

## Determinants of Household Consumption Expenditure in the Middle East

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### ABSTRACT

Household consumption and the variables that drive it have received widespread attention in economic literature. GDP per capita, population, and inflation are some of the macroeconomic variables that are usually considered to affect household spending. This study examines the influence of these macroeconomic variables on household consumption using multiple linear regression analysis models. The annual data used in this analysis covers the period 2010 to 2022. The paper found a positive and significant relationship between the expenditure of household consumption and GDP per Capita and population. As well as the significant and negative relationship between inflation and the expenditure of household consumption in the Middle East.

حظي استهلاك الأسر المعيشية والمتغيرات التي تدفعه باهتمام واسع في الأدبيات الاقتصادية. يُعتبر الناتج المحلي الإجمالي للفرد، والسكان، والتضخم من بعض المتغيرات الاقتصادية الكلية التي تُعتبر عادةً مؤثرة على إنفاق الأسر المعيشية. تفحص هذه الدراسة تأثير هذه المتغيرات الاقتصادية الكلية على استهلاك الأسر المعيشية باستخدام نماذج تحليل الانحدار الخطي المتعدد. تغطي البيانات السنوية المستخدمة في هذا التحليل الفترة من 2010 إلى 2022. وجدت الورقة علاقة إيجابية وهامة بين إنفاق استهلاك الأسر المعيشية والناتج المحلي الإجمالي للفرد والسكان. بالإضافة إلى العلاقة السلبية الهامة بين التضخم وإنفاق استهلاك الأسر المعيشية في منطقة الشرق الأوسط.

### RÉSUMÉ

La consommation des ménages et les variables qui la déterminent ont fait l'objet d'une grande attention dans la littérature économique. Le PIB par habitant, la population et l'inflation sont quelques-unes des variables macroéconomiques

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généralement considérées comme influençant les dépenses des ménages. Cette étude examine l'influence de ces variables macroéconomiques sur la consommation des ménages en utilisant des modèles d'analyse de régression linéaire multiple. Les données annuelles utilisées dans cette analyse couvrent la période 2010-2022. L'étude a mis en évidence une relation positive et significative entre les dépenses de consommation des ménages, le PIB par habitant et la population. Il existe également une relation significative et négative entre l'inflation et les dépenses de consommation des ménages au Moyen-Orient.

**Keywords:** Household Consumption Expenditure, GDP per Capita, Population, Inflation

**JEL Classification:** C23 D12 O53

## 1. Introduction

Household consumption expenditure has an important role in the economy of a country. High household consumption can provide a significant boost to economic growth and national development. Dumitrescu et al. (2022) and Agarwala & Vasudevan, (2021) said in his research that high household consumption can contribute significantly to economic growth and national development. Understanding the factors influencing household consumption expenditure is essential to formulate effective economic policies, Thomas, (2013).

Wibowo & Airlangga (2020) and Çebi Karaaslan et al., (2022) Writing an analysis of household consumption expenditure factors can provide an overview of economic dynamics and consumer behavior in a particular region. These expenses are in the form of food, clothing, shelter, transportation, health, education, recreation, and other consumer goods. Household consumption expenditure is an important component in measuring a country's economic activity and can provide valuable information for people and related countries. The Middle East is a country with different levels of development, resources, and social systems.

Çebi Karaaslan et al., (2022) and Almalki et al., (2022), demonstrating the importance of understanding the factors influencing household consumption expenditure in the culturally rich and economically rich Middle East region, for governments, entrepreneurs, and academia. Countries with people who have a high level of income and expenditure

so that they have high economic potential. Most households in the region spend on expensive items such as cars, houses, and luxury goods. However, household consumption expenditure in the region can also vary significantly. These differences can be influenced by a variety of determinants such as average household income, price level, inflation, unemployment rate, and other social and demographic factors, Obinna, (2020).

Income levels in the Middle East can be a complex and multifaceted subject. Although the region is known for its oil wealth, per capita income and wealth distribution can vary greatly between countries and even within countries themselves. On the one hand, countries such as Qatar and Saudi Arabia have very high per capita incomes, due to their links to their natural resources, especially oil and gas and the presence of government subsidies and social benefits programs, Tapsin &; Hepsag, (2014).

Then the Turkish country with a high level of income due to has a fairly diverse economy, including manufacturing, agriculture, tourism, and increased access to credit in Turkey, Çebi Karaaslan et al., (2022). On the other hand, there are Iran and Egypt which have lower per capita incomes. Because problems such as unemployment and poverty are still major challenges in the country.

