

Identifying the Significant Factors that Influence Teachers Families Consumption and Savings in Erbil Governorate

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ABSTRACT

In recent years, public school teachers in the Iraqi Kurdistan Region have experienced persistent and severe delays in receiving their monthly salaries, often spanning between 30 and 60 days. This financial instability has generated highly adverse impacts on both their household consumption patterns and long-term personal savings. This empirical study aims to investigate the most critical socio-economic factors influencing the consumption expenditures and savings of teachers' families, utilizing a representative sample of 390 teachers in the Erbil Governorate. To achieve this, two distinct econometric models were developed to analyze total consumption expenditures and savings behaviors. The empirical findings demonstrated that monthly salary, spouse's monthly income, the total number of children, and certain qualitative variables—such as employment in the private school sector and sending children to private institutions—had a positive and statistically significant influence on consumption. Conversely, holding a bachelor's certificate exerted a negative and significant impact on family consumption compared to holding a doctorate degree. Regarding the savings model, both the teacher's salary and spouse's income significantly dictated family savings. Furthermore, elasticity calculations revealed that consumption expenditures were inelastic relative to changes in the teacher's salary and spouse's income, but highly elastic regarding the number of children. Meanwhile, savings elasticity was positive and elastic for the teacher's salary, but inelastic for the spouse's income.

KEY WORDS: Teachers, Erbil Governorate, Socio-Economic Factors, Consumption Expenditures, Savings.

1. INTRODUCTION

Families' status of consumption and savings play an important role in understanding the economic well-being of any society. Teachers being influential agents in the education process in any community, reviewing and investigating how their income and other socioeconomic factors affect their livelihood is crucial. In most communities teachers are middle-class pros who confront various economic burdens due to permanent income, as Milton Friedman defined it, families and social responsibilities, plus professional demands. Limited budget allocations for filling teachers' families'

financial gaps might result in low levels of savings and sometimes to borrowing. Therefore, they rank? prioritize their consumption patterns according to family needs and forgoing?? their options. In order to reduce the challenges that teachers confront, authorities need to adopt policy measures, such as salary adjustment and development of social safety. Housing rent, children schooling expenditures, food, electricity, sanitized water, clothes, healthcare, transportation, furniture, profession training courses, obtaining higher degrees, are all essential requirements of today's life that demand an income sufficient to cover the basic needs of teachers in order to have a good standard of living.

Professional fees are another major expense to keep in mind. Teachers are spending out of pocket on transportation to classrooms, professional certifications, and work-related implements, reducing their disposable income. These expenses can lead to a financial burden—particularly in situations where teachers are underpaid, or are having their wages unpaid, as is the case in the Iraqi Kurdistan Region, due to the financial crises, political instability and relationship with the central

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federal government of Iraq. Hence, little opportunity for career development.

The behavior of teachers engaged with students in physical activities has emerged as one of the most important aspects of the educational process, especially physical education. Contributions and experiences of the individual participants in Mohammed et. al. (2024) study confirm that physical education teachers play a major role in providing students with both theoretical insights and practical skills. All of this requires material and mental support in order to provide a suitable and comfortable atmosphere for teachers and students alike, which is unlikely to be provided for the educational sector of Iraqi Kurdistan, including Erbil Governorate.

In Kurdistan Region of Iraq teacher family's savings are limited, due to various consumption expenditures with a fixed salary, since promotions and financial incentives have been ceased by the government due to financial crises for more than 12 years. These expenditures mostly include housing rent especially in urban areas, transportation expenses, children education expenses, especially in private schools, high costs of heating and cooling, etc. All these with the delay in payment of salaries and inflation, have placed financial burdens on teachers, leaving very limited opportunities for self-development.

The problem of delaying a teacher's per month salary for 30 to 60 days has created strong adverse impacts on the lives of their family's consumption expenditures and savings, also on the economic well-being of the Kurdistan Region community. Erbil governorate, the capital of Kurdistan Region encompassing its related districts, is selected as the target location of this study.

The aim is to present a detailed analysis of the key variables impacting teachers' families' consumption expenditures at the periods when the majority of their monthly payments were delayed throughout the years 2023-2024. This topic combines economic theories with actual observations to examine teachers' families' consumption habits.

The importance of this study lies in understanding the main variables that impact teachers' household expenditures in the Kurdistan Region's educational institutions, particularly those in Erbil, in order to find a solution to the problem of this important category of the society, that has suffered financially over the last decade aiming to ensure good living conditions for them to improve their productivity.

This should be a separate section under Section 3 Methodology which should come after section 2 of Literature Review and theoretical knowledge

Data Source and Method: a sample survey (appendix 1), was collected from 390 teachers at basic schools in Erbil governorate, Iraqi Kurdistan Region, for the

academic year 2023-2024. The data were collected within 3 months (from November 2023 to January 2024). The total sample size 390 respondents were chosen based on Cochran (1977, as cited in Sarmah et al., 2013, pp. 36-37), relying on the latest published official number of teachers 39,835 in the Governorate of Erbil (Kurdistan Region Statistics Office, 2019). The researcher adopted cluster sampling technique for data collection, as she divided the governorate into five sites; Erbil city, and its related districts that are located to the; north, south, east and west of the city. Three schools were selected in each site, with 26 teachers from each school.

Descriptive statistics, cross tabulation counts, and Ordinary Least Squares (OLS) methods were adopted for model construction by using SPSS22 software.

The hypotheses of this study was introduced through two econometric models. The first model, proposed that there is a positive and significant association between family consumption expenditures and four independent variables, individually, such as salary/month, spouse income/month, number of children, and teacher employment sector (public or private). While negative and significant associations exist between each of the independent variables; undergraduate educational certificate, and inflation rate impact, on consumption, individually.

The second model of this study assumed that each of the independent variables; teachers' and spouses' income/month are positively and significantly associated to teacher's household savings.

Concerning the two models (consumption and savings) elasticity rates, this study assumes that the consumption expenditures of teachers' families are positively elastic to changes that may occur in income, spouse income, and number of children. As for saving, it is also positively elastic to changes that may occur in the teacher's monthly income and the income of his/her spouse.

The structure of this study entails five main sections; introduction, literature and theoretical review, results and discussion, conclusions, and recommendations.

