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Kodila-Tedika, Oasis and Kalonda-Kanyama, Isaac and Azia-Dimbu, Florentin

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Oasis Kodila-Tedika
Department of Economics
University of Kinshasa, B.P. 832 KIN XI,
Kinshasa, Democratic Republic of Congo.
Institute of African Economics
Email: oasiskodila@yahoo.fr

Florentin Azia-Dimbu
Department of Psychologie and Education
Université Pédagogique Nationale/Kinshasa, Democratic Republic of Congo.
flo_azia@yahoo.fr

Isaac Kalonda-Kanyama
Department of Economics and Econometrics, University of Johannesburg, South Africa.
Department of Economics, University of Kinshasa, Democratic Republic of Congo.
ikkanyama@uj.ac.za

Abstract

This study aims at testing the relationship between alcohol and corruption. Using cross-sectional data, we find the nexus to be positive. It follows that the depth of drinking alcohol has a significant positive correlation with the level of corruption.

Keywords: corruption; alcohol; drinkers; institutions

JEL Classification: D73; I10; I12; I19

1. INTRODUCTION

There is little doubt that alcohol consumption is associated with many social problems. Not only is alcohol consumption and its adverse outcomes a concern for an individual's close partners and relatives, but it is also a cause of serious public health problems in accordance with alerts of national and international health organizations. For example, maternal alcohol consumption during pregnancy can result in fetal alcohol syndrome in children, and parental drinking is correlated with child abuse and impacts a child's environment in many social, psychological and economic ways (Gmel & Rehm, 2003). On the other hand, according to the Worth Health Organization (2011), the harmful use of alcohol results in 2.5 million deaths each year. In addition, 320 young people between the age of 15 and 29 die from alcohol related causes, resulting in 9% of all deaths in that age group.

The relationship between alcohol and health is well documented as well. Abusive alcohol consumption is shown to be the cause of several health conditions such asneuropsychiatric disorders (Samokhvalov et al., 2010), gastrointestinal diseases, cancer (Baan et al., 2007; Hamajima et al., 2002), cardiovascular diseases (Rehm et al., 2010) and diabetes mellitus (Baliunas et al., 2009a). In addition to the fact that abusive use of alcohol is an important cause of road accidents, research has also found that alcohol consumption is strongly associated with violent crime (Bushman, 1997; Graham and West, 2001) and with a substantial number of domestic violence accidents (Maffli and Zumbrunn, 2003; Gmel et Rehm, 2003 ; White and Chen, 2002 ; Obot, 2000; Jewkes, Levin and Penn-Kekana 2002; Koenig et al., 2003); although the relationship between alcohol and domestic violence is complex.

More interestingly, the impact of alcohol has been investigated with macroeconomic variables. Researchers have suggested that alcohol consumption expenditures account for a substantial part of the annual Gross Domestic Product of industrialized countries (Klingemann & Gmel, 2001). Baklien and Samarasinghe (2001) conducted a study in 11 districts in Sri Lanka, examining the link between alcohol and poverty and found that 7% of men said that their alcohol expenditure was greater than their income. On the other hand, heavy drinking at the workplace may potentially lower productivity. Trapenciere (2000) estimated that drinking and alcoholism have reduced labor productivity by about 10%. In addition, there is ample evidence that people with alcohol dependence and problem drinkers have higher rates of sickness and absenteeism than other employees (Klingemann & Gmel, 2001). Furthermore, Klingemann and Gmel (2001) note that a number of studies have demonstrated an association