Another factor that causes high household consumption expenditure is the price level. The price level also affects the consumption patterns of a society. Jan Brůha, Michal Hlaváček, (2017) and Çebi Karaaslan et al., (2022) said that when the overall price level rises, it will decrease the purchasing power of households. In the Middle East, if inflation is high, it can lead to an increase in the price of essential goods and services, such as food, housing, and transportation. In addition, many countries in the Middle East also rely on importing large amounts of consumer goods. High inflation in the home country can also increase the cost of imports and lead to an increase in the price of consumer goods in the domestic market, affecting their household consumption expenditure, Khan et al., (2021).

Then another factor that causes the increase in household consumption expenditure is demographic factors. Dumitrescu et al., (2022) The Middle East has a varied population, and every year it grows rapidly and significantly. Al-Khraif et al., (2020) Rapid population growth in some

Middle Eastern countries could increase demand for consumer goods and services, such as food, housing, education, and health services. This has led to an increase in household consumption expenditure to meet the needs of a growing population. Chai, (2018) It also states that household consumption expenditure is the amount of money used by households in buying goods and services to meet their needs and desires.

In general, previous studies used panel data analysis to determine the determinants of household consumption such as those conducted by Arapova, (2018) who examined household consumption from 13 countries in Asia and 110 other countries around the world, then by Shaikh et al., (2014) who examined household consumption expenditure in Pakistan using the range of 1985 – 2011 using foreign investment, household consumption, domestic savings, domestic savings, Value Added in the Industrial, Agricultural and Service sectors taken independently, Foreign Debt, Remittances, Gross Capital for research variables. Another researcher by Wibowo & Airlangga, (2020) who examined household consumption in Indonesia using data from 33 provinces in Indonesia, and a previous study Hone & Marisennayya, (2020) examined factors affecting consumption expenditure in Debremarkos City, Amhara Region, Ethiopia. The study found that GDP has a significant influence on household consumption expenditure in Ethiopian countries.

The scientific novelty and fundamental character of the study can be found. First, in a methodological approach, which is based on a comparative analysis of the determinants of final consumption expenditure and their influence on several countries in the Middle East. Second, the study attempts to combine various factors influencing macroeconomic household final consumption expenditure and population factors.

Therefore, this study contributes to the literature because it is conducted at the Country or cross-country level, especially in the context of middle and high-income countries in the Middle East. By using a random sample method (Purposive Sampling) of 5 countries in the Middle East and using panel data regression analysis. This study aims to uncover the determinants of household consumption expenditure (HFCE) in selected Middle Eastern countries. The determinants of HFCE were studied using multiple linear regression models applied to data in 5 countries in the

Middle East such as: Turkey, Egypt, Qatar, Iran, and Saudi Arabia, during 2010 – 2022. The determinants studied for their effect on HFCE consist of PBD per Capita, Population and Inflation Rate.

## **2. Literature Review**

Consumption in economics is the selection, acquisition and use of goods and services for the purpose of desire satisfaction, Goodwin et al., (2020). Consumption can also refer to the overall lifestyle of individuals or groups of people to non-economic factors as well as economic factors that influence consumer behavior, Arapova, (2018). Schumpeter & Keynes, (1936), define consumption as directly influenced by income levels, but the emphasis is that consumption is not entirely dependent on current income alone; Anticipation of future earnings also has a significant impact. Therefore, in Keynesian theory, consumption is considered a sensitive response to changes in income, be it current income or future estimated income. It has an important role in explaining individual consumption behavior.

This theory was developed by Thore & Friedman, (1957) with the Life Cycle Hypothesis which put forward the permanent income hypothesis and emphasized that consumption is influenced by "income expected in the long run, not current income levels". The implications of the permanent income hypothesis were explored by Hall, (1988) and Macklem, (1998) who proved that current and expected future disposable income is a significant determinant of household consumption. Therefore, Habanabakize, (2021) said whatever the growth of absolute income, the consumption expenditure of an individual will remain constant if his personal absolute income increases but other members of the same society do not increase their income by the same proportion. Although there are variations in researchers' methods of measuring income and investigating its impact on household consumption, they occupy a leading position among factors affecting household consumption.

Some researchers are beginning to measure how income impacts household consumption expenditure. Arapova, (2018) cites Schumpeter & Keynes, (1936) about consumption and income known as "Keynesian Consumption Theory". In this theory, Keynes stated that the level of consumption is influenced by the level of income. Keynes suggested that people tend to consume some of their extra income, but not entirely. The

main concepts in this theory are the tendency to save (marginal propensity to save) and the tendency to consume (marginal propensity to consume). However, each of these variables takes into account income level as the main element that affects overall consumer spending, Ezeji & Ajudua, (2015). This income level can also be seen from the size of GDP per Capita in a region. GDP per capita can look at the average income generated by the population of a country in a given period of time, usually measured in years. GDP per Capita is calculated by dividing a country's GDP by its population, Katsaiti et al., (2017).