2. LITERATURE REVIEW

Several economic theories explain household consumption behavior, which is also relevant to teachers' families. The Life-Cycle Hypothesis, proposed by Modigliani and Brumberg (1954), suggests that individuals balance consumption across their lifetime, spending more during their working years and less during retirement. On the other hand, teachers may face financial constraints in their early careers due to low pay and delayed income increases. Similarly, Friedman's Permanent Income Hypothesis (1957) argues that people spend based on long-term income expectations rather

than present wages. This hypothesis resonates with teachers, who often have consistent but small wages and hence follow careful spending habits.

Behavior's economic theories, such as in Thaler's (1990), explain how psychological variables influence consumption. Teachers can focus spending on necessities such as housing and education, while lowering spending on leisure activities. Furthermore, Engel's Law (1857) underlines that lower-income households spend a greater proportion of their income on basic necessities, a pattern that is frequently observed in teacher families.

Financial savings models are critical for understanding how different professional groups, such as teachers' families, handle their money.

2.1 Teaching vs Other Careers

Attempts to investigate spending and savings habits related to occupations showed that teachers spent a smaller percentage of their money on leisure and luxury items compared to higher-paid categories including business professionals, medical doctors, and technical engineers. Or teachers in underdeveloped/developing countries may avoid having savings to pay for basic expenses, representing their economic weakness. There are some important variables that can affect teacher family's consumption expenditures:

- i- Steadiness of income
- ii- The size of the family
- iii- Proficient duties

ix- Economic hardships like inflation, high demand on goods and services, and economic crises such as the COVID-19 Pandemic exacerbate teacher's financial problems, compel them to withdraw savings or look for others sources of income.

2.2 Economic Theories Foundations

2.2.1 Life-Cycle proposition by (Modigliani & Brumberg, 1954): Think that individuals are trying to maintain consistent consumption levels, by balancing high incomes during working years with lower income in retirement. The limited wage growth and unchanging salaries, may have controlled spending and savings in the early and middle years in teachers' careers.

2.2.2 Friedman's Permanent Income Hypothesis (1957) :Says family spending is driven by long-term income prospects rather than prompt wages. Teachers who receive consistent but small incomes may practice frugal spending habits, especially in areas with inadequate pension assistance or high inflation.

2.2.3 Behavior role (Thaler, 1990): Spending decisions are influenced by a teacher's psychological factors. Concepts like "nudges" proposed in behavior economics to influence the savings behavior, such as automatic enrolment in retirement plans and default

contribution rates are effective for instructors (Beshears et al., 2009).

2.2.4 Engel's Law (Engel, 1857): States that as money grows, spending on necessities reduces like food and housing. Teachers with low income, on the other hand, are more likely to devote a considerable portion of their wages to these necessities.

2.3 Previous Empirical Findings

2.3.1 Typical Spending Patterns: Teachers' spending patterns are impacted by their wages, job security, and cultural norms. Studies repeatedly reveals that:

i- Housing: Rent and mortgage payments are substantial expenses, particularly in metropolitan regions (Nguyen, 2022).

ii- Education: Teachers make enormous investments in their students' education, viewing it as a means of achieving social and economic success (Khan et al., 2021).

iii- Professional expenses: Out-of-pocket expenses for teaching supplies and professional development reduce disposable cash.

2.3.2 Compared to Other Professions: A comparative analysis reveals the following teacher expenditure patterns:

i- Teachers spend less on leisure and luxury than those in higher-paying areas such as technology or business (Lee et al., 2020).

ii- In impoverished economies, teachers regularly lower their savings to meet basic needs, exhibiting financial vulnerability (Ahmed et al., 2020).

2.3.3 Regional Differences:

i- Urban vs. Rural: Urban teachers have greater housing and travel costs, which might limit their personal expenditures (Nguyen, 2022).

ii- Cross-National Perspectives: Teachers in wealthy countries have higher social safety nets, leading to financial stability, whereas those in poorer nations face economic volatility and inadequate safeguards (Martinez & Gomez, 2023).

2.4 Key Factors Influencing Consumption Expenditures

2.4.1 Income Stability: Teachers' salaries are typically fixed and tied to tenure rather than performance, which aids in financial planning but reduces adaptability during economic shifts (Smith & Johnson, 2018).

2.4.2 Household Composition:

i- Larger families incur higher expenses for necessities like education, healthcare, and food (Khan et al., 2021).

ii- Single-income households are particularly susceptible to financial shocks.

2.4.3 Professional Obligations: Teachers frequently bear the cost of materials, technological tools, and certifications, which limits funds for other household expenditures (Clark et al., 2019).

2.4.4 Economic Context:

i- Inflation erodes purchasing power, compelling teachers to reallocate spending priorities (Ahmed et al., 2020).

ii- Economic disruptions, such as the COVID-19 pandemic, have underscored the financial fragility of educators, with many relying on secondary income or savings (Nguyen, 2022).

2.5 Key Factors Influencing Savings

2.5.1 Income Stability and Predictability: Teachers' job stability positively affects long-term savings but may reduce the urgency to save aggressively compared to professions with variable income (Brown & Haughwout, 2019).

2.5.2 Pension Plans and Retirement Benefits: Defined-benefit pension plans significantly impact teachers' saving behaviors, often diminishing the perceived need for additional personal savings (Munnell et al., 2011).

2.5.3 Financial Literacy: Financial literacy is a crucial determinant of saving behavior. Teachers generally exhibit higher financial literacy, which correlates with better savings outcomes (Way & Holden, 2009).

2.5.4 Family Dynamics and Dual-Income Households: Dual-income households, common among teachers' families, influence saving strategies, with joint decision-making often leading to diversified savings portfolios (Duxbury & Higgins, 2001).

2.6 The Gaps in Previous Related Studies

While significant progress has been made in studying teachers' spending behavior, several gaps persist:

i- Few longitudinal studies track how teachers' expenditure patterns evolve over their careers.

ii- Limited comparative research exists across different countries, highlighting a need to identify global best practices for addressing educators' financial challenges.

iii- Teachers' families confront distinct financial challenges formed by stable income, pension schemes, and educational backgrounds. While?? classic models, such as the Life-Cycle Hypothesis, give core knowledge, including behavioral economics and addressing the importance of financial literacy and family dynamics offers a broader perspective.

