Money Talks: A Holistic and Longitudinal View of the Budget Basket in the Face of Climate Change and Sustainable Finance Matters

Enkeleda Lulaj

Faculty of Business, University Haxhi Zeka, Kosovo
Email: enkeleda.lulaj@unhz.eu
ORCID https://orcid.org/0000-0002-5325-3015

Abstract. This study presents a holistic and longitudinal view of the household budget basket concerning climate change and sustainable finance matters. It aims to understand their impact on the budget basket by examining the relationship between money, climate change and sustainable finance in a global economy for transition countries. Comprehensive CPI data were collected in Kosovo from 2002 to 2022, and data analysis was performed using statistical methods such as t-tests and proximity matrixes in SPSS. The results show significant differences between the average and desired values within the budget basket, indicating changes in consumer behavior, particularly in food expenditures, budget allocations, and climate change impacts. Interesting patterns emerge, such as correlations between bread, cereals, and meat, and the absence of fish in some purchases. Spending on clothing and other goods also deviates from desired values. These findings highlight the complex relationship between money, climate change, sustainable finance, and consumer spending patterns, and underscore the need to address the gap between expected and desired spending values for the global economy in transition economies. Future research should focus on analyzing household spending and its interaction with other factors to improve personal financial management and promote sustainable financial behavior in a larger number of global economies.

Keywords: Money Talks; Sustainable Finance; Climate Change; Budget Basket; Sustainable and Environmental Finance; Finance Matters; Global Finance Economy

1. Introduction

This paper explores a crucial issue in the context of finance by examining the holistic and longitudinal view of the budget basket and its link to sustainable finance and climate change. According to (Morgan et al., 2020), consumers require income and development, highlighting the importance of a collective benefits approach to address the lack of co-ordinated action and weak relationships between central and local levels of government. Further, (Griva et al., 2018) emphasize the power of the budget basket as a tool to understand consumer habits and preferences in the context of climate change and sustainable finance. As for (Proedrou, 2023), the reordering of global economic problems in the era of

climate change, sustainable finance, and the budget basket are highlighted. Furthermore, (Campagnolo, 2022) highlights the macroeconomic consequences of climate change on consumer households, while (Wilts et al., 2021) explore the implications of food security in the future. Bhardwaj et al. (2023) examine the risk associated with varying levels of investment at different risk levels. In light of climate change and the need for sustainable financial practices, Lulaj (2023) emphasizes that companies seeking sustainable profitability must innovate in their delivery of information applications such as discounts, product usage guidelines, expiration dates, product composition details, and various payment methods, in addition to offering transportation services to consumers. To effectively implement these changes, companies are advised to utilize cost-volume-profit (CVP) analysis (Lulaj, 2018) and prepare financial statements based on reliable data (Lulaj, 2021). Such strategic approaches are critical to promoting sustainable decision-making in the context of climate change. Furthermore, to promote sustainable finances, (Neill and Lahne, 2022) argue that consumers adopt a spending basket that encourages realistic purchasing decisions, considering various products and their impact on sustainable finances. This aligns with the emphasis placed on residents' real wages and incomes (consumers) for better evaluation by (Gelman and Santilli, 2018).

Therefore, this study aims to provide a holistic and longitudinal view of the budget basket in the face of climate change and sustainable finance for transitioning countries in the global economy, using data from Kosovo. By examining the complex interactions between money, climate change, and sustainable finance, it aims to deepen the understanding of their dynamics, taking into account historical trends, current challenges, and future projections for the global economy. This knowledge will make it possible to identify patterns, forecast future financial needs, and propose forward-looking solutions that effectively address the impact of climate change on the global economy's basket of goods and services.

2. Review of Literature and Hypothesis Development

This research takes the reader on an interesting journey into the complex realm of intertwined subjects: money talks, climate change, and sustainable finance, through a holistic and longitudinal view of the budget basket. So, the analysis of global challenges that affect the budget basket is highlighted by (Seo, 2020). On the other hand, (Fuest and Meier, 2023) and (Li et al., 2022) emphasize the importance of sustainable financing in low-carbon investments and country-oriented policies for consumers' budget basket, climate technologies, access to financial institutions. Additionally, (Iacobuţă et al., 2022) stresses the need for harmonization in climate actions, while (Carè and Weber, 2023) highlight the importance of climate financing. Moreover, (Cheng et al., 2022) underscore the significance of climate change related to the budget basket, and sustainable finance, as they are all intricately interconnected. According to (Tariq and Hassan, 2023), green financing has a significant impact on financial sustainability, purchasing power, and cli-

mate change in the context of sustainable social interactions, as well as the economic and demographic risks posed by climate change (Zhu et al., 2023). However, according to (Cevik and Jalles, 2023), climate change has a strong correlation with income inequalities on a global scale within the budget basket, as well as the environmental budget to prevent climate change (He et al., 2023).

