

Measuring the function of Household Consumer Spending; An Evidence from Baghdad City

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Abstract

This study aims to estimate the function of family consumer spending in Baghdad governorate to determine the impact of income and family size on spending, where the field survey was based on a questionnaire distributed to a random sample of families in the central city of Baghdad, and the data was analyzed in a standard statistical method through a multiple linear regression model using the (SPSS) and (Eviwes10) programs, and it has been shown through the results that have been reached, that there is an increase in the marginal propensity to consume for the Iraqi family, but there is still little spending flexibility for necessary consumer goods, that is the Baghdadi family has turned to luxury spending.

Keywords: Consumer spending, Income, Family size, Spending Flexibility, Linear Regression Model.

Introduction

The emergence of the phenomenon of increasing private consumer spending in the context of the economic growth movement in Iraq is not exceptional if compared with countries with spring economies, but the problem lies in the inconsistency between the pressure of consumption on limited resources and investment needs to expand production capacity in the future, So the nature of family life at the present time and the economic conditions, especially the effects of the corona pandemic, which affected the family consumption pattern and became a burden on income, so family income may no longer be enough to satisfy the basic needs of family members

This study is an attempt to conduct a field survey of the Baghdad City community through a random sample to identify trends in household consumer spending and the main changes identified for its behavior.

Theoretical framework

Since private consumer demand (current household spending on goods and services) is a part of the total consumer demand, consumer goods are those products that are used over a short period of time (Azam et al.,

2022). It is worth noting that private consumption is not an individual problem, but a social problem in which many human motives intervene, as consumption in itself is a natural behavior for a person to maintain his existence, and to meet his needs, and is no longer just a satisfaction of human needs, but has become a goal that is linked to the modern lifestyle, with its effects the importance of this study is highlighted by the importance of the two indicators studied income, The gap between consumption and income in favor of consumption means that there is a negative saving, which leads to a decrease in the resources available for investment, the main engine of development, because the imbalance that affects these two indicators is a corner reservation when talking about development and economic well-being, because the imbalance that affects these two indicators is a structural defect that requires reform.

From here it can be said that the main problem that the Iraqi family suffers from in general is the increase in consumer spending due to the devaluation of the currency and the high rate of inflation in prices in conjunction with health expenses due to the circumstances of the pandemic, with the varying size of income. Therefore, the important question is what kind of relationship between increased family consumer spending and income by measuring the function of family consumer spending for Baghdad governorate. The expected answer is based on the hypothesis of the study (that the direct relationship between household consumer spending and income is the most important influence).

The questionnaire form will be adopted as the main tool for collecting data as well as theoretical resources and documents related to the research topic, regardless of the actual needs, which contributes to increasing consumption, which constitutes the greatest burden on the family and community economy (Durham, 2004).

Consumer behavior is influenced by several factors including:

- His experiences and personality are considered to be internal influences;
- The environment in which he lives, especially the climatic and health conditions (drought, pandemic, etc.);

- Family and social roles, considering that the first consumer unit in which an individual grows and creates good or bad consumer habits are social influences (Mohsin, Naseem, Ivaşcu, et al., 2021);
- The appropriate purchasing power from one consumer to other leads to a difference in the levels of satiety, as well as the type of market and the presence of alternatives to satiety all have economic effects (Iman Khalil, 2004).

Spending (International Labour Organization, 2003)

1. **Consumer goods and services** are those that are used by a household to satisfy its personal needs and the desires of its members directly. The consumer expenditure of a living family is the value of consumer goods and services that a living family has acquired, used or paid for through direct cash purchases or production for its own account in exchange or as income in kind to satisfy its needs and the desires of its members.
2. **The actual final consumption** of a household is the sum of consumer spending of this household and the value of consumer goods and services acquired by the family or used through transfers from the government or from non-profit institutions or from another household. This concept is the most appropriate for the analysis of welfare because it takes into account all consumer goods and services available to a household to satisfy the needs and desires of its members.
3. **Household expenditure** is defined as the sum of household consumption expenditure and household non-consumption expenditure, and non-consumption expenditure is the expenditure incurred by a household in connection with mandatory and semi-mandatory transfers to the government, non-profit institutions and other households without possession of any goods or services in exchange for satisfying the needs of its members household expenditure represents the sum of expenses that.

