U.S. INTRA-STATE GEOGRAPHIC VARIATION IN PSYCHOLOGICAL CHARACTERISTICS AND CORRUPTION

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ABSTRACT

This paper extends on corruption literature by examining state level variation of the Big Five personality traits, per-capita GDP, and income distribution on the prevalence of corruption in the United States. Significant relationships between per-capita GDP, state income distribution, conscientiousness and neuroticism were observed. Suggestions for further research are developed.

INTRODUCTION

Since Mauro Paulo's publication on the effects of corruption on markets during his initial employment at the World Bank in 1993, the topic has received intense interest over the recent years as its effects have become more understood. In the current economic climate, the role of the state in economic growth has become ever more scrutinized. The importance of this subject has led to a search for causes of corruption. The rational choice perspective of political science views corruption in terms of incentive structures [36], while institutional theorists posed corruption in terms of norms and social structure [26]. Husted [17] extended the realm of explanation for corruption into the mind of the actors in his cross cultural investigation of corruption, using Hofstede's five dimensions, showing a strong relationship between culture and corruption. A replication and extension was done by Li et. al (2008) using Scott's (1990) three institution "pillars" to describe the prevalence of organizational corruption across nations [20] [29]. While the linkage between culture and corruption has been well established, the little work has been done to examine the linkage between personality and corruption [10]. This paper extends previous work on corruption and economic development by examining its relationship to the "Big Five" personality traits.

THEORY

As explained above, models of corruption have traditionally excluded personality factors, focusing more on economic variables and omitting personality influences. With the understanding that there are numerous variables influencing the frequency of corruption behavior, the following personality and economic factor model is intended as a framework to help researchers identify categories of factors that are present in transactions between different personality groups.

MODEL

Economic Development

The level of economic resources available to members of a society has been theorized to offer the ability of the members to engage in activities which promote equitable governance, including education increases, stronger middle class, upward pressures on government expenditures [17]. With economic development, the environmental munificence minimizes the threat/capture drive [32] where actors resort to corrupt activities to control uncertainty in their environments.

Hypothesis 1: *Economic development will be negatively related to corruption frequency in a state.*

Income inequality has been both implicated as a consequence of corruption as well as a consequence [4] [23]. As Husted suggests, "the existence of a more equal distribution of wealth reflects the existence of a middle class which can act to protect the interests through the organization of interest groups" [17]. The existence of the inequality suggests that some members of the population may have better access to government officials, which would lead to a higher probability of state capture [4]. This view linking state capture to the concentration of resources leads to:
Hypothesis 2: *Income inequality will be positively related to corruption frequency in a state.*

Personality and Corruption

Hofstede has made clear inroads into the connection between common beliefs and the perceptions individual's maintain about reality with his "software of the mind" analogy [16]. Husted made the connection between culture and the prevalence of corruption, finding the strongest relationship with power distance [17]. Aggregate personality studies have existed for some time in various fields, linking geographic differences to personality characteristics of populations [28]. While these provide some insight to macro phenomena, linkage across levels has been fraught with spurious relationships and misdirected efforts [31]. Within nation differences have more recently been investigated. Regional psychological differences have been measured in men in the Midwest and the Southern U.S. with respect to fatalism and sense of honor [8]. Significant differences along individualism and collectivism has been measured across the fifty states [35]. Only recently has attention focused on tying one of the more established personality measures, the Big Five Inventory (BFI) to macro level relationships. The BFI is the result of a convergence of personality research regarding that personality traits may be underpinned by five main traits: neuroticism, extraversion, openness to experience, agreeableness and conscientiousness [11].

Neuroticism represents a person's capability to adjust as well as their emotional stability. A person high in Neuroticism tends to experience emotions including anxiety, hostility, depression, self-consciousness, impulsiveness and vulnerability [11]. Some explanation for the cause of neuroticism has pointed towards a hyper sensitivity to negative outcomes. Gray explained this sensitivity as the close cognitive linkage between negative stimuli as signals of punishment [15]. Bolger and Zuckerman observed that high neuroticism individuals displayed more negative emotions to stressful events [7]. In the context of corruption, which the risk of sanctions is from being implicated in criminal activity, this would seem to have a significant influence on individuals' choice of action. Thus:
Hypothesis 3: *Neuroticism will be negatively related to corruption frequency in a state.*

Extraversion:
Extraversion represents the extent to which individuals are assertive, active, energetic, talkative, dominant and enthusiastic [11]. A person scoring highly on the Extraversion scale would tend to be cheerful, seek excitement and stimulation, and like people and large groups. Likewise, people scoring low prefer to spend time alone and are seen to be reserved, quiet and independent [11]. Weighing risk rewards of actions outside of the regulatory prescribed actions involves an added element of uncertainty [37]. Possessing a risk seeking personality which values excitement and stimulation, would expand the universe of alternative directions of an individual to include those which are extra-legal, provided that they also offer a higher possibility of reward. Thus:
Hypothesis 4: *Extraversion will be positively related to corruption frequency in a state.*

