



Mpala, Ke Botlhokwa

FACTORS INFLUENCING VEGETABLE CONSUMPTION IN BOTSWANA

AN ANALYSIS OF THE 2022 POPULATION AND HOUSING CENSUS

Ministry of Health: Department of Public Health

Anastacia Masesane and Tumelo Joseph



Republic of Botswana



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Outline of the Presentation

- Introduction
- Problem statement
- Objectives of the analysis
- Methodology
- Findings and discussions
- Conclusions
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- Recommendations



Introduction

Play a crucial role on improving public health



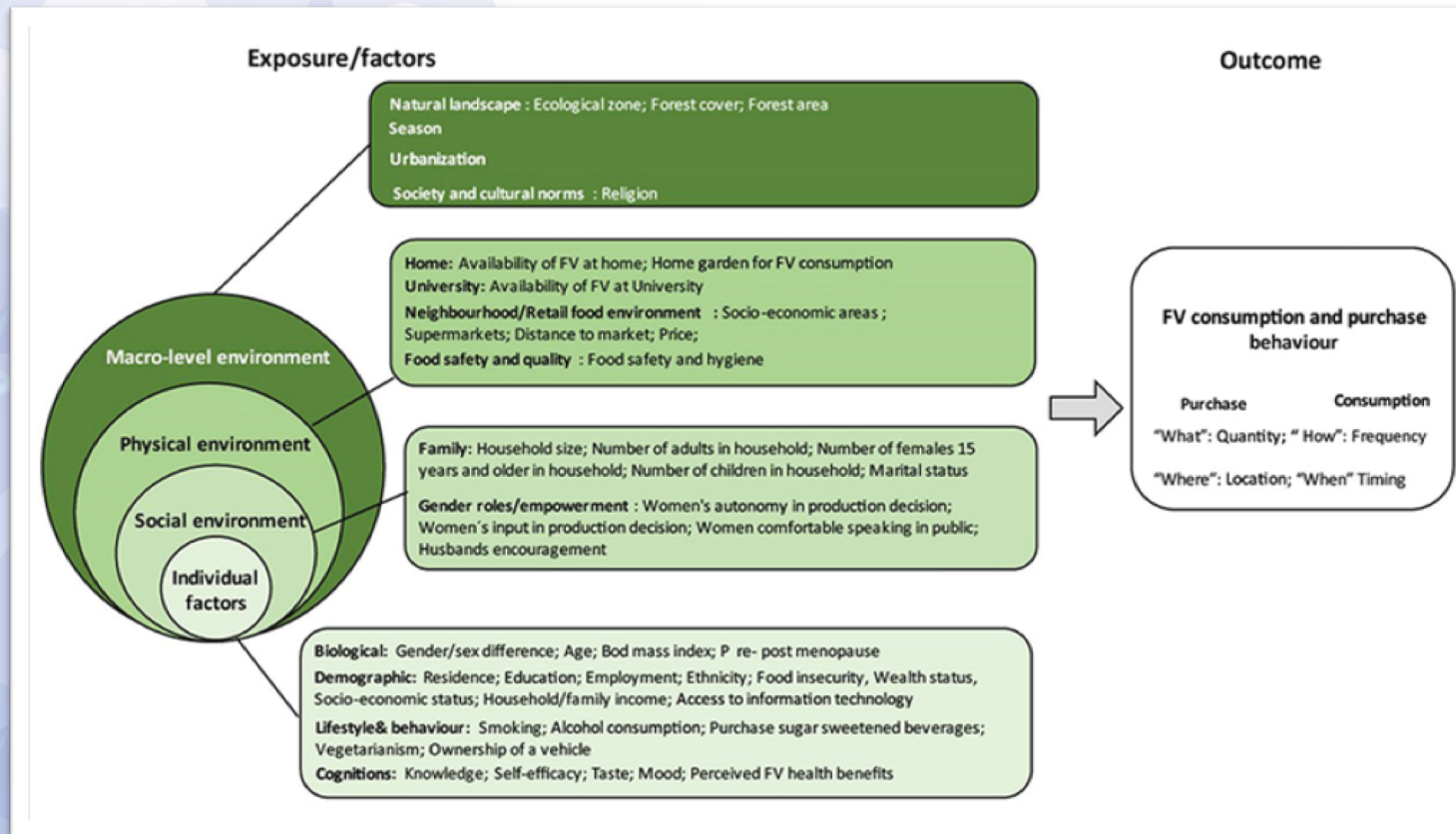
WHO recommendation
5 portions (400g of fruits
and vegetable per day

