



## Impact of Food Inflation 2024 on Food Consumption Pattern of Women of Reproductive Age (15-49yrs) In Rawalpindi / Islamabad

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*Inflation, a global issue, not only impacts the economy of a country but also influences the food consumption patterns of its people, particularly women. The continuously rising prices of food commodities compel the public to prioritize savings over consumption, which subsequently affects food intake, leading to decreased consumption among individuals. Pakistan, being a developing country, is undoubtedly experiencing the highest-ever price increases, adversely affecting the purchasing power of its consumers. To date, most research has not thoroughly explored the impact of food inflation on food consumption, especially among women. The main aim of this paper is to examine the relationship between food price inflation and its impact on the food consumption patterns of women, particularly in Rawalpindi and Islamabad. A total of 106 participants completed an online questionnaire. Analysis of the results using SPSS revealed a mean age of 25.8 years (SD = 9.39). The study found that 48.1% reduced fruit intake, 45% reduced dairy intake, and 42% reduced meat consumption due to inflation. There was no significant association between employment status and consumption patterns ( $p = 0.274$ , 95% CI). The data suggest that inflation affects consumption patterns, with half of the population reducing their intake of fruits, meat, and milk due to rising prices. Further investigations should aim to establish a more comprehensive understanding of these relationships.*

## **1. Introduction**

Inflation, as defined by the International Monetary Fund (IMF), is a sustained increase in the general price level of goods and services in an economy, leading to a decrease in the purchasing power of money. It has a great impact on the types of foods and beverages an individual or population habitually consumes, including the frequency, quantity, and types of foods and beverages. The food consumption pattern is highly affected by rising prices (Oner, 2019). A common issue in both developed and developing nations is inflation. In recent years, there has been a lot of discussion about inflation. Some claim that inflation indicates a sound economy, while others declare that inflation hinders economic growth. It is apparent that an increase in the rate of inflation progressively erodes people's purchasing power, particularly for those with less money. Over the past forty years, food has been the primary focus of research worldwide due to its essential need for survival (Ameye et al., 2021). Food prices play a significant role in influencing dietary choices, and the majority of research indicates that healthier diets are more expensive than less healthy ones. This implies that people who want to follow dietary standards will have to spend more money on food, assuming they make just small dietary adjustments (Hoenink et al., 2022).

Households are severely impacted by inflation since the cost of needs has increased beyond their means of subsistence, thereby lowering their standard of living. This significantly increases their debt and forces them to depend on borrowing in order to survive (Saha, 2022). In this study, data is gathered by women through online questionnaire in the city of Islamabad and Rawalpindi in order to assess their consumption pattern. Pakistan, as a developing country, is experiencing unprecedented price increases in its present affecting the purchasing power of its consumers adversely. There is a lot of discussion on how fluctuations in food prices have a disastrous impact on low-income countries' food intake, which can lead to problems with cheaper, lower-quality staple foods relative to high-income countries (Headey & Alderman, 2019). The world's poorest and most malnourished populations are undoubtedly seriously threatened by such sharp increases in food costs, but there is a dearth of data on how food inflation affects dietary intake in low- and middle-income countries (LMICs) especially the dietary pattern of women.

Women's diet has long-term health effect on factors including quality of life, risk of disease, pregnancy outcomes and can have serious consequences on the health and productivity of next generations (Makarova & Zyriax, 2023). Research on the relationship between food prices and household poverty indicates that the effects of rising food costs on households with low incomes vary over time and across different types of livelihoods (Headey & Ruel, 2023). This study aims to bridge this gap in data

and explore the impact of rising food prices on the dietary pattern of women of reproductive age. It hypothesizes that inflation significantly impacts the dietary patterns of women of reproductive age in Islamabad and Rawalpindi, leading to reduced consumption of nutrient-dense foods. This study examines the impact of inflation on the dietary patterns of women of reproductive age in Islamabad and Rawalpindi. It aims to explore how rising food prices influence food choices, quantity, and quality, particularly among women who are more vulnerable to nutritional deficiencies due to pregnancy, lactation, and overall reproductive health needs. By using an online questionnaire, this study gathers firsthand data on women's food consumption habits, affordability challenges, and coping strategies in response to inflation. The research is significant in the context of Pakistan, a developing country experiencing record-high inflation, which severely affects purchasing power, especially for low- and middle-income households.