As for Income:

Income can be defined as everything that an individual and

a family achieve during a year (Najafi & Alvandi, 2017). As this study focuses on family income, which can be defined as "the set of net monetary and in-kind income of all members of the researched family from various sources of income during the Research year". With the exclusion of the server's income from the family income, as well as the exclusion of emergency or irregular collections that happen once (lottery prize, inheritance...etc.).

Hence the emphasis should be placed on the sources of family income (ILO .2003)

1. **Income from work** it means the net income resulting from work for the performance of a person's work for himself.
 - **income from paid work** includes all wages and cash salaries for the direct and periodic performance of specified working hours, as well as bonuses, Grants, Commissions and additional fees .it also includes the sample benefits that an individual receives as a result of his work, whether in the form of goods or services such as treatment, housing and transportation... Which is obtained by the employer for free or at a symbolic price.
 - **income from self** - employment means income resulting from an individual working for himself in self-employed professions or from a business owned or possessed by him, whether he is alone, in this case (he works for himself and does not employ anyone) or employs one or more workers who help him in completing the work, in this case (employer, manages and employs others) and profits resulting from capital investments of non-non-working partners in projects, whether agricultural or non-agricultural (not considered from work). On the other hand, labor income includes the value of goods and services produced for self-consumption by the individual worker for an account.
2. **Income from property** is the sum of the returns of financial property of the family (returns of securities, savings pots and non-financial property (land - equipment - intellectual property) during the study year.

3. **Income from the estimated rental value of the housing owned and occupied by the family** represented in the value of the residential service received by residents residing in housing units owned by them and estimated at the value of the rent in terms of location, area and other specifications at the current market price after deducting the value of regular repairs and maintenance expenses.
4. **Income from periodic cash and in-kind transfers to the family** is the actual value of cash transfers or the estimated value at the market price of all goods obtained by the family during the school year by gift or gift and the family did not pay for cash for it.

Consumption Function:

The consumption function expresses the relationship between income and consumption, which was emitted by the treasure contribution in this area, where many believe that the first determinant of consumption is ((disposable income), that is, it is a link between the part of income spent on consumption (MPC), which measures the ratio of changes in consumption to changes in consumption to changes in income

$$MPC = \frac{\Delta c}{\Delta y}$$

Where C represents consumption and Y consider about income.

This tendency decreases with the increase in income and is less than the average propensity to consume (APC), which expresses the ratio between current consumer spending and disposable income. The more income increases in the short term, the lower the average propensity to consume, meaning that the increase in income is directed towards saving. The most important parameters of the state of family consumption can be clarified (Naseem et al., 2019):

1. The point of equivalence of disposable income with consumption (the average family has consumed all its income).
2. The decline in household income from the breakeven point makes consumer spending greater than disposable income (passive savings), which is the stage of borrowing or withdrawing from previous savings.

3. Families whose income is higher than the breakeven point until they save part of the money and consume the other part.
4. With increasing income, family consumption also increases, but at a rate lower than the rate of increasing savings. Therefore, high-income families spend less on consumption than income and their savings are higher.

Theories that explained the relationship between income and consumption:-

1-The Theory of absolute income:

This theory is based on the hypothesis that the individual consumer allocates a percentage of his current income to consumer spending according to his absolute income level. And that any increase in absolute income will lead to a decrease in the percentage allocated to consumption, since total consumption is not equal to a fixed percentage of income, but this percentage decreases with increasing income levels, and real disposable income (excluding the impact of prices) and individual and family income have been used for the current period (Naiwen et al., 2021).

2-The Theory of relative income:

This theory suggested that consumption is a function of current income relative to a higher level of previous income and (duzenberey) believes that people have a strong desire to emulate their neighbors and seek to raise their standard of living, and the percentage of income allocated to consumption depends on the level of family income measured by the incomes of neighboring families or families that you know, and not only on the absolute income of that family, and individuals try to maintain the stability of the level of consumption to cope with fluctuations in their income level, i.e. the proportional relationship between consumption and income in the long term (Mohsin et al., 2022).

3-The Theory of permanent income:

Which linked consumption to permanent income, not current income, where (M.Fridmant) the family income is divided into two parts in any year, a permanent (fixed) income and a temporary transitional income, where permanent income is measured by incomes earned in the

past several years, consider consumer spending as a direct function of permanent income (Mohsin, Zhu, et al., 2021).