2.7 Policy Considerations of Consumption Expenditures

2.7.1 Enhancing Salaries and Benefits: To reduce

financial stress, policymakers should prioritize salary increases and allowances for professional expenses (Martinez & Gomez, 2023).

2.7.2 Promoting Financial Literacy: Programs aimed at improving teachers' financial knowledge can enhance their ability to manage budgets, debt, and savings (Smith & Johnson, 2018).

2.6.3 Expanding Social Support Systems:

Greater access to affordable healthcare, housing, and retirement benefits can improve teachers' economic security and expenditure patterns.

2.8 Policy Consideration for Savings

2.8.1 Enhancing Financial Education: Implementing targeted financial literacy programs for teachers can optimize savings behaviors, as suggested by Clark et al. (2006).

2.8.2 Retirement Plan Reforms Adjustments to pension systems to include more flexible, portable retirement plans could address gaps identified in research by Costrell and Podgursky (2009).

3. RESULTS AND DISCUSSION:

3.1 The Descriptive Statistics

Table 1 shows the results of descriptive statistics for the sample of this study. The findings indicate, on average, total monthly consumption expenditures of the teachers' families were 562,998.6 Iraqi Dinars (IQD). Average monthly salary of the teachers was IQD 809,489.7. Average monthly spousal income amounted to IQD 386,064.1, for teachers whose spouses were employed.

The teachers in the sample had 14 years of experience in the education sector and were parents of at least two children, on average.

Table 1
Descriptive Statistics

Variables	Mean	Std. Deviation	N
Consumption Expenditures IQD	562998.5615	250709.54319	390
Salary per month IQD	809489.74	275395.595	390
Spouse income IQD	386064.11	452598.677	390
Extra income IQD	40179.50	123189.061	390
Age	39.04	8.430	390
Years of services	14.09	7.732	390
No. of Children	2.75	1.688	390
Savings IQD	358076.93	1030922.160	390

Source: researcher's calculations, 2024.

3.2 Crosstabulation of Certificates and Gender

Table 2 highlights the educational qualifications of the teachers in the sample. Among the female teachers 319

are holding diploma certificates, 16 bachelors, 13 masters, and 10 doctorates. In contrast, among male teachers, 20 of them are holding diploma, 11 bachelor, no master's degree, and 1 with doctorate.

Table 2

Crosstabulation of Certificates and Gender

Count	Gender	Gender		Total
		female	male	
Certificates	Diploma	319	20	339
	Bachelor	16	11	27
	Master	13	0	13
	Doctorate	10	1	11
Total		358	32	390

Source: researcher's calculations, 2024.

Figure 1 presents a bar chart, illustrating the distribution of educational qualifications among teachers, categorized by gender. The chart highlights majority of the studied sample consists of female teachers with diploma degrees.

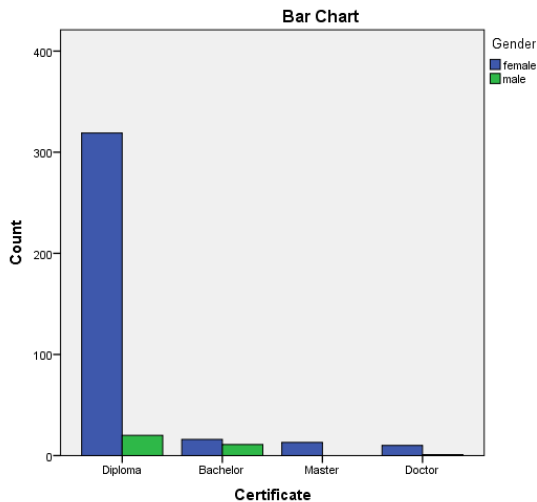


Fig. 1 Education Certification of the Teachers According to Gender. Source: Table 1.

3.3 Crosstabulation of Number of Children and their Schooling Category

This section covers a crosstabulation study that correlates the number of children of the teachers with their respective schooling category.

Table 3 reveals that the children of 216 teachers attended public schools, those of 132 teachers attended private schools, and 42 instructors had no children in school.

Table 3 Number of Children and Children Education Category

Count	Children education sector			Total
	public school	private school	not at school	
No. of Children	0	1	0	42
	1	28	7	35
	2	82	31	113
	3	48	30	78
	4	21	37	58
	5	22	19	41
	6	7	6	13
	7	7	1	8
	8	0	1	1
Total	216	132	42	390

Source: researcher's calculations, 2024.

Figure 2 shows that 113 teachers, the majority, had two children, with 82 of them attending public schools and 31 attending private schools.

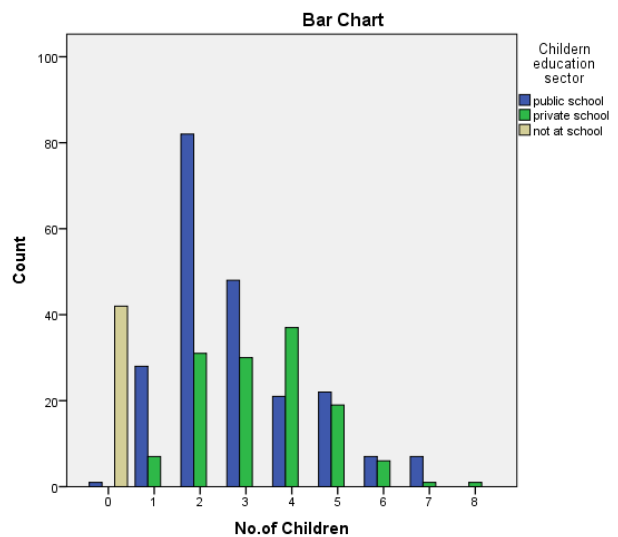


Fig. 2 Number of Children and Children Education Category Source: Table 3.

3.4 ESTIMATION OF CONSUMPTION EXPENDITURES MODEL

The Gauss-Markov theorem says if a linear regression model follows the first six classical assumptions, then ordinary least squares (OLS) regression provides the most reliable estimates. Specifically, OLS estimates are not only unbiased (meaning they do not systematically overestimate or underestimate the true values), but they also have the smallest possible variance compared to any other linear estimation method. In simple terms, among all the unbiased ways to estimate relationships in a dataset, OLS is the most efficient.

