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Financial Behavior of Workers Under Work from Home Scheme during the Global Energy Crisis

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Abstract: The ongoing global energy crisis has led to a substantial increase in household utility expenses, placing additional financial strain on individuals, particularly those engaged in remote work. This study investigates the role of financial literacy and perceived energy cost pressure in shaping the financial behavior of employees working from home during a period of economic instability. The research adopts a quantitative associative design, involving 100 formal sector workers operating under a remote work arrangement. Data were collected through structured questionnaires and analyzed using multiple linear regression techniques. The findings reveal that financial literacy positively influences financial behavior, while energy cost pressure exerts a significant negative effect. Together, both variables explain 42.8% of the variance in financial behavior. These results suggest that financial capability functions as a key adaptive resource in responding to external cost pressures. The study underscores the need to strengthen financial awareness and institutional support to sustain household financial stability in evolving work conditions.

Keywords: Financial Literacy, Energy Cost Pressure, Financial Behavior, Work From Home, Global Energy Crisis

Introduction

The transformation of work arrangements in the aftermath of recent global health disruptions has positioned remote working as a dominant organizational model. What initially emerged as a temporary response has gradually evolved into a sustained work system. However, this shift is now confronted by new challenges associated with the global energy crisis, which has significantly increased the cost of living (da Costa et al, 2023). The relocation of professional activities into the domestic environment has redefined household expenditure patterns, particularly by transferring energy-related costs from employers to employees (Lee, 2023).

Escalating fuel prices and electricity tariffs have intensified the financial burden experienced by remote workers. The growing dependence on digital devices and home-based work infrastructure has contributed to higher utility consumption, often without proportional income adjustments (Nabi et al, 2025). As a result, individuals are required to modify their financial practices to cope with reduced purchasing power and heightened economic uncertainty (Lagalur, 2023). Inadequate management of these rising costs may compromise household financial security and overall well-being (Kaya & Arı, 2023).

In this context, financial literacy becomes increasingly important as a determinant of individual resilience. It encompasses not only knowledge but also the practical ability to manage finances, regulate spending, and make informed decisions under uncertain conditions (Taranum et al, 2025). Individuals with higher financial literacy are generally more capable of adjusting their consumption behavior and maintaining financial discipline (Liu et al, 2024). Nevertheless, existing evidence suggests that knowledge alone is insufficient without consistent behavioral control and lifestyle management. The shift to remote work has also been associated with increased digital consumption, which may further strain personal finances (Sirait et al, 2025).

While prior studies have extensively explored remote work in relation to productivity and work–life balance, limited research has addressed its implications for financial behavior, particularly under conditions of rising energy costs. This study aims to fill this gap by examining how financial literacy and energy cost pressure jointly influence the financial behavior of remote workers. The findings are expected to provide both theoretical insight and practical guidance for managing household finances in an uncertain economic environment.

Methodology

This research applies a quantitative approach using a correlational framework to examine the relationships among variables. The design aims to generate an objective understanding of financial behavior by considering both internal factors, represented by financial literacy, and external factors, represented by energy cost pressure.

The study adopts an associative explanatory design focusing on formal sector employees in urban areas who have transitioned to remote working during the global energy crisis. This context was selected due to the high reliance on electricity in supporting work activities, making the issue of rising utility costs particularly relevant (Kakde, 2024). The population includes individuals who have worked from home within the study period. A purposive sampling method was employed to ensure that participants met specific criteria, including a minimum of six months of remote work experience and responsibility for managing household finances (Marlina et al, 2025). The final sample consisted of 100 respondents, which is considered sufficient for analyzing behavioral patterns in financial management studies (Sudarmini et al, 2025).

Data collection was conducted using an online questionnaire distributed across various regions. This approach allowed efficient data gathering while reducing input errors and facilitating data processing. Participants were assured anonymity to encourage accurate disclosure of financial conditions and energy consumption patterns (Simon & O'Brien, 2023).

The variables were operationalized using measurable indicators based on a Likert scale ranging from one to five. Financial literacy refers to the ability to understand and manage financial resources effectively, including aspects such as risk assessment, investment planning, and decision-making control (Colastre et al, 2025; Görken & Kaya, 2025). Energy cost pressure represents the perceived burden arising from increased

household utility expenses during remote work. Financial behavior reflects individual actions in managing finances, including saving habits, budgeting, and adaptive consumption patterns under changing economic conditions (Alfiriana et al, 2025; Fernández-López et al, 2023; Hidajat et al, 2025).

Data analysis was conducted in several stages to ensure the validity and reliability of the findings. The initial stage involved instrument testing using validity and reliability tests, with Cronbach's Alpha set at a minimum threshold of 0.60. Descriptive statistics were also applied to present respondent characteristics and the distribution of responses. The next stage involved classical assumption tests, including normality, multicollinearity using the Variance Inflation Factor, and heteroscedasticity tests to ensure the robustness of the regression model (Haji-Othman et al, 2024).