Ayanlade et al. (2023) underscore the necessity for a comprehensive understanding of the complex risks associated with climate change, sustainable finance, and consumer budget baskets. This includes exploring how these risks interact with socioeconomic factors, as well as the impact of social factors and population characteristics, as highlighted by Cattaneo and Foreman (2023). Regarding the intricate relationship between financial systems, climate change, and sustainable development, according to Chaikumbung (2023) and Biswas and Rahman (2023) explore the connection between corruption, financial trust, and public willingness to address climate change. Their findings underscore the importance of financial integrity in fostering climate action. According to Lagoarde-Segot (2019) emphasizes the crucial role of sustainable finance in the 21st century, which Geng et al. (2018) elaborate on by examining the fluctuating sustainability index of financing.

Reforming sustainable finance and circular economy are important in reducing the impacts of climate change and social inequalities (Sepetis, 2022), and finance plays a crucial role in socio-technical transitions, and it is time to understand their role, which is why further research is needed to explore the potential of transition structures (Steffen and Schmidt, 2021). But in order for families to have a well-being, the state must reduce tax expenses for businesses as it indirectly affects the budget basket, (Lulaj and Dragusha,2022), and also ensure a fair distribution of public expenditure so that all citizens benefit equally (Lulaj et al, 2022; Lulaj, 2021 & 2022). According to (Fuest and Meier, 2023), sustainable financing incurs costs for climate policies and consumers' budget baskets to develop a system that prevents food losses (Krestyanpol, 2023) and sheds light on budgeting behaviors and beliefs related to the budgeting process at the family level for consumption and savings behavior (Zhang et al., 2022). Hence, the budget basket offers different choices of goods and services (Shi and Cheng, 2023). Moreover, (Caputo and Lusk, 2022) emphasize that consumers select their preferred items or make combinations of two or three items in their budget baskets during purchases, using hedonic methods to easily assess the affordability of paying prices and the quantity of product purchase in a budget basket. However, (Musarat et al., 2021) emphasize the proposal of a structure to include inflation in budget evaluation and prevent cost overruns in the budget basket in the face of climate change and sustainable finance.

H_1: There is a complex relationship between money, climate change, sustainable finance, and how consumers utilize their funds to purchase products and services in the budget basket in the global economy

H_2: There exists a discrepancy between the expected value and desired value of expenditures on variables within the budget basket in the face of climate change and sustainable finance matters in the global economy.

3. Methodology

3.1. Data Collection

During the data collection process for the analysis of the Consumer Price Index in Kosovo for the period 2002–2022, official secondary data published by the Statistical Office of Kosovo were used.

3.2. The econometric analyses of the research

Two analytical methods have been employed to perform data analysis: One Sample Test and Proximity Matrix. A statistical t-test can be used to assess the discrepancy between the expected value and desired value of expenses on variables within the budget basket in the context of climate change and sustainable finance in the global economy (Al-Kassab, 2022), (Gerald, 2018) to validate the hypothesis. The data processing in this study utilized the statistical software SPSS across 5 sections.

4. Results

In the results section, the main findings regarding money talks through a holistic and longitudinal view in the budget basket concerning climate change and the importance of sustainable finance will be presented for countries in transition in the world economy with data from Kosovo. It was evident that sustainable financing can improve access to prices, and purchases, and ensure a more sustainable and adaptable budget basket to current challenges. This section will include subsections as follows:

4.1. Money talks in the budget basket through the variable of food expenses
4.2. Money talks in the budget basket through the variable of beverage expenses
4.3. Money talks in the budget basket through the variable of clothing and shoes expenses
4.4. Money talks in the budget basket through the variable of household expenses
4.5. Money talks in the budget basket through the variable of various goods and services expenses

4.1. Money talks in the budget basket through the variable of food expenses

In the first section, the impact of climate change and sustainable finance on consumer food consumption was analyzed, including its subvariables: bread and cereals (BRCE), meat (ME), fish (FI), milk, cheese, and eggs (MICHEG), oils and fats (OIFA), fruits (FRU), vegetables (VEG), sugar, jam, honey, chocolate, and sweets (SJHCHSW), as well as various food products (FOOPR).