According to (Wooldridge, 2013) an estimated OLS model has to be best linear unbiased estimator (BLUE), therefore, for OLS regression to work well, six key assumptions need to be met:

1. Linearity: The relationship between the variables should follow a straight-line pattern. If the actual

relationship is curved or more complex, the model's predictions will not be accurate.

2. No Perfect Multicollinearity: The independent variables should not be too closely related. If they are, it becomes hard to determine their individual effects, making the model less reliable.

3. Exogeneity: The independent variables should not be influenced by hidden factors that also affect the errors. If they are, the model's estimates will be biased and could consistently over- or underestimate the true effects.

4. Homoscedasticity: The error terms should have a consistent spread across all levels of the independent variables. If their variance changes in a pattern (heteroscedasticity), the results may not be trustworthy.

5. No Autocorrelation: The errors should not be linked to each other. If they follow a pattern, the model might falsely detect trends that do not actually exist, which is especially problematic in time series data.

6. Normality of Errors: For small datasets $N < 30$, error terms should be normally distributed for valid statistical tests. In larger datasets, the Central Limit Theorem makes this assumption less important.

In this study OLS approach used to construct teachers' family consumption expenditures model, which is taking the following specification:

$$\text{Ln_TE} = B_0 + B_1\text{Ln_Sa} + B_2\text{Ln_SI} + B_3\text{No.of Ch.} + B_4\text{CerBa.} + B_5\text{WSPriv.} + B_6\text{Ch.Spriv.} + U_i \quad (1)$$

Where; the dependent variable (Ln_TE) represents the natural log (Ln) of teacher's family consumption expenditures in IQDs, (Ln_Sa) is the natural log (Ln) of teacher's salary per month in IQDs, (Ln_SI) is the natural log (Ln) of teacher's spouse income in IQDs, (No.of Ch.) is number of Children, (CerBa.) is educational certificate for Bachelor (as doctorate degree considered a base category), (WSPriv.) is teacher's working sector (private schools) (as public schools considered a base category), (Ch.Spriv.) represents teacher's children schooling (as no schooling is considered a base category), and (U_i) represents the model's error term (residuals).

Implementing the stepwise method, six variables were determined to be significant (four variables at 1% error prob. level, and two variables at 5% error prob. level) out of fifteen independent variables incorporated into the expenditures model 1. Tables 4 to 6 show the econometric results and tests for teacher's family total consumption expenditures model "Model 1".

Table 4
The Estimated Model 1 for Teachers' Families
Consumption Expenditures

Model (1) DV: Ln_TE	Unstandardized Coefficients		Standardized Coefficients		
	B	S.Error	Beta	t	Sig.
(Constant)	8.379	.993		8.437	.000
Ln_Sa	.291	.073	.228	3.963	.000
Ln_SI	.034	.016	.115	2.141	.033
No.of Ch.	.088	.016	.326	5.676	.000
CerBa.	-.199	.085	-.122	-2.345	.020
WSPriv.	.205	.049	.222	4.147	.000
Ch.Spriv.	.186	.055	.181	3.378	.001

Source: researcher's calculations, 2024.

The excluded variables after using a stepwise method are:

Age, extra income, Years of services, CerDiploma, CerMaster, doctor certificate is the base, Gen female, male is the base, Delay salary payment DS.yes, DS. No is the base, inflation impact (Yes, No is the base).

3.4.1 Interpretation of the Results: The estimated coefficients of consumption expenditure model 1 in Table 4 are about two types of variables entered into the model, scale (continuous) variables (some of them in natural log), and categorical variables. Starting with scale variables, we observe that they are indicating a significant positive relationship between teacher's salary (Ln_Sa) and the dependent variable, which is in the form of natural log of teacher's family total expenditures (Ln_TE). Thus, model (1) shows as monthly salary increases by 1%, total consumption increases by 0.291%, at the 1% significance level, all other factors being constant. Next teacher's spouse income (Ln_SI) also has a positive and significant relationship with (Ln_TE). Therefore, if (Ln_SI) increases by 1%, (Ln_TE) increases by 0.034%, at the 5% significance level, all other factors being constant. Increases in the number of children (No.of Ch.) also have a positive significant impact on (Ln_TE). So, if a teacher's family size increases by one child it will lead to increases in the total expenditures (Ln_TE) by $0.088 \times 100 = 8.8\%$, at the 1% significance level, all other factors being constant.

In view of the categorical variables the estimated model 1 shows a negative relationship between the teachers holding a bachelor degree and their family's consumption. Therefore, consumption of teacher's family with bachelor degree would be less by $0.199 \times 100 = 19.9\%$ comparing to a teacher with doctorate degree, in this instance doctorate degree is considered the base category for all other types of educational certificates, at the 5% significance level.

If we investigate the influence of a teacher's work sector, teaching in private schools or public schools. Model 1 shows existence of a positive significant

relationship between private working sector (WSPriv.) and (Ln_TE). Therefore, consumption expenditures of a teacher's family who works in the private sector (schools) would be more by $0.205 \times 100 = 20.5\%$ comparing to a teacher working in public schools, in this case public sector is considered the base category, at the 1% significance level, all other factors being constant. The last independent variable in model 1 is revealing the impact of Children schooling, public, private, or not in school. The estimations show a positive significant relationship between teacher's children with private schooling (Ch.Spriv.) and (Ln_TE). Thus, consumption expenditures of a teacher's family whose children in private schools would be more by $0.186 \times 100 = 18.6\%$ comparing to children who aren't going to schools, in this situation children who aren't at schools is considered the base category, at the 1% significance level, all other factors being constant.

3.4.2 The Reliability Check of Model 1: We can rest on on the estimated model (1) for teacher's family savings using OLS method and say it is a best linear unbiased estimator (BLUE) as it passed Gauss Markov assumptions, which demonstrated in Tables 5 and 6.

The significance of Pearson Correlation test in Table 5 shows the evidence of linearity of the predictors with the dependent variable Ln_TE.

Table 5
Correlations of the Predictors with Ln_TE

Test	Ln_TE	Ln_S a	Ln_S I	No.of Ch.	CerBa.	WSpriv.	Ch.Spriv.
Ln_TE Pearson Correlation	1	.460**	.216**	.496**	-.232**	.123**	.246**
Sig. (2-tailed)		.000	.001	.000	.000	.003	.000
N	390	390	229	390	390	390	390

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Source: researcher's calculations, 2024.