Help in prevention of;

- malnutrition
- Diet related non-communicable diseases

39 million death worldwide attributed to
inadequate vegetable consumption

Socio-ecological Conceptual Framework on Factors Influencing F & V Consumption in Sub-Saharan Africa



Barbara Stadlmayr, 2023

Problem Statement

- Several studies revealed that Botswana like other Sub-Saharan countries did not meet the daily recommended F & V consumption. According to Steps survey, 94.8% of Botswana consumed less than the recommended average of five servings of F&Vs per day while the Botswana Demographic survey indicated that only 43.5% of the population consumed vegetables daily while 22.6% consumed them once in a while (WHO, 2014 & Statistics Botswana, 2017). On the other hand, diet related diseases continues to increase in Botswana.
- Vegetable and fruit consumption have been proven to contribute to improved health and well-being due to their micronutrient and phytochemicals especially antioxidants. However, factors influencing vegetable consumption in Botswana have not yet been extensively studied, hence the analysis of 2022 PHC.

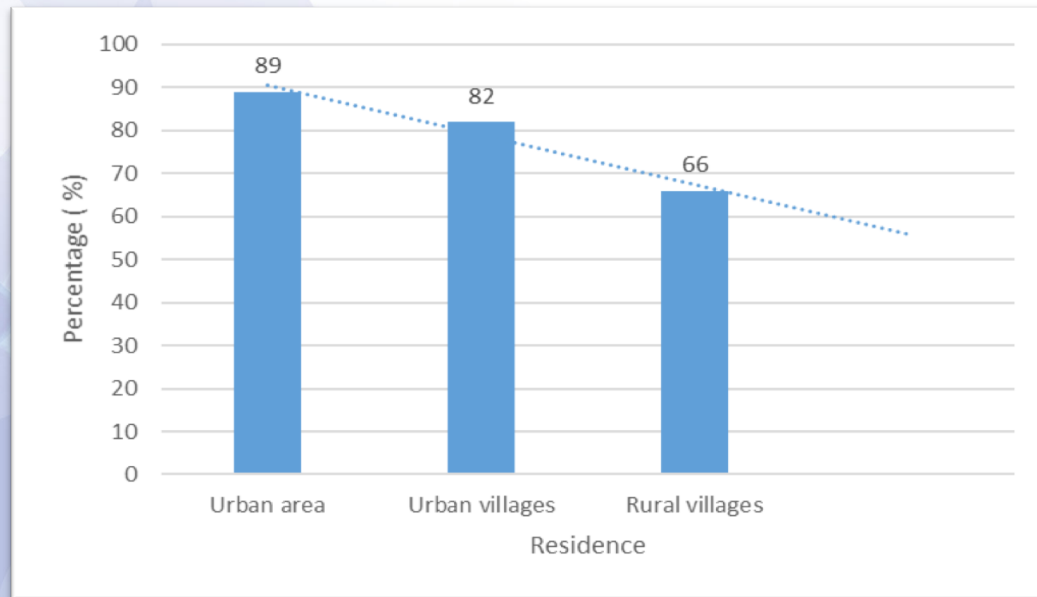
Objective of the analysis

- The main objective of the analysis is to utilise data from the 2022 Population and Housing Census to determine factors influencing vegetable consumption in Botswana.