between heavy drinking or alcohol abuse and unemployment. Here, a causal association may go in either direction, heavy drinking may lead to unemployment, as suggested by Mustonen, Paakkaned and Simpura (1994) and Mullahy & Sindelar (1996). However, loss of work may also result in increased drinking, which may lead to heavy drinking, as indicated by Gallant (1993), Dooley & Prause (1998) and Claussen (1999). Other links between alcohol consumption and work related issues are documented by Hughes and Bellis (2000) and Stallones and Xiang (2003).
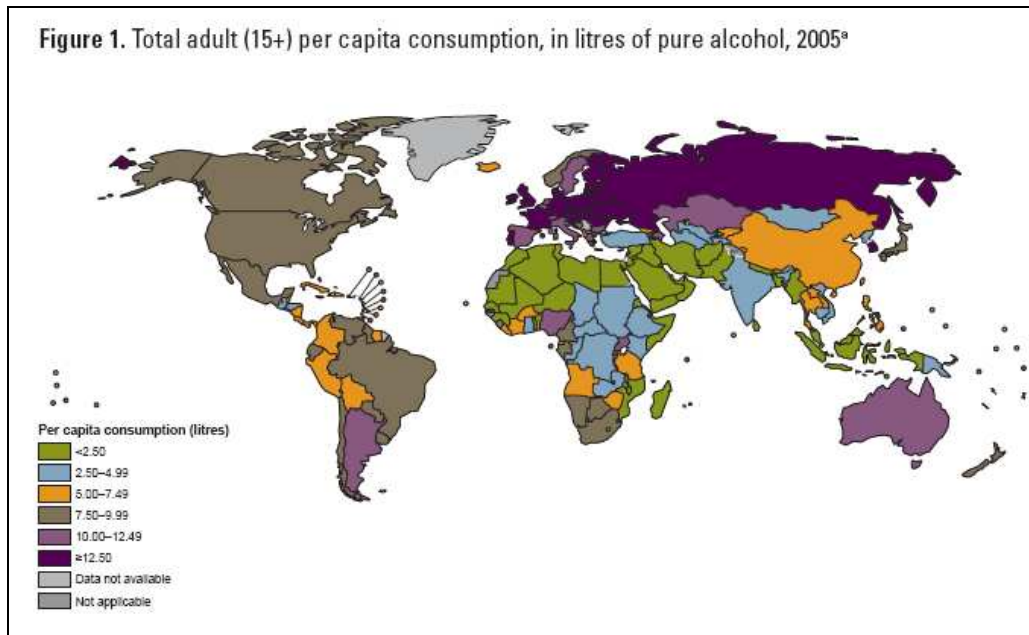
Although many research papers have focused on the impact of alcohol consumption, none has addressed its impact on corruption[1]. While only anecdotal evidence point to the possible link between alcohol consumption and corruption (Ramirez Torres, 1990), no paper, to the best of our knowledge has systematically provided empirical evidence of such an effect. Our aim in this paper is to feel this gap in the literature. This intuition motivating the hypothetical nexus is that, alcohol can weaken the conscience (Hull, 1981), hamper the smooth processing of data (Steele and Josephs, 1988) and disturb cognitive functioning. Hence, a drunk is less sensible to norms, to his/her personal expectations as well as to his/her deviation from personal codes of honor and societal norms. Consequently, a drunk is highly susceptible to adopt of certain code of conduct that is antagonistic to his/her normal state in the absence of drunkenness (Rathus, 1991). In light of the above, it is therefore logical to justify a premise for a corruption-alcohol nexus. This is because, in general terms, corruption is an abnormal and socially-repugnant behavior. Accordingly, once alcohol has taken control of someone, this person could easily become a candidate of corruption owing to a substantial decrease in the victim's sense of appreciation. Moreover, alcohol could be a stimulating agent for those already deeply embroiled in the scourge. Consistent with Remirez Torres (1990), those who lack the courage to engage in the act could use alcohol as a stimulant. This paper therefore assesses the relevance of the above.

The rest of the paper is organized as follows. Section 2 presents the anecdotal evidence. The methodological approach is covered in Section 3 while results are presented in Section 4. The last section concludes.

2. ANECDOTAL EVIDENCE

This section presents some evidence on alcohol consumption and corruption.

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[1] See recent literature on the determinants of corruption (Kodila-Tedika, 2012)

Figure 1. Total adult (15+) per capita consumption, in litres of pure alcohol, 2005[a]

Per capita consumption (litres)
- <2.50
- 2.50–4.99
- 5.00–7.49
- 7.50–9.99
- 10.00–12.49
- ≥12.50
- Data not available
- Not applicable

Source: World Health Organization (2011)

A large variation exists in adult per capita consumption (Figure 1). The highest consumption levels can be found in the developed world, mostly in the Northern Hemisphere, but also in Argentina, Australia and New Zealand. Medium consumption levels can be found in southern Africa, with Namibia and South Africa having the highest levels, and in North and South America. Low consumption levels can be found in the countries of North Africa and sub-Saharan Africa, the Eastern Mediterranean region, and southern Asia and the Indian Ocean. These regions represent large populations of the Islamic faith, which have very high rates of abstention (World Health Organization, 2011).