Given that women's nutrition directly impacts pregnancy outcomes, disease risk, and the health of future generations, understanding the effect of rising food prices on their diet is crucial for policymakers and public health experts. The study contributes to the limited literature on food inflation's impact in low- and middle-income countries, providing insights into how economic instability shapes dietary habits in urban settings. Despite its relevance, the study has certain limitations. First, the use of an online questionnaire restricts participation to literate and internet-accessible women, potentially excluding those from lower socioeconomic backgrounds who may be most affected by inflation. Second, the study is limited to Islamabad and Rawalpindi, urban areas that may not fully represent the food insecurity challenges faced by women in rural Pakistan. Third, self-reported dietary data may be subject to recall bias, where respondents might misreport or inaccurately recall their food consumption habits. Future research could address these limitations by incorporating rural populations, conducting longitudinal studies, and using biochemical assessments for nutritional evaluation.

## **2. Review of Literature**

### **2.1 Impact of Food Insecurity on Women's Dietary Patterns in Pakistan**

Food insecurity is a critical problem in Pakistan with nearly 50 % of the population being affected from it. Data suggest that between 2015-2016 and 2018-19, dietary intake has declined especially in rural areas, with an increase in food insecurity by 21%. Increased food prices due to inflation in this period has also reduced access of healthy foods, leading to micronutrient deficiencies, especially in areas of Sindh, KP, and Balochistan (Hameed et al., 2024). A diverse diet including all major food groups in adequate amounts is crucial for females, especially for women of reproductive age, to achieve better pregnancy outcomes and child health. But when resources are scarce the

access, availability, and cost are restricted, making it difficult to increase nutrient-rich food consumption. Although there is limited data on effect of certain food on women health, but there is a large convincing body of evidence suggesting a significant association of women's diet on overall health and lifestyle (Skoracka et al., 2021). Income, culture, and personal taste also play a role in the decision of taking food, but food price is a major factor. Nutrition-dense fruits, vegetables, dairy products, meat, and poultry were consumed less in Ouagadougou, Burkina Faso, whereas staple consumption stayed constant despite a 53% price increase (Kennedy & Moursi, 2015).

## **2.2 The Impact of Food Inflation and Supply Chain Challenges on Food Security in Pakistan**

Various studies have shown that Pakistan is facing in agricultural Food production, leading to supply chain shortages and ultimately food inflation. Poor infrastructure, improper food storage leading post-harvest losses, rapid population growth and increasing demand for food have further worsen this issue, leading to unstable food supply chain (Salam & Hameed, 2022). Economic growth in Pakistan is not equitable leading to low-income group suffering more from inflation resulting in unequal access to food and resources (Khan et al., 2021). There is a surge in food prices in the developing countries including Pakistan since 2008 due to a spike in global food prices. Major staple foods like rice and wheat had price increases of 121% and 76%, respectively. A study conducted in 2008 by the UN interagency Assessment Mission found that rising food prices contributed to the increase in the number of Pakistanis with inadequate food consumption, defined as less than 2,100 kilocalories per capita per day, from 72 million (45% of the country's total population) in 2005–06 to 84 million (51%) in 2008. Food insecurity in the nation had therefore increased as a result of rising food prices. Another study discovered that a 20% increase in food costs would cause the number of people living in poverty to rise by 8%. 1% increase in these food groups' costs raises the likelihood that a household will be impoverished from 2.6% to 77%, respectively. Because of their relative relevance in the household budget, the price increase of various food groups over time has different effect on various households (Shabnam et al., 2023). Food inflation has shown to affect the food consumption habits, shopping behaviors, and food purchasing motives particularly of those who are food insecure than those who are food secure (Haydaroğlu & Bilgiç, 2024).

In food insecure populations, lack of dietary diversity and nutritional food leads to increased risk of malnutrition, decreased fertility and improper fetus growth and negative pregnancy outcomes (Keats et al., 2021). Women dietary pattern has significant impact on her overall lifestyle, but also determines the health and development of their children. Most of the researches have discussed the role of food

inflation on food consumption pattern but data is still limited on its impact on women, for instance a study conducted by Naveed Hayat et al. (2023) speculated food consumption pattern in detail but ignoring the gender aspect of food consumption by not targeting women specifically (Hayat et al., 2023).