Methodology

- The analysis utilised secondary data derived from 2022 PHC questionnaire that collected information on socio-economic characteristics of respondents.
- The questionnaire was administered to the head of the household representing family members and the response was based on their demographic characteristics.
- The analysed households demographic and socio-economic characteristics included age, sex, religion, educational attainment, place of residence by district (urban and rural villages) as well as access to Information and Communication Technology (ICT).
- The characteristics were linked to the household vegetable consumption in the 7 days prior to the administration of the questionnaire.
- The analysis implored descriptive statistics by frequencies, means and averages to summarise demographic and socio-economic data.
- The bivariate analysis was used to determine factors associated with vegetable consumption. Statistical analysis were performed using SPSS version 22.

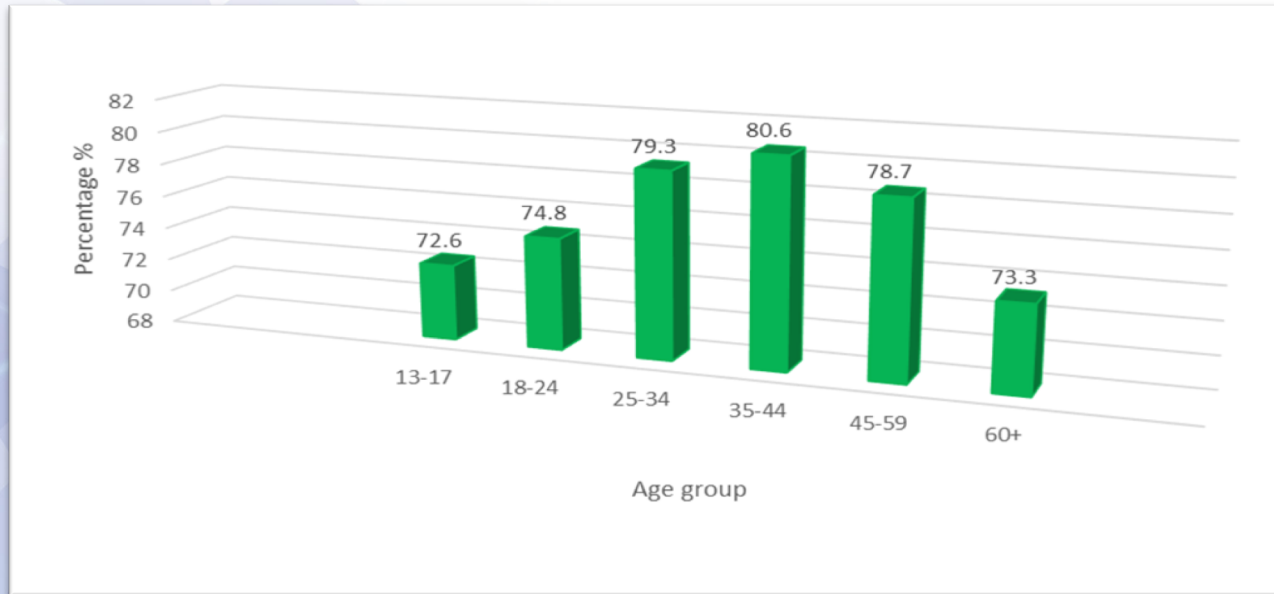
Findings and Discussions



Household Vegetable Consumption by Residence 2022

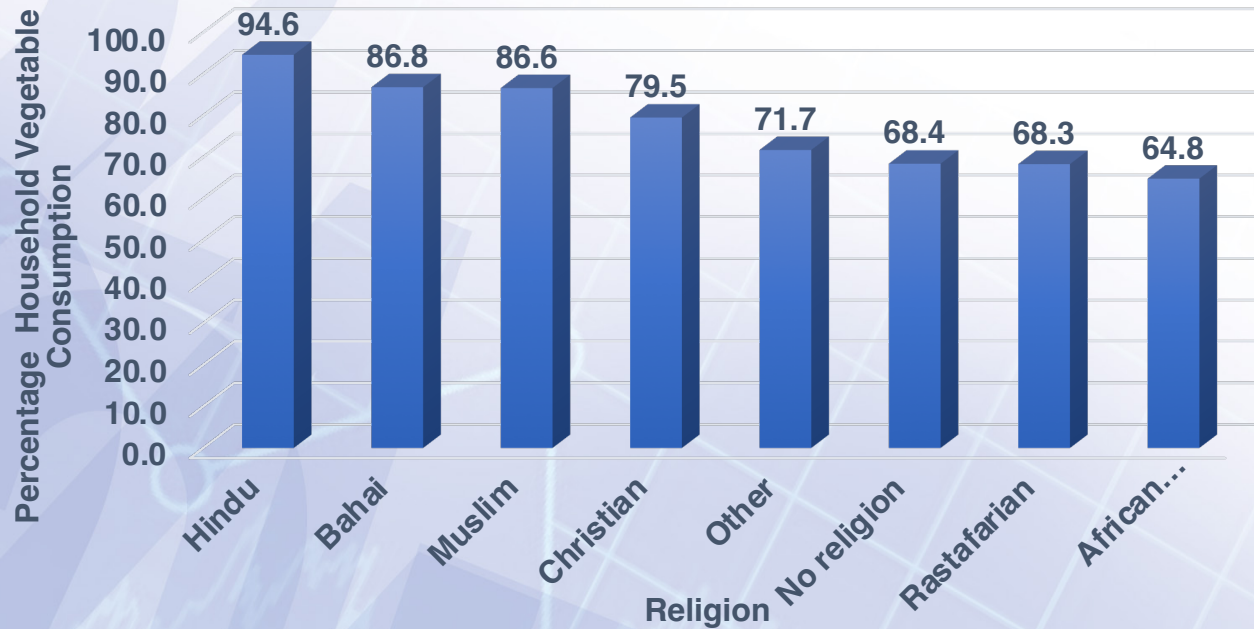
- More households (89%) at the urban areas consumed vegetables in 7 days preceding administration of the questionnaire followed by households at urban villages (82%).
- Lower households at the rural villages consumed vegetables.

Household Vegetable Consumption by Age categories 2022



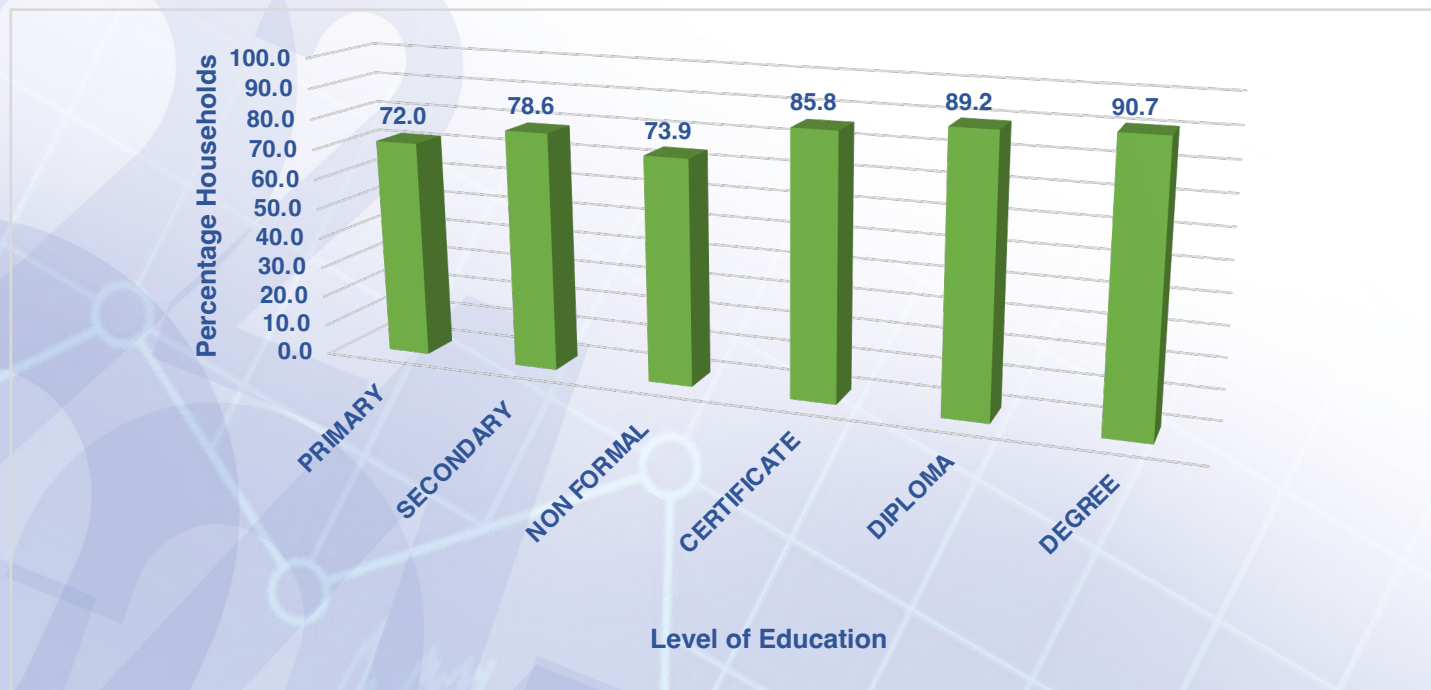
- Majority of households (**80.6%, 79.3% and 78.7%**) with populations between **35-44 years, 25-34 years** and **45-59 years** respectively consumed vegetables
- **Less households (72.6% and 73.3%)** with lower age and highest age categories (**13-17 and 60 years and above**) had the lower vegetable consumption
- Interestingly, the age bracket with high vegetable consumption appears to be the most employed with employment rate between **13.4% and 17.9%** (Statistics Botswana, 2022b).