Table 1 presents the results of the distance method between the dependent variable of food expenses and the independent variables (BRCE, ME, FI, MICHEG, OIFA, FRU, VEG, SJHCHSW, and FOOPR). The Var (BRCE) has the closest distance with (ME). The Var(ME) has the closest distance with (MICHEG). The Var(FI) has the closest distance with

(FOOPR). The Var(MICHEG) has the closest distance with (VEG). The Var(OIFA) has the closest distance with (FOOPR). The Var(FRU) has the closest distance with (SJHCHSW). The Var(VEG) has the closest distance with (SJHCHSW). According to Kruskal's stress statistics, the following findings for the matrixes are emphasized: between a variable with years (Stress=0.01554, RSQ=0.99989) the significance is 99%, between one variable and other variables (Stress=0.13348, RSQ=0.89846) the significance is 90%, between one year and the variables (Stress=0.02683, RSQ=0.99781) the fit is 99%, and between one year and other years (Stress=0.07001, RSQ=0.98949) the significance is 99%.

Table 1. Proximity Matrix for the food variable in the budget basket

Proximity Matrix									
Indep. Var.	Euclidean Distance								
BRCE	.000								
ME	10.399	.000							
FI	196.074	187.688	.000						
MICHEG	59.814	51.936	137.629	.000					
OIFA	166.688	158.413	29.612	108.331	.000				
FRU	153.287	144.961	42.821	95.060	13.678	.000			
VEG	100.642	92.552	95.825	42.113	66.382	53.171	.000		
SJHCHSW	155.334	147.043	40.863	96.972	11.449	3.111	55.031	.000	
FOOPR	170.249	161.967	26.051	111.960	3.857	17.161	70.005	15.063	.000
Dependent variable: Food									
Matrix- Z Scores (Stress & RSQ)									
For the matrix between a variable with years			Stress = .01554		RSQ = .99989				
For the matrix between one variable and other variables			Stress = .13348		RSQ = .89846				
For the matrix between one year and the variables			Stress = .02683		RSQ = .99781				
For the matrix between one year and other years			Stress = .07001		RSQ = .98949				

Note: Var=variable

Table 2 presents the results of the One Sample T-test for food expenses variable during the years 2002–2022. The (BRCE), the mean budget basket value is (18.26), while the desired value was (TV=90), indicating a significant difference between both values (-71.74%, p=0.000). The Var(ME), the mean budget basket value is (17.52), while the desired value was (VT=90), highlighting a significant difference between both values (-72.48%, p=0.000). The Var(FI), the mean budget basket value is (0.85), while the expected value was (VT=90), demonstrating a significant difference between both values (-89.15%, p=0.000). The Var(MICHEG), the mean budget basket value is (13.05), while the expected value was (VT=90), indicating a significant difference between both values (-76.95%, p=0.000). The Var(OIFA), the mean budget basket value is (3.46), while the expected value was (VT=90), showing a significant difference between both values (-86.54%, p=0.000). The Var(FRU), the mean budget basket value is (4.65), while the expected value was (VT=90), indicating a significant difference between both values (-85.35%, p=0.000). The Var(VEG), the mean budget basket

value is (9.35), while the expected value was (VT=90), demonstrating a significant difference between both values (-80.65%, p=0.000). The Var(SJHCHSW), the mean budget basket value is (4.47), while the expected value was (VT=90), indicating a significant difference between both values (-85.53%, p=0.000). The Var(FOOPR), the mean budget basket value is (3.15), while the expected value was (VT=90), showing a significant difference between both values (-86.85%, p=0.000).

Table 2. One Sample Test for the food variable in the budget basket

					One-Sample Test					
One-Sample Statistics					**Test Value = 90**					
	N	**Mean**	**Std. Deviation**	**Std. Error Mean**	**t**	**df**	**Sig. (2-tailed)**	**Mean Difference**	**95% Confidence Interval of the Difference**	
									Lower	**Upper**
BRCE	22	18.263	40.807	8.7001	-8.245	21	.000	-71.73636	-89.829	-53.6435
ME	22	17.518	39.141	8.3450	-8.686	21	.000	-72.48182	-89.836	-55.1274
FI	22	.8545	1.9128	.40781	-218.59	21	.000	-89.14545	-89.993	-88.2974
MICHEG	22	13.045	29.222	6.2302	-12.352	21	.000	-76.95455	-89.911	-63.9980
OIFA	22	3.4636	7.7867	1.6601	-52.126	21	.000	-86.53636	-89.988	-83.0839
FRU	22	4.6545	10.406	2.2186	-38.467	21	.000	-85.34545	-89.959	-80.7315
VEG	22	9.3455	20.927	4.4616	-18.077	21	.000	-80.65455	-89.933	-71.3760
SJHCHSW	22	4.4727	10.019	2.1362	-40.036	21	.000	-85.52727	-89.969	-81.0847
FOOPR	22	3.1455	7.0770	1.5088	-57.564	21	.000	-86.85455	-89.992	-83.7168