In terms of consumption, according to the same report, the world average consumption of pure alcohol was 6,13 liters per capita of more than 15 years (calculated on an average from 2003 till 2005). The countries which consume most are Russia, the United Kingdom, France, Germany and the Eastern Europe with more than 12,5 liters of pure alcohol a year per person. Just behind, we find the rest of Europe, Argentina and Australia, with more than 10 liters.

The WHO notes generally that the consumption is stable since the beginning of 1990s to the rich countries but that it increases strongly in developing countries, in Asia and in Africa. She also worries about the increase at the young people generally. On 82 countries having agreed to answer, 80 % would have noted such an evolution.

Obviously, the tendency varies strongly across countries. The consumption of the Russians increases to reach 15,7 liters a year, whereas that of the French people, with 13,7

liters, takes a nose dive, if we compare with the 1960s, when they consumed about 25 liters of pure alcohol a year.

The second graph below brings to light the perception of the corruption in the planet. A low score (red) indicates a high degree of corruption. The index assumes values between 0 (corruption) and 10 (no corruption). It is clear that the countries of the southern hemisphere and the Asian countries are the most corrupt, with regard to this indicator. Contrary to the previous graph, this one is concentrated. It is more the block of regions that is the most concern.

Figure 2. Corruption perception in world
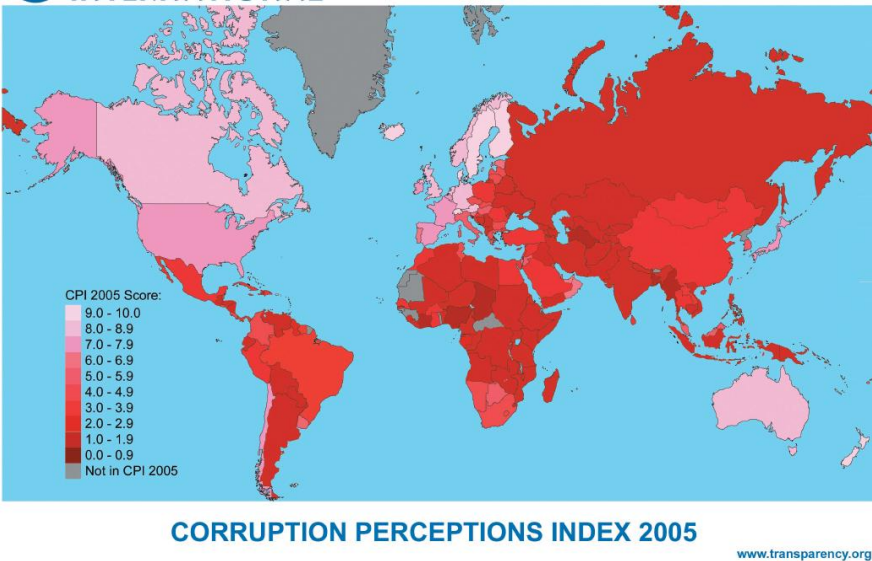
It is not obvious, from the previous figures, to establish a relationship between corruption and alcohol consumption. We plot the two variables in Figure 3. We represent the number of drinkers on the horizontal axis and the corruption perception index (CPI) on the vertical axis. The data is for 2005 and comes from World Health Organization (2011) and Transparency International for CPI. From the graph, the reversed index assumes values between 0 (no corruption) and 10 (extreme corruption).

It appears that countries with a low number of drinkers have lower CPI while countries with a higher number of drinkers have higher levels of CPI. However, Figure 3 also depicts the fact that some of the countries that have less drinkers have a lower CPI as well. Our aim in this paper is to check if there exists a causal relationship between the two variables.