Due to the high contribution to GDP, consumption expenditure is taken into account in macroeconomic policy for fiscal planning. Policymakers try to predict how consumers will behave in the face of income fluctuations Dumitrescu et al., (2022). There have been many empirical studies on the effect of GDP on household consumption expenditure such as Bonsu & Muzindutsi, (2017), Demyanyk et al., (2019), Alp & Seven, (2019), Keho, (2019), and Obinna, (2020). Which proves that GDP has a significant effect on household consumption expenditure. Shaikh et al., (2014), concluded that if Pakistan's Gross National Expenditure, Export of Goods, Gross Savings and Final Consumption Expenditure have a positive influence on GDP. Similarly to Bangladesh, Final Consumption Expenditure has a positive and significant impact on the GDP of both countries.

Then another factor that causes an increase in household consumption expenditure is the population of a country. The second variable that can affect household consumption expenditure is because the more the population, the greater the likelihood of demand for goods and services, Hakib & Asdar, (2020). Empirical research on the influence of population on household consumption expenditure such as Addessi, (2018), Bromage et al., (2018), Cloyne et al., (2017) and Hone & Marisennayya, (2020). They proved in their research that population or family size can have a significant positive effect on household consumption expenditure. The larger the population, the higher the aggregate demand according to the idea put forward by Schumpeter & Keynes, (1936) As a result, households tend to spend more money on a variety of consumer products, such as food, clothing, housing, and transportation.

Although many studies show that population impacts have a significant effect on household consumption expenditure, it does not rule out the

opposite may happen. Like Keynes's (1936) theory of the Paradox of Thrift (Paradox of Saving) This concept assumes that as the population increases, increasing consumption expenditure is not effective. According to this theory, as the population increases, the ability to save and invest also increases, which can ultimately reduce the level of consumption expenditure. This is because households tend to be more concerned with saving for a more secure and stable future rather than spending all of their current income. Thus, proving that the population or population level is not in line with household consumption expenditure.

And the third variable, Inflation is a general and continuous increase in the prices of goods and services in an economic region within a certain period. Inflation increases the cost of living and reduces household purchasing power. Higher prices cause basic necessities, such as food, clothing, and housing, to become more expensive, affecting consumers' ability to purchase goods and services, Varlamova & Larionova, (2015). Keynes, (1936) in saying if household consumption expenditure is disrupted by inflation, it can hamper spending because households feel uncertain about the future of the economy, thus limiting their spending. Tokoya et al., (2022) ,Keho, (2019) examined the impact of inflation on household consumption. Their findings were that household consumption was significantly negatively impacted. Another significant study by inflation rate. Then there are other studies by Bonsu & Muzindutsi, (2017) and Obinna, (2020) finding evidence to the contrary.

### **3. Data and Methodology**

#### **3.1 Study Design**

Descriptive statistics are important for quantitative analysis because they provide a numerical picture of the data and measurements used in a particular study, Bashtannyk & Hyndman (2001). This research is a quantitative approach that examines the determinants of household consumption expenditure, using the method *Purposive Sampling* by randomly taking countries in the Middle East considering the completeness of the data obtained per country. Such as Turkey, Egypt, Qatar, Iran and Saudi Arabia. This study places emphasis on the Keynesian consumption function as well as function modification by incorporating other variables. Data is sourced from secondary sources and analyzed using statistical software.

### 3.2 Model Specifications

The variables used in this study are Consumption, GDP per capita, Population, and Inflation. The statistics used include final expenditure data on household consumption per country in the form of billions per year, data on the level of GDP per capita for each country in the form of millions per year, data on the number of populations per country in the form of millions of people per year, and inflation rate data per country in the form of percentage data per year.

The relevance of factors affecting household final consumption expenditure was evaluated using the following estimation regression model specifications:

$$HFCE_{it} = \alpha + \beta_1 GDP \text{ per Capita}_{it} + \beta_2 Population_{it} - \beta_3 Inflation_{it} + e$$

Information:

$HFCE_{it}$  = Log level of household consumption expenditure in Country i at time t.

$\alpha$  = Constant

$\beta_1 GDP \text{ per Capita}_{it}$  = Log rate of GDP per Capita in a Country i at time t.

$\beta_2 Population_{it}$  = Log rate of total population in a Country i at time t.