The most important point of this theory is that (Apc) the average propensity to consume decreases with increasing income when studying the relationship between current income and current consumption of families with different levels of income, as well as the difference (MPC) the marginal propensity to consume in the short term from the long term, because individuals do not change their consumption pattern longer, making sure that the increase in their income is permanent and not temporary.

4-The theory (the role of life):

whose ideas were developed By F.modigliani (based on the fact that per capita consumption is determined by several long-term factors, especially the income expected to be obtained during his lifetime, so individuals try to maintain the stability of their consumer spending by comparing their ordinary income for the duration of their life.

That is, a person begins a productive life with a reduced income that is less than his consumption, which prompts him to borrow, with his progress in work, his income increases by a percentage higher than the consumption level until he reaches his maximum value so that he can accumulate his savings until he reaches retirement age, his income decreases and his consumption remains the same, so he starts withdrawing from his previous savings, assuming that the consumer is trying to agree on a certain percentage of his wealth on consumption, the task of which was his current income (Mohsin, Naseem, Sarfraz, et al., 2021). It is clear from the previous theories that opinions differ about the relationship between consumer spending and the form of income as a key determinant of consumption, however, I assumed.

All of them are the constancy of other factors affecting consumption, since there are many factors that affect one way or another in the volume of consumer spending, the impact of which varies in different human societies, so it was necessary to address the most important of those factors, which some classified into two types objective factors (Objective factors) are factors whose value or volume can be measured, including:

1. The individual's saving: In order to obtain a fixed income at retirement age will be lower if the interest rate rises, which increases consumer spending (meaning the real interest rate), i.e., after deducting the inflation rate, i.e., the effect of this factor is shown by changing the cost of borrowing or the current value of wealth or both.
2. Consumer lending: The availability of credit installments to the consumer at a lower cost increases his purchasing power, that is, the term payment provided them with the possibility of spending more than their own income for durable goods.
3. Price changes and their expectations: an increase in prices without a change in cash incomes means a decrease in real income and therefore a decrease in real consumption, but at the same time consumption may increase from other goods whose prices have become lower, so price fluctuations and differing expectations about the rise or decline create uncertainty that leads to more savings instead of consumption.
4. Marketing: the more sophisticated means of advertising and advertising are used, the more enticing the consumer to buy more goods and services, but this factor cannot be clearly measured in the consumption function.
5. The size of wealth and the change in its value: the wealth of an individual has an impact on the behavior of the spender, even if it does not directly contribute to the formation of his cash income, its presence will prompt him to increase his consumer spending, unlike a person without wealth will be inclined to save, (Al-Idrisi, 1986; Salamat et al., 2020; Sarfarz et al., 2022).

There are a number of other factors that affect the volume of consumer spending, which are economic and social factors, including (family size, age, education, career, and others), all of which affect the average propensity to consume, as for age, the highest income rate is in youth and reaches the peak in middle age, then decreases in old age and saving follows the same income behavior, so the largest part of income is allocated for consumption in youth and old age, and the largest saving is in middle age, as well, the level of

education or profession is one of the factors affecting consumption, but their impact is slow in the short term.

As for subjective and psychological factors, which are the psychological desire variables affecting family consumer medicine on goods and services, including these factors (Testes) and individuals may differ in their consumption pattern even if they are similar in age and equal in income for their different tastes and saving tendencies, and these factors are generally divided into (Al-Idrisi, previous source, pp. 234-244).

Factors that affect the desire of individuals to increase their savings, which leads them to reduce their consumer spending, including (caution and caution for the future), especially in times of political and economic instability, as well as the outlook on the future to improve the economic and social situation of the family or independence was providing a certain amount per month for each child to have an amount of money that he can dispose of when he grows up.

There are also factors that affect the behavior of individuals and families in consumer spending directly, including the so-called social pressure (social pressure), that is, individuals are forced to spend a certain amount to maintain a certain level of consumption for others who wish to reach the same social class, although their income does not allow them to spend, as well as expectations play an important role in an individual's spending behavior, whether income increases or decreases.

Third: - the practical side:

1. Selection of the study sample:

The study was concentrated in the Baghdad governorate center and included (200) families out of the total families living in the governorate, as the population of the governorate is estimated to be about (8,750,000) thousand people, a random sample was selected that amounted to about (1/10) the total number, which amounted to (875,000) people, assuming that the yellow family consists of 3 people, and therefore the number of families that were selected amounted to (291) families, and due to the many losses and errors in filling out forms, the total number of (200) a form.

