

## An Investigation of the Effects of Globalization and Trade Liberalization on Food Consumption and Food Security in Egypt

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### Abstract

*This paper presents a thorough examination of the effects of globalization and trade liberalization on food consumption and food security in Egypt. The paper uses a literature review type of approach, by collecting data and information from previously published studies, and other reputable sources, such as the World Bank, the United Nations, among others. This paper focuses on the economic and geographic aspects of the problem, and then delved on how globalization and trade liberalization can help Egypt solves its food consumption and food security dilemma. Egypt is an arid country confronted with considerable geographic and economic constraints. With limited arable land and low rainfall, Egypt's capacity for domestic food production is severely restricted, pushing the nation towards heavy reliance on food imports. Economic volatility and protectionist policies further exacerbate food insecurity, affecting particularly vulnerable demographic segments. This study explores how globalization and trade liberalization, if strategically deployed, could potentially address these challenges. It posits that these twin processes could diversify Egypt's food import sources, invite foreign investment, stimulate competition, and facilitate technological transfers to boost agricultural productivity. However, this approach also requires a careful examination of Egypt's existing economic policies and a commitment to reduce bureaucratic red tape and excessive regulations that may hinder progress. This paper's findings underscore the urgent need for policy realignment in Egypt to achieve sustainable food security amidst rapidly changing global conditions.*

### 1. Introduction

#### 1.1. Research Question

“To what extent does globalization and trade liberalization affect food consumption and food security in Egypt?”

“Trade reforms and economic liberalization have expanded global trade in agricultural products. But despite increasing food supply, hunger still remains a large-scale tragedy.

We need to create a fairer and more inclusive trading system to provide for the food security needs of the world's most vulnerable populations.”

– José Graziano da Silva, former Director-General of the Food and Agriculture

Organization (FAO)

#### 1.2. Global Significance

Globalization is a concept that may hold several meanings. In the case of the official definition set by the World Bank (n.d.), globalization can be referred to as the complex process where the economies of various countries and nation sets become so integrated, they effectively act as one. There are numerous advantages of globalization. Some of the most commonly cited of which include but may not be limited to the more seamless spread of social and cultural ideas, technology, and lower overall cost of goods, and an easier way to conduct business, especially on a multinational scale.

Today's era is different in that the level of interconnectedness across social, political, and economic spheres is at its highest across human history, and a large part of this trend can be attributed to globalization (World Bank, n.d.). Over the years, colonization paved the path for trade and economic collaboration, and globalization soared with the help of technological advancements and improved transportation systems (Brooks, 2016). As a result, we have seen a steady increase in cross-border trade of goods, services, technology, information, and people movement. Small nations, in particular, can utilize globalization to enhance their domestic and international worth, fostering economic growth and poverty reduction (Friedman, 2005).

The second concept that we intend to cover in this essay is trade liberalization. Trade liberalization is similar in a lot of ways to globalization, and at some point, these two concepts are interconnected. Trade liberalization is a process that involves the removal or the lowering of restrictions and barriers that hinder the free exchange of goods between nations (Smith, 2018). Governments worldwide are proactively drafting trade policies and forming agreements with other countries, creating a conducive environment for the efficient operation of the free-market sector. The primary objective of trade liberalization is to make a positive impact on economic growth and development, which directly influences food security and consumption patterns (Rodrik, 2019).

As this shift takes hold globally, one region that is interesting to look at would be Africa. Nations in Africa like Egypt have attracted the attention of many western countries with developed economies primarily due to their considerable economic potential (African Development Bank, 2021). Within the purview of this discourse, we will focus on Egypt to gauge the impact of globalization and trade liberalization on food consumption and food security.

### 1.2.1. Global Themes and Issue

This study aligns well with the comprehensive global theme of geography and economics, because it explores the connections between a country's geography (i.e., a nation situated in Africa, namely, Egypt), and its economic performance, in relation to its policies on globalization and trade liberalization. The dynamics of globalization and trade liberalization shed light on the ever-evolving aspects of the subject, with their resulting impacts on food consumption patterns having substantial implications on a country's outcomes, including that of its people. Specifically, this research confronts urgent global issues related to current food consumption trends, rooted in solid trade and transactional processes. Special emphasis is placed on the case of Egypt, juxtaposed against its counterparts.