$\beta_3 Inflation_{it}$  = Log rate of Inflation in a Country i at time t.

$e$  = Model error that includes omitted variables and unobserved state impacts.

### 3.3 Data Sources

Data for this study were obtained from a *World Bank* publication. Covering 2010 – 2022.

### 3.4 Data Analysis Techniques

Regression analysis of panel data with E-Views 0.9 is the analysis technique used. All data is transformed in the form of natural logarithms (ln) to provide valid and consistent results. The method combines cross section data with model estimation procedures that include common



effect, fixed effect, and random effect. There are various tests, such as the Chow test, Hausman test, and *LM* to select the best model. Test the Coefficient of Determination, Test (F), Test (t) and *R – Square* before testing the hypothesis.

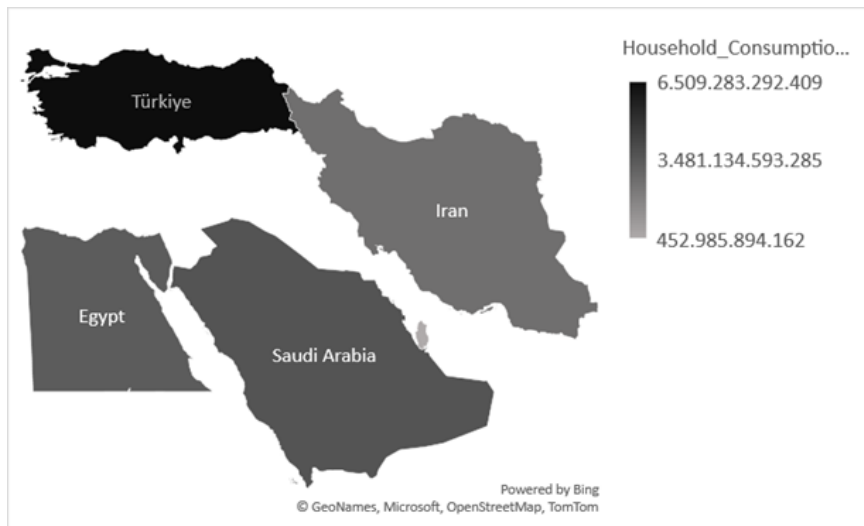
#### **4. Results and Discussion**

In this study took samples of 5 (five) countries in the Middle East region, including Turkey, Egypt, Qatar, Iran, and Saudi Arabia. Where the five countries have different levels of household consumption. Data analysis of household consumption levels covers from 2010 – 2022 in each of the five countries. Household consumption levels in Middle Eastern countries vary significantly, influenced by several factors including the economy, government policies, culture, and economic infrastructure at any given time.

The final household consumption rate is highest in Turkey, with an average over 12 years reaching US \$ 6,509 M. Household consumption is a major component of the economy in Turkey. Its contribution is 56% to GDP in 2022 (TUIK, 2023). The high level of consumption in the country is driven by the population, a growing middle class, and increased access to credit Çebi Karaaslan et al., (2022). Saudi Arabia, being the second country with the highest level of consumption. With a 12-year average of US\$3,661 M. Household consumption in Saudi Arabia contributes 38% to Saudi Arabia's GDP in 2022, (GASTAT, 2023). This high level of consumption is supported by oil revenues, government subsidies, and social benefit programs in Saudi Arabia. Egypt became the third country with the highest level of final consumption of household consumption expenditure. US\$3,374 M over the past 12 years. Household consumption contributes about 75% to GDP in Egypt in 2022 (World Bank, 2022).

Household consumption expenditure in Egypt is allocated to food, housing, and transportation. Iran, the fourth country with a household final consumption expenditure level of US\$2,678 M. Its contribution is 51% of GDP in Iran (Word Bank, 2022). Household final consumption expenditure is mostly allocated to food, housing, and transportation. Then Qatar, with household final consumption expenditure of US\$3,661 M. Its contribution amounted to 23% of GDP in 2022. (World bank, 2022). High levels of consumption are supported by high per capita income, and government subsidy programs Household in Figure 1.