2. Display and tabulation of data:

This stage is one of the important stages in the steps of the field study, so the choice of the appropriate way to unload information from the collected statistical forms clearly reflects the characteristics of the phenomenon under study, so the (SPSS) program was relied on to unload the questionnaires, and then calculate all the required statistical indicators, as well as estimate the Family Consumer agreement function using the (Eviwes10) program

3. Steps for estimating the consumer spending function:

After the data has been collected and tabulated, the important statistical indicators have been calculated, namely: $C_i = \alpha + \beta y_i + u_i$

A- The stage of formulating the family consumption function begins:

Where:

- C_i : Family consumer spending.
- α, β : Constants
- u_i : Random limit
- y_i : Family income

The correlation coefficient is used to determine the strength and nature of the relationship between the two variables.

B- Assessment stage

The linear formula and the double logarithmic formula will be used, and the actual numbers and averages will be used, where the estimation is done using the (Eviwes10) program and the (OSL) method (Koutsoyiannis, 1977; Muhammad et al., 2019).

C- Calculation of spending flexibility

Which means the relative change in the quantity demanded to the relative change in spending (Habib, 200,187) because it shows the extent to which demand responds to changes in spending, and it is one of the important indicators used in the analysis of consumption because it reflects the reactions of

consumers to changes in spending, usually the necessary goods have less spending flexibility than the correct one. The expenditure flexibility of each commodity group or all goods is calculated through the double logarithmic formula of the relationship between income by expropriation or gross , and consumer spending by items or gross and as follows

(Monga, 1972, 715-724)

$$\text{Log } GP_i = \alpha_0 + \alpha_1 \log y_i + u_i$$

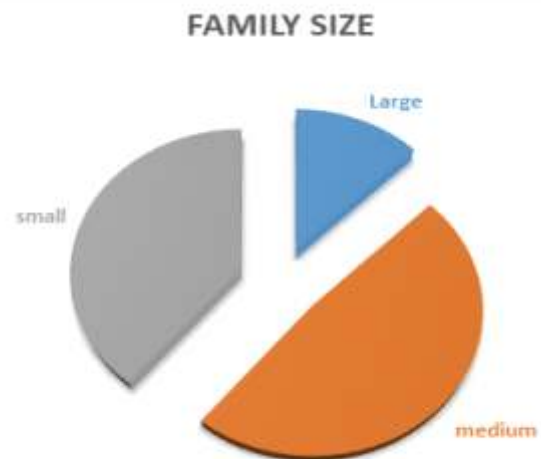
α_1 Represents spending flexibility (it represents the limit for consumption)

GP_i : Average consumption (spending)

y_i : Average income

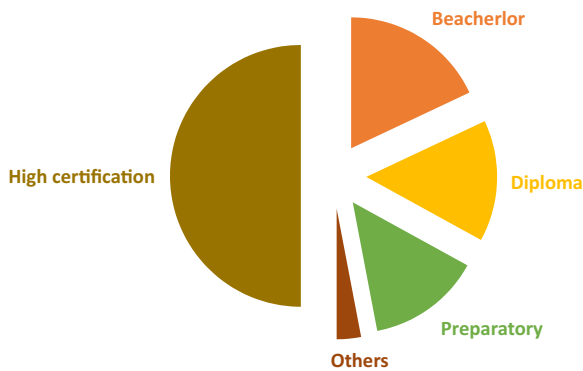
It turned out through the results of the questionnaire that was unloaded using the (SPSS) program and some important indicators, which are as follows:

1. the average number of families made up about 48.5% of the total number of (200)families, and that small families made up 39% and large families (12.5%), that is, medium-sized families, whose number of members ranges between (4-6) individuals were among the families studied.



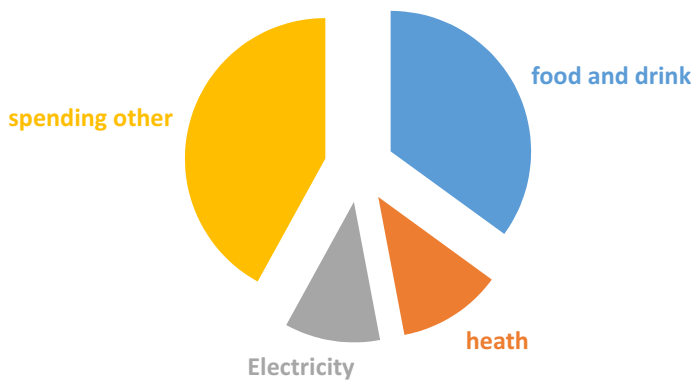
2. it has been found that university education has prevailed over the educational level of the sample members

THE EDUCATIONAL LEVEL



3. it was also noted that the total monthly expenditure of the sample members (the studied families). It has reached (267, 22 million dinars), where spending on food and drink accounted for 35% of total spending, 12% for Health Services, 11% of household spending on electricity.