### 1.2.2. Food Consumption & Food Security

#### 1.2.2.1. Food Security

A good starting point in this case would be to provide some theoretical context about the concept of food consumption and food security. This will effectively delineate the scopes and limitations of this paper about the impacts of globalization and trade liberalization on Egypt's food consumption and food security outcomes.

A country's socioeconomic standing also has a significant impact on whether it will be able to achieve an acceptable level of performance in these four dimensions, and collectively, in terms of overall food security.

Food security represents a condition where every individual within a given nation or jurisdiction can access, in a physical, economic, and social sense, ample quantities of nutritious and safe food. This access needs to meet their unique dietary requirements and preferences, while fostering a healthy well-being and lifestyle. As articulated previously, achieving an appropriate level of food security, particularly on a national scale, necessitates consideration of four core aspects. This perspective is echoed in Shehata & Mohammad's 2005 research on the status of food security in Egypt and other African nations at the time (Shehata & Mohammad, 2005).

- **Food availability:** The presence of ample, good-quality food, supplied either via domestic production or imports, including food assistance.
- **Food access:** The capability of individuals to secure suitable foods for a healthy diet, using adequate resources or entitlements. Entitlements refer to the combinations of all commodities a person can command given their community's legal, political, economic, and social arrangements, including traditional rights like access to communal resources.
- **Utilization:** The effective use of food through a balanced diet, access to clean water, sanitation, and healthcare services, to attain a state of nutritional wellness where all physiological needs are fulfilled. This highlights the significance of non-food factors in achieving food security.
- **Stability:** To ensure food security, populations, households, or individuals should consistently have access to adequate food. They should not face the risk of losing access to food due to sudden shocks, such as economic or climatic crises, or cyclical events, such as seasonal food insecurity. Thus, the notion of stability can encompass both availability and access aspects of food security.

#### 1.2.2.2. Food Consumption (Egypt)

This leads the discussion to the concept of food consumption. It would be interesting what kind of food consumption patterns Egypt has as a country, to more effectively estimate or predict whether the definition of food security that we currently have is a goal that can be realistically met, considering the country's food consumption practices and patterns.

Understanding the dynamics of food consumption is critical, given its fundamental role and substantial influence on the economic wellbeing of Egyptian households. In many of the previously published studies that we have analyzed, it appears that Egyptians supply the bulk of calories and proteins from plants (e.g., vegetables), with a modest contribution from animal sources (Abdelaal & Thilmany, 2019). The latter, while less prominent, offer essential, easily digestible proteins of superior quality. Therefore, it is important to understand the factors shaping food demand, informing the creation of holistic agricultural, social, and food strategies to enhance food accessibility.

In a study that was conducted by Dawoud (2005), for example, a detailed analysis of food consumption patterns in a typical Egyptian household was presented. Dawoud's (2005) study employed both partial and complete food demand systems to project future food policies in Egypt. Estimations of expenditure elasticities were performed separately for rural and urban regions and for different household sizes, using an Engel double-log model.

Due to data limitations, Dawoud utilized spatial variations in regional prices derived from household surveys as food price proxies. Consequently, he incorporated the aggregated commodity unit values into the study's food demand analysis.

The backbone of that study is the recent Egyptian Household Income, Expenditure, and Consumption Survey, conducted by Egypt's Central Agency for Public Mobilization and Statistics (CAPMAS). He then performed a descriptive and econometric analysis of this data to dissect the structure of food consumption and expenditure patterns across selected food groups, and then emphasized discrepancies between rural and urban areas and within these regions across governorates.

The findings from that detailed study highlight the food consumption pattern that as a household's income rises, an uptick in vegetable and meat consumption can be observed. Expenditure elasticities are more pronounced in rural areas compared to urban ones (Dawoud, 2005). Additionally, expenditures on most food groups ascend at a decreasing rate as household size expands. While expenditure elasticities for all food groups were positive and less than one, certain items like fruits, meats, and milk were classified as luxury goods. The demand for these commodities is expected to grow, emphasizing the importance of food price changes in shaping comprehensive agricultural and food policies in Egypt.

### 1.3. Research Importance

The essence of this paper lies in its goal of examining the relationship between globalization, trade liberalization, and their subsequent impacts on food consumption and food security in Egypt. Egypt's current socio-economic situation is similar in a lot of ways to that of other developing nations, in that it is heavily influenced by its agricultural sector. This in turn is profoundly impacted by the forces of globalization and trade liberalization.

