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FARMERS SENSITIVITY TOWARDS EFFECTS OF AGRICULTURE POLITICS ON FOOD SECURITY IN TAMIL NADU

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Abstract

The study focus on examining the effects created by the agricultural policies on food security and enhanced standard of living of farmers in Tamil Nadu. The study following the modus operandi of empirical research design and opinions from farmers is gathered to arrive at logical conclusion. The observations are analysed based on opinions given by the farmers of Tamil nadu. The interview schedule consists of three parts which involves demographic profile, scale of farming activities and food security of farmers in the study area. The study has used focused interview method which aims to generate interviews from the farmers. The sample design of the study consists of top five districts that are topping the lists based on higher level of assistance obtained from agricultural policies. The districts that are involved using the above criterion are Tenkasi, Thoothukudi, Nagapattinam, Tiruvarur & Tiruchirappalli. These districts are selected based on the benefits obtained by the farmers based on agricultural policies. The availability of the population frame made the research to use simple random sampling. The study has used the Cochran sampling size formula to determine the sampling size. The formula has given a sample size of 384 and these farmers were selected from these five districts of Tamil Nadu. The hypothesis was framed to establish relationship among the agricultural politics and their role in food security as well as enhanced standard of living of farmers. The study has used the latent path model analysis to measure the quantitative relationship among agricultural politics and food security. The study concluded that agricultural politics has crucial role in enhancing the continued agricultural operations and food security of farmers in the state of Tamil Nadu.

Keywords: Agricultural Politics, Policy Beneficiaries, Food Security, Standard of Living & Farmers

Research Background

The provision of adequate food supplies is essential to the economic and social well-being of any country. Any nation's level of food security is directly proportional to the nation's overall health. Despite the fact that agriculture is practiced by fifty percent of the Indian population, the country is unable to offer sufficient quantities of food grains for its residents to consume as a result of the enormous expansion in its population. According to the present trends, it is anticipated that by the year 2022, over one third of children in India who are under the age of five would still be living with stunted growth. In India, there has also been a rise in the incidence of acute malnutrition, often known as undernourishment [1]. If one does not take into consideration the shifts in consumption patterns that have taken place over the course of the last three decades, then any study of India's food security would be inadequate. The statistics on consumption expenditure and quantity consumption that have been analysed in the past by the National Statistics Service (NSSO) suggest that there has been a continuous replacement of superior grains for coarse cereals [2]. In addition, progressive diversification in the consumption pattern of the people in favour of livestock and horticulture items has also been taking place concurrently. This transformation has been taking place simultaneously.

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The welfare state of today places a significant emphasis on the problem of enhancing the level of food security that is available to the general population [3]. Food is the most essential need for human existence since it is essential for the continuation of human life. Even while there has been a significant increase in food production over the last several decades, to the point where there is sufficient food to satisfy the fundamental requirements of each and every individual, there is still not perfect food security [4]. In the case of India, where millions of people are living in poverty and suffering from chronic hunger and malnutrition, this is an even more pressing concern [5]. Over the course of the last several decades, the idea of food security has emerged and developed. The entire food output, which includes imports and buffer stockpiles of food on hand (FCI), is referred to as food security proportions and food availability. Accessibility of food: food ought to be made available or ought to be so that it is accessible to every individual [6]. A person should be able to afford food, which means that they should have enough money to buy food that is enough in terms of quality, safety, health, and nutrition in order to fulfil their dietary requirements.

Increasing the availability of food and ensuring food security are both goals that may be accomplished via the agriculture sector's strategic role [7]. However, despite the fact that there is widespread consensus about the fact that there will be a subsequent rise in the need for food on a worldwide scale in the future decades, there is a lack of assurance regarding the ability of global agriculture to meet this demand by means of an increase in the food supply. There is a possibility that hunger might be eliminated via the implementation of a strategy that involves enhancing the supply of food through the enhancement of agricultural production and the expansion of the range of agricultural land usage [8]. However, in the case of poor nations with low incomes, the technology and knowledge that is now available will not be sufficient to allow them to produce all of the food that will be required in the year 2020 and beyond. It demonstrates the need of increasing expenditures in agricultural research and extension systems, both within developing nations and for developing countries, in order to raise the productivity of agricultural output per unit of land and per agricultural worker.