SPENDING



4. the results of the questionnaire have been emptied in the following table

In order to use it in estimating the family consumer spending function for Baghdad governorate (2022-2023) and calculating the spending flexibility to compare income and its impact on family consumer spending and the most important aspects of spending that account for the largest part of total income

Categories included	Number of families	Income (Y)	(S)Spending
less than 500	22	10000	14258
700	11	7700	16050
900	16	14400	22886
1100	16	17600	13007
1300	12	15600	14600
1500	45	67500	56040
1700	40	68000	59480
1900	8	15200	11500
2100	17	35700	32400
2300 or more	13	29900	27000
SUM	200	281600	267221

The data in the table above were used through the (EVIWES10) program to estimate the family spending function for Baghdad governorate and in the linear formula to calculate the marginal propensity to spend, the results were as follows

$$S \approx 5193 + 0.765 Y_1$$

$$t: (2.334)(12.15)$$

$$f: 147.58 \quad D.W = 1.91 \quad r = 0.97$$

It is noted from the above estimated equation that the marginal propensity to spend has reached (0.765), which means that when there is an increase in family income by a thousand dinars, 0.765 dinars will be allocated as consumer spending.

As it turned out the significance of the estimated coefficients through the Test (t) as well as the height of the overall outlay of the model through the test (F), that is, there is a quality in the description of the model, also the correlation coefficient between income and consumer spending was high and amounted to (r=0.97) as well as the direct relationship, which is consistent with economic logic.

The coefficient of determination was about (R²=0.94), which means that the explanatory capacity is very high, which confirms that income is the main factor influencing consumer spending for the Iraqi family.

Through the test (D.W) Darin-waszen it turns out that the absence of the autocorrelation problem is important in the accuracy of the equation.

In order to calculate the spending flexibility, the combined algorithmic equation was calculated, the results were as follows

$$\log \hat{S} = 2.97 + 0.71 \log y \quad 2$$

t: (2.30) (5.474) r=0.98
f: 29.96 R² =0.96 D.W=1.881

Equation(2) shows that the expenditure flexibility of (0.71) is less than one, which means that the response is feasible, i.e. the consumer spending of the Iraqi family, especially on food, electricity and health, its specialization is necessary whether the income increases a large percentage or decreases statistically the estimated equation is of high statistical significance, the matrix of estimated transactions through the Test (T) as well as the matrix of the , The equation is devoid of the problem of self-correlation, and since the spending flexibility is far from zero, it means that the Baghdadi family is still suffering from a lack of saturation of consumer goods and all the necessary living requirements .

Conclusion:

The development orientation of any economy should be towards increasing investment spending and rationalizing consumption, whether for the government sector or the private sector, and the Iraqi economy is one of the developing economies that need to rationalize unnecessary consumer spending and move towards increasing savings to stimulate investment demand to accelerate the economic development process.

Through the current study, the following can be noted:

1. Bagdad governorate the sample of the study, for which the function of family consumer spending was estimated through a questionnaire that was distributed to a random sample of 200 Baghdadi families, and since it is the capital, the nature of consumer spending is assumed to be more distinctive.
2. The important point that should be pointed out is that there is a clear disparity in the volume of income, as well as between the volume of income and the level of consumer spending , especially for low – income segments, so living in the capital-and the desire to

emulate the chaste family and its commitment to a certain pattern of consumption to suit the nature of the society in which it lives, forcing it to resort to the growth of certain means to obtain additional income to cope with increased consumer spending or withdrawal from its previous savings or borrowing.

3. The results of the study show that the highest percentage of spending was on food, drink, electricity, then Health, and most of the sample members were at the university education level, and the majority of the size of the average family studied.
4. It has become clear through the results of the standard estimate that the marginal propensity to consume is high and probably exceeds the rest of the Iraqi provinces, and the spending flexibility is still less than the one, which confirms the willingness of families to spend on luxury goods because the response of consumer spending to necessary goods is still less responsive to income changes.

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