Figure 3. Alcohol and corruption
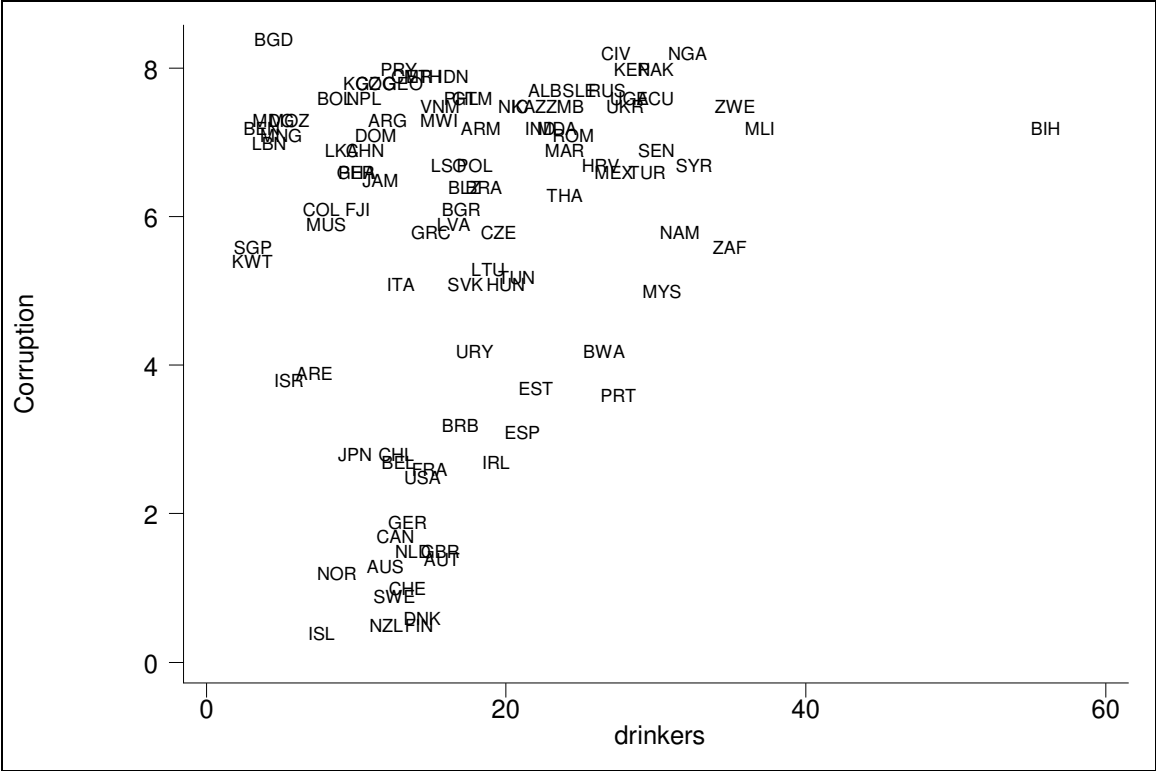
3 EMPIRICAL MODEL

We estimate the following empirical model:

$$Cor_i = \propto + \beta Alcohol_i + \delta Z_i + \varepsilon_i \qquad (1)$$

where Cor_i is the corruption index for country i. To measure corruption, we use the reversed Transparency International's Perception of Corruption Index (CPI) for the year 2005. The reversed index assumes values between 0 (no corruption) and 10 (extreme corruption). The CPI has often been used in empirical research on corruption (see the studies mentioned in section 1). $Alcohol_i$ is adult per capita consumption among drinkers, both sexes, 2005 (15+ years; in liters of pure alcohol). The source of this variable is the report of the World Health Organization 2011. $Z = (z1, \ldots z_k)'$ is the vector of control variables, and ε_i is the error term that is assumed to be normally and independently distributed. Finally, $\propto$ is the intercept, β captures the effect of adult per capita consumption among drinkers while $\delta = (\delta_1, \delta_2, \ldots \delta_k)$ is the parameter vector for the control variables. Our parameter of interest is thus β.

As control variables, we include openness to trade (or KOF index of economic globalization for the year 2005 from the literature (Dreher, 2006; Dreher et al., 2008) for the year 2005 (from Penn World Tables 6.3); the log of GDP per capita for the year 2005 (from

Penn World Tables 6.3); intelligence quotient for the year 2001 (from Lynn et al., 2002); democracy for the year 2005 (from Cheibub et al., 2010); average years of schooling (% of population aged 25 and over or % of population aged 15 and over) form Barro and Lee (2010); legal origin and geographical location to account for recent debates in the corruption literature (Asongu, 2012; Okada and Samreth, 2012). Following the trend in the literature, legal origin is captured by distinguishing between the English, French, German, Scandinavian and socialist legal heritages.