Research Gap

In this century, one of the most significant challenges that we face is meeting the dietary and nutritional needs of the growing population of the globe while also ensuring that food production is sustainable. The extraordinary demand for agricultural and natural resources is brought about by the high consumption rate of a demographically expanding population [9]. The population of the world is projected to reach 9.5 billion by the year 2050. The current food output will be needed to feed this enlarged population more than twice as much. This significantly reduces the genetic variety of agriculture across the world. The need for land for farming and water for irrigation is also increasing as a result of the significant increase in population. This results in the overexploitation of resources as well as the degradation of natural and agricultural systems. The number of people who are hungry has grown from 40 million to 170 million as a direct result of climate change, which has also significantly reduced agricultural production [11]. The deterioration of the socio-ecological cost of the environment has been prompted by the improper use of chemical fertilisers, fossil fuels, agrochemicals, and mono-cropping of current types. Traditional agriculture has the capacity to adapt and mitigate against these anthropogenic risks, which may result in output that is both sustainable and safe for the environment [12]. It is a dynamic tool that may be used to conserve natural resources such as water and agro-ecosystems, and it can be used to landscapes as well as family farms. The ecological principle and the interplay between the human environment and the natural resources that are already there are the foundations of the traditional agricultural system. The distinctive characteristics of traditional agriculture include its environmentally positive nature, public acceptability, environmental and economic viability, and popular acceptance. It maintains productivity by making appropriate use of the local resources that are accessible and by developing agricultural techniques that are site-specific and

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consistent with the meteorological conditions of the area as well as the spatial and temporal variety of the location. Home yard farming is responsible for more than half of the world's food production, and it is the primary means by which a significant number of rural populations are able to maintain their livelihoods [13]. There is a collection of techniques that are referred to collectively as traditional agricultural practices (TAPs), which are included in traditional agriculture. In the indigenous community, TAPs are conservative and rooted in the communities themselves. Due to the fact that these methods are adapted to the local environment and are founded on indigenous local knowledge (ILK), they demonstrate more adaptability in situations where other approaches would not be successful. TAPs may be characterised as a collection of knowledge, practice, and trust nexus that has formed as a result of its adaptive nature and is passed on to the subsequent generation via a cultural transmission that describes the link between living creatures and their environment [14]. Adaptation to these approaches allows for the recovery of all components of the agriculture system in response to impacts of climate change. According to Dubey et al. 2019, the adaptive capacity is applied at the field and landscape level, as well as with regard to crop kinds and species varieties. The majority of the adaptation that occurs at the field and landscape level is accomplished via the use of agroforestry, livestock-integrated farming, and the diversity of the landscape through the cultivation of various crops [15].

The agricultural landscape is significantly moving towards sustainability which is clear from the above literature survey. The people are more concerned about the healthy choices and policies that support food security of the farmers. The farmers play a key role in food availability and studies relating to the farmers food security based on agricultural politics are lacking. This study measures this research gap which identifies the connectivity among the agricultural politics and food security in study area.