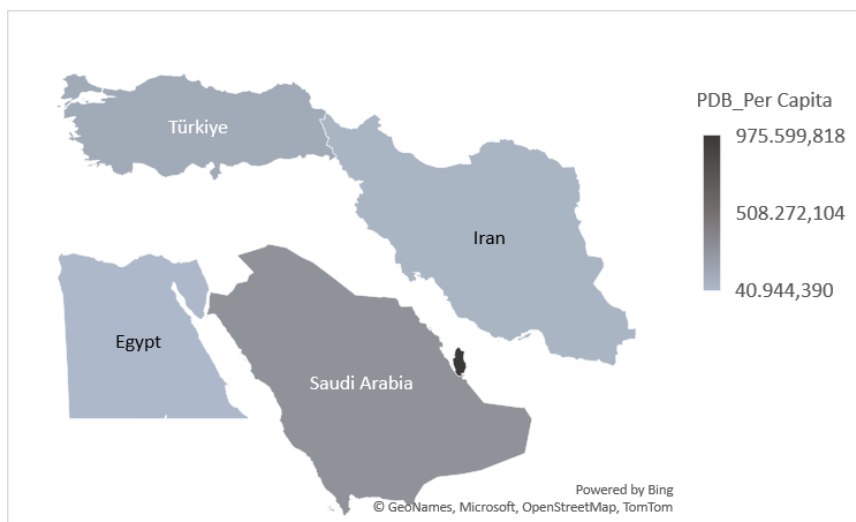
**Figure 1:** Map of the distribution of final expenditure levels of household consumption in 5 Middle Eastern Countries



Source: World Bank (2022)

*GDP (Gross Domestic Product)* or Gross Domestic Product in Middle Eastern countries has significant variations due to differences in economic sectors, natural resources, government policies, and political stability, (Çebi Karaaslan et al., 2022).

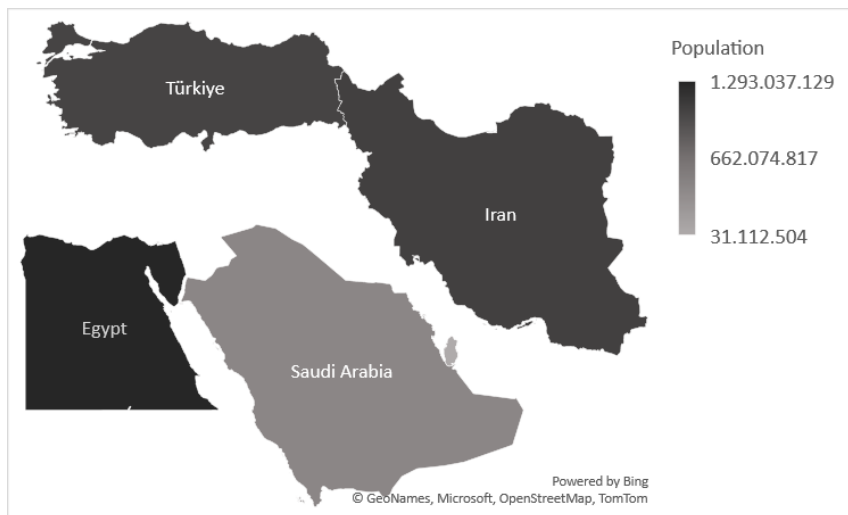
Of the 5 countries, the highest GDP per capita level is in the State of Qatar. With a 12-year average of US\$975,599 M, Qatar has the highest GDP per capita in the Region due to its abundant oil and natural gas resources. Saudi Arabia is the second country to have a high GDP per capita, amounting to US \$ 296,304 M. has the largest GDP per capita because Saudi Arabia is the main oil exporter in the world. Turkey, being the third country to have a high GDP per capita rate. US\$138,936 M. Turkey's economy experienced moderate money growth with GDP per capita steadily increasing in recent years. Iran. The fourth country with a GDP per capita level of US\$69,901 M. Iran's GDP per capita growth is hampered by international economic sanctions and domestic political instability. Then the last country, Egypt. Egypt's GDP per capita is US\$40,944 M. Although Egypt's GDP per capita is relatively low, it continues to show an increase in line with steady economic growth. PBD rate graph as shown in figure 2.

**Figure 2.** Distribution of GDP Levels per Capita in 5 Middle Eastern countries

Source: World Bank (2022)

Population refers to the total number of individuals living in a region or country at any given time. It not only refers to the number of people, but also involves various aspects related to the composition, distribution, demographic, and social characteristics of such people, Li et al., (2019).

Populations in Middle Eastern countries have diverse characteristics and are influenced by factors such as natural growth, migration, family policies, and socio-economic conditions. Turkey has a large and diverse population. The population growth is quite stable. Egypt is one of the countries with the largest population in the Middle East. Its population growth is quite fast and has significant urbanization which is explained in research by Abu Hatab et al., (2022). Qatar has a relatively small population, mainly due to its limited geographical size. Despite this, Qatar's population has seen a significant increase due to international migration for better work and life, Wawan & Hannase, (2022). Iran has a sizable population and is one of the most populous countries in the Middle East. Although its population growth has slowed in recent years, Iran still has family policies that support population growth and has ever-increasing urbanization. Izadi et al., (2023). Saudi Arabia has a large and growing population. The country has also seen significant urbanization, Aboukorin & Al-shihri, (2015). Population levels are described in figure 3.