**Table No 1: Government-Announced Support Prices for Key Agricultural Commodities in Pakistan**

Commodity	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
<b>Wheat</b>	1300	1300	1300	1300	1400	1800	2200	3900
<b>Paddy (Rice Varieties)</b>								
- Basmati: Super	-	-	-	-	-	-	-	-
- Basmati: 385	-	-	-	-	-	-	-	-
- IRRI-6 (FAQ)	-	-	-	-	-	-	-	-
- DR-82/83, KS-282 (FAQ)	-	-	-	-	-	-	-	-
<b>Seed Cotton (Phutti)</b>								
- B-557, 149-F, NIAB-78	-	-	-	-	-	-	5000	8500
<b>Sugarcane</b>								
- Punjab	180	180	180	180	190	200	225	300
- Sindh	172	182	182	182	192	202	250	302
- Khyber Pakhtunkhwa	180	180	180	180	180	200	225	300

(Prices in Pakistani Rupees per 40 kilograms)

**Source:** Adapted from the Agriculture Policy Institute, Islamabad

Moreover, a study conducted by Shabnam N et al., (2023) provided no evidence regarding relation of food prices and its impact on food consumption pattern on women (Shabnam et al., 2023). Consequently, a research conducted by Saher Hasnain (2019) speculated the disruptions that alter food consumptions patterns but it didn't focused food price inflation dynamics which also alters consumption patterns (Hasnain, 2020). Whereas, the main aim of this paper is to represent relation between food price inflation and also to improvise its impact on food consumption patterns especially of women of Rawalpindi and Islamabad.

### 3. Materials and Methods

#### 3.1 Study design

This study employs a cross-sectional quantitative survey-based design to evaluate the impact of inflation on WRA.

### **3.2 Sample size and Data collection**

The target population for this study consists of women of reproductive age (15–49 years) residing in Islamabad and Rawalpindi. A self-administered questionnaire was used to evaluate the changes in the dietary pattern in response to inflation. The data was from a total of 106 women of reproductive age in the urban areas of Rawalpindi and Islamabad. Sample was collected using random sampling technique. Inclusion criteria includes women within the age range of 15 to 49 years. Pregnant and lactating women and participants with any diagnosed medical complication were excluded from the study to avoid any biasness.

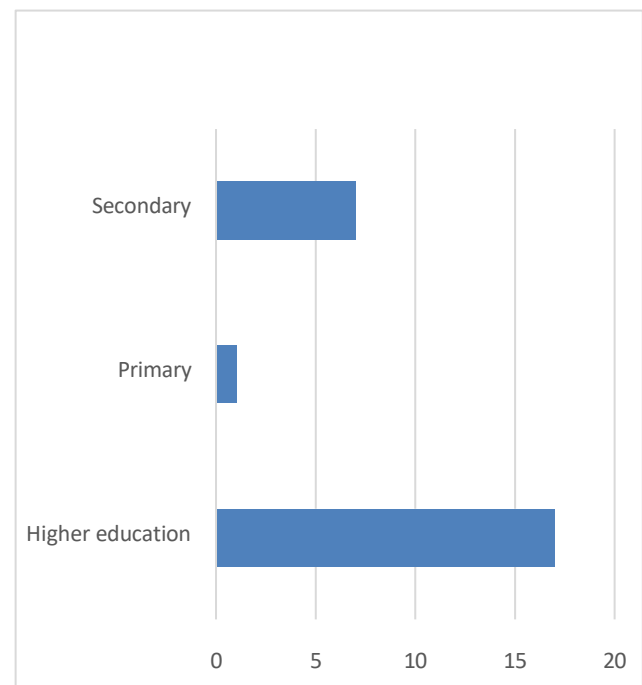
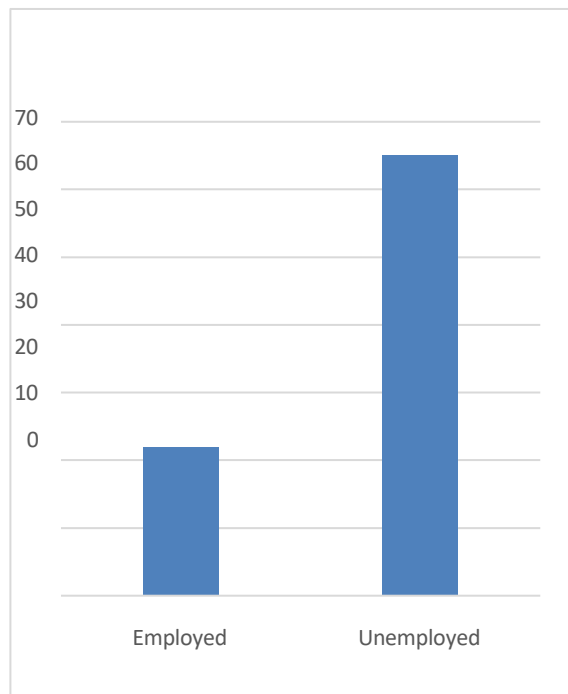
## **4. Data Analysis and Results**