Problem Statement

When the number of people in the world increases, there is a corresponding decrease in the amount of natural resources, particularly food, that are available. This results in a decrease in agricultural production. This leads to a scenario in which agricultural output is unable to keep up with the rising population, and hunger follows the drop in supply that occurs as a consequence of this predicament [16]. The elimination of poverty and the improvement of food security may be accomplished by increasing the buying power of families in countries that are not very developed. The indicators that were used in the research project include those that describe the availability, accessibility, and utilisation of food. These indicators include food production per capita, the ratio of total exports to food imports, calorie consumption per capita, protein intake per capita, and the population that does not engage in agriculture. It is proposed that desirable and specific solutions be implemented in order to increase food security in particular clusters. Additionally, the study provides a complete viewpoint for the formation of policy on a global scale, which may be of interest to academics and policy makers [17]. The most prevalent causes of undernourishment, the capacity for food production in nations that are suffering from undernourishment, the depletion of natural resources, and the need to maintain sustainable development are all things that should be taken into consideration before making any decisions. Despite the fact that several steps have been made to ameliorate the problem of hunger across the globe, food insecurity and undernutrition continue to be significant issues in a number of nations. It is a very high priority for emerging regions of the world, where population growth combined with the increased intensity of environmental events such as floods, droughts, extreme variations in temperature, or rainfall frequently pose a threat to food security [18]. Although achieving food security is desirable regardless of the political framework and socioeconomic conditions, it is an exceptionally high priority in these regions. Additionally, as a result of increased food demand and decreased agricultural production, increasing food costs, in conjunction with income disparities, may have a detrimental impact on the availability and accessibility of food for families who are economically disadvantaged. The agricultural policies have a greater role to play enhancing the families of the farmers as well as

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improving their life standards. The agricultural farmers has significant financial and operational burden which affects their economic standards. The study focus on improving the enhancing role played by the agricultural politics which frame policies for welfare of farmers in the country as well as in the state based on views give by farmers.

Research Significance

Both state and central governments have the authority to make decisions about agricultural policy. It is interesting to note that farmers get subsidies in a variety of forms for the purpose of promoting agricultural activities. As a result, there is a significant incentive for farmers to involve themselves in agricultural activities, which in turn increases the availability of food grains in the nation [19]. There is a significant contribution that the pricing policy of agriculture makes to the achievement of growth. The purpose of the pricing policy is to safeguard both the consumers and the producers. The agricultural price is a key tool for attaining food security since it helps to improve job opportunities, productivity, and income for farmers. In order to encourage greater levels of production and impertinent, the government's objective on the pricing of agricultural commodities is to establish prices that are attractive to consumers. Because the nation was going through a severe lack of food grains at that time, the main priority was to maximise output. This was because the country was experiencing a catastrophic shortage. It is possible that the most important aspect of the Price Support Mechanism was the provision of protection for farmers in the event of a decrease in prices. A growing population and increasing earnings have led to an increase in the demand for food grains, notably rice and wheat, from one year to the next. This demand in particular has been on the rise. Consequently, a pattern had emerged that was characterised by an increase in the degree of consumption, as well as the substitution of wheat and rice for coarse grains such as maize, jawar, and other substances. As a consequence of this, there was a persistent rising trend in price levels, and there was a scarcity that was even of a marginal type. This was done in order to bring the demand and supply into equilibrium. In the current setting, serious worries about the nation's food security have surfaced in the form of an increase in food costs, a reduction in the area allocated to food grains, and a reduction in the amount of subsidies provided for food. To put it another way, even in the present day, when people talk about food security, the overall output of food grains is considered to be the most important proxy. The central emphasis of this research is on the ways in which agricultural politics have influenced the evolution of farmers and how they have ensured that they have access to food security.

Research Aims

- To evaluate the effects of agricultural policies on food security and enhanced standard of living of farmers in the study area.

Methodological Design

The study following the modus operandi of empirical research design and opinions from farmers is gathered to arrive at logical conclusion. The observations are analysed based on opinions given by the farmers of Tamil nadu. This approach will help to examine the present condition of food security based on views of farmers and role played by the agricultural policies in enhancing the life standards. The study focuses on extracting the information from the farmers using close ended questions which forms the major part of interview schedule. The interview schedule consists of three parts which involves demographic profile, scale of farming activities and food security of farmers in the study area. The study has used focused interview method which aims to generate interviews from the farmers.