**Figure 3.** Population Distribution of 5 countries in the Middle East

Source: World Bank (2022)

Inflation rates in Middle Eastern countries can vary widely, affected by a variety of factors including government economic policies, political stability, energy price fluctuations, as well as global market dynamics. Turkey has experienced high inflation rates in recent years. Factors such as currency devaluation, political instability, and aggressive monetary policy have affected the rising inflation rate in the country. The Inflation Rate reached 84.39% in November 2022, (*Tradingeconomics, 2022*). The government has been trying to control inflation with tighter economic policies, Coskun, (2023). Egypt also faces inflationary challenges. The inflation rate in Egypt reached 24.9% in December 2022, (*Tradingeconomics, 2022*). A number of factors such as rising fuel prices, subsidy removal policies, and currency fluctuations have affected the inflation rate in the country, Purnomo, (2017).

The inflation rate in Qatar tends to be lower compared to some other countries in the region. Iran has experienced quite high inflation in recent years. In 2022 the inflation rate in Iran reached 48.6%, (*Tradingeconomics, 2022*). Much of this is due to international sanctions that limit its access to global markets. The Iranian currency underwent a significant devaluation, triggering an increase in the prices of goods and services within the country, Ture & Khazaei, (2022). The inflation rate

in Saudi Arabia is usually lower compared to some other countries in the region. With an inflation rate of 3.1% at the end of 2022, (*Tradingeconomics, 2022*). The Saudi Arabian government has been trying to keep inflation low with various economic policies aimed at controlling consumer prices. The country's inflation rate is described in figure 4.

**Figure 4.** Rate %, Inflation of 5 countries in the Middle East



Source: World Bank (2022)

#### 4.1. Panel Data Regression Model Selection

##### 4.1.1. Chow Test, Hausman Test, and Lagrange Multiplier Test

Chow Test, Hausman Test, and Lagrange Multiplier Test to select the most correct model between Fixed Effect, Common Effect, and Random effect assuming  $H_0$  is rejected if  $\text{Prob. Cross Section } F \leq 0.05$ .

**Table 1.** Best Model Selection Test Results

No.	Test	Prob	Information
1.	Chow	0.0000	FEM
2.	Hausman	0.0001	FEM

Source: Eviews 9 Data Processed, 2023.

It is possible to accept H1 and reject H0 based on the findings of the Chow Test, and the Hausman Test. Fixed Effect Test results are superior. Therefore, the Fixed Effect Model was chosen over the Common Effect and Random Effect Models.

#### 4.2. Panel Regression Results

The Fixed Effect model was chosen as the appropriate model from the panel data regression significance test data, and a multiple linear regression equation model was created as follows:

**Table 2.** Fixed Effect Regression Test Results

<b>Bound and Free Variables</b>	<b>Regression Coefficient</b>	<b>t-stat</b>	<b>Probability</b>
C	-17.15977	-7.052679	0.0000
<i>GDP_PER_CAPITA</i>	0.911995	15.09921	0.0000
<i>POPULATION</i>	1.993293	15.82548	0.0000
<i>INFLATION</i>	-0.049774	-3.608402	0.0007
R-Square	0.991574		
Adjusted R-Square	0.990539		
F-Statistic	958.2367		
Prob (F-Statistic)	0.000000		

Source: Eviews 9, data processed 2024

The interpretation of the panel data regression model estimation is explained as follows:

A constant ( $\alpha$ ) of 2.00 with a significance level of 0.0000 explains that when GDP per capita, population, and inflation are equal to zero or constant, HFCE will increase by 2.00%.

$\beta_1$  (GDP\_PER.) = 0.911995, variable regression coefficient GDP amounted to 0.911995. It can be concluded that the positive influence

	between GDPs per capita towards HFCE (Y) of 0.911995. Assuming all other factors are constant, if GDP (X1) grew by 2%, HFCE will increase by 1%.
$\beta_2$ (population)	= 1.993293, variable regression coefficient population (X2) is 1.993293. It can be concluded that the positive influence between populations on HFCE (Y) amounted to 1.993293. Assuming all other factors remain constant, if the population (X2) rises by 4%, HFCE will rise by 1%.
$\beta_3$ (Inflation)	= -0.049774, variable regression coefficient Inflation (X3) of -0.049774. It can be concluded that the negative influence between the inflation rate on HFCE (Y) of -0.049774. Assuming all other factors remain constant, HFCE will grow by 1% if the inflation rate (X3) increases by 1%.