The main analytical method used was multiple linear regression to measure the effect of financial literacy and energy cost pressure on financial behavior. The regression model is expressed as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$$

Hypothesis testing was conducted using t-tests for partial effects and an F-test for simultaneous effects at a significance level of 0.05. The coefficient of determination was also calculated to assess the explanatory power of the model. All statistical analyses were performed using statistical software to ensure accuracy.

The stages of data analysis and hypothesis testing are illustrated in Figure 1, which presents the flow of the analytical procedure from data collection to hypothesis testing.

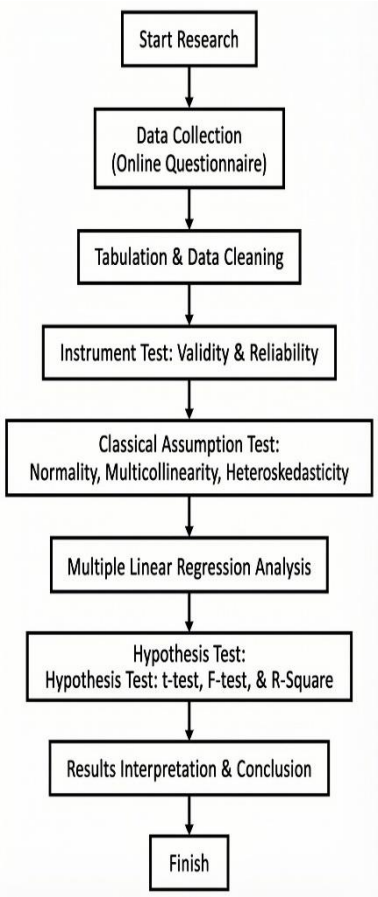

Figure 1. Flowchart of data analysis and hypothesis testing procedures.

Result and Discussion

The empirical findings are derived from data collected from 100 respondents who perform their job responsibilities under a work from home arrangement. The analysis integrates descriptive statistics and inferential testing to examine how financial literacy and energy cost pressure relate to financial behavior.

The respondent profile indicates that most participants are formal sector employees residing in urban areas and fall within the productive age range of 25 to 40 years. This demographic group tends to rely heavily on electricity to support work-related activities conducted from home (Pelz et al, 2023). The data further reveal variation in both financial knowledge and perceived financial burden associated with increased energy consumption during the global energy crisis (Koomson et al, 2025). Financial literacy scores are generally high, suggesting that respondents possess adequate understanding of financial management practices (Saleh Albarrak et al, 2024). In contrast, energy cost pressure falls within a moderate to high category, confirming the increase in household electricity expenses due to remote work arrangements (Khadka & Khadka, 2024). In contrast, perceived energy cost pressure is positioned between moderate and high levels, indicating that most respondents experience noticeable increases in household utility expenses. Financial behavior appears at a moderate level, reflecting partial adaptation in managing consumption and budgeting under changing economic conditions (Sajuyigbe et al, 2024).

The distribution of respondents according to the level of increase in energy costs during remote work is presented in Figure 2, which illustrates how utility expenses have shifted under the work from home scheme.

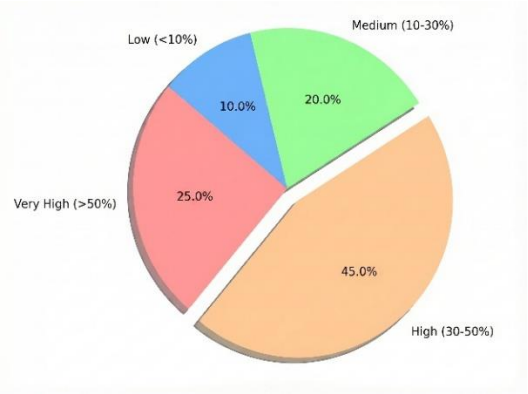

Figure 2. Distribution of respondents based on energy cost increase during work from home.

A statistical overview of the main variables is provided in Table 1. The table reports the mean, standard deviation, and range of each variable, offering a general picture of data dispersion across observations.

Table 1.
Descriptive statistics of research variables (N = 100)

Variable	Mean	Std. Dev	Min	Max
Financial Literacy (X1)	3.95	0.52	2.80	5.00
Energy Cost Pressure (X2)	3.78	0.65	2.40	4.85
Financial Behavior (Y)	3.42	0.58	2.10	4.50

The average score of energy cost pressure remains relatively high, which aligns with previous studies indicating that remote work contributes to increased household utility expenditures and reduces disposable income (Anand, 2023). This descriptive pattern provides an initial indication of the relationship between internal financial capability and external cost pressures.

To further examine this relationship, multiple linear regression analysis was conducted. The estimation results are summarized in Table 2.