Table 6 shows significance of F-test at 1% error prob. level, which means all entered independent variables are having a significant impact on teachers' families' consumption expenditures, jointly. And the value of the estimated parameters in Table 4 lies within 95% confidence interval illustrated in Table 6.

The test of variance inflation factor (VIF) is a technique used for detecting the problem of multicollinearity in a regression model. It reveals how much the estimated coefficient's variance or standard error is exaggerated as a result of collinearity. Under ideal conditions the VIF's value of a variable of less than 3, means that a predictor is uncorrelated with other predictors in the model, see Table 6. Therefore, multicollinearity problem doesn't exist in the estimated regression model 1.

Table 6
Model 1 Reliability Statistics

Model (1)	95.0% Confidence Interval for B		Collinearity Statistics		
	Lower Bound	Upper Bound	Tolerance	VIF	
(Constant)	6.422	10.337			
Ln_Sal	.146	.436	.803	1.245	
Ln_SI	.003	.065	.917	1.091	
No.of Ch.	.058	.119	.811	1.234	
CeBach.	-.366	-.032	.983	1.017	
WSPriv.	.108	.303	.933	1.071	
Ch.Spriv.	.077	.294	.928	1.077	
Model Summary	R	R Square	Adjusted R Square	SEE	D.W
	.639 ^a	.408	.392	.34262	1.728
ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Regression	17.950	6	2.992	25.486	.000
	Hetro. test Broch-Pegan (B-P test)	df	Mean Square	F	Sig.
		6	.012	.372	.896

a. Dependent Variable: ln_TE

Source: researcher's calculations, 2024.

The result of R-Square shows 40.8% of the variations that might take place to a teacher's family consumption expenditures are due to the independent variables entered into Model 1.

Durbin Watson test of autocorrelation is DW =1.728, implies that there is no considerable first-order autocorrelation, where the appropriate range is between 1.50 and 2.50 (SAP Library - Causal Analysis, n.d.).

Heteroscedasticity problem is checked for Model 1 by using Breusch and Pagan (1979) B-P test, through regressing the residuals squares on the predictors, for:

H₀: The errors have constant variance, homoscedasticity.

H₁: The errors have non-constant variance, i.e., heteroscedasticity.

The results of B-P test for heteroscedasticity in Table 6 show F-statistic= 0.896, with p-value =0.372 is greater than 0.005, which is insignificant. Therefore, apparently H₀ shouldn't be rejected, revealing that the estimated model (1) does not suffer from heteroskedasticity problem.

The last test of Model 1 is investigating error term normality distribution, illustrated in Figures 3 and 4. As we can observe that the mean of the predicted residuals

is 0.000 and the standard deviation is 0.987 quite close to 1, meaning they are distributed normally. However, Gujarati and Porter (2009, p.122) explains that normality matters more when working with small datasets ($N < 30$) because hypothesis tests depend on the residuals being normally distributed. However, with larger samples, the Central Limit Theorem (CLT) takes effect, meaning that the sampling distribution of the estimators naturally approaches normality. As a result, the assumption of normality becomes less of a concern for large samples.

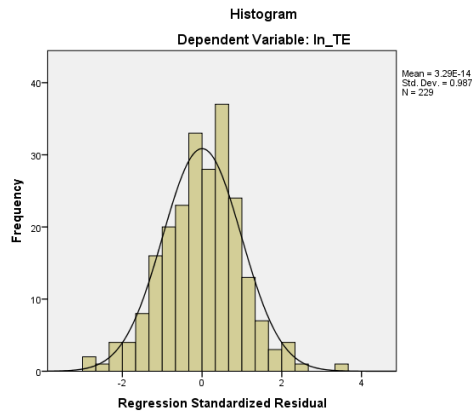


Fig. 3 Residuals Normal Distribution of Model 1
Source: researcher's calculations, 2024.

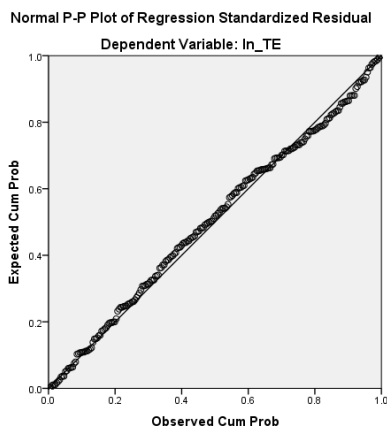


Fig. 4 Residuals Normal P-P Plot of Model 1
Source: researcher's calculations, 2024.

3.4.3 Elasticity of Consumption: Knowing income (or any other factor) elasticity of consumption into the estimated models, economists may gain a better understanding of spending dynamics across income or factor levels and predict how the change would affect overall consumption patterns.

The average rate of elasticity of consumption measures how responsive consumption is due to changes in income (or any other variable). Since model 1 specified in the form of natural logs, then the elasticity of teacher family consumption expenditures equals to the value of estimated parameter for only scale (continuous) type independent variables (Gujarati & Porter, 2009,

p.173). Using the following formula:

- Teacher salary elasticity of consumption (ESa):

$$ESa = \frac{\% \Delta TE}{\% \Delta Sa} = B1 \quad (3)$$

$$ESa = 0.291$$

- Teacher spouse income elasticity of consumption (ESI):

$$ESI = \frac{\% \Delta TE}{\% \Delta SI} = B2 \quad (4)$$

$$ESI = 0.034$$

- Number of children elasticity of consumption (E No. of Ch.):

$$E \text{ No. of Ch.} = \frac{\% \Delta TE}{\% \Delta \text{No. of Ch.}} = B3 * 100 \quad (5)$$

$$E \text{ No. of Ch.} = 8.8$$

Elasticity values for the variables; teacher per month salary, spouse income, number of children, are holding positive signs, meaning that the three variables are considered normal necessity factors affecting TE. Therefore, as each one of them increases (or decreases), teacher family's consumption expenditures will increase (or decreases).