### 4.3. Hypothesis Testing

To find out whether the relationship between the independent factor and the dependent variable really affects it, either simultaneously or partially, hypothesis testing is carried out. A partial test (t-test) and a simultaneous test (F-test) are two different types of hypothesis testing.

#### 4.3.1. Simultaneous F test

The F test is used to assess whether all independent factors, including GDP per Capita (X1), population (X2), and inflation (X3), simultaneously affect the dependent variable, HFCE (Y). F-statistical values are used to make decisions in this F test.

Value =  $k - 1 = 3$  and  $n - k = 8$  or  $df(4.07)$  at  $\alpha=0.05$  obtained the value of F-table 4.07 and the result of F-count obtained a value of  $df_1 df_2$  1519.824, so the value of F-calculate (958.2367)  $\geq$  F-table (4.07). It can

be said that H1 is accepted and H0 is rejected, meaning that the independent variables of GDP per Capita, population, and inflation can have a simultaneous or simultaneous effect on the HFCE dependent variable in the Middle East from 2010 to 2022, simultaneously.

#### 4.3.2. Partial Test (t Test)

The t-test compares the Prob (t-statistic) of each variable with degrees of freedom to determine the impact of each independent variable, such as, population, and inflation, on the dependent variable, i.e. HFCE 95% of the degree of freedom ( $\alpha=0.05$ ) or by comparing t-count and t-table. Based on the results of data analysis using regression with Fixed Effect Model shows:

##### 1. GDP per Capita

The t-count value of GDP per Capita is 15.09921 while the t-table is 2.306004, so the t-count value is  $\geq$  the t-table value and probability value (0.0000). H1 is therefore accepted, meaning that the variable GDP per Capita has a Significant Impact on HFCE. The results show that HFCE increases when GDP rises. This shows how the direction of GDP is the same as HFCE.

##### 2. Population

The t-count value of the population is 15.82548 while the t-table is 2.306004, so the t-count value  $\geq$  the t-table value and probability value (0.0000). Thus, H1 is accepted and H0 is rejected, suggesting that population variables have a significant impact on HFCE. The data collected shows that HFCE increases with population growth. This suggests that the population is in line with HFCE.

##### 3. Inflation

The calculated t-value of the Inflation variable is -3.608402, while the t-table is 2.306004, so the t-count value is  $\geq$  t-table and the probability value is  $0.0007 < \alpha=0.05$ . As a result, H0 was accepted and H1 was rejected which shows that the inflation variable has a significant negative effect on HFCE. The results suggest that HFCE will decline as inflation rises. This indicates that inflation is moving in a different direction from the HFCE trend.



#### 4.4. Coefficient of Determination ( $R^2$ )

The coefficient of determination is 0.991574 or 99%. This shows that from the dependent variable Household Consumption Expenditure (HFCE) which is 99% explained by the independent variable GDP per Capita, population, and inflation of 1% can be explained by other factors. ( $R^2$ )

#### 4.5. Discussion

##### 4.5.1. The Effect of GDP Per Capita (X1) on Household Consumption Expenditure (Y)

People's consumption tendencies are influenced by various factors. Factors that influence some consumption patterns are people's income levels. The study shows that while changes in GDP per Capita (X1) have a significant impact on household consumption expenditure in the Middle East, high GDP per capita in some Middle Eastern countries has enabled a well-off lifestyle for most households. This encourages higher spending on consumer goods, including luxury goods and imports. In countries such as Saudi Arabia and Qatar, revenues from the oil and gas sector are redistributed to communities in the form of subsidies, allowances, and other social assistance programs. This increases household income and encourages higher consumption. Based on Keynesian consumption theory, income levels are influenced by their income level. The higher the income, the higher the level of consumption.

This is in line with other research by Dilanchiev & Taktakishvili, (2021), Bonsu & Muzindutsi, (2017), Demyanyk et al., (2019), Alp & Seven, (2019), Keho, (2019) and Obinna, (2020). There is a correlation between income levels (GDP or GDP Per Capita) and favorable levels of consumption where households constantly increase their spending as their incomes rise.

##### 4.5.2. Effect of Population Level (X2) on Household Consumption Expenditure (Y)

The results in this study show that population (X2) has a significant effect on household consumption expenditure. The region's population growth has increased every year, thus having a significant impact on the level of

household consumption. Many countries in the Middle East are experiencing high and significant population growth. A larger population means more people need goods and services for consumption, such as food, housing, clothing, transportation, and more.