Data analysis was performed using IBM SPSS. Descriptive statistics were used to summarize the data, while chi-square was conducted to examine the association of employment status of participants and changes in dietary pattern. The findings reveal that inflation has significantly

impacted food consumption patterns, with fruits, dairy, meat, and pulses showing high rates of decreased intake. Conversely, vegetables and grains exhibited a relatively higher percentage of increased or unchanged consumption, suggesting that affordability concerns may influence dietary priorities. Moreover, 60% of population involved in study is unemployed. Majority of population have a good education status.

**Figure No 1: Employment status of participants**

**Figure No 2: Education level of respondents**



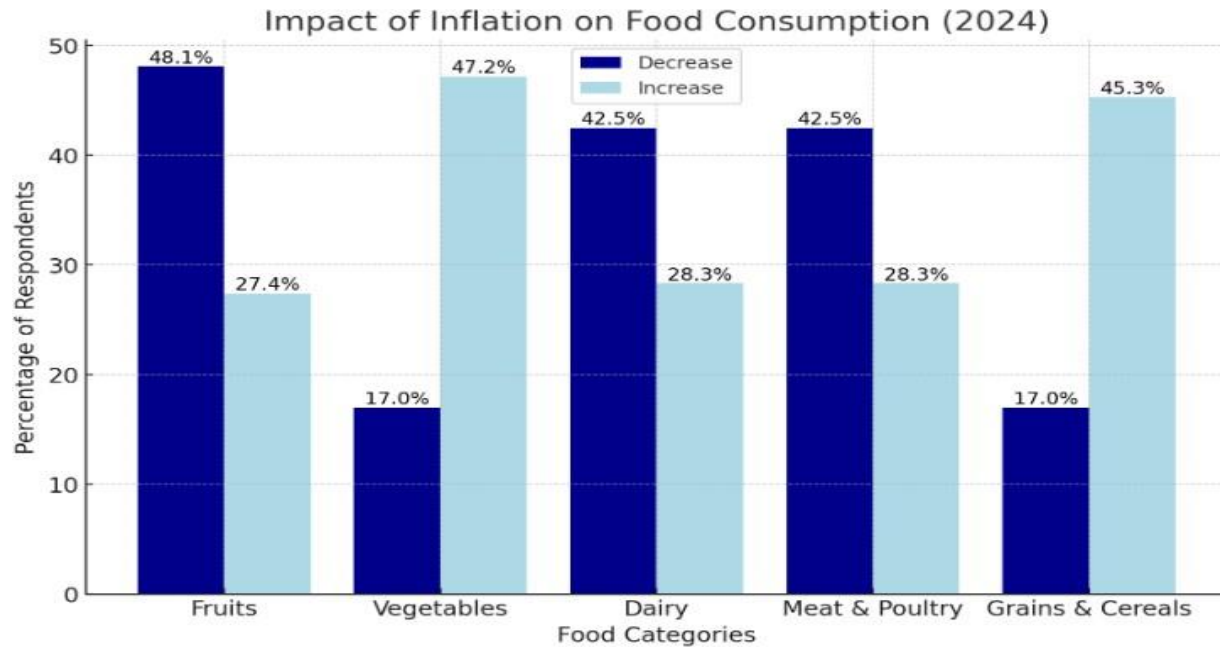
#### 4.1 Consumption pattern

The study analyzed the impact of inflation on food consumption patterns among 106 respondents, focusing on changes in the intake of various food groups. Among 106 respondents, 48.1% (n=51) reported a decrease in *fruit consumption*, while 24.5% (n=26) stated their intake remained unchanged. Only 27.4% (n=29) reported an increase in fruit consumption. *Vegetable consumption* also showed a different trend, with 47.2% (n=50) reporting an increase in intake, while 35.8% (n=38) stated their intake remained unchanged. 