Household Vegetable Consumption by Religion 2022



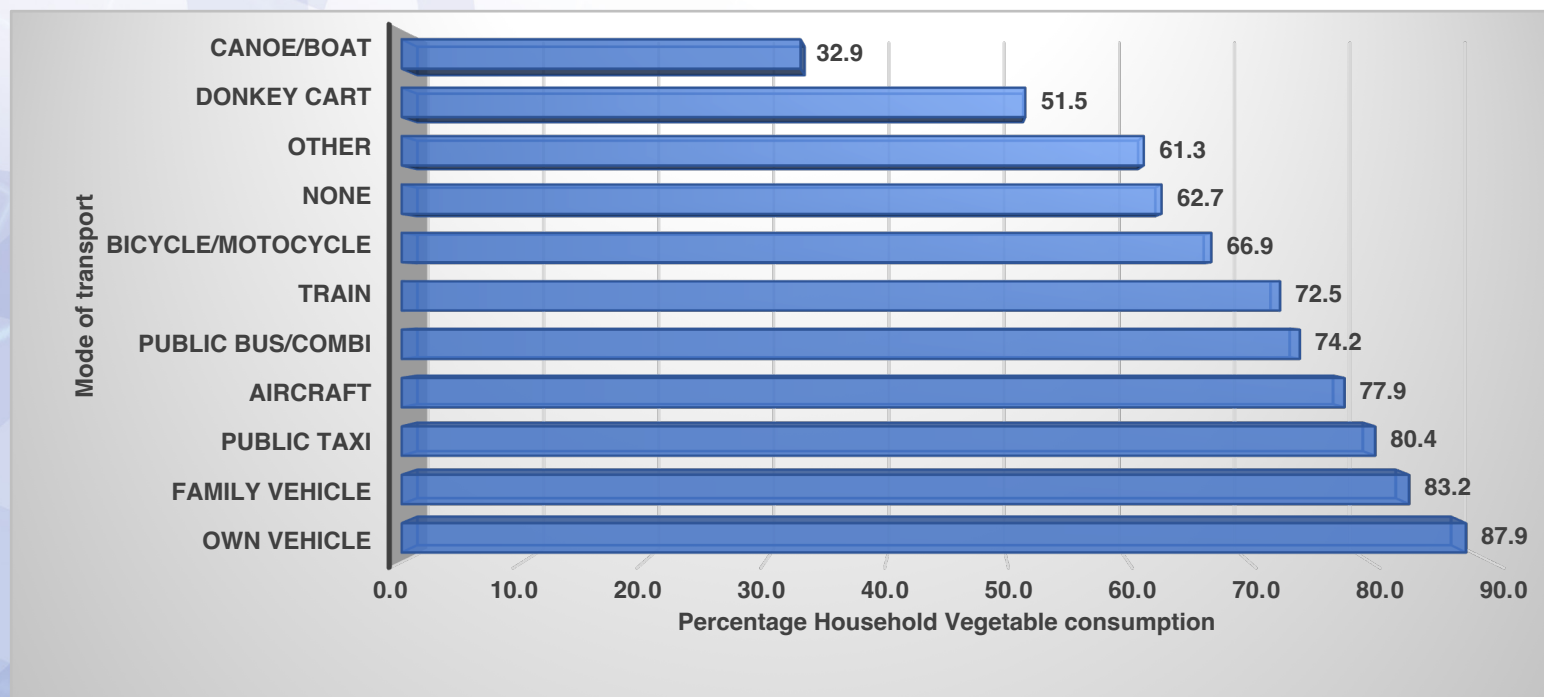
- **The Hindu religion households** mostly consumed vegetables (**94.6%**) while the lowest vegetable consumption were among the **African traditional religion (64.8%)**