The sample design of the study consists of top five districts that are topping the lists based on higher level of assistance obtained from agricultural policies. The districts that are involved using the above criterion are Tenkasi, Thoothukudi, Nagapattinam, Tiruvarur & Tiruchirappalli. These districts

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are selected based on the benefits obtained by the farmers based on agricultural policies. The farmers lists were collected from the regional agricultural offices which resulted in usage of random sampling techniques. The availability of the population frame made the research to use simple random sampling. The study has used the Cochran sampling size formula to determine the sampling size. The formula has given a sample size of 384 and these farmers were selected from these five districts of Tamil Nadu.

The collected data were error checked and cleaned for the usage in SPSS software. The hypothesis was framed to establish relationship among the agricultural politics and their role in food security as well as enhanced standard of living of farmers. The study has used the latent path model analysis to measure the quantitative relationship among agricultural politics and food security.

Statistical Evaluation

The data analysis has used the dimensions of the variables that are involved in the evaluation of food security among the farmers based on agricultural politics. The agricultural politics related queries are framed based on the diverse agricultural policies that are implemented for safeguarding the interest of farmers. The diverse aspects of agricultural policies were given out in a likert scale to analyse their effects on the food security and enhanced standard of living of farmers in study area. The diverse policies role is grouped into seven factors based on opinions given by the farmers. The factors involved in the evaluation of food security are

- *FS- I- Affordability and Accessibility based on Farm Income*
- *FS- II- Improved Food Consumption*
- *FS-III- Knowledge on Nutritional Foods*
- *FS- IV- Impact by Social Dynamics*

The farmers feel that these factors are considered to be vital for measuring the food security among their community. The farmers' food security is highly dependent on these factors which are vital for ensuring their continued operation. The diverse areas of food security are evaluated based on these factors. The enhanced standard living is also evaluated using the farmers' opinions which is categorised into three factors. The factors that are used for measuring the enhanced standard of living among the farmers are given in the following

- *EOS- I – Higher Level of Disposable Income*
- *EOS- II- Policies oriented Social Security*
- *EOS- III- Better Infrastructure for Agricultural Operations*

These factors are derived from the opinions of farmers which were based on their responses towards twelve variables which measures the outcome of enhanced standard of living. These factors are framed into latent model which was analysed using the structural equations. The model will elaborate the effects of agricultural policies on food security and enhanced standard of living among the farmers. The model is using the regression weights based on the opinions given by the farmers which will help to quantify the effects of agricultural politics on food security. The following helps to understand the relationship among these vital dimensions of farmers' economic position in the country.

