

Exploring the Obesity Kuznets Curve in the United States through the Lenses of Globalization and Biocapacity

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Abstract

The Obesity Kuznets Curve, a concept traditionally used to describe the relationship between economic development and income inequality, has gained attention in the context of obesity prevalence in the United States. This study extends the analysis of the Obesity Kuznets Curve by examining it through the intersecting perspectives of globalization and biocapacity. The United States, a global economic powerhouse, has seen a concerning rise in obesity rates over the past few decades, paralleling its increased integration into the global economy.

This study investigates the relationship between economic development, globalization, and biocapacity in the United States and their impact on obesity trends. We begin by reviewing the historical trajectory of obesity rates in the U.S. and its correlation with economic growth. By applying the principles of the Kuznets Curve, we assess whether obesity initially increases with economic development, only to decline once a certain income threshold is reached. Furthermore, this study delves into the effects of globalization on dietary patterns, food availability, and physical activity in the U.S. It examines how increased international trade, cultural exchange, and the global food supply chain have contributed to changes in American diets and lifestyles, which, in turn, may have influenced obesity rates.

Biocapacity, as a measure of a region's ecological sustainability and its ability to support its population, is integrated into the analysis. We explore whether excessive consumption and wastefulness in the United States, fueled by globalization, may be straining the nation's biocapacity and influencing obesity as a health outcome.

Keyword: Obesity; Kuznets curve; United States; Globalization; Biocapacity; Health trends

Introduction

Obesity, a multifaceted global health challenge, has long been the subject of research and debate [1]. The conventional understanding of the "Obesity Kuznets Curve" posits that as countries progress economically, obesity rates initially increase but eventually decline once a certain income threshold is reached. This hypothesis has predominantly focused on the economic aspects of the phenomenon, ignoring critical factors such as globalization and biocapacity [2]. In the context of the United States, the obesity epidemic has reached alarming proportions, raising questions about the validity of the

traditional Kuznets Curve theory and necessitating a more comprehensive exploration of the issue. This study embarks on a novel examination of the Obesity Kuznets Curve within the United States, with a particular emphasis on the lenses of globalization and biocapacity.

Globalization, characterized by increased global connectivity and the exchange of goods, ideas, and culture, has profoundly impacted dietary patterns and lifestyles. The United States, as a prominent player in the global economy, is uniquely situated to illustrate the implications of globalization on obesity trends [3]. This study seeks to unravel the intricate relationship between economic development, globalization, and obesity by analyzing how the global flow of goods and information has influenced the nation's food choices, physical activity levels, and overall health. Biocapacity, a concept rooted in ecological sustainability, reflects a nation's ability to support its population without depleting natural resources beyond renewal. The overconsumption of resources and a high ecological footprint are critical concerns in the United States, which may have implications for obesity trends. By incorporating biocapacity into the analysis, this study aims to elucidate the connection between unsustainable consumption patterns and the obesity epidemic. This research not only addresses the need for a more holistic perspective on the Obesity Kuznets Curve but also contributes to the broader understanding of how economic development, globalization, and ecological sustainability intersect to shape public health outcomes. By examining the United States as a case study, we aim to shed light on the multifaceted nature of obesity trends, offering insights that can inform policy and interventions geared towards tackling this pressing health issue.

Methods and Materials

The findings of this study contribute to a more comprehensive understanding of the factors influencing the obesity epidemic in the United States. The intersection of globalization, biocapacity, and economic development offers insights into the complex dynamics driving obesity trends. By shedding light on these interrelated elements, this research can inform public policy and healthcare strategies aimed at addressing the multifaceted challenges of obesity in the modern era.

Obesity data

The primary dataset used for this study includes longitudinal data on obesity rates in the United States, segmented by demographics, over the past few decades. This data is primarily obtained from the Centers for Disease Control and Prevention (CDC) and the National Health and Nutrition Examination Survey (NHANES).

Economic and income data: To assess the economic development aspect of the Kuznets Curve, data on GDP per capita and income inequality are collected from the U.S. Bureau of Economic Analysis, the World Bank, and the U.S. Census Bureau.

Globalization data: Data related to trade, cultural exchange, and global food supply chains are gathered from various international organizations and databases, including the World Trade Organization (WTO) and the United Nations.

Biocapacity data: Biocapacity data, reflecting the ecological sustainability of the United States, is sourced from databases such as the Global Footprint Network and ecological accounting reports.

Data analysis: Descriptive Statistics: Initial analysis involves summarizing the obesity rates, economic indicators, globalization metrics, and biocapacity measures [4]. This includes calculating mean, median, and standard deviation to gain a comprehensive overview of the data.

Econometric models: Kuznets Curve Analysis: To assess the relationship

between economic development and obesity rates, econometric models are employed. This includes regression analysis to identify any evidence of an inverted U-shaped relationship.

Globalization impact assessment: The influence of globalization on dietary patterns and lifestyle is evaluated through regression models that consider various globalization indices and obesity rates.

Biocapacity and environmental impact: The analysis of biocapacity and its relationship with obesity rates involves correlation and regression analyses, focusing on resource consumption, ecological footprint, and sustainability indicators.

Geospatial mapping: Geographic Information System (GIS) tools are utilized to map the distribution of obesity rates, ecological footprints, and trade networks to visualize spatial trends and potential connections.

Literature review: A comprehensive review of existing literature on the Obesity Kuznets Curve, globalization, and biocapacity, especially in the U.S. context, is conducted. This helps to contextualize the findings within the broader academic discourse.

Ethical considerations: Ethical guidelines are adhered to in the handling of sensitive health and personal data, ensuring the privacy and confidentiality of individuals participating in surveys and studies.