Household Vegetable Consumption by Education 2022



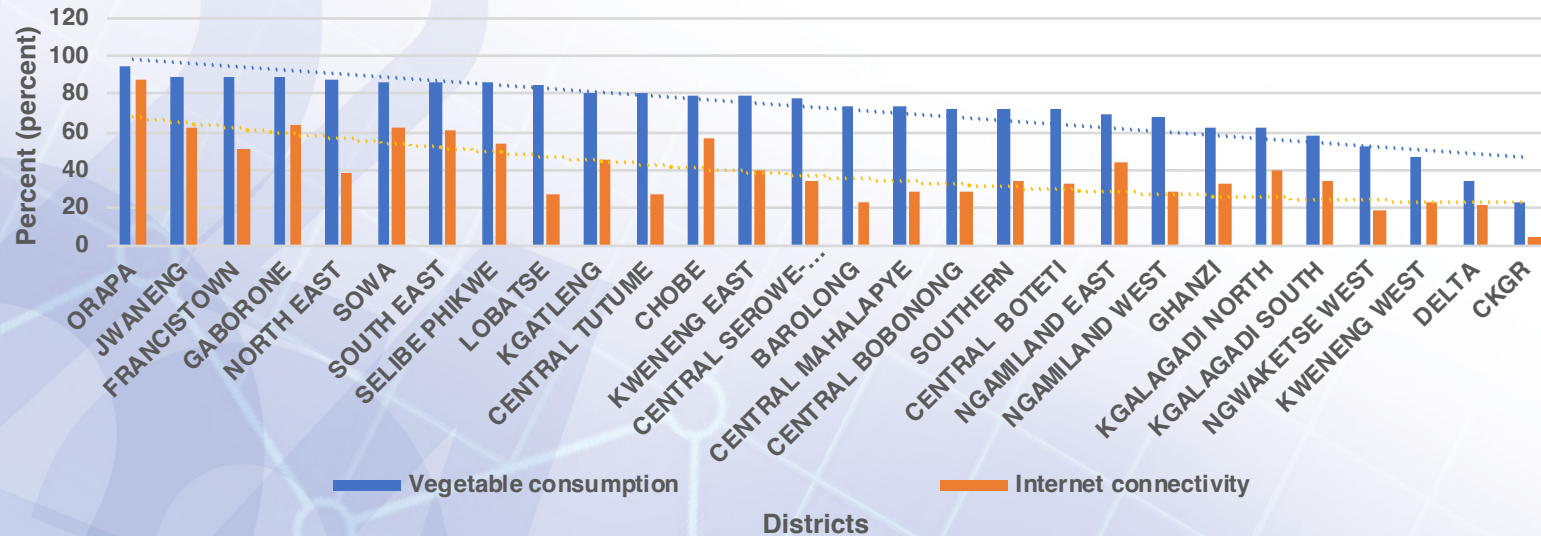
- Households with members who attained degree mainly consumed vegetables compared with the rest, while the lowest households were those with the highest qualification attained at primary level
- Stadlmayr et. al, 2023 reported that frequency and quantity of vegetable and fruit consumption including purchase power in Sub-Saharan Africa increased with higher level of education.