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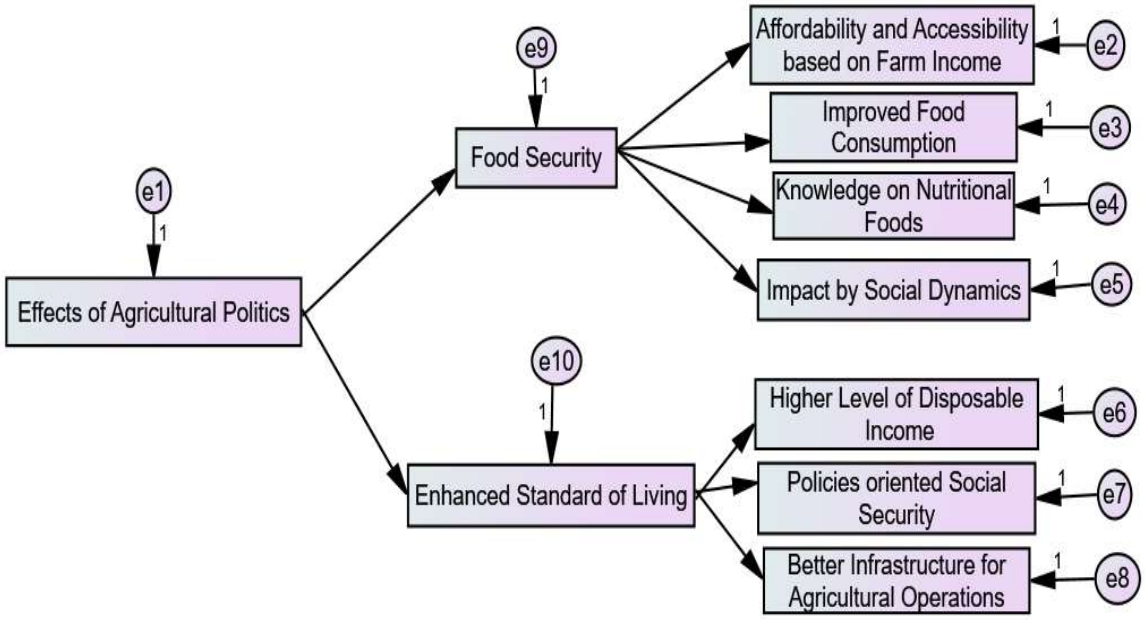
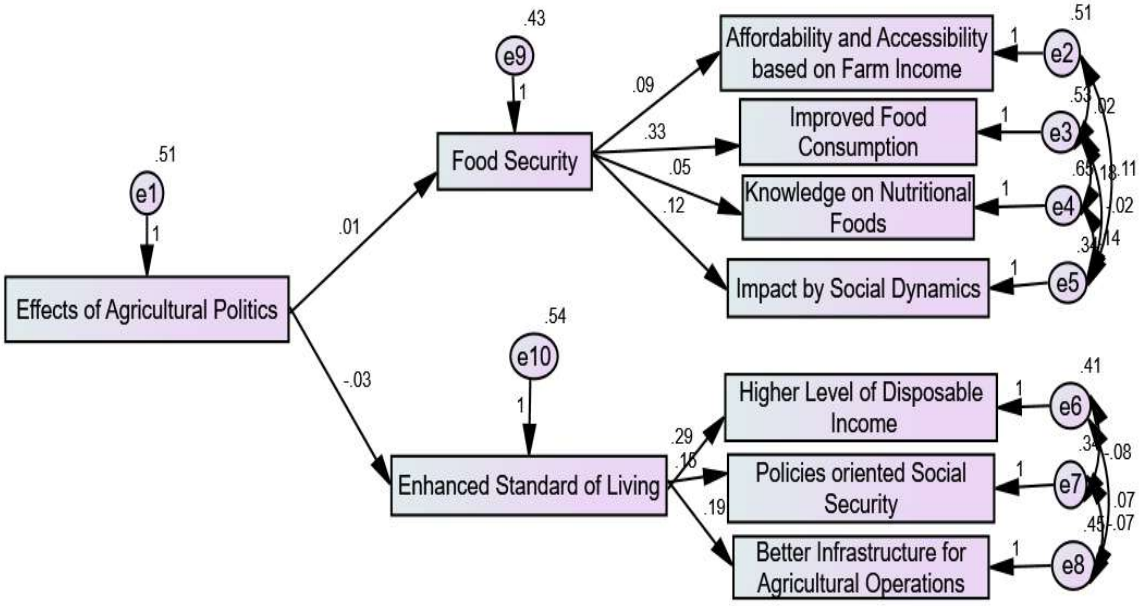
Latent Model
Effects of Agricultural Politics on Food Security and Enhanced Standard of Living



Theory Model – I- Effects of Agricultural Politics on Food Security and Enhanced Standard of Living



Tested Model – 2- Effects of Agricultural Politics on Food Security and Enhanced Standard of Living

Regression Estimates

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The model has used diverse quantitative tools for the estimation of impacts created by effects of agricultural policies on food security and standard of living. The diverse areas of quantitative relationship are estimated using the maximum likelihood model which is assessed using regression techniques. The following table provides the outcome based on the relationship among the effects created by agricultural policies on factors of food security and enhanced standard of living.