Openness to New Experience:
Openness to new experience assesses one's intellectual curiosity and their drive to seek new experiences and explore novel ideas. A person high on Openness tends to be creative, innovative, imaginative, reflective and untraditional. Conversely, low Openness tends to be conventional, narrow in interests and unanalytical [11]. Corruption has been categorized as a "hyper-norm", where the action is universally considered to be antisocial across cultures [25]. While this convention is strong across cultures, within individual cultures the acceptance of this norm may vary greatly. Viewing corruption through the "Moral Intensity" model of ethical decision making, an individual may view the intensity of a singular corrupt action as a low intensity violation of a social norm [19]. The indirect negative impact on others by pursuing this course of action would more easily fail the reflective test

by the high Openness individual, making it different than other hyper-norms such as theft, where an the adverse impact concentrates on one individual. Thus:
Hypothesis 5: *Openness to new experience will be negatively related to corruption frequency in a state.*

Agreeableness:
Agreeableness characterizes one's interpersonal orientation. This is seen as being more trusting, forgiving, caring, altruistic and gullible. A high agreeableness individual represents someone who value cooperativeness and positive interpersonal relationships. Low Agreeableness individuals can be characterized as manipulative, self-centered and ruthless [11]. Corruption requires a conspiratorial mindset where two entities must trust one another [36]. While agreeableness would foster trust, Zhao and Seibert point out that such a vulnerability may be a detriment in arenas offering scant legal protection from opportunism [37]. It seems reasonable to suggest that agreeableness has no impact on corrupt activities.

Conscientiousness:
Conscientiousness is a personality dimension indicating a person's degree of persistence, hard work, organization and motivation in the pursuit of goal accomplishment. Conscientiousness is an indicator of an individual's volition or his/her ability to work hard [3]. Initial examination of the conscientiousness to crime connection led to the view of a relationship between conscientiousness and lawful behavior. Collins and Schmidt (1993) explained the relationship as a linkage between conscientiousness and the construct of integrity, which lead individuals to avoid criminal behavior [9]. Contrary to these expectations, Blickle et.al. (2006) found that white collar criminals exhibited a higher rate of conscientiousness than their white collar counterparts, attributing the difference as the necessity of conscientiousness to embark on their extra-legal endeavor [6]. In their first analysis of their cross national study on personality and corruption, Connelly and Ones (2008) similarly noticed a positive relationship between Conscientiousness and corruption [10]. However, in a deeper analysis within countries, they noted that within countries, the relationship was negative, supporting the claim by Collins and Schmidt (1993) that conscientiousness is a strong factor in the construct of integrity and negatively related to crime [9]. Thus:
Hypothesis 6: *Conscientiousness is positively related to corruption frequency in a state.*

METHODS

Income distribution was measured by the most recent state level Gini coefficient available from the U.S. Census Bureau [33]. While state per capita GDP (SPCGDP) is available from as recent as 2008, it was decided to use and match both the most recent state Gini coefficient and the SPCGDP.

Data for the Big Five personality variables were obtained from Rentfrow et.al. (2008) survey results. Their survey consists of an online questionnaire administered to respondent volunteers. Complete data were received from 619,397 respondents over the period between December 1999 and January 2005 [28]. Convenience sampling such as this risks failure in capturing a representative sample of the population in question. The representativeness of the sample from each state in the U.S. with respect to the U.S. Census Bureau's estimates of the population of each state was directly proportional (r=.98). In general, the survey matched the U.S. population at large [28]. The survey questionnaire used the BFI's 44 short statements designed to assess the prototypical traits of each of the Five Factor Model dimensions [18].

For the dependent variable, corruption, the US Department of Justice *Report to Congress on the Activities and Operations of the Public Integrity* was used. In this report, the Department of Justice provides the number of convictions by state and state regions over a ten year period. Using convictions under U.S. Federal definitions divided by the state population.

DATA ANALYSIS AND RESULTS

The correlations show relationship patterns between the personality dimensions as previous studies using the Big 5 inventory [3]. One variable, neuroticism, does not show the negative correlation with conscientiousness and the positive relationship with agreeableness and openness found in other studies, as shown in Table 1.

Table 1

Descriptive Statistics and Correlations for All Variables

	Variable	M	SD	Correlation						
				1	2	3	4	5	6	7
1.	Corruption frequency	4.5E-06	6.5E-06							
2.	SPCGDP	0.0511	0.0117	-.128						
3.	State Gini	0.416	0.0316	.648**	.358**					
4.	Neuroticism	0	1	0.61	.117	.308*				
5.	Extraversion	0	1	0.44	.011	-0.06	-0.16			
6.	Openness to experience	0	1	-0.235	.315*	0.156	0.093	-.324*		
7.	Agreeableness	0	1	-0.081	.055	-0.01	-0.07	0.434**	-0.244	
8.	Conscientiousness	0	1	-0.127	.096	0.103	-0.267	.392**	0.006	.664**

Note. All tests are two tailed. N = 51

A first regression was run on the complete model yielding an adjusted R square of .539 ($p < .001$). SPCGDP, state Gini, and neuroticism were significant ($p > .01$), and conscientiousness ($p = .096$) supporting hypotheses 1 and 2. The relationship between extraversion and corruption activity of hypothesis 4 was not supported ($p = .251$). The relationship between openness and corruption activity (hypothesis 5) was also not supported (.800). No relationship between extraversion was revealed, as expected ($p = .633$). A second regression was performed on the variables: SPCGDP, state Gini 1999, neuroticism and conscientiousness, yielding an adjusted R square of .551, not significantly less than the full model ($p = .627$). A positive relationship was observed between state Gini and corruption activity ($p > .001$), supporting hypothesis 1. As expected in hypothesis 2, level of SPCGDP was negatively related to corruption activity ($p = .001$). Neuroticism was positively related to corruption activity ($p = .002$), supporting hypothesis 3. A negative relationship was observed between conscientiousness and corruption activity ($p = .019$), supporting hypothesis 6 (Table 2).