The central premise here is that trade liberalization and globalization have far-reaching consequences on national food systems, redefining food consumption patterns, and thereby, food security status. By delving into this intricate relationship, I hope to expose crucial findings that could aid policy formulation, particularly in sectors like agriculture, trade, and public health.

An improved understanding of the factors shaping food demand within the context of a globalized trade environment can guide the creation of more effective strategies to ensure food accessibility for all strata of society. This study offers insights into food consumption patterns and expenditure elasticities in Egypt, contributing valuable knowledge that can underpin future food and agricultural policies.

Moreover, given the increasing role of trade and globalization in shaping national economies, a comprehensive understanding of these dynamics is crucial in creating resilient and sustainable food systems. Therefore, this research fills a critical knowledge gap, providing data that is not only essential for Egypt but also holds valuable lessons for other nations grappling with similar challenges.

Ultimately, the goal is that this research will help encourage further discussions around the relationship between trade liberalization, globalization, and food security, contributing to a more equitable and sustainable food system in Egypt and beyond.

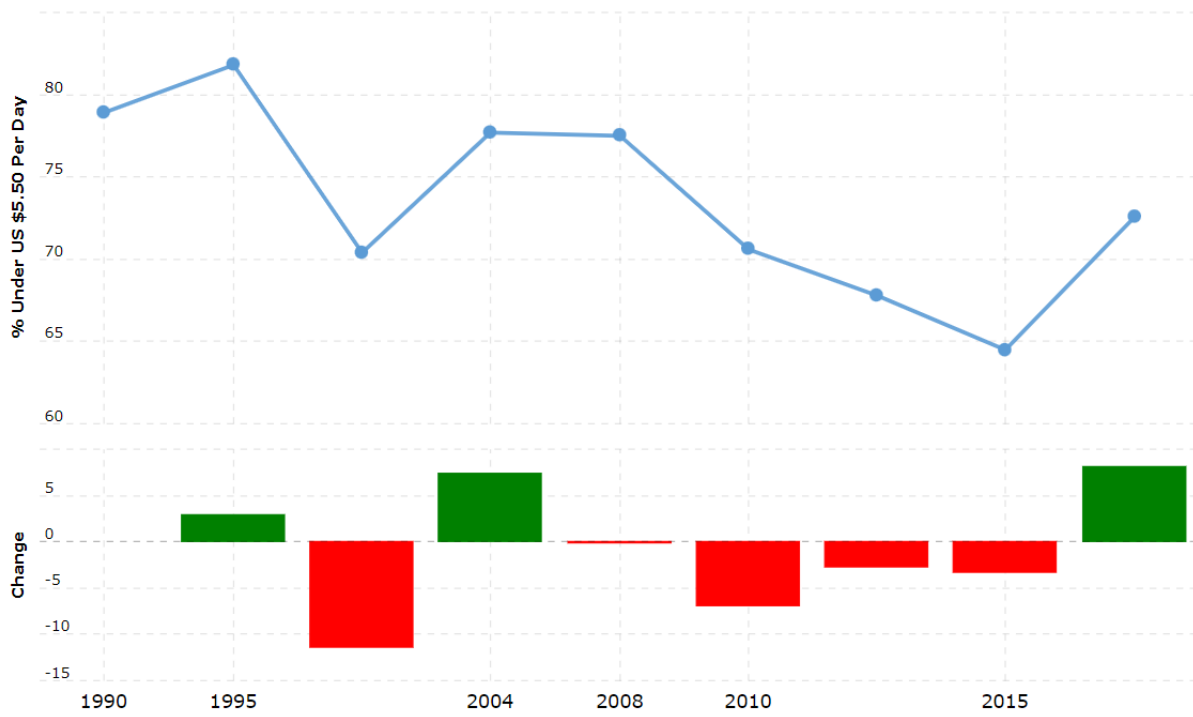
### 1.4. Local Significance

#### 1.4.1. Area of Study

Egypt is the most populous country in North Africa and the Arab world, with a population of 109.3 million people, and has widespread geopolitical influence in its region (The World Bank, 2023). Although Egypt has been able to maintain stable economic growth, they face a long-standing predicament of food insecurity. This issue primarily stems from the nation's agricultural sector being unable to produce enough cereal grains, such as wheat and oilseeds, failing to meet even half of the country's domestic demand.

This leads the discussion to the main causes of food insecurity in Egypt. To summarize, this can be deduced to these factors: 1) Economic Challenges, 2) Population Growth and Urbanization, and 3) Climate Change and Water Scarcity.