Although the independent variables Ln_Sa, and Ln_SI, have a significant impact on the dependent variable TE, as shown in Table 4, consumption elasticity values are less than one, indicating that consumption is inelastic to the changes that might occur to these two independent variables separately. Perceiving that a 1% change in both variables is causing a lethargic change in consumption by 0.29%, and 0.03%, respectively. As change in consumption is less proportionate to the changes in both aforementioned variables. Perhaps because the households under investigation prioritize other aspects such as the variable No. of Children in order to significantly manage their consumption levels, as an increase in the number of children rises consumption by 8.8%. Because teacher's family have to bear more burden in order to provide food, goods, health services, clothing, etc... for their new children, in addition to the expenses of the rest of the family members.

Regarding the elasticity of categorical variables, it can't be calculated as they are not continuous variables (Wooldridge, 2010, p. 238).

In this occurrence, although the all estimated parameters for the independent variables have a significant impact on teacher family total consumption expenditures, but the variable of number of children has a bigger impact as its parameter is bigger in magnitude 8.8%. Therefore, we can conclude the factor of number of children impacts teacher's family consumption drastically comparing to the rest variables.

3.5 Estimation of Teachers Saving Model

The saving model of this study specified as the

following:

$$\text{Ln_Sav} = b_0 + b_1 \text{Ln_Sa} + b_2 \text{Ln_SI} + u_i \quad (2)$$

Where; (Ln_Sav) refers to natural log of teachers' household savings, (Ln_Sa) teacher's salary per month, (Ln_SI) is teacher's spouse income, and (ui) represents the residuals of Model (2).

Two variables of the scale (continuous) type were found to be significant using a stepwise method out of fifteen independent variables incorporated into the saving model (2). Results of the estimations are illustrated in tables 7 to 11.

Table 7

The Estimated Model (2) for Teachers' Families Savings

Model (2) DV: Ln_Sav	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-3.909	1.779		-2.198	.029
Ln_Sa	1.107	.129	.489	8.566	.000
Ln_SI	.127	.030	.243	4.259	.000

Source: researcher's calculations, 2024.

The excluded variables after using stepwise method:

Extra income, Years of services, Age, No. of Children, CeDiploma, CeBachelor, CeMaster, doctor certificate is the base, Genfemale, male is the base, DYes, DSno is the base, children schoolingpublic school, Private school, Not in school is the base, WSprivate, WSp public sector is the base, impact of Inf=yes, impact of Inf=No(is the base category).

3.5.1 Interpretation of the Results: Model 2 in Table 7 shows the variable of salary per month (Ln_Sa) has a significant positive relationship with teacher's household's savings (Ln_Sav) at the 1% significance level. So, as teacher's monthly salary rises by 1%, the savings will rise by 1.107%, assuming all other factors remain constant. Also, the variable of spouse income (Ln_SI) correlated positively and significantly with teacher's family savings (Ln_Sav) at the 1% significance level. Assuming all other variables remain constant, if the income of teacher's spouse increases by 1%, his/her family savings expected to increase by 0.127%.

Even though both independent variables are significant for savings, but in this instance, we can conclude that a teacher per month salary has a larger impact on family savings comparing to the income of his/her spouse, due to related parameter larger size.

3.5.2 The Reliability Check of Model 2:

We may depend on the estimated model (2) for teacher's family savings using OLS method and say it is a best linear unbiased estimator (BLUE) as it passed Gauss Markov assumptions, which demonstrated in Tables 8 and 9.

Pearson Correlation test for testing the significance of linearity between each predictor and the (Ln_Sav) is shown in Table 8.

Table 8
Correlations of the Predictors with Ln_Sav

Test	Ln Sav	Ln Sa	Ln SI
Pearson Correlation	1	.313**	.260**
Sig. (2-tailed)		.000	.000
N	358	358	216

Source: researcher's calculations, 2024.

Table 9 demonstrates the significance of the F statistic at the 1% error prob. level, indicating that all independent variables have a substantial influence on teachers' families' savings, collectively.

The value of the estimated parameters in Table 7 lies within 95% confidence interval illustrated in Table 9.

Since the vales of VIF for all regressors are less than 3, then the estimated regression Model 2 of Savings does not suffer from multicollinearity issue.

Table 9
Model 1 Reliability Statistics

Model	95.0% Confidence Interval for B		Collinearity Statistics	
	Lower Bound	Upper Bound	Tolerance	VIF
2 (Constant)	-7.415	-.403		
Ln_Sa	.852	1.362	.999	1.001
Ln_SI	.068	.186	.999	1.001

Model Summary	R	R Square	Adjusted R Square	SEE	D.W
	.553a	.306	.300	.65775	1.889

ANOVA	Sum of Squares	df	Mean Square	F	Sig.
Regression	40.699	2	20.349	47.035	.000

Hetro. test	df	Mean Square	F	Sig.
Broch-Pegan (B-P test)	2	1.234	1.202	.303

a. Dependent Variable: Ln_TE

Source: researcher's calculations, 2024.

R-Square results of Model (2) suggest that 30.6% of the variability in teacher's savings are caused by the independent variables (Ln_Sa, and Ln_SI).

The test of autocorrelation using Durbin Watson statistics DW=1.89, which is close to 2, indicating no first-order autocorrelation exists in Model 2, as the acceptable range is 1.50 to 2.50 (SAP Library - Causal Analysis, n.d.).

Heteroscedasticity problem is checked for Model 2 by using Breusch and Pagan (1979) B-P test, through regressing the residuals squares on the predictors, for:

H₀: The errors have constant variance, homoscedasticity.

H₁: The errors have non-constant variance, heteroscedasticity.

For this F-statistic p-value =0.303, which is greater than 0.005 as shown in Table 9. Therefore, we can't reject H₀, thus the estimated model (2) does not suffer from heteroskedasticity problem.

Lastly, Model (2) residuals normality test gives an impression of normal distribution of the residuals, as the mean of the anticipated residuals is 0.000 and the standard deviation is 0.995 very close to one, as shown in Figure 5. However, normality assumption is not essential for large sample size data N>30 (Gujarati and Porter, 2009, p.122).

