National Bureau of Economic Research (NBER) Mentoring and Tutorial Program on the Economics of Digitization

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Course of study: **Ph.D** (Health Services Research);

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Two years of enrollment.

Research Interest: **Digital Methodologies, Dietary Behavior and African Americans amid COVID-19**

Abstract:

Introduction: According to the John Hopkins University (JHU) Virus Tracker October 20, 2020 data, out of the 40,835,340 COVID-19 infection cases and 1,125,656 deaths at the global level, the U.S. currently has 8,274,878 cases and 221,078 deaths. This confirms the U.S as the global epicenter of COVID-19.

Digital health space includes health care IT and information systems, as well as a host of companies that build and sell technologies like wireless sensors, software-enabled diagnostic and imaging devices, and artificial intelligence software programs with health care implications (Foroughi and Stern, 2018). Coincidentally, the U.S. as well as the global economy are currently experiencing digitalization revolution and rapid development of medical technology with transactions costs-reduction implications[1] for accessing public health services and enhancing wellbeing. In addition, digitalization has democratized health care, shifting the hierarchical doctor-patient relationship to a partnership level, redefining their place in medicine via shared and community-based economy.

This study attempts to demonstrate the interaction between the four systems, namely, technology, food, culture, and communication. In other words, it presents the sequence and structure for nudging fruit and vegetables consumption among African American populations,

[1] According to Greenstein (2020), digitization has resulted in drastic reduction in transaction costs – search costs, replication costs, communications costs, tracking costs, and verification costs., coupled with the restructuring of supply of digital commodities in creative industries such as movies, music and television.

through the provision of digital communication systems and cultural centers.

To better understand whether and how digitization contributes to health disparities and dietary behavior, this study aimed to review published literature to understand the relationships between digitization and dietary compliance with focus on fruits and vegetables consumption (FFC) during the ongoing COVID-19 pandemic.

Population: Only 1 in 10 US adults consume 1.5-2 cups of fruits and 2-3 cups of vegetables per day; This represents just 9% and 2% of high school students respectively meet the fruits and vegetables recommendation. According to the COVID Racial Data Tracker, COVID-19 is affecting Black, Indigenous, Latinx, and other people of color the more. Through October 21, Native Hawaiians/Pacific Islanders were most likely to have contracted COVID-19, and Black/African American people were most likely to have died[2]. The focus population for this study is the minority rural population in the U.S. COVID and post-COVID pandemic era.

Intervention/Comparison/ Time: Adoption of digital tools, mobile applications or smartphones as an indicator for measuring digitization. Traditional approaches which implies no use of mobile applications.

Expected Outcome: reduction in death risks and chronic diseases such as obesity, cancers, cardiovascular diseases among African Americans.

Research question, hypotheses, and proposition: How much digitization are we talking about here? Who are the actors in digitizing dietary behavior? What types of policy interventions are being adopted for fruits and vegetables consumption in the U.S., and how effective are these policies? What is the effect of online grocery shopping on the healthfulness of grocery purchases (Harris-Lagoudakis, 2020)? What capabilities and resources are most important for communicating digital opportunities and innovation in this setting? Does digital innovation enable the rise in dietary compliance? What effect will adoption of digitalization intervention have on FVC? Do mobile applications intervention increase FVC among rural dwellers compared to a traditional intervention approach?

Conclusion: This study will provide innovative insights into the effect of COVID-19 on nutrition related chronic diseases. In view of this, it is necessary to comprehensively monitor, and document suspected chronic diseases patient before and after adopting digital technologies for increased FVC.

[2] Complete dataset is available at: https://covidtracking.com/race/infection-and-mortality-data#US

Future Research Plan: Based on my keen interest in investigating the interactive pathways between dietary trends, health disparities, digitization adoption and behavioral change in fruits and vegetable consumption during the COVID-19 pandemic, the next stage of this research is to adopt a robust randomized control trials (RCT) in objectively realizing the study objectives, thereby enhancing evidence-based policy interventions reinforcement with implications for cultural values towards appropriate behavioral skills.

Keywords: Diet trends, health disparities, digital health, medical technology, Dietary Guidelines for Americans (DGAs), *COVID-19, fresh fruits, and vegetables consumption (FFVC), digitization, U.S.*

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