Focusing on the economic front of Egypt's food insecurity problems first, Egypt has a high poverty rate, one of the highest in the region and in the world. The figure below for example shows the trend of Egypt's poverty incidence from 1990 to 2019, with poverty being defined as a household earning under \$5.50 per day (Macrotrends, 2023).



**Figure 1 Egypt Poverty Incidence Rate (Macro Trends, 2023)**

The country's economy has also been largely unstable, thanks to its volatile political climate, and the fact that Egypt does not really have a single industry or economic sector that it can pin its hopes of a brighter future on as a solid foundation. This one-two combination of factors has made it extremely challenging for the average Egyptian household to afford sufficient and nutritious food.

### 1.5. Interdisciplinary Research

Interdisciplinary research is crucial in order to investigate the research question: 'To what extent does globalization and trade liberalization affect food consumption and food security in Egypt?' The intermingling of economics and geography offers a holistic and somewhat nuanced comprehension of the complex dynamics present in this particular research question. Geography allows us to dissect the social and political aspects of the question, such as globalization indices which provides a comprehensive framework to examine the intensity of globalization across countries, allowing a comparative analysis. On the other hand, economics, enables the analysis of market structure forces and trade policies, shedding light on the economic dimensions regarding food consumption and food security. This approach will undoubtedly enable us to unravel the intricate connections between globalization/trade liberalization and its impacts upon food consumption and food security in Egypt.

#### 1.5.1. Geographical Perspective

Egypt is a country situated in the North African region. Most of the countries in this region has an arid climate. One thing that is common among countries with this type of climate is the lack of precipitation, i.e., rainfall, which makes finding sources of freshwater for drinking and other domestic uses extremely difficult. The agricultural industry which is one of the pillars of food production, and therefore, of food security, requires a huge demand of water input. According to statistical data from the United Nations, roughly 85% of Egypt's freshwater demand can be attributed to agricultural use (Khalifa, n.d.). What this means is that any phenomenon that may lead to the disruption of freshwater supply in the country can have a considerable impact on Egypt's agricultural industry. This, by extension, would have a domino effect on its food production outcomes, and ultimately, food security, and food consumption patterns. The fact is that water availability has long been considered as one of the major threats to Egypt's quest towards food security (Hamza & Mason, 2004). This threat to Egyptian food security is something that can be attributed directly to its geography.

#### 1.5.2. Economic Perspective

The country's economy has been growing at a rapid pace in recent years. Egypt's annual GDP growth rate for 2022 has been at 6.6%. The figure below shows the country's annual GDP growth rate from 1972 to 2023 (World Economics, 2023).

### GDP Annual Growth Rate: Egypt



**Figure 2 GDP Annual Growth Rate in Egypt (World Economics, 2023)**

The volatility of the growth of its economic performance is clear, and this is one of the reasons why the country is having a hard time attaining food security. The last (on the economic front) is an external factor, which is the erratic movement of global commodity prices. Egypt is a net importer of many consumer goods and other commodities that are considered critical for sufficient food production. Therefore, any sudden movements in the supply, demand, and prices of such goods can have a significant (often negative) impact on the country's food security outcomes. A perfect example would be the Russia-Ukraine war, and how it essentially disrupted Egypt's goal of being closer towards food security.

## 2. Hypothesis

In this research, I hypothesize that globalization and trade liberalization, together, can play a key role in helping Egypt reach its food consumption and food security goals much faster. In fact, globalization and trade liberalization can help Egypt meet its goals beyond these two (Vitale, 2020). It has been proven in countless studies that liberal trade and economic policies benefit a blanket of economic sectors and industries, instead of just one, assuming of course that said policies have been drafted and implemented correctly (Giovannetti, et al., 2020).

## 3. Methodology

The main objective of this paper was to investigate the potential effects of globalization and trade liberalization on food consumption and food security in Egypt. The operational term here is *potential*, because Egypt's existing economic policies are far from what one can consider as liberal (when it comes to trade), and its food consumption and food security outcomes are also far from what one can consider to be secure or stable. For this purpose, I decided to use a critical literature review type of approach, where I will be relying on trusted sources of data, including but not limited to, academic journals, and reputable institutional websites, e.g., The United Nations, the World Bank, to form arguments about the potential effects of globalization and trade liberalization on Egypt's food consumption and food security outcomes.