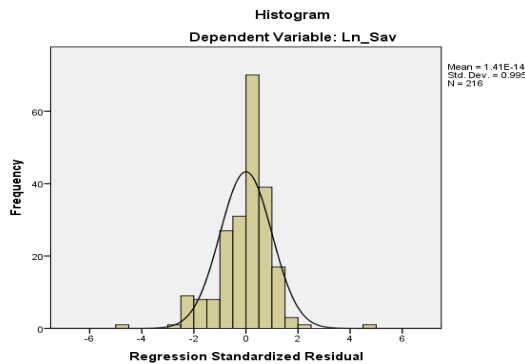


Fig. 5 Normal Distribution of Model 1 Residuals
Source: researcher's calculations, 2024.

3.5.3 Elasticity of Savings: Economists and policymakers can better understand and anticipate savings behaviors across income levels by incorporating income elasticity into their models.

The average rate of elasticity of savings measures how responsive savings are to changes in income (or any variable) using the following formula:

- Teacher salary elasticity of savings ESaS:

$$ESaS = \frac{\% \Delta Sav}{\% \Delta Sa} = b1 \quad (5)$$

$$ESaS = 1.107$$

- Teacher spouse income elasticity of savings EISS:

$$EISS = \frac{\% \Delta Sav}{\% \Delta SI} = b2 \quad (6)$$

$$EISS = 0.127$$

The elasticity values for the variables; per month salary and per month spouse income, are positive, indicating both variables are normal necessary factors impact teacher household's savings. As a result, if any of the variables rise, disjointly, so will the savings. Regarding the value of teacher's salary elasticity of savings 1.107, is greater than one, means that saving is

elastic to changes in salary. Therefore, as Ln_Sa increases by 1%, teacher family savings will increase by 1.107%. Conversely, if Ln_Sa decreases by 1%, the savings will decrease by 1.107%.

Given the independent variable Ln_SI has significant impact on the dependent variable Ln_Sav, as shown in Table 7, but saving elasticity is 0.127, less than one. Implying that saving is inelastic to changes in the variable spouse income Ln_SI. Thus, a 1% change in Ln_SI causes a 0.127% increase in savings, though its slow change in savings, as change in savings are less proportional to change in teacher's spouse income. Conceivably the households under examination prioritize other elements in order to considerably increase their savings, such as the teacher's salary, as ESaS=1.107 > 1. Hence, teacher's savings Model (2) shows that teacher's monthly savings is elastic to a change in salary, and inelastic to a change in the income of teacher's spouse.

4. CONCLUSIONS

1. Two types of variables entered into the estimated expenditure Model 1, scale (continuous) variables and categorical variables. In view of the impact of scale variables, the results exposed positive relationship between each predictor and teacher household consumption expenditures. Accordingly, other factors being constant, an increase in the factors of; teachers per month salary, and income of teacher's spouse, number of children, disjointly, lead to increase in teacher's household total expenditures by 0.29%, 0.03%, 8.8%, respectively.

2. Regarding the impact of Model 1's categorical variables, the results showed a negative relation between teachers with bachelor degree, and teacher's family total expenditures, compared to doctorate degree. Possibly the government does not adjust teacher's salary to go along with increases in inflation rates, this led to adverse impacts that would reduce family's consumption expenditures. Total expenditures for teachers who work in the private sector (schools) would be more by 20.5%, comparing to teachers working in public schools.

Teachers with children in private schooling tolerate more family expenditures comparing to teachers with no children at schools by 18.6.

3. Consumption elasticities for a 1% increase in variables; teacher per month salary, and spouse income, are 0.29%, and 0.03%, respectively, with positive signs, meaning that both variables are considered normal necessity factors affecting teachers' household total consumption expenditures (TE), with a lethargic impact, as they are inelastic, elasticity values are less than one. While the variable of number of children is elastic 8.8%,

greater than one. Thus, increase in the number of children has an extensive positive impact on teacher's family consumption expenditures.

4. The estimated savings model 2 showed a positive significant relationship between each of teacher's salary, spouse's income, and teacher's family savings, disjointly. Therefore, assuming all other factors remain constant, as a teacher's monthly salary rises, his or her savings will rise as well. Also, as the monthly income of a teacher's spouse increases, his/her family savings will increase as well.

5. Saving elasticity for changes in teacher's salary and spouse income are positive, indicating that both variables are normal necessary factors impacting household's savings. Where teacher's salary elasticity of saving is 1.107 elastic. Meaning a 1% increase in the teacher's salary yields 1.107% increase in his/her households' savings. While spouse income elasticity of savings is inelastic 0.127, i.e., 1% increase in spouse income will increase savings by 0.127%. As such spouse income considered necessity for teacher family savings.

5. RECOMMENDATIONS

To address the financial challenges faced by teachers' families, several policy interventions by authorities and teachers themselves are necessary. Such as Increasing salaries and providing allowances for professional expenses can alleviate economic strain. Prompting teacher's spouse to improve his/her job skills that lead to higher income. Trying to gain higher educational degrees. Since Kurdistan Region Government (KRG) has ceased all kinds of financial promotions for teachers and employees, reducing the levels of inflation by controlling and monitoring prices of goods and services would be needed. Financial literacy programs tailored for educators and students could empower them to manage budgets, reduce debt, and increase savings effectively particularly for teachers whose children study at private schools. Expanding access to healthcare, housing subsidies, and retirement benefits can further stabilize their household finances and improve their quality of life.

Improving the financial well-being of teachers' families involves strategies that address both spending and saving habits, such as:

1. Establish and follow a family budget:

Creating a detailed family budget is essential for managing expenses and identifying opportunities to save. By monitoring income and expenditures, families can prioritize spending, reduce unnecessary costs, and allocate funds toward savings goals. This approach promotes financial discipline and provides a clear plan for achieving financial objectives.

2. Engage in open financial discussions within the

family:

Encouraging open conversations about money matters helps demystify financial management and fosters responsible financial behavior among all family members. Sharing positive financial experiences and discussing financial goals can normalize financial planning and decision-making within the household

3. Incorporate practical financial lessons for children particularly those children who study at private schools:

Integrating practical financial education into children's daily lives can build a strong foundation for future financial stability. Activities such as budgeting exercises, savings challenges, and discussions about the difference between needs and wants can make financial concepts more tangible for young learners. These kinds of lessons not only impart essential financial skills but also encourage critical thinking and informed decision-making.