Table - 1
Beta Estimates

			Beta Value	Error	Critical Ratio	P
Food Security	<---	Effects of Agricultural Politics	0.014	0.047	0.294	***
Enhanced Standard of Living	<---	Effects of Agricultural Politics	-0.030	0.053	-0.577	***
Affordability and Accessibility based on Farm Income	<---	Food Security	0.085	0.056	1.530	***
Improved Food Consumption	<---	Food Security	0.331	0.057	5.817	***
Knowledge on Nutritional Foods	<---	Food Security	0.052	0.063	0.820	***
Impact by Social Dynamics	<---	Food Security	0.122	0.045	2.710	***
Higher Level of Disposable Income	<---	Enhanced Standard of Living	0.291	0.044	6.588	***
Policies oriented Social Security	<---	Enhanced Standard of Living	0.147	0.040	3.640	***
Better Infrastructure for Agricultural Operations	<---	Enhanced Standard of Living	0.193	0.047	4.156	***

(Source: Primary Data)

Hypothesis – I - Effects of Agricultural Politics and Food Security

The study has identified that the agricultural policies has created significant impact on the food security of farmers where the beta values are positive. The food security has positive relationship based on the effects created by agricultural policies which has a beta value of 0.014. The food security of farmers is considerably increased by the agricultural politics that are surrounding the development of agricultural in the state.

Hypothesis – II - Effects of Agricultural Politics and Enhanced Standard of Living

The model explains that the standard of living of farmers is not greatly improved by the effects of agricultural politics in state. There is negative relationship among the effects of agricultural politics on enhanced standard of living. The support of the agricultural politics has to be strengthened in the areas of standard of living which is major area of concern identified by this study.

Table – 2

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Fit Index

Measure	Threshold	Model Value
Chi- Square	**<5.00**	**3.953**
GFI	**>0.080**	**0.949**
AGFI	**>0.080**	**0.913**
NFI	**>0.080**	**0.894**
CFI	**>0.090**	**0.931**
RMR	**<0.080**	**0.047**
RMSEA	**<0.090**	**0.061**

(Source: Compilation from AMOS Output & threshold value based on literature)

The model tested has significant reliability which is evaluated by various measures that are determining the model efficacy. The model outcome reveals that the hypotheses results are fit and has significant implications in the area of effects created by the agricultural politics. All these measures are satisfied by the model that is tested and has higher level of reliability as suggested by the fit value of the model.

Discussions and Conclusion

The patterns of socioeconomic growth that are seen across the globe are very asymmetrical. On the one hand, these patterns are characterized by massive surpluses, and on the other hand, they are characterized by persistent food shortages that contribute to hunger and undernourishment. Food security is an issue that is most severely affecting developing nations with low per capita GDP levels. These countries often also suffer from poor agricultural circumstances and infrastructural limitations, which makes it much more difficult for them to maintain food security. As a consequence of these evaluations, it has been determined that the most severe difficulties in preserving food security are encountered in developing nations that have a large proportion of their gross domestic product (GDP) that is derived from agriculture, as well as in countries that have inadequate infrastructure and bad circumstances that hamper agricultural productivity. It is not always the case that high rates of undernourishment are associated with a modest amount of arable land assigned to each individual. This is due to the fact that the limited resources of agricultural land may be compensated for by improved productivity and the importation of food to make up for the shortage. The provision of food assistance that encourages the growth of production and the improvement of market infrastructure has the potential to play a constructive role in the improvement of food security. It is important to note that food assistance is not the sole method of addressing food insecurity, nor is it the most effective one in many instances. In this context, it is vital for developing nations to define and execute socio-economic growth plans that are focused on establishing circumstances for development that may result in an increase in the efficiency of national economies as well as an improvement in the quality of life for individuals.

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