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Applications and Extensions of National Culture in the Shadow Economy

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Abstract: This paper examines the correlation concerning national cultural dimensions and the shadow economy. Present in all countries, the shadow economy significantly influences economic development, prompting researchers to explore the factors that affect its magnitude. However, existing literature has largely neglected the association between national culture and the shadow economy. To investigate this connection, we will utilize regression analysis in conjunction with Hofstede's cultural dimensions. The volume of the shadow economy, expressed as a percentage of GDP, was evaluated using the MIMIC and CDA methods. Our correlation analysis reveals associations between the shadow economy and several cultural dimensions, including power distance, uncertainty avoidance, individualism versus collectivism, and long-term versus short-term normative orientation. Our contribution to the literature provides empirical evidence that cultural factors can elucidate the magnitude of the shadow economy across different countries. Based on our findings, we underscore the importance of cultivating national culture to mitigate the shadow economy. The identified relationships between the shadow economy and specific cultural dimensions deserves further investigation.

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I. INTRODUCTION

The shadow economy is a modern economic phenomenon that occurs in every country, varying significantly in size and form. Understanding the process of legal activities requires a foundational understanding of the shadow economy (Schneider, 2007).

The shadow economy is continuously evolving. It often trails behind legal activities, sometimes operates concurrently, and at other times, it leads. However, there is no universally established meaning of the shadow economy. The literature presents various meanings, including illegal activity, unreported work, underground economy, black sector, black market, grey economy, informal economy, undeclared labor, and unregistered activities. The European Union tends to refer more to the undeclared economy than to the shadow economy. These differing definitions create various categories, which influence both the interpretation and the scope of the issue (ibid, 2007).

According to Schneider & Enste (2000), the shadow economy incorporates economic accomplishments that add to the formally computed gross national product but remain undeclared. Katsios (2006) defines the shadow economy more precisely, noting that it includes criminal activities such as drug sales, smuggling, prostitution, betting, and gambling, as well as lawful businesses conducted mostly in cash and not reported to financial or other authorities. This is often referred to as parallel economy.

The primary drivers behind the expansion of the shadow economy are increases in taxation and social protection burdens. The larger the gap concerning the total labor costs in the formal economy and after-tax income, the bigger the motivation to escape this disparity and engage in informal work (Schneider & Enste, 2000). The most concerning consequences of the shadow economy include corruption, reduced novelty and creativity, reduced competitiveness at both macro and micro levels, and condensed budget incomes, which adversely affect education funding and the quality of public institutions. This erosion of trust in the tax system ultimately lowers the quality of working life, health, and insurance (Buehn, Lessmann & Markwadt, 2013; Kireenko & Nevrorova, 2015).

Research by Adam & Ginsburg (1985) suggests that the shadow economy can positively influence GDP growth. In contrast, Dreher & Schneider (2010) argue that it negatively impacts legitimate economic activities.

Countries universally strive to reduce the shadow economy, but achieving this goal is a challenging task. The level of the shadow economy tends to remain relatively stable. In developed nations with market-oriented and democratic systems, it typically constitutes less than 10% of total GDP. In contrast, accession countries may experience shadow economies around 30% of GDP, while less developed nations facing economic and constitutional challenges can see figures surpassing 50% of their GDP (Schneider, 2008).

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II. NATIONAL CULTURE AND ECONOMIC RESULTS: LITERATURE REVIEW

The boundaries involving economics and social sciences have become progressively obscured, prompting the need to explore behavioral phenomena in economics beyond traditional economic explanations. There is a growing academic interest in how national culture influences economic systems. For instance, Grinblatt & Keloharju (2001) examine the cultural impact on trade choices, while Seigel, Licht, & Schwartz (2011) analyze its impacts on transnational investment flows. Numerous studies have highlighted the role of culture in shaping business choices, including research by Dimitratos et al. (2011), Fidrmuc & Marcus (2010), Shao, Kwok, & Guedhami (2010) and Zheng et al. (2011).