Population size is also related to labor force and income. A large population creates greater market potential, enabling business growth, job creation, and increased income. This, in turn, can increase household consumption expenditure. This research is in line with research conducted by Addessi, (2018), Bromage et al., (2018), Cloyne et al., (2017) and Hone & Marisennayya, (2020), in his research the number of people in the population directly affects the demand for goods and services which can directly affect the amount of aggregate demand. The larger the population, the greater the potential for consumption. Population growth can increase demand for everyday goods such as food, clothing, and housing.

#### 4.5.3. Effect of Inflation Rate (X3) on Household Consumption Expenditure (Y)

The results of this study show that the Inflation variable (X3) has a negative and significant effect on household consumption expenditure. Households will reduce the level of demand for goods and services when inflation increases. High inflation rates can cause distortions and uncertainty in the economy, which will reduce aggregate consumption. Inflation leads to an increase in the price of goods and services. In Middle Eastern countries that may depend on imports for certain consumer goods, rising import prices can creep into prices in the local market. This can make consumers' purchasing power decrease as the cost-of-living increases. These results are in line with research conducted by Tokoya et al., (2022), Keho, (2019) and Obinna, (2020), which indicates that rising inflation rates reduce the amount of goods and services households want to buy. These findings lend support to the real equilibrium effect of inflation.

## 5. Conclusion

The focus of this study was to examine the effect of GDP per capita, population and inflation on household consumption expenditure in 5 Middle Eastern countries from 2010 – 2022. Based on a detailed time

series involving the use of multiple linear regression techniques. The empirical results of this study can be concluded, *First*, the variable GDP per Capita has a significant positive contribution to household consumption expenditure, which indicates that any increase in the amount of income (GDP Per Capita) can lead to an increase in household consumption expenditure. This is because the average per capita income in some Middle Eastern countries is very high which leads to a well-off lifestyle for most households. That ultimately drives higher spending on consumer goods, including luxury goods and imports. Qatar, and Saudi Arabia are dominating countries with the highest GDP per capita among the five countries studied.

*Second*, population variables have a positive contribution to household consumption expenditure, which indicates that the more the population increases, the more household consumption expenditure increases. The Middle East experiences rapid and significant population growth every year. Therefore, the increase in consumption of daily necessities such as food, clothing, transportation, and others will also increase as the population increases. Egypt has the highest population rate among the five countries studied.

*Third*, the inflation variable has a significant negative contribution, which indicates that households tend to hold back non-primary consumption expenditures and only focus on basic needs when facing high economic uncertainty. Although Middle Eastern countries are rich in oil resources, high inflation can still suppress household consumption expenditure. Therefore, maintaining price stability is important to support sustainable purchasing power and consumption expenditure. Countries with the highest inflation rates among the five countries are Turkey and Iran. The country's government is still trying to control inflation with tighter economic policies.

The authors acknowledge that research on factors influencing final expenditure of household consumption in 5 Middle Eastern countries still has flaws. One of the limitations is the number of sample countries which is only 5 countries and the period of panel data used is relatively short, namely from 2010 – 2022. Therefore, for future research, it is recommended to expand the scope of the research area by increasing the number of countries and using a longer research time span by utilizing the latest data to produce more complete and comprehensive findings.

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**Appendix A : fixed effect regression results**

Dependent Variable: HOUSEHOLD\_CONSUMPTION

Method: Panel Least Squares

Date: 06/24/24 Time: 22:13

Sample: 2010 2022

Periods included: 13

Cross-sections included: 5

Total panel (balanced) observations: 65

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-17.15977	2.433085	-7.052679	0.0000
GDP_PER_CAPITA	0.911995	0.060400	15.09921	0.0000
POPULATION	1.993293	0.125955	15.82548	0.0000
INFLATION	-0.049774	0.013794	-3.608402	0.0007

**Effects Specification**

Cross-section fixed (dummy variables)

R-squared	0.991574	Mean dependent var	25.95592
Adjusted R-squared	0.990539	S.D. dependent var	0.944536
S.E. of regression	0.091873	Akaike info criterion	-1.822011
Sum squared resid	0.481112	Schwarz criterion	-1.554394
Log likelihood	67.21535	Hannan-Quinn criter.	-1.716419
F-statistic	958.2367	Durbin-Watson stat	0.901564
Prob(F-statistic)	0.000000		

**Appendix B: Chow test results**

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	47.008204	(4,57)	0.0000
Cross-section Chi-square	94.792157	4	0.0000

**Appendix C: Hausman test results**

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	21.755066	3	0.0001