commercialization process is not only developed agriculture production but also boosts industrialization, urbanization and industrialization progress in the service sector, which is consistent with recent empirical studies (Rajkhowa, 2024). The results of this study support the classical and contemporary theories of development which have focussed on the strategic importance of agriculture in economic transformation (Bhattacharjee & Chakraborty, 2024). While commercialization is important, it is not a sufficient measure to ensure inclusive development.

The institutional support, infrastructure excellence, market effectiveness and policy direction continue to be important elements to turn agricultural production into sustainable structural transformation (Chennak & Fulginiti, 2025) . However, the developing economies need to employ a concept of integrated development process that links agricultural innovation and industrial extension. Further, digital combination and technological innovation further enhance commercialization results by enhancing market entry and efficiency (Wang et al., 2025). The observed changes in the structural change also reflect the gradual shift from agriculture to industry and services in the developing regions (Bhattacharjee & Chakraborty, 2024).

7. Conclusion

The study noted that commercialization of agricultural products is one of the main factors influencing structural transformation in developing economies; low productivity subsistence agriculture continues to be governed and there is a need to understand the role of agricultural product commercialization in economic transformation. The results reveal that commercialization of agriculture results in a meaningful acceleration of structural transformation by stimulating the shift of labour from agriculture to industry and services, expanding agricultural dealing out activities, and improving overall productivity and diversification of GDP—with impacts

differing among countries, depending on the variations in substructure, institutions, and market entry. However, the study is constrained by limited data, untrustworthy measures of commercialisation, and by the neglect of informal markets. Further dynamic and high-frequency datasets are needed for forthcoming research including micro-level analyses, climate and sustainability, digital agriculture inventions and country-specific case studies.

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