## 4. Data Presentation and Analysis

### 4.1. Geographical Data

Geography is a non-modifiable risk factor within the context of the present discussion about Egypt's food consumption and food security. That is, it is something that the government and its people must learn to live with, because it cannot be changed. Egypt is situated in the North African region. Most of the land under its jurisdiction is desert. This means that unlike countries in North America, Europe, and even Asia, Egypt's arable land, i.e., land that is suitable for agriculture, is severely limited.

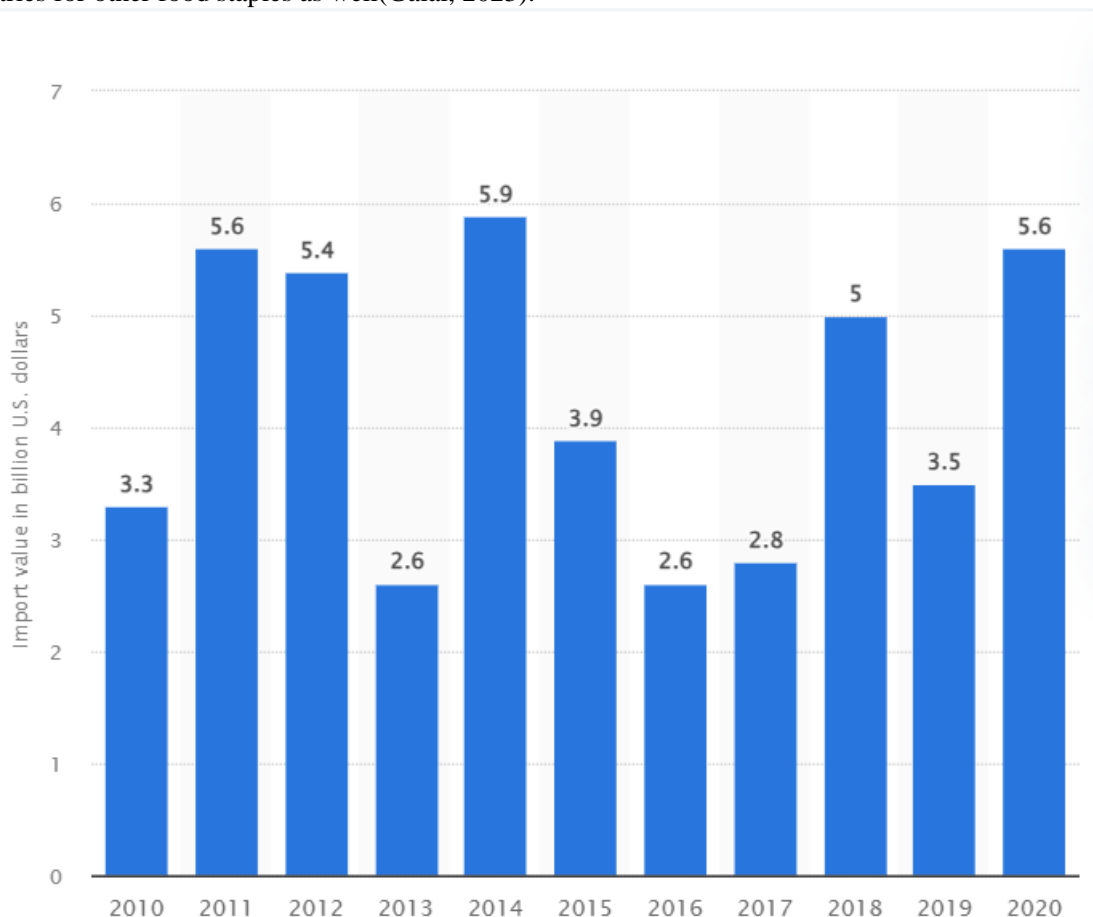
Egypt's already limited arable land must also have to compete against the country's also limited habitable land. The country has a huge population of 105 million people, and these people will need space to build their houses, offices, and other buildings on. Most of the country's arable and habitable land are situated in the area surrounding the Nile River, such as the Nile Delta and the Nile Valley.

This means that as the country's population continues to grow, the amount of arable land in the country will only continue to decrease. This will ultimately lead to lower food production, an outcome that works against the goal of food security.

Water scarcity is another inherent problem that is related to Egypt's geography. The climate in Egypt's part of the world is largely arid, and a common characteristic of countries in this area is the extremely low volume of rainfall that Egypt gets per year.