Note: Var=variable

4.2. Money talks in the budget basket through the variable of beverage expenses.

In the second section, the impact of climate change and sustainable finance on consumer beverage consumption has been analyzed, including its sub-variables such as coffee, tea, and cocoa (COTECO), as well as mineral water, soft drinks, fruit and vegetable juices (MWSDFGJ).

Table 3. Proximity Matrix for the beverage expenditure variable

Proximity Matrix		
Indep. Var.	Euclidean Distance	
COTECO	.000	
MWSDFGJ	9.388	.000
Dependent variable: Soft drinks		
Matrix- Z Scores (Stress & RSQ)		
For the matrix between a variable with years	Stress = .00000	RSQ = 1.00000
For the matrix between one variable and other variables	Stress = .15412	RSQ = .99112
For the matrix between one year and the variables	Stress = .11283	RSQ = .98182
For the matrix between one year and other years	Stress = .00000	RSQ = 1.00000

Note: Var=variable

Table 3 presents the results of the distance method between the dependent variable of beverage expenses and the independent variables (COTECO and MWSDFGJ). The Var(COTECO) has a close distance with (MWSDFGJ). According to Kruskal Stress statistics, the following findings for the matrixes are emphasized: between a variable with years (Stress=0.00000, RSQ=1.00000) the significance is 100%, between one variable and other variables (Stress=0.15412, RSQ=0.99112) the significance is 99%, between one year and the variables (Stress=0.11283, RSQ=0.98182) the significance is 98%, and between one year and other years (Stress=0.00000, RSQ=1.00000), the significance is 100%.

Table 4. One-Sample Test for the beverage expenditure variable

	One-Sample Statistics				One-Sample Test					
					Test Value = 90					
	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
									Lower	Upper
COTECO	21	1.5238	.49589	.10821	-817.622	20	.000	-88.47619	-88.7019	-88.2505
MWSDFGJ	21	3.2190	.93948	.20501	-423.299	20	.000	-86.78095	-87.2086	-86.3533

Note: Var=variable

Table 4 presents the results of the One Sample T-test for the beverage expenses variable during the years 2002–2022. The Var(COTECO), the average budget basket expenditure is (1.52), while the desired value was (TV=90). This is a significant difference between both values (-88.48%, p=0.000). The Var(MWSDFGJ), the average budget basket expenditure is (3.22), while the desired value was (VT=90). It is highlighted that there is a significant difference between both values (-87.21%, p=0.000).

4.3. Money talks in the budget basket through the variable of clothing and shoes expenses

In the third section, the impact of climate change and sustainable finance on consumer purchases of clothing and shoes has been analyzed, including its sub-variables: Clothing (CLO) and Shoes (SHOE).

Table 5. Proximity Matrix for clothing and shoe expenses variable

Proximity Matrix		
Independent variables	Euclidean Distance	
CLO	.000	
SHOE	12.245	.000
Dependent variable: Clothing and shoes		
Matrix- Z Scores (Stress & RSQ)		
For the matrix between a variable with years	Stress = .06973	RSQ = .98536
For the matrix between one variable and other variables	Stress = .03652	RSQ = .99237
For the matrix between one year and the variables	Stress = .00503	RSQ = .99988
For the matrix between one year and other years	Stress = .02770	RSQ = .99775

Note: Var=variable

Table 5 presents the results of the distance method for the variable of clothing and shoe expenses, considering the independent variables (CLO and SHOE). The Var (CLO) exhibits a close proximity with (SHOE). The Kruskal Stress statistics reveal the following for the matrixes findings: between a variable and years (Stress=0.06973, RSQ=0.98536) the significance is 99%, between one variable and other variables (Stress=0.03652, RSQ=0.99237) the significance is 99%, between one year and the variables (Stress=0.00503, RSQ=0.99988) the significance is 100%, and between one year and other years (Stress=0.02770, RSQ=0.99775) the significance is 100%.