Guiso et al. (2009) explore how "trust" affects trade and investment flows, while Kanagaretnam, Lim, & Lobo (2011) highlight the significant impact of informal institutions, such as culture, on economic decisions.

Seiler et al. (2012) investigate the economic and behavior factors that lead individuals in the United States to strategically default on mortgages. Antonczyk & Salzmann (2014) find that companies in nations with great individualism results tend to have greater debt ratios compared to those in more collectivist societies.

Chui et al. (2016), in a study across 29 countries, conclude that there is a strong negative correlation between certain aspects of national culture (such as integration) and corporate debt costs. Similarly, Sulganova (2016) notes that rising non-performing loans significantly restrict household consumption, a finding also supported by Madeira (2017).

Tajaddini & Gholipour (2017) question why countries with similar levels of real estate debt regulation and economic growth experience vastly different mortgage default rates. Lavezzolo et al. (2018) emphasize the role of uncertainty avoidance and how political institutions shape the relationship between this cultural dimension and a country's financial structure. Berger, Li, Morris, & Roman (2019) find a positive relationship among cultural dimensions of individualism and masculinity and the occurrence of bank failures.

Hofstede's cultural dimensions have been extensively examined, replicated, and discussed (Smith, 1996; Sondergaard, 1994). While they have faced critique (Lowe, 2001; Yeh & Lawrence 1995), some refinements have been proposed (Schwartz, 1992).

Defining culture narrowly aids in establishing a causal link between culture and financial outcomes. By describing culture as "the customary beliefs and values transmitted by ethnic, religious, and social groups that remain stable across generations" (Guiso et al., 2006), we can focus on the cultural dimensions that affect economic results. Hofstede (2011) characterizes culture as "the shared coding of the mind that differentiates members of one cluster or grouping from others". While culture is inherently a collective phenomenon, it can also relate to various aggregates, often tied to races, ethnic groups, nations or organizations.

➢ *The Hofstede's Six Elements of National Culture*

- *Hofstede (2010 &2011) Identifies Six Dimensions of National Culture:*

Power Distance Index (PDI) is the dimension that addresses how societies manage the fundamental issue of human inequality. In cultures with a high PDI, individuals accept and maintain existing hierarchical structures. Conversely, in low PDI societies, there is a strong desire for a more equitable distribution of power.

Uncertainty Avoidance Index (UAI) measures how well members of society handle future uncertainty without experiencing significant stress. It reflects how a culture conditions its members to feel either relaxed or awkward in uncertain conditions.

Individualism versus Collectivism (IDV) is a dimension that pertains to how individuals integrate into groups. In high individualism societies, relationships are loose, and individuals prioritize their own needs and those of their immediate families. In contrast, high collectivism societies emphasize group welfare over individual interests, promoting a sense of belonging and shared responsibility.

Masculinity versus Femininity (MAS) is the dimension that distinguishes emotional roles and values assigned to men and women within a culture.

Long-Term Orientation versus Short-Term Normative Orientation (LTO) relates to whether individuals concentrate their attempts on the future or prioritize the present and past.

Indulgence versus Restraint (IVR) is the dimension that examines the balance between satisfying basic human desires for enjoyment and exercising control over them. High scores indicate a society that embraces fun and enjoyment, while low scores suggest a culture that suppresses desires and adheres to strict social norms.

Countries are ranked according to their scores on each dimension, which are statistically evident and can happen in various mixtures, though some arrangements are more common than others. The evaluation of these dimensions for each country utilizes statistical correlations and techniques such as factor analysis.

III. METHODOLOGICAL APPROACH

Hofstede's dimensions of national culture were utilized to assess the cultural characteristics of 62 countries, as outlined in Table 1. Each dimension is measured on a scale from 1 to 100, and the selection of countries was determined by the availability of data. The shadow economy data, expressed as a percentage of official GDP, were sourced from calculations by Medina & Schneider (2018), employing the MIMIC (Multiple Indicators Multiple Causes) and CDA (Currency Demand Approach) methods (see Figure 1). The

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MIMIC method is favored for its flexibility. We focused on this specific definition of the shadow economy, as established by Schneider, whose databases are widely recognized in the scientific community. The results of the correlation analysis are detailed in Table 3.