We perform our analysis on the empirical model specified in equation (1) above using essentially ordinary least square (OLS) estimates. To correct for likely heteroskedasticity, we present white-corrected standard errors.

4 EMPIRICAL RESULTS

Table 1 presents the results of equation (1). The control variables display the expected signs and are statistically significant in several cases. The variable of interest is positive and statistically significant in all cases. What indicates certain robustness with the change of the variables. The coefficients of the 'drinker variable' are statistically significant at the 1% level in columns (1) and (2).

The first column does not include our determinants. The variable accounts for 5% of the HIV/Aids prevalence rate in Africa. In the second column, introducing geographical localization variables in the model increases its explanatory power by 38% (R-squared was 0.05 and is now 0.38); they are thus critical determinants of the epidemic. But, all the variables of the geographical localization (with positive sign) are not significant. Only Europe is significant, with a negative sign. In column (3), contrary to Potrafke (2012), that intelligence (Intelligence quotient) and education (Average years of schooling) have a positive influence on corruption, but Intelligence quotient are significant. Per capita income is statistically significant at the 1% level in column and has the expected negative sign. Higher income is thus associated with less corruption. The democracy variable has the expected negative sign but does not turn out to be statistically significant. The KOF index of economic globalization is statistically significant at the 1% level and has the expected negative sign. Globalization thus reduces corruption.

In column (4), we only control for the variables of geographical location and legal origin. The results in column (4) show that countries in Africa and Asia have higher

corruption; this effect is statistically significant at different levels. The coefficients of the British legal origin, French legal and Socialist legal origin variable is statistically significant at the 1% level, while the Scandinavian legal origin variable does not turn out to be statistically significant.

Tableau 1. Main results

	(1)	(2)	(3)	(4)
Drinker	0,057***	0,060***	0,035*	0,032**
	(0,019)	(0,017)	(0,020)	(0,012)
Africa		0,845		3,624**
		(0,529)		(1,553)
America				2,460
				(1,634)
Asia		0,827		2,946*
		(0,568)		(1,578)
Europe		-1,981***		0,373
		(0,624)		(1,602)
Oceania		4,832*		
		(0,567)		
LegalOrigin (UK)				1,931***
				(0,550)
LegalOrigin (French)				2,821***
				(0,492)
LegalOrigin (Socialist)				4,473***
				(0,391)
LegalOrigin (Scandinavian)				-0,360
				(0,342)
Intelligence quotient			0,050**	
			(0,022)	
Log GDP per capita			-1,849***	
			(0,289)	
Democracy			-0,243	
			(0,388)	
KOF index of economic globalization			-0,033*	
			(0,019)	
Average years of schooling			0,040	
			(0,087)	
Constant	4,589***	4,832***	19,156*	4,832***
	(0,489)	(0,567)	(1,909)	(0,567)
Adj. R²	0,05	0,38	0,66	0,63
Obs.	102	102	89	101

Notes: Absolute value of t-statistics in brackets; * significant at 10%; ** significant at 5%;*** significant at 1%

5 CONCLUSION

This study has assessed the link between alcohol and the corruption, or more exactly the nexus between drinkers and corruption. Based on the results, we have been able to establish a positive nexus between the investigated variables. It follows that the depth of drinking alcohol has a significant positive correlation with the level of corruption.

While the intuition motivating a positive nexus between alcohol and corruption has already been substantially documented in the introduction, it is interesting to discuss the ethical implications of the relationship. Firstly, a drunken person may substantially take alcohol before engaging in a corruption practice so as to use to his/her drunken state (at the time of the act) as an alibi of unconsciousness if the matter is taken to court. Secondly, drinkers may engage in corrupt activities because they are poor. Thirdly, corruption is based on interpersonal trust as those who engage in the activity must trust that no party involved will take the matter to the police. Fourthly, in situations where police officers and judges are also alcoholic, reporting of corrupt practices may be settled in 'alcohol parlors'. These ethical explanations are consistent with recent institutional literature (Andrés and Asongu, 2013; Asongu, 2013).

Two main caveats are interesting to highlight here: the possibility of reverse-causality that is not addressed in the estimation specifications and, the interpretations of the estimated nexuses as correlations (not causalities) because of the cross-sectional character of the study.

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