REFERENCES

- Ahmed, Z., Khan, R., & Ali, F. (2020). Household Consumption and Income Dynamics in Developing Economies: Focus on Teachers. *Economic Review Quarterly*, 18(2), 102-119.
- Beshears, J., Choi, J. J., Laibson, D., & Madrian, B. C. (2009). The importance of default options for retirement saving outcomes: Evidence from the United States. NBER Working Paper.
- Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica*, 47(5), 1287. <https://doi.org/10.2307/1911963>
- Brown, M., & Haughwout, A. (2019). Job stability and savings behavior: Evidence from public sector employees. *Journal of Public Economics*.
- Clark, R. L., d'Ambrosio, M. B., McDermed, A. A., & Sawant, K. (2006). Financial education and retirement savings. *Journal of Pension Economics and Finance*.
- Clark, R., Brown, A., & Taylor, M. (2019). Financial Strains on Educators: A Study of Teacher Expenditure Patterns. *Journal of Educational Economics*, 12(3), 45-60.
- Consumer Price Index (CPI) in Kurdistan region, Nov/ 2024. (n.d.). <https://krso.gov.krd/en/publications/consumer-price-index-cpi-in-kurdistan-region-nov/-2024>
- Costrell, R. M., & Podgursky, M. (2009). Distribution of benefits in teacher retirement systems and their implications. *Education Finance and Policy*.
- Duxbury, L., & Higgins, C. (2001). Work-life balance in dual-income households. *Journal of Family and Economic Issues*.
- Engel, E. (1857). Die Produktions- und Konsumptionsverhältnisse des Königreichs Sachsen. Reprinted in *Jahrbücher für Nationalökonomie und Statistik*.
- Friedman, M. (1957). *A Theory of the Consumption Function*. Princeton University Press.
- Gujarati, D. N., & Porter, D. C. (2009). *Basic Econometrics* (5th ed.). McGraw-Hill.

- Khan, R., Ahmed, Z., & Ali, F. (2021). Determinants of Household Expenditure in Developing Economies: Insights from Education Sector Employees. *Economic Review Quarterly*, 18(2), 78-92.
- Kurdistan Region Statistics Office, Ministry of Planning, Kurdistan Regional Government, Number of teachers in public & private schools. (n.d.). <https://krso.gov.krd/en/indicator/health-and-education/education/number-of-teachers-in-public-and-private-schools>
- Lee, J., Park, S., & Kim, H. (2020). Comparative Analysis of Household Consumption Across Occupations. *Social Science Quarterly*, 101(1), 134-150.
- Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*.
- Martinez, P., & Gomez, L. (2023). Improving Teachers' Financial Resilience Through Policy Reform. *Education and Economy Journal*, 22(1), 13-25.
- https://www.npr.org/2021/07/27/1021262899/finance-money-tips-kids-families-conversations?utm_source=chatgpt.com
- Modigliani, F., & Brumberg, R. (1954). Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data. *Post-Keynesian Economics*, 388-436.
- Mohammed, W. A., Amin, C. K. ., Salih, B. A. ., & Saleh, H. M. (2024). The Impact of PE Teachers' Attitudes on High School Students' Motivation and Lesson Engagement. *Koya University Journal of Humanities and Social Sciences*, 7(2), 498-505. <https://doi.org/10.14500/kujhss.v7n2y2024.pp498-505>
- Munnell, A. H., Aubry, J.-P., & Cafarelli, M. (2011). The impact of pensions on savings behavior. Center for Retirement Research.
- Nguyen, T. P. (2022). Urban Living Costs and Household Spending: The Case of Teachers. *Urban Economics Review*, 14(4), 301-319.
- Sarmah, H.K., Hazarika, B.B. and Choudhury, G. (2013) An Investigation on Effect of Bias on Determination of Sample Size on the Basis of Data Related to the Students of Schools of Guwahati. *International Journal of Applied Mathematics & Statistical Sciences*, 2, 33-48. - References - Scientific Research Publishing. (n.d.-a). <https://www.scirp.org/reference/referencespapers?referenceid=2848227>
- SAP Library - Causal analysis. (n.d.). https://help.sap.com/doc/saphelp_scm700_ehp02/7.0.2/en-US/e8/3cc95360267614e10000000a174cb4/frameset.htm
- Smith, D., & Johnson, E. (2018). Inflation and its Impact on Middle-Class Professionals. *Economic Perspectives*, 10(2), 67-84.
- Thaler, R. H. (1990). Anomalies: Saving, Fungibility, and Mental Accounts. *Journal of Economic Perspectives*, 4(1), 193-205
- Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Penguin Books.
- Way, W. L., & Holden, K. C. (2009). Teachers' financial literacy and financial behavior. *The Journal of Consumer Education*.
- Wooldridge, J. M. (2010). *Econometric Analysis of Cross Section and Panel Data*. MIT Press.
- Wooldridge, J. M. (2013). *Introductory Econometrics: a Modern Approach*. Cengage Learning.

APPENDIX

Survey forms distributed to teachers in the schools of: Gundi Kori , Azmar , Pirzin, Chuar Chra , Chnar, Sebirani Kchan , Halani Tekalaw, Shahid Hasen Nejar, Jger Khwen, Shamamk, Qushtapa, Daratu, Shorsh, Bakhan, Rusak.

Survey Form

Greetings, I want to make it clear that this form is solely will be used for scientific research reasons, intitled (Identifying the Significant Factors Influencing Teachers' Household Consumption and Savings in Erbil Governorate). Please answer the questions thoroughly and indicate which option you chose with a ✓. We appreciate your cooperation.

(The Researcher)

- 1- Age:
- 2- Years of service as a teacher:
- 3- Number of children:
- 4- Monthly salary in Iraqi Dinars:
5. The amount of your monthly income from other jobs, if any:
- 6- Monthly income of the spouse:
7. What is the monthly savings, if any:
- 8- Monthly food expenses:
- 9- Monthly rent expenses if any:
- 10- Monthly travel expenses:
11. Monthly expenses of health care:
- 12- Other expenses:
- 13- Degree: Diploma Bachelor's Master
Doctorate
- 14- Type of working sector: public, Non-public (Private)
- 15- Gender: Male Female
16. Do you expect to receive your monthly salary on time:
Yes No
17. Does rising prices (inflation) affect your family's level of consumption? Yes No
- 18- Type of your children education: Public schools do not attend private schools
19. Do you borrow an occasional sum of money to cover your home expenses? Yes No