Table 1 Hofstede's Cultural Value Scores for 62 Countries and the Volume of the Shadow Economy

COUNTRY	PDI	IDV	UAI	MAS	LTO	IVR	SIZE OF SHADOW ECONOMY (%GDP)
ARGENTINA	49	46	86	56	20	62	24,14
ARAB COUNTRI	80	38	68	53	23	34	26,54
AUSTRALIA	36	90	51	61	21	71	12,06
AUSTRIA	11	55	70	79	60	63	8,93
BANGLADESH	80	20	60	55	47	20	33,59
BELGIUM	65	75	94	54	82	57	20,57
BRAZIL	69	38	76	49	44	59	37,63
BULGARIA	70	30	85	40	69	16	29,17
CANADA	39	80	48	52	36	68	13,92
CHILE	63	23	86	28	31	68	16,69
CHINA	80	20	30	66	87	24	14,67
COLOMBIA	67	13	80	64	13	83	33,31
CROATIA	73	33	80	40	58	33	28,81
CZECH REP	57	58	74	57	70	29	14,83
DENMARK	18	74	23	16	35	70	15,19
EL SALVADOR	66	19	94	40	20	89	45,59
ESTONIA	40	60	60	30	82	16	23,80
FINLAND	33	63	59	26	38	57	13,49
FRANCE	68	71	86	43	63	48	14,08
GERMANY	35	67	65	66	83	40	11,97
GREAT BRITAIN	35	89	35	66	51	69	11,08
GREECE	60	35	112	57	45	50	27,06
HONG KONG	68	25	29	57	61	17	14,69
HUNGARY	46	80	82	88	58	31	25,23
INDIA	77	48	40	56	51	26	23,91
INDONESIA	78	14	48	46	62	38	24,11
IRAN	58	41	59	43	14	40	17,88
IRELAND	28	70	35	68	24	65	13,89
ITALY	50	76	75	70	61	30	24,95
JAPAN	54	46	92	95	88	42	10,41
KOREA SOUTH	60	18	85	39	100	29	25,70
LATVIA	44	70	63	9	69	13	22,23
LITHUANIA	42	60	65	19	82	16	25,15
LUXEMBOURG	40	60	70	50	64	56	10,67
MALAYSIA	104	26	36	50	41	57	31,49
MALTA	56	59	96	47	47	66	29,80
MEXICO	81	30	82	69	24	97	31,74
MOROCCO	70	46	68	53	14	25	34,01
NETHERLANDS	38	80	53	14	67	68	10,77
NEW ZEALAND	22	79	49	58	33	75	11,70
NORWAY	31	69	50	8	35	55	14,07
PAKISTAN	55	14	70	50	50	0	33,10
PERU	64	16	87	42	25	46	52,40
PHILIPPINES	94	32	44	64	27	42	39,31
POLAND	68	60	93	64	38	29	25,10
PORTUGAL	63	27	104	31	28	33	21,88
ROMANIA	90	30	90	42	52	20	30,14
RUSSIA	93	39	95	36	81	20	38,42
SINGAPORE	74	20	8	48	72	46	11,90
SLOVAKIA	104	52	51	110	77	28	15,33

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SLOVENIA	71	27	88	19	49	48	24,09
SPAIN	57	51	86	42	48	44	24,52
SWEDEN	31	71	29	5	53	78	13,28
SWITZERLAND	34	68	58	70	74	66	7,24
TAIWAN	58	17	69	45	93	49	32,50
THAILAND	64	20	64	34	32	45	50,63
TRINIDAD & TO	47	16	55	58	13	80	34,37
TURKEY	66	37	85	45	46	49	31,38
URUGUAY	61	36	100	38	26	53	37,91
USA	40	91	46	62	26	68	8,34
VENEZUELA	81	12	76	73	16	100	33,81
VIETNAM	70	20	30	40	57	35	18,70