Household Vegetable Consumption by Mode of Transport 2022



- Households with assets such as vehicles mainly consumed vegetables (87.9%) and the least was those using canoe or boats.

Household Vegetable Consumption by District Versus Internet Connectivity 2022



- Internet connectivity was mostly common at cities and major villages where similarly vegetable consumption was higher among those households.
- Exposure to knowledge on the importance of vegetable consumption as part of health promotion through internet access might have contributed to higher consumption of vegetables at such districts.

Policy Implications

- Food security is defined as “a situation that exists when *all people at all times have physical, social and economic access to sufficient, safe and **nutritious** food that meets their **dietary needs** and food preferences for an active and healthy life*” (FAO).
- The Government of Botswana has a goal as per the 1997 National Population Policy (NPP) to “Improve Quality of Life and Standard of Living of All People in Botswana”.
- The 2022 population census showed that households with lower vegetable consumption were among the rural villages, less educated vulnerable groups and districts with lower access to internet connection.

Policy Implications

- **Vegetable Import Ban:** As an effort to improve food security and sustainability in the country, an import ban was introduced in January 2022. However, measures need to be taken to evaluate the impact on demand supply, quality of the vegetable produced and price variation.
- Nevertheless, government programs and policies through Agriculture and Health ministries and other sectors such as CEDA, NDB and LEA provide the roadmap to achieve the SDGs.
- The NPP seeks to ensure gender equality and equity in the socio-cultural, political, economic and legal domains, all these targeted to be achieved by 2030.

Limitations and Strengths

- It is worth noting that the 2022 PHC data is representative of the entire population with diversity of households covered. The following limitations were encountered during data analysis and report writing;
- Only one methodology of 7 days prior to the administration of the questionnaire was used which is prone to recall bias.
- The frequency of vegetable consumption within a week, proportion and size was not taken into consideration.
- The question asked about consumption of vegetables in general without categorizing them into types such as green leafy, yellow/orange, tubers, root and indigenous types.

Limitations and Strengths continue

- Some of the major factors influencing vegetable consumption such as income, occupation and agricultural activities were not readily available for the analysis.
- Internet connectivity was mostly common at cities and major villages where similarly vegetable consumption was higher among those households.
- Exposure to knowledge on the importance of vegetable consumption as part of health promotion through internet access might have contributed to higher consumption of vegetables at such districts.

Conclusions

- The analysis of PHC shows that even though the country has made efforts to improve food and nutrition security, majority of households in urban areas and urban villages mainly consumed vegetables compared to rural villages.
- Some of the socio-economic factors that influenced vegetable consumption included education attainment, age category, religion, internet connectivity and mode of transport showing some level of inequality.
- Households with members with high education attainment were likely to influence the family food choices through their knowledge and access to promotion of healthy eating through the internet.
- The same households conveniently accessed food markets through their own or family transport compared to other households.

Recommendations continues

- It is recommended that strategies and policies aimed at improving food and nutrition security enhance vegetable availability, accessibility and affordability across the entire population.
- A multi-sectoral approach engaging different sectors and non-governmental organisations need to develop strategies geared at aggressive health education for a changing lifestyles targeting all population particularly the less privileged.
- Improvement of infrastructure including free internet connectivity to most villages need to be expedited for community empowerment and improved knowledge and awareness on the importance of healthy eating as it was evident during the era of COVID-19.

Recommendations

- Similar studies determining factors associated with vegetable consumption with in-depth interviews on vegetable consumption including;
 - **Frequencies within a week**
 - **Portion sizes**
 - **Vegetable categories and classification**
 - **Incorporating fruits to meet the global recommendation of 5 portions a day will add value to informing decision makers on the extent of the interventions needed for the country to achieve vision 2036 and agenda 2063**

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