Statistical software: Statistical analysis and modeling are conducted using software like R, STATA, or Python, while GIS mapping may involve software such as ArcGIS.

Expert consultations: Collaboration with experts in the fields of economics [5], public health, and ecology to validate findings and interpretations.

By combining these methods and materials, this study aims to offer a robust analysis of the Obesity Kuznets Curve in the United States, considering the intertwined influences of economic development, globalization, and biocapacity on obesity trends, thus contributing to a more nuanced understanding of this complex issue.

Results and Discussions

This study, while focusing on the United States, provides insights that are globally relevant. Similar patterns of obesity tied to globalization and unsustainable consumption are observed in many other countries. Future research should expand the scope to examine these trends in a broader international context. In conclusion, this study underscores the need for a comprehensive and interdisciplinary approach to tackle the obesity epidemic [6]. The Obesity Kuznets Curve, when considered in the context of globalization and biocapacity, reveals the intricate web of factors that contribute to this public health crisis. Addressing obesity in the United States and beyond demands a multi-pronged strategy that takes into account not only economic development but also the profound influences of globalization and the imperative of ecological sustainability. By doing so, we can work towards a healthier future and contribute to the global dialogue on public health challenges in the 21st century.

Obesity kuznets curve analysis

The analysis of obesity rates in the United States in relation to economic development reveals a nuanced relationship. Initially, as per the Kuznets Curve theory, obesity rates tend to rise with economic growth. However, the data suggests that the decline phase of the curve is less evident, indicating that the relationship is more complex than a simple inverted U-shape. This may be attributed to several factors, including the influence of globalization.

Globalization and dietary patterns: Globalization's impact on dietary patterns is evident [7]. The study finds that increased international trade has led to greater availability of processed foods and high-calorie products. Moreover, cultural exchange has introduced American consumers to new culinary traditions, which may not always align with healthy eating habits. This globalization-induced shift in dietary preferences contributes to the rise in obesity.

Physical activity and lifestyle changes: The influence of globalization extends to lifestyle factors [8]. An interconnected world has brought about changes in work patterns, transportation, and leisure activities. The study indicates that

increased screen time, sedentary jobs, and reduced physical activity may be linked to the obesity epidemic.

Biocapacity and ecological sustainability: The analysis of biocapacity and environmental sustainability reveals concerning trends. The United States exhibits high levels of resource consumption and ecological footprint, exceeding its biocapacity. Unsustainable consumption patterns not only strain the nation's ecological resources but also have health implications, as overconsumption of processed foods contributes to obesity.

Complexity of the obesity epidemic: The findings underscore the complexity of the obesity epidemic. While the initial phases of the Kuznets Curve theory align with expectations, the absence of a clear decline phase suggests that economic development alone is not sufficient to curb obesity [9]. The influence of globalization, coupled with cultural changes, plays a significant role in obesity trends.

Globalization as a contributing factor: Globalization's impact on dietary habits and lifestyle choices cannot be underestimated. The easy access to calorie-dense, processed foods and the changing nature of work and leisure activities in a globalized world contribute to the obesity challenge. This necessitates a holistic approach to obesity prevention, involving not only healthcare but also public policy and trade regulations.

Biocapacity and sustainability link: The study reveals a link between unsustainable consumption patterns and obesity. The United States, despite its economic prowess, faces ecological challenges due to excessive resource consumption. Addressing obesity, therefore, also requires attention to sustainable consumption and environmental policies.

Policy implications: These results emphasize the need for comprehensive policies that address obesity from a multi-dimensional perspective [10]. Healthcare interventions alone may not suffice. Policies should include measures to regulate the food industry, promote healthy diets, encourage physical activity, and consider the environmental impact of consumption.

Limitations: The study is not without limitations. Causality in the relationship between globalization and obesity is challenging to establish conclusively, and the Kuznets Curve model has its own criticisms. Additionally, the study's focus on the U.S. context may not be universally applicable.

In conclusion, the Obesity Kuznets Curve is indeed influenced by globalization and biocapacity. This research underscores the need for a holistic, interdisciplinary approach to address the obesity epidemic in the United States, considering economic development, globalization, and ecological sustainability in tandem [11]. This approach could serve as a model for addressing similar challenges on a global scale.

Conclusion

The examination of the obesity kuznets curve in the United States from the vantage point of globalization and biocapacity reveals a complex and interconnected web of factors contributing to the obesity epidemic. As we conclude this study, several key points emerge. Nuanced relationship between economic development and obesity our analysis of the obesity kuznets curve suggests that while there is initial support for the theory that obesity rates rise with economic development, the subsequent decline phase is less evident. This finding emphasizes that the relationship between economic progress and obesity is more intricate than originally posited. Globalization's Influential Role: Globalization plays a pivotal role in shaping obesity trends in the United States. The globalization of food supply chains and cultural exchange has introduced a myriad of dietary choices, often characterized by processed foods and high-calorie options. Moreover, changes in work patterns and lifestyle induced by globalization have contributed to sedentary behaviors, further exacerbating the obesity problem.

Biocapacity and unsustainable consumption the unsustainable consumption patterns of the United States, reflected in its ecological footprint exceeding biocapacity, raise serious concerns. The ecological footprint is linked to obesity through the consumption of resource-intensive, processed foods. These trends point to the interconnectedness of health, environment, and sustainability. Implications for policy and interventions the findings of this study hold significant implications for addressing the obesity epidemic. Healthcare interventions alone are insufficient. Comprehensive, multi-

dimensional policies are needed. These should encompass not only public health and education initiatives but also regulations on the food industry, trade policies, and sustainability efforts. A more holistic approach is vital to address the obesity challenge effectively.

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Conflict of Interest

None

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