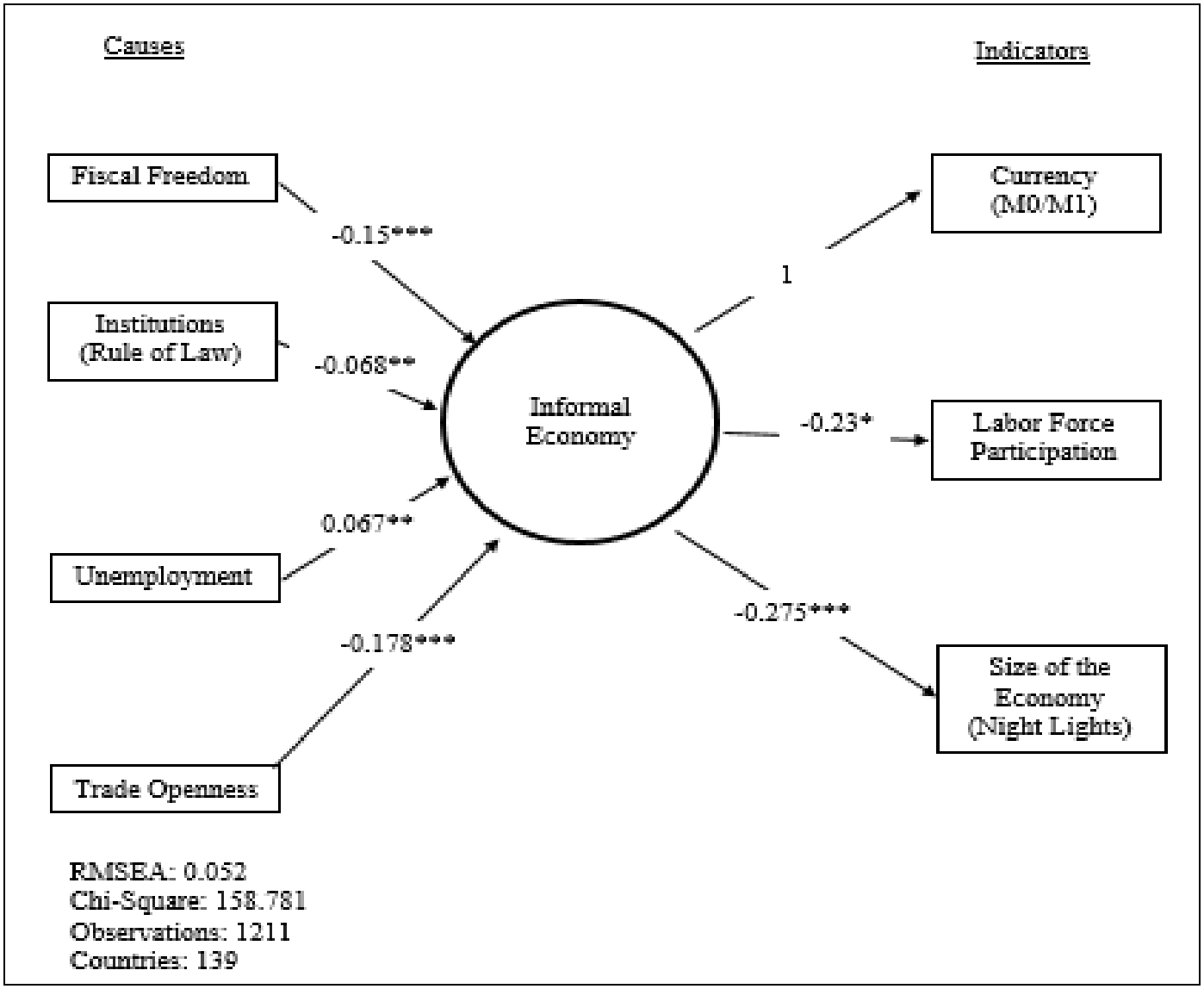

Fig 1 Multiple Indicators, Multiple Causes (MIMIC) Approach

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Table 2 Correlation Outcomes Among Shadow Economy and the Extents of National Culture (Hofstede's Dimensions).