Table 2.
Multiple linear regression results (N = 100)

Model	Coefficient (β)	t-value	Sig.
Constant	2.150	5.420	0.000
Financial Literacy (X_1)	0.485	6.231	0.000
Energy Cost Pressure (X_2)	-0.312	-4.150	0.000
R-Square	0.428		
F-value	36.215		
Sig. F	0.000		

The estimated regression equation can be written as $Y = 2.150 + 0.485X_1 - 0.312X_2$. The coefficient of financial literacy is positive and statistically significant, indicating that higher levels of financial knowledge are associated with better financial behavior. Conversely, the coefficient of energy cost pressure is negative and significant, suggesting that increasing utility expenses weaken individuals' ability to manage their finances effectively (Fitriani et al, 2024; Rihi et al, 2025; Thanduthapani & Sunil Prakash, 2024).

The overall model is statistically significant, as indicated by the F-value of 36.215 with a probability value below 0.05. The coefficient of determination shows that 42.8% of the variation in financial behavior can be explained by the two independent variables included in the model. The remaining proportion is likely influenced by other factors such as income level, compensation systems, or individual lifestyle choices (Alam et al, 2024).

The distribution of residuals and the consistency of the regression model are illustrated in Figure 3. The pattern shown in the figure confirms that the data meet the normality assumption required for regression analysis.

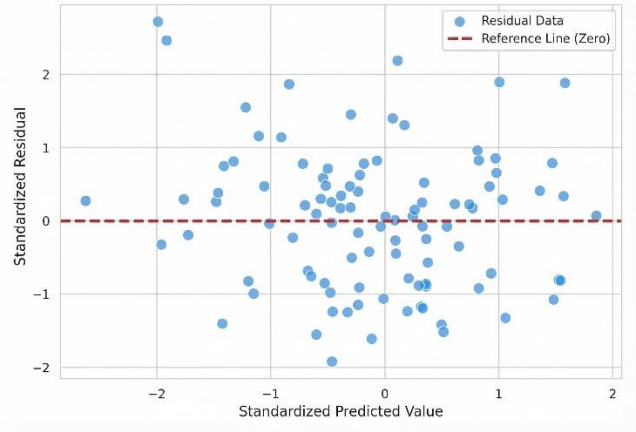

Figure 3. Scatter plot of regression residuals

Additional diagnostic tests indicate that the model satisfies classical assumptions. The absence of multicollinearity and heteroscedasticity issues suggests that the regression estimates are reliable and can be used to explain the observed relationships.

Discussion

The findings indicate that financial literacy plays a decisive role in shaping financial behavior among individuals working from home. Respondents with stronger financial understanding demonstrate a greater ability to regulate spending, maintain savings, and allocate resources more effectively under uncertain conditions (Goyal, 2023). This supports the argument that financial capability functions as an internal resource that enhances individual adaptability in times of economic pressure. The presence of self-control further strengthens this relationship, particularly in limiting excessive consumption that may arise from increased digital accessibility during remote work (Shabbir et al, 2024).

In contrast, energy cost pressure emerges as a significant external factor that constrains financial stability. The increase in electricity and utility expenses during remote work requires individuals to reallocate their budgets, often reducing savings or delaying long-

term financial planning (Singg & Gomez, 2024; Svoboda, 2024). This condition illustrates how external economic shocks, such as rising energy prices, directly affect household financial decisions and reduce overall purchasing power (Calle-Tarrillo et al, 2025; Pawar et al, 2024). Inefficient energy use in the home environment further amplifies this financial strain and may lower economic well-being over time.

The combined effect of financial literacy and energy cost pressure highlights the dynamic interaction between internal capability and external constraints. Financial behavior cannot be explained by a single factor but rather emerges from the balance between knowledge and economic pressure. Individuals who are able to apply financial knowledge effectively are better positioned to absorb rising costs and maintain stability during the transition to remote work (Kleimeier et al, 2023). These findings carry practical implications for organizations. Supporting employees through financial education programs or providing compensation related to utility costs may help maintain both financial stability and work productivity. Such measures are particularly relevant in the context of prolonged economic uncertainty, where employees face continuous pressure from increasing living costs (Lestari et al, 2024).

Conclusion

This study confirms that financial literacy and energy cost pressure significantly influence the financial behavior of workers under a work from home scheme during the global energy crisis. Financial literacy has a positive effect, indicating that stronger financial knowledge improves individual decision making and financial management. In contrast, energy cost pressure has a negative effect, showing that rising household utility expenses weaken financial stability. These findings demonstrate that financial behavior is shaped by the interaction between internal financial capability and external economic pressure.

The study highlights the importance of strengthening financial literacy as a key mechanism for improving financial resilience in uncertain economic conditions. It also suggests that organizations should consider providing financial education and energy-related support to sustain employee well-being and productivity. Future research is encouraged to include a broader sample and incorporate additional variables, such as income level and organizational support, to provide a more comprehensive understanding of financial behavior dynamics.

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