17.0% (n=18) reported a decrease in vegetable consumption. *Dairy consumption* patterns indicate that 42.5% (n=45) of respondents reported a decrease in intake, and 29.2% (n=31) maintained their usual consumption. 28.3% (n=30) reported an increase in dairy intake, showing that inflation has affected dairy consumption for some individuals. A similar trend was observed in *meat and poultry consumption*, where 42.5% (n=45) reported a decrease in intake, while 29.2% (n=31) stated their intake remained unchanged. 28.3% (n=30) reports increase in consumption. *Grains and cereals*, shows that 45.3% (n=48) of respondents increasing their intake, and 37.7% (n=40) reported no change. However, only 17.0% (n=18) reported a decrease in consumption, indicating that despite inflation, grains and cereals remain a key part of the diet for most women. A total of 48.1 % women reported a decrease in their consumption of fruits intake due to inflation in 2024. However, there is been an increase in consumption of vegetables 47.2 %. The findings suggest that while inflation has led to a decline in the consumption of nutrient-rich foods like fruits,

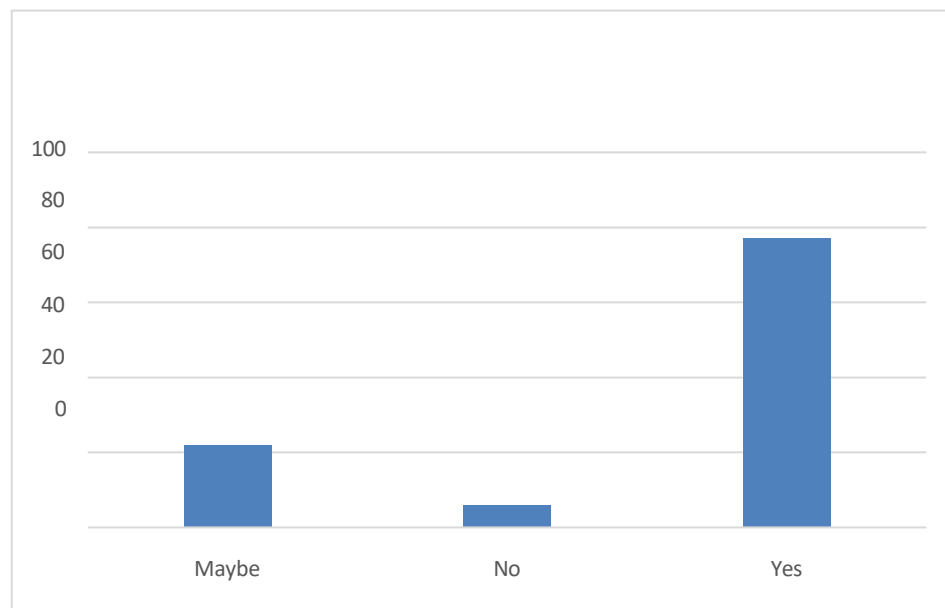


dairy, and meat, staple foods such as vegetables and grains have seen relatively stable or increased intake, highlighting the role of affordability in dietary choices.