Correlations

		PDI	IDV	UAI	MAS	LTO	IVR	SIZE OF SHADOW ECONOMY (%GDP)
PDI	Pearson Correlation	1	-,640**	,180	,184	,010	-,297*	,523**
	Sig. (2-tailed)		<,001	,162	,153	,941	,019	<,001
	N	62	62	62	62	62	62	62
IDV	Pearson Correlation	-,640**	1	-,181	,026	,094	,149	-,616**
	Sig. (2-tailed)	<,001		,159	,839	,465	,248	<,001
	N	62	62	62	62	62	62	62
UAI	Pearson Correlation	,180	-,181	1	,025	-,036	-,052	,427**
	Sig. (2-tailed)	,162	,159		,850	,783	,689	<,001
	N	62	62	62	62	62	62	62
MAS	Pearson Correlation	,184	,026	,025	1	,022	,064	-,107
	Sig. (2-tailed)	,153	,839	,850		,867	,621	,410
	N	62	62	62	62	62	62	62
LTO	Pearson Correlation	,010	,094	-,036	,022	1	-,492**	-,306*
	Sig. (2-tailed)	,941	,465	,783	,867		<,001	,016
	N	62	62	62	62	62	62	62
IVR	Pearson Correlation	-,297*	,149	-,052	,064	-,492**	1	-,093
	Sig. (2-tailed)	,019	,248	,689	,621	<,001		,474
	N	62	62	62	62	62	62	62
SIZE OF SHADOW ECONOMY (%GDP)	Pearson Correlation	,523**	-,616**	,427**	-,107	-,306*	-,093	1
	Sig. (2-tailed)	<,001	<,001	<,001	,410	,016	,474	
	N	62	62	62	62	62	62	62

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

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

IV. RESULTS

Table 2 presents the empirical results. Initially, we observe a strong positive correlation between the shadow economy and the power distance index (0.523) as well as the uncertainty avoidance index (0.427). Conversely, there is a substantial negative correlation between the shadow economy and the individualism versus altruism index (-0.616) and the long-term versus short-term regulatory orientation index (-0.306). These results align with expectations. In countries with a low individualism index, collectivism is predominant, leading to lower involvement in the shadow economy due to greater respect for laws. Research shows that nations with lower levels of collectivism tend to exhibit higher levels of fiscal redistribution (Kammas et al., 2017). This negative correlation is supported by existing literature (Richardson, 2008; Tsakumis et al., 2007; Dan, 2015).

Additionally, a low score on the uncertainty avoidance index indicates that individuals are more tolerant of risk and alternative choices, often exhibiting courage and entrepreneurial spirit. In contrast, high scores suggest a fear of embarrassment in unfamiliar situations. Our positive correlation aligns with findings from the literature (Tsakumis et al., 2007; Richardson, 2008). Similarly, a high-power distance index indicates unequal distribution of power, where using power for personal gain is accepted. In contrast, a low index reflects a more decentralized power structure, which also correlates positively based on existing research.

The correlation with the long-term versus short-term regulatory orientation index is similarly anticipated. Individuals and entrepreneurs typically prioritize immediate gains, which can lead them to engage in the underground economy. This is consistent with findings from Rethi (2012) & Achim (2016), who noted that tax evasion and corruption tend to rise under short-term orientation.

V. CONCLUSIONS

The research successfully met its main objective, establishing a relationship between national culture and the shadow economy. It has been demonstrated that national culture plays a significant role in reducing the shadow economy, particularly in relation to the dimensions of power distance and uncertainty avoidance. This finding opens avenues for further exploration.

Individuals and companies involved in the shadow economy face the risk of detection and punishment. In cultures characterized by high uncertainty avoidance, the shadow economy tends to thrive.

In conclusion, it is crucial to consider national culture when addressing efforts to reduce the shadow economy.

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However, our research has some limitations. The absence of time series data on culture necessitates caution in interpreting the results. Additionally, the small sample size stems from a lack of available data on the underground economy beyond what is provided by Schneider.

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