Table 6. One-Sample Test for clothing and shoe expenses variable

One-Sample Statistics					One-Sample Test					
					Test Value = 90					
	N	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
									Lower	Upper
CLO	21	4.6476	1.46309	.31927	-267.335	20	.000	-85.35238	-86.0184	-84.6864
SHOE	21	2.0857	1.01355	.22117	-397.487	20	.000	-87.91429	-88.3756	-87.4529

Note: Var=variable

Table 6 presents the results of the One Sample T-test for the variable of beverage expenses during the years 2002–2022. The Var(CLO), the average budget basket is (4.65), while the desired value was (TV=90). Therefore, there is a significant difference between both values (-85.35%, p=0.000). The Var(SHOE), the average budget basket is (2.09), while the desired value was (VT=90). It is emphasized that there is a significant difference between both values (-87.91%, p=0.000). The observed values are significantly lower than the expected values, indicating pronounced differences in clothing and footwear purchases.

4.4. Money talks in the budget basket through the variable of household expenses

In the fourth section, the impact of climate change and sustainable financing on household expenditures of consumers has been analyzed, including its sub-variables such as current housing payment (CUHOPA), maintenance and arrangement of residence (MAARRRE), water supply and various services related to the residence (WSVSRR), and electricity, gas, and other fuels (ELGAOFU).

Table 7 presents the results of the distance method between the dependent variable of household expenses with the independent variables (CUHOPA, MAARRRE, WSVSRR, and ELGAOFU). The Var(CUHOPA) has the closest distance with the variable (MAARRRE). The Var(MAARRRE) has the closest distance with (WSVSRR). The variable (WSVSRR) has the closest distance with (ELGAOFU). According to Kruskal Stress statistics, the following findings for the matrixes are emphasized: between a variable with years (Stress=0.15810, RSQ=0.88874) the significance is 89%, between one variable

and other variables (Stress=0.05884, RSQ=0.98809) the significance is 99%, between one year and the variable (Stress=0.00691, RSQ=0.99989) the significance is 100%, and between one year and other years (Stress=.06196, RSQ=.98750) the significance is 99%.

Table 7. Proximity Matrix for the variable of household expenses

Proximity Matrix			
Indep. Var.	Euclidean Distance		
CUHOPA	.000		
MAARRRE	1.817	.000	
WSVSRR	2.283	1.493	.000
ELGAOFU	27.075	25.902	25.340	.000
Dependent variable: Housing, water, electricity, gas and other fuels			
Matrix- Z Scores (Stress & RSQ)			
For the matrix between a variable with years	Stress = .15810	RSQ = .88874	
For the matrix between one variable and other variables	Stress = .05884	RSQ = .98809	
For the matrix between one year and the variables	Stress = .00691	RSQ = .99989	
For the matrix between one year and other years	Stress = .06196	RSQ = .98750	

Note: Var=variable

Table 8 presents the results of the One Sample T-test for the variable of household expenses during the years 2002–2022. The Var(CUHOPA), the average budget basket is (0.52), while the desired value was (TV=90). There is a significant difference between both values (-89.48%, p=0.000). The Var(MAARRRE), the average budget basket is (0.82), while the desired value was (VT=90). It is emphasized that there is a significant difference between both values (-89.18%, p=0.000). The Var(WSVSRR), the average budget basket is (0.94), while the desired value was (VT=90), and it is highlighted that there is a significant difference between both values (-89.06%, p=0.000). The Var(ELGAOFU), the average budget basket is (6.25), while the desired value was (VT=90), and it is emphasized that there is a significant difference between both values (-83.75%, p=0.000).

Table 8. One-Sample Test for the variable of household expenses

One-Sample Statistics					One-Sample Test					
					Test Value = 90					
	N	Mean	Std. Devia-tion	Std. Error Mean	t	df	Sig. (2-tailed)	Mean Dif-ference	95% Confidence Interval of the Dif-ference	
									Lower	Upper
CUHOPA	21	.5190	.17210	.03756	-2382.620	20	.000	-89.48095	-89.559	-89.4026
MAARRRE	21	.8238	.20225	.04413	-2020.559	20	.000	-89.17619	-89.268	-89.0841
WSVSRR	21	.9429	.27124	.05919	-1504.610	20	.000	-89.05714	-89.180	-88.9337
ELGAOFU	21	6.2476	1.47466	.32180	-260.265	20	.000	-83.75238	-84.423	-83.0811

Note: Var=variable

4.5. *Money talks in the budget basket through the variable of various goods and services expenses*

In the fifth section, the influence of climate change and sustainable financing on consumer expenditures for goods and other services was analyzed, including its sub-variables: personal care (PECA), personal items (PEIT), social protection (SOPR), insurance (INS), financial services (FISER), and other services (OTHSER).