According to statistical data from the World Bank, Egypt gets a paltry 10 mm of precipitation per year (The World Bank, 2023). In a study that was authored by Giralt et al. (2020), they analyzed the minimum amount of rainfall that is necessary to support a viable agricultural sector, and in their study, they concluded that a country should receive at least 450 mm of annual rainfall in order to support a strong agricultural sector; it must be noted though that this number was computed within the context of an environment that has no irrigation. This means that technically speaking, countries with arid and hyper-arid, and even semi-arid climates can be considered unproductive, agriculturally (Giralt, et al., 2020).

Combined, these geographic factors make it extremely difficult for Egypt to grow a sufficient amount of food for its growing population. This is why it has to rely so much on the importation of food products and agricultural commodities. Egypt, for example, is the world's largest importer of wheat. It relies on the importation from other countries for other food staples as well (Galal, 2023).



**Figure 3 Egyptian Wheat Imports (in Billions of USD, 2010 to 2020)**

This is precisely where the country can benefit from the concept of globalization and trade liberalization. Globalization is an external factor in this case, as this is a phenomenon that results from the collective effort of all countries, and not just Egypt. Trade liberalization, meanwhile, is an internal factor, as it is the result of the country's ability to adjust its economic policies (i.e., trade) in a way that suits the trend of globalization.

Through globalization and trade liberalization, Egypt should, in theory, be able to diversify the sources of its food imports. This can go a long way for a country that relies heavily on wheat to meet the caloric needs of its people. Additionally, the resulting diversification can also drive down the price of food and agricultural commodities lower, which can make a huge positive impact for a developing country like Egypt that has a low GDP per capita (Bouet & Odjo, 2021).

One of the outcomes of globalization and trade liberalization is a much easier and faster process of technological and knowledge transfer (Abdelmageed, et al., 2019). Should Egypt be able to take full advantage of this, the country's agricultural sector can greatly benefit from the efficiency and productivity boosts that will surely come from the use of new technologies in farming and other agricultural practices. The importance of this gets magnified by the fact that Egypt has a limited amount of arable land, which means that the only real way to keep up with the demand for food is to boost efficiency and productivity of existing agricultural enterprises.

#### 4.2. Economic Data: Trade Liberalization

Cairo depends heavily on large volumes of subsidized imports to ensure an adequate and affordable supply of bread and vegetable oils for its 105 million population. Securing this supply has made Egypt the world's largest wheat importer and one of the world's top 10 sunflower oil importers. This is due to the fact that Egypt lies in one of the driest regions in the world, where food production has become increasingly complex due to shortages in water. In 2011, MENA countries (Middle east/North Africa) were subjected to soaring food inflation levels, causing social unrest, poverty and food insecurity to increase significantly (Barakat & Elaydi, 2022). This occurrence was detrimental for Egypt's economy, due to the nation's fragile finances, weakened by the regime's subsidy policy that they have been using for decades (Breisinger, et al., 2023).

From 2019 The Egyptian government launched a goal of aiming to achieve self-sufficiency in key food commodities, focused on increasing the nation's agricultural productivity, enhancing irrigation systems and promoting domestic food production, so that they are less reliant on food imports (Abay, et al., 2022). Despite this in 2022, the outbreak of the Russian-Ukraine war catapulted food prices, as Ukraine's food production declined significantly causing increased levels of scarcity. For instance, the price of wheat increased by 44% and sunflower oil went up by 32% virtually overnight. More significantly, the war also threatens Egypt's physical supply itself, as 85% of its wheat and 73% of sunflower oil is imported from Russia and Ukraine (Glauber, et al., 2023).

One of the main problems that has led to nationwide food insecurity in Egypt is due to Egypt's income inequality and high poverty levels, where the World Bank estimates that over 60% of the population are poor or vulnerable. Furthermore, inequality across Egypt's regions is sharp, with poverty levels in Egypt's poorest villages being as high as 81.7% (Ali, 2023). Consequently, this had led to a spike in Egypt's "hunger and malnutrition" rates. For instance, Egypt's population of children under-five years faces a severe dilemma regarding stunting as a result of food insecurity, with 21 percent of the under-5 population facing this issue in 2014 (United Nations, 2020). In addition, a report by WFP estimated that 17% of Egypt's population suffered from food insecurity in 2011 (WFP, 2013). Consequently, this issue is undoubtedly one that lies on the forefront of local and global significance, and hence links to my global theme of Health and Development.