**Figure No 3: Reported impact of food inflation on consumption pattern in 2024**



**Figure No 4: Reported change in dietary pattern in 2024**

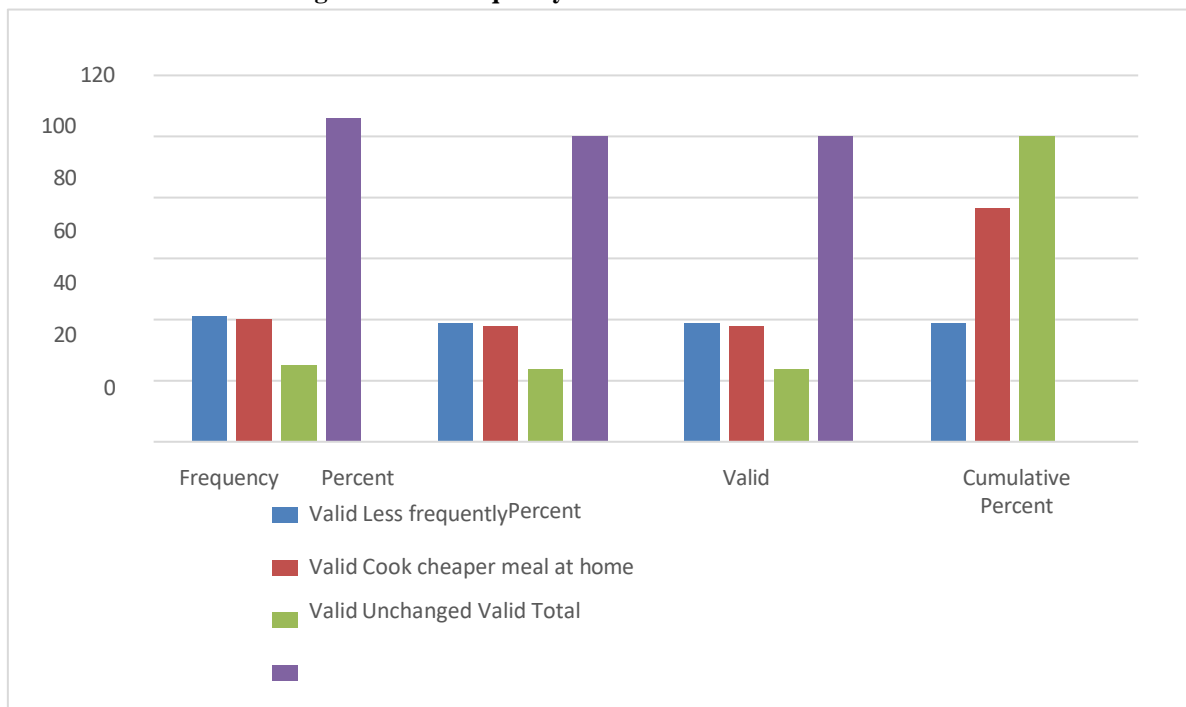


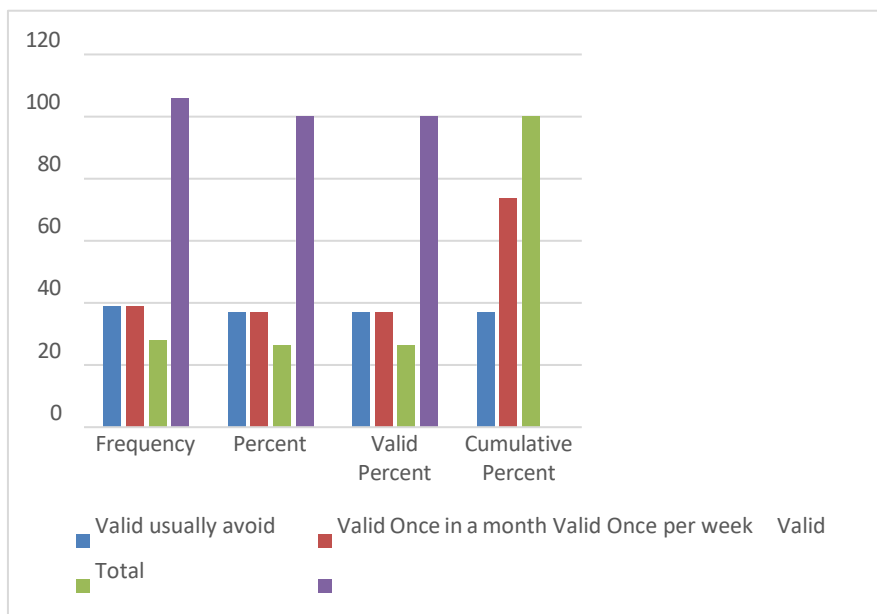


#### 4.2 Association between employment status and consumption pattern

The study also examined whether women's employment status influenced their dietary patterns and ability to afford healthy foods. The association of women's employment status and dietary pattern was evaluated to find out the impact of women's own earning on her intake of or buying capacity of healthy foods. Chi-square test was performed to find out the association between employment status of the subjects and their consumption patterns. No significant association between employment status and consumption patterns ( $p = 0.274$ , 95% CI) was found. Hence, the results showed no significant relationship between women's employment status and their food consumption patterns. This suggests that having a source of personal income does not necessarily translate into better dietary choices or increased access to healthy foods. Instead, broader economic conditions, such as inflation, rising food prices, and overall household income, may have a more substantial impact on what women can afford to eat. It indicates that even employed women might struggle with maintaining a nutritious diet if food costs are high or if their earnings are insufficient to counter inflation. These findings highlight the need for policies and interventions that address food affordability and access at a larger scale, rather than solely focusing on employment as a determinant of dietary habits.