Table 9. Proximity Matrix for Consumer Expenditures on Goods and Other Services

Proximity Matrix						
Indep. Var.	Euclidean Distance					
PECA	.000					
PEIT	6.869	.000				
SOPR	8.226	2.587	.000			
INS	6.829	1.068	2.261	.000		
FISER	6.914	1.439	2.661	1.404	.000	
OTHSER	7.547	2.007	.894	1.507	2.040	.000
Dependent variable: Furnishings, home appliances and home maintenance						
Matrix- Z Scores (Stress & RSQ)						
For the matrix between a variable with years				Stress = .13195		RSQ = .93765
For the matrix between one variable and other variables				Stress = .06413		RSQ = .97878
For the matrix between one year and the variables				Stress = .07006		RSQ = .98819
For the matrix between one year and other years				Stress = .12774		RSQ = .95979

Note: Var=variable

Table 9 presents the results of the distance method between the dependent variable of consumer expenditures on goods and various services and the independent variables (PECA, PEIT, SOPR, INS, FISER, and OTHSER). The Var(PECA) has a close distance to the Var(INS). The Var(PEIT) has a close distance to the Var(INS). The Var(SOPR) has a close distance to the Var(OTHSER). The Var(INS) has a close distance to the variable (FISER). The Var(FISER) has a close distance to the Var(OTHSER). According to Kruskal Stress statistics, the following findings for the matrixes are highlighted: between a variable with years (Stress=0.13195, RSQ=0.93765) the significance is 94%, between one variable and other variables (Stress=0.06413, RSQ=0.97878) the significance is 98%, between one year and the variables (Stress=0.07006, RSQ=0.98819) the significance is 99%, and between one year and other years (Stress=0.12774, RSQ=0.95979), the significance is 96%.

Table 10 presents the results of the One Sample T-test for the variable of consumer expenditure on the purchase of goods and various services, along with the independent variables during the years 2002–2022. The Var (HOSE), the average budget basket is (0.78), while the desired value was (TV=90), indicating a significant difference between both values (-88.17%, p=0.000). The Var(PEIT), the average budget basket is (0.18),

while the desired value was (VT=90), highlighting a significant difference between both values (-89.68%, p=0.000). The Var(SOPR), the average budget basket is (0.62), while the desired value was (VT=90), emphasizing a significant difference between both values (-89.91%, p=0.000). The Var(INS), the average budget basket is (0.38), while the desired value was (VT=90), indicating a significant difference between both values (-89.54%, p=0.000). The Var (FISER), the average budget basket is (1.09), while the desired value was (VT=90), pointing out a significant difference between both values (-89.49%, p=0.000). The Var(OTHSER), the average budget basket is (0.24), while the desired value was (VT=90), indicating a significant difference between both values (-89.76%, p=0.000).

Table 10. One Sample Test for Consumer Expenditures on Goods and Other Services

One-Sample Statistics					One-Sample Test					
					Test Value = 90					
	N	Mean	Std. Devia-tion	Std. Error Mean	t	df	Sig. (2-tailed)	Mean Differ-ence	95% Confidence Interval of the Difference	
									Lower	Upper
PECA		.7762			-909.523	20	.000	-88.1666	-88.3689	-87.9645
PEIT		.1810			-1020.599	20	.000	-89.4952	-89.6782	-89.3123
SOPR		.6238			-13697.717	20	.000	-89.9095	-89.9232	-89.8958
INS		.3810			-1191.655	20	.000	-89.5428	-89.6996	-89.3861
FISER		1.0905			-1022.356	20	.000	-89.4904	-89.6731	-89.3079
OTHSER		.2429			-3296.207	20	.000	-89.7571	-89.8139	-89.7003