The economic causes of Egypt's food insecurity can be attributed to the volatility of its economic growth. As shown in the annual economic growth chart in Figure 2, Egypt's economic prospects has been largely volatile in the past several decades. One of the consequences of this volatility is that investors, both domestic and overseas, end up being discouraged to put up business operations in the country. The list of discouraged potential investors certainly includes businesses in the agricultural and food processing sector, which could have helped Egypt add more value to its existing agricultural and food supply chain (Radwan, et al., 2019).

This leads the discussion to trade liberalization. One of the reasons behind the country's volatile and more candidly, lackluster, economic growth in the past decades is its protectionist trade policies. Protectionist trade policies are the antithesis of a trade-oriented, liberal economy. This can be evidenced by the level of control that the Egyptian government has over major economic sectors such as agriculture, energy, transportation, banking, and telecommunications. Some of the biggest companies operating in the country are state-owned enterprises. These enterprises have been given an unfair advantage in the local market, which is why many foreign players in the same industry are discouraged to participate and invest in the domestic economy (Bakeer & Hebatallah, 2019). The end result of course is less competition. Established economic principles dictate that in an environment with no or limited competition, the per unit price of goods and services go up, and the quality of the goods and services delivered to the intended consumers go down (Randrianarisoa, 2021). The same is true when it comes to the agricultural and food industry.

The country has also been tackling problems in relation to excessive regulations and bureaucratic red tape. This greatly increases the barriers to entry for foreign investors. In order to align with trade liberalization's principles, Egypt must dismantle all unnecessary regulations, and create a streamlined (i.e., no redundant processes) framework of processes that international investors can undergo, should they want to invest in the country (Bakeer & Ghoneim, 2021).

#### 5. Conclusions

In conclusion, it would be safe to say at this point that there is a large collection of ways in which geographical constraints and economic conditions can significantly influence Egypt's food consumption and food security outcomes, and how these negative outcomes can be augmented and solved by globalization and trade liberalization.

The unchangeable realities of Egypt's physical geography, characterized by sparse arable land and limited precipitation, lead to considerable restrictions in the nation's potential for agricultural self-sufficiency. Consequently, addressing these geographic constraints force the country to rely on food imports to meet the dietary needs of its growing population.

However, as indicated by the catastrophic economic fallout from the Russia-Ukraine war, this dependence on food imports subjects Egypt to the whims of international markets and potential global supply chain disruptions, escalating food insecurity. Concurrently, pervasive income inequality and high poverty levels worsen the national food crisis, exposing vulnerable demographic segments, such as children under-five, to malnutrition risks.

The country's economic outcomes, which reflect protectionist (anti-liberal) policies, worsen its food security situation. Economic volatility for example has deterred crucial investments into the agricultural sector and food supply chains, which could otherwise ameliorate the nation's food security situation. A major cause of this volatile economy is Egypt's protectionist trade policies, which have stymied foreign investment, hindered competition, and prevented the benefits of a liberalized trade system from being realized.

Hence, to overcome these intertwined challenges, the study points to the dual processes of globalization and trade liberalization as the key solutions for Egypt to reach its food security goals. Through strategic trade liberalization, Egypt can stimulate competition, entice foreign investment, and capitalize on technological and knowledge transfers that could revolutionize its agricultural sector. Simultaneously, the phenomenon of globalization could aid Egypt in diversifying its food import sources, thereby insulating the country from regional disruptions in food supply.

In the light of these findings, it is imperative for Egypt to reconsider its economic strategies and fully leverage the opportunities presented by globalization and trade liberalization. Doing so can enhance the resilience of its food security infrastructure against both enduring geographical constraints and fluctuating international market conditions. Thus, this study underscores the urgent necessity of policy realignment in Egypt's pursuit of sustainable food security amidst a rapidly globalizing world.

## 6. Evaluation

The approach used in this paper, which shares a lot of similarities with a typical literature review, provided a robust, cross-disciplinary exploration of the subject matter. Drawing from various sources allowed for a comprehensive understanding of the multiple dimensions of Egypt's food security and the potential impacts of globalization and trade liberalization on it. However, this methodology also has its shortcomings. While it allowed for an extensive theoretical analysis, it might not fully capture the real-time conditions and fluctuations within Egypt's food economy. Additionally, the quality of conclusions drawn is contingent on the quality and relevance of the literature reviewed. Finally, it lacks primary data, making it crucial to supplement this approach with field research for a more nuanced understanding.

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