**Figure No 5: Frequency of dine out in 2024**



**Figure No 6: Frequency of fast-food consumption**

Key findings of this study include

- 4.2.1 Inflation significantly affected food consumption, with a notable decrease in the intake of fruits (48.1%), dairy (42.5%), meat (42.5%), and pulses.
- 4.2.2 Vegetable (47.2%) and grain (45.3%) consumption increased or remained unchanged, indicating that affordability plays a crucial role in dietary priorities.
- 4.2.3 Employment status was not significantly associated with consumption patterns ( $p = 0.274$ , 95% CI), suggesting that other socioeconomic factors may influence dietary habits.
- 4.2.4 60% of the respondents were unemployed, while the majority had a good education level.

These findings highlight the adverse effects of inflation on dietary quality, particularly reducing access to nutrient-rich foods, while staple foods like grains remain a priority.

## 5. Discussion and Conclusion

This study aims to highlight the impact of food inflation on food consumption patterns specifically, we focused Women of Reproductive Age (19-50 yrs) of twin cities (Rwp/Isb). Our results illustrated that as prices of food commodities were raised the food consumption pattern of women was also changed ( $p < 0.05$ ). In addition, it was also clearly demonstrated that women substituted best quality food products with cheaper

low quality food products with the fear of the over rising prices of best quality food products. Moreover, this study suggests that rise in inflation lead to decrease in dietary diversity among majority women as they were bound to choose cheaper food items irrespective of the fact that whether they were of best quality or not which in turn sparked health issues in them. Our study findings are closely linked with the study conducted by D T Fajobi which illustrated that rise in food prices was closely associated with women being (underweight, overweight, and obesity) at p-value of 0.01 which implicates that health status is also deeply impacted by dietary choices of the individual (Fajobi et al., 2023). However, our results were different from the results of the study conducted by Gandhi which were that there is no significant association between consumption of necessity goods and gender. He also stated that impact of sex and inflation on consumption of necessity goods has no link (Kalpesh, 2022). A study on the impact of inflation on the consumption pattern of necessity goods of the people of the Saurashtra region. Moreover, a study conducted by Headay et.al (2020) found out a strong association between food inflation and stunning and wasting in children which implies that dietary habits impacts growth status of children. These risks apply to young infants, suggesting a prenatal pathway in the wake of inflation (Headey & Ruel, 2023). Another study was conducted which demonstrated the association of maternal dietary pattern and early growth risk in infants (Hu et al., 2020).

The result of this study is also supported by a study conducted on on food price elasticity and its impact on dietary patterns in Pakistan by Hameed et al., (2024) They find out that Pakistan's diet mostly consists of a single commodity food-bundle and lack diversity. They showed that Pakistan nutritious food groups like milk and meat are complementary to staple food (wheat, pulses and vegetables) and even slight increase in food prices will lead to decrease consumption of these food group. This observation aligns with our findings, which show that food price inflation significantly reduces access to nutrient-rich foods, particularly reported decrease in meat and dairy intake (Hameed et al., 2021). In fact, our study enlightens innovative aspects and is without any limitation. The study sample size was limited to women. Moreover, additional studies with larger sample size are needed in this regard to identify and wipe out misleading practices. Our study provides remarkable insights and reasons to policymakers for the need of eradicating the issue of inflation and also highlighting one of the risk factor of unhealthy lifestyle of most people. As mentioned earlier, food inflation is not just restricted to prioritizing cheaper food products over high quality food products but is closely linked with a number of health disparities that occur after recurrent consumption of such products just for the sake of optimizing budget. Furthermore, future researchers should aim to provide possible solution and innovative ideas to resolve this issue otherwise its long term persistence can create havoc.

## 5.1 Conclusion

As a matter of fact, our study demonstrated the negative impact of food inflation on dietary patterns of individuals. Subsequently, the data received in this whole study demonstrated that with rise in prices of various food products their consumption is affected prominently. Due to the reason that women prioritize optimizing household budget and completely vanishing the fact that they also need well balanced food sources in their diet in order to have healthy living. This study therefore enlightens various aspects including the need of better precautionary measures to take control over these everyday rising prices of food commodities and also controlling the impact of it on lifestyle of the individuals. The result of this study are strong enough to guide practitioners in making effective policies regarding provision of affordable food supply which will in turn pave way towards healthy lifestyle not only in women but in overall individuals .

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