Table 2

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-9.634E-5	.000		-7.296	.000
	SPCGDP	-1.232E-11	.000	-.361	-3.316	.002
	State Gini	.000	.000	.899	7.694	.000
	Extraversion	8.630E-7	.000	.132	1.163	.251
	Agreeableness	-4.456E-7	.000	-.068	-.482	.633
	Conscientiousness	-1.625E-6	.000	-.249	-1.702	.096
	Neuroticism	-2.259E-6	.000	-.346	-2.957	.005
	Openness	-1.904E-7	.000	-.029	-.256	.800
2	(Constant)	-9.685E-5	.000		-7.487	.000
	SPCGDP	-1.270E-11	.000	-.372	-3.673	.001
	State Gini	.000	.000	.904	7.904	.000
	Conscientiousness	-1.613E-6	.000	-.247	-2.435	.019
	Neuroticism	-2.386E-6	.000	-.365	-3.254	.002

a. Dependent Variable: Corruption Activity

DISCUSSION AND CONCLUSION

Mauro called for deeper research into the antecedents of corruption and for stronger measures of corruption [23]. Following his suggestion, this paper extends beyond the macro level views of corruption into individual level constructs of personality, shared by members across regions. While some work along these lines have shed light on the linkage between corruption and shared personality characteristic via cultural analysis, few have directly investigated the role of personality[16] [10]. Studies which have investigated the culture to corruption relationship as a means of explaining a linkage between personality and behavior at the macro level have had to grapple with the issues of cross cultural comparisons. Issues of matching disparate conceptualizations of both the underlying independent variables of culture and the dependent variables of the many definitions of corruption make the investigation of corruption a formidable task [1] [23]. Holding these cultural dimensions within one nation and providing an operationally defined measure of corruption across the group observed offers a clearer picture of relationship between personality and corruption. Consistent with previous studies, within the U.S. there is a negative relationship between per capita GDP and corruption. While this is often explained as a result of the additional resources providing the individuals with the ability to investigate and police against corrupt activities (Alam, 1995), Mauro's (1995) explanation that corruption seems more relevant in this environment – that corruption dampens GDP rather than the inverse [2] [23]. Alam's observation was made from observing disparities between wealthy and third world nations. Such differences would seem to be less observable between states in the U.S. Likewise, disparities in income are related to increased corruption in the states, and are positively related to per capita GDP, raising this issue as an opportunity to pit Alam's claim against Mauro's in future research using the U.S. context.

Shared personality of members of particular states does appear to have a relationship with levels of corruption. Conscientiousness of individuals may provide some foundation for either avoiding situations to participate in extralegal activities, or it may provide the propensity for preventing such actions in others. Situations as explained by Staw and Szwajkowski (1975) are likely to occur less frequently in environments where conscientiousness acts as a buffer for dissatisfied individuals in a group to avoid anti-social behavior [24]. Conversely, the sensitivity of high neuroticism individuals seems to amplify the presence of negative outcomes in their calculations when faced with opportunities to engage in corrupt behavior. This relationship was not observed by Connelly and Ones (2008) [10]. A strong factor in the absence of this relationship in their study is the context of the individuals and whether the actions were seen by the individuals as corrupt or not. Using the CPI index, the definition of corruption is heavily weighted towards western ideas of what corruption is. The targets of these evaluations are predominately non western actors, where definitions of cronyism and nepotism, and even bribery are frequently less comprehensive [14]. Holding the cross group definition of corruption constant, the presence of consistent normative and regulatory standards constant, the sensitivity to adverse consequences emerges as a relevant factor.

Limitations of this study include the typical criticisms of cross sectional studies. Given the relatively recent interest in corruption, particularly on a national and state by state level, the data needed for a more revealing panel study are not yet available.

Future research opportunities include assembling more comprehensive data, when it becomes available from the next census, to deploy panel designs to work towards a clearer picture of causality. Another opportunity is the tie in of corruption and state GDP growth, a particularly relevant topic in the current economic climate. The linkage entrepreneurship as a driver of economic growth somewhat is well documented [4], as is corruption and economic growth [23], and hostile governments on entrepreneurship and economic growth [30]. Recent work using the Five Factor Model of personality to entrepreneurial activity has offered some insight of this relationship on an individual level [38]. This leaves an opportunity to tie personality, cultural, normative and regulatory environments together to in a larger framework similar to Scott's (2001) institutional model of organizational environment [29].

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