Note: Var=variable

Figure 1 shows the proximity matrix using the (Euclidean distance model and the scatterplot of linear fit), and OTS (One Simple Test). It includes sections (S1-5) and examines relationships between variables and years, variables and other variables, years and variables, and years and other years. In Section 1 (S1), focusing on the food expenses variable and its subvariables (BRCE, ME, FI, MICHEG, OIFA, FRU, VEG, SJHCHSW, and FOOPR), notable insights emerge. Consumers buying bread and cereals tend to purchase meat but not fish. Meat buyers also opt for cheese and eggs while avoiding fish. Fish buyers tend to diversify their purchases, excluding cheese and eggs. Shoppers of cheese and eggs show a preference for vegetables, excluding oils and fats. Oils and fats shoppers tend to diversify their choices, excluding spices. Fruit and spice shoppers diversify by choosing sugar, jam, honey, chocolate, and confectionery. In Section 2 (S2), examining the beverage expenditure variable and its subvariables (COTECO and MWSDFGJ), the key finding is that consumers purchasing coffee, tea, and cocoa also tend to buy mineral water, soft drinks, and fruit or vegetable juices. In Section 3 (S3), exploring the clothing and shoes expenditure variables and their subvariables (CLO and SHOE), the results indicate that consumers who buy clothing also tend to purchase shoes. In Section 4 (S4), analyzing the household expenditure variables and their subvariables (CUHOPA, MAAR-

RRE, WSVSRR, and ELGAOFU), trends highlight that consumers paying for housing expenses also allocate funds for maintenance and furnishings. Those financing housing maintenance also allocate resources for water supply and related services. Similarly, those covering household expenses also allocate resources for electricity, gas, and fuel. In Section 5 (S5), examining the variable related to consumer expenses on miscellaneous goods and services and its subvariables (PECA, PEIT, SOPR, INS, FISER, and OTHSER), the findings reveal that buyer preferences, such as those purchasing personal items, allocate funds to insurance, and spending on social protection is associated with other services. This understanding provides valuable insights that underpin sustainable global economic development and stability.
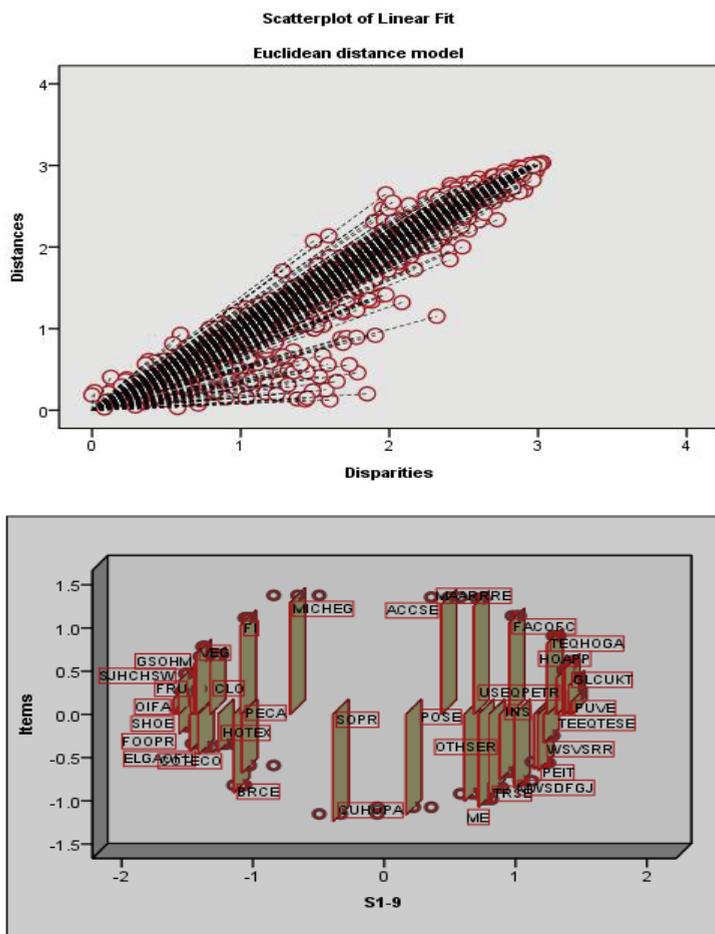

Figure 1. Proximity Matrix – OTS (S1-5)

Table 11. Hypothesis Verification for all sections (S1-8)

No.	Econometric Methods and Analyses	Hypothesis	Factors	Interpretation
1	Proximity Matrix	H_1: There is a complex relationship between money, climate change, sustainable finance, and how consumers utilize their funds to purchase products and services in the budget basket in the global economy	Money talks in the budget basket through the variable of food expenses.	Approved
			Money talks in the budget basket through the variable of beverage expenses.	Approved
			Money talks in the budget basket through the variable of clothing and footwear expenses.	Approved
			Money talks in the budget basket through the variable of household expenses.	Approved
			Money talks in the budget basket through the variable of various goods and services expenses.	Approved
2	One Sample Test (OST)	H_2: There exists a discrepancy between the expected value and desired value of expenditures on variables within the budget basket in the face of climate change and sustainable finance matters in the global economy.	Money talks in the budget basket through the variable of food expenses.	Approved
			Money talks in the budget basket through the variable of beverage expenses.	Approved
			Money talks in the budget basket through the variable of clothing and footwear expenses.	Approved
			Money talks in the budget basket through the variable of household expenses.	Approved
			Money talks in the budget basket through the variable of various goods and services expenses.	Approved

Table 11 provides an overview of the hypotheses' elaboration and their subsequent verification. The Proximity Matrix highlights the inclusion of various expenditure variables within the budget basket, encompassing categories such as food, beverages, clothing and footwear, household expenses, home maintenance, transportation, communication devices, restaurant and hotel visits, as well as other goods and services. Hypothesis 1 (H_1) reveals a complex relationship between money, climate change, sustainable finance, and the allocation of consumer funds within these expenditure variables. Furthermore, the One Sample Test demonstrates the pivotal role of money across all aspects of the budget basket, influencing expenditures on food, beverages, clothing and footwear, household expenses, and other goods and services. The validated hypothesis (H_2) suggests the existence of a discrepancy between the expected and desired values of expenses within each of these variables, particularly when addressing climate change and sustainable finance matters.

5. Discussion

The various research studies conducted in the fields of climate change, sustainable finance, and budgeting were presented for the global economy, so these studies shed light on the key elements of individuals' expenses that are influenced by climate change, including food, beverages, housing, consumer goods of households (Lulaj et al., 2021). Regarding

financial stability in a global economy (Cicen, 2023), it was emphasized that weak institutions can exacerbate financial shocks. Similarly, (Luick et al., 2023) highlighted the importance of prioritizing healthy food choices in budgeting and developing strategies to align consumer goals with climate and sustainable finance matters. Their research suggests that these efforts can lead to sustainable consumption patterns and enhance consumer awareness regarding the carbon footprint of the products they consume, as emphasized by (Kanay et al., 2021). Moreover, (Ulvidienė et al., 2023) highlighted a significant increase in interstate economic competition in recent decades. Collaborative efforts among consumers, as emphasized by (Grashuis and Hakelius, 2023), can foster increased competition and help prevent food price inflation (promoting fairness, equal access to food, and income equality (Hough and Contarini, 2023), further (Tsouli, 2022), it is emphasized that financial inclusion is significantly related to poverty. As per Lulaj (2020), the crucial connection between education, effective budget practices, and environmental influences reveals insights into budget management among groups from Kosovo, Western Balkan countries, and European countries, offering practical recommendations for sustainable finance. While previous studies have provided initial insights into the relationship between personal spending and climate challenges, this research delves deeper, providing a holistic and longitudinal view of this critical issue. The findings provide clear evidence that food expenses, as observed through the market basket, reveal significant disparities between desired and actual expenses. So, uncovers interesting patterns within consumer food preferences, such as the correlation between bread and cereals and meat, and the exclusion of fish in certain purchases. Consumers who buy coffee, tea and cocoa also tend to buy mineral water, soft drinks and fruit or vegetable juices. Looking at clothing and shoes expenses within the budget basket, this research reveals a strong correlation between these expenditures and the impacts of climate change and sustainable finance. These findings underscore the importance of thoughtful planning and budgeting for leisure activities within the context of climate change and sustainable financial practices, contributing to a more resilient and sustainable global economy.

6. Conclusions and Future Studies

This study provides a deep and clear overview of the link between sustainable finance, climate change, and budget basket, offering important information for countries, businesses, and households. Food consumption was lower than expected, indicating pronounced changes in consumer behavior regarding food. Interesting patterns were identified in budget allocations, such as the correlation between bread and cereals with meat, as well as the absence of fish in some purchases. Findings showed intriguing connections in the budget allocations of consumers purchasing beverages, including drinks like coffee, tea, and cocoa, with mineral water, nonalcoholic beverages, and fruit or vegetable juices. Expenses on clothing and shoes significantly differed from desired values, highlighting the need to consider factors and temporal aspects in consumer purchases. Overall, expenses on goods and services demonstrated the complexity and interdependency of consumer

behavior. The recommendations focus on creating a more sustainable and resilient world economy by fostering responsible consumer behavior, sustainable budget planning, and promoting sustainable financial choices in various sectors. Future studies should focus on: analyzing the interaction between household expenditures and other factors for personal financial management and promoting sustainable financial behavior; identifying ways and strategies to promote sustainable financial behavior in the context of climate change and sustainable finance.

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