Election and Corruption: The Case of Gabon

Abstract: This article analyzes the relationship between elections and corruption. Unlike previous approaches on African countries, in general, and Gabon, in particular, we have integrated a new control variable, namely: the number of ministerial staff rotation. After estimating the direct influence of elections on corruption by the robust least squares method over the period 2000 to 2019, we show that there is a significant relationship between elections and the Corruption Perceptions Index (CPI). Thus, it appears that the elections promote corruption in the country. In addition, we also show that the low level of Gabonese « press freedom » encourages corruption and that the multiplication of changes of members of the ministerial office could increase it.

Keywords: Corruption; Election; Press Freedom; Staff Rotation.

INTRODUCTION

The majority of studies on corruption suggest that it is bad for economic and social development (Rothstein, 2011). Corruption has also been shown to have a detrimental effect on tax revenue (Pani, 2011), economic growth (Mauro, 1995), equality and poverty (Chong and Calderon, 2000; Gupta et al., 2002; You and Khagram, 2005; Uslaner, 2008) and well-being (Tay et al., 2014). In addition, corruption appears to deteriorate political trust as well as political legitimacy in various institutional settings (Della Porta 2000, Seligson, 2002; Andersen and Tverdova, 2003). These harmful effects serve to justify the implementation of incentive mechanisms that influence the behavior of politicians, anxious to stay in power. This is how, in a democracy, elections appear as an opportunity given to citizens to encourage incumbents to reduce corruption.

However, the increase in the level of corruption in the new democracies, on the one hand, and the re-election of a corrupt candidate in the consolidated democracies, on the other hand, gives renewed interest to the analysis of the links between corruption and elections. The relationship between these two variables has been the subject of varied literature, both theoretical and empirical.

On a theoretical level, the analyzes crystallize around two orientations.

The first looks at the influence of corruption on the electoral results of incumbents (Ferraz and Finan, 2008; Krause and Mendez, 2009; Choi and Woo, 2010), on the one hand, and on electoral participation (Peters and Welch, 1980; Stockemer and Calca, 2013; Stockemer et al., 2013), on the other hand. It is commonly believed that high levels of corruption lowers voter turnout (Mc Cann and Domínguez, 1998).

The second, for its part, studies the effects of elections on corruption. This approach broadens the notion of performance voting (Key, 1966; Kramer, 1971; Ferejohn, 1986) to non-economic dimensions, such as “good governance” (Rundquist et al., 1977) and considers that the sanctions and rewards of citizens have incentive effects on the corruption of politicians. The analyzes of effects of elections on corruption reveal two (02) main points of view. The first, developed by Ferejohn (1986), Persson and Tabellini (2000), Besley and Case (1995), Besley and Burgess (2002) predicts that elections encourage politicians to align with citizens’ preferences and to abstain of any corrupt behavior. This approach suggests that corruption would decrease in consolidated democracies (Persson et al., 2003; Rudolph and Däubler, 2016). The second point of view starts from the observation that there are high levels of corruption in consolidated democracies and seeks to explain the absence of electoral sanctions for corrupt candidates. The justifications put forward include asymmetries of information between the voter and the candidate (Bryce, 1959; Levin, 1960; Ferraz and Finan, 2008; Chang et al., 2010); the sharing of private benefits (Wilson, 1966; Gosnell, 1967; McC Cook, 1892; Banfield and Wilson, 1963); functional corruption (Berg et al., 1976; Rogow and Lasswell, 1966) and voter loyalty (Rundquist et al., 1977; Anduiza et al., 2013, Solaz et al., 2017).
Empirically, work has been carried out in developed countries; then in emerging and developing countries. Regarding developed countries, Peters and Welch (1980) assess the electoral impact of accusations of corruption on candidates in the United States House of Representatives contests in five elections from 1968 to 1978. They show that while most of candidates accused of corruption are re-elected, overall they seem to suffer a loss of 6 to 11% from their expected vote. Ecker, Glinitzer and Meyer (2016) analyze whether and to what extent voters punish incumbents for high levels of corruption. Based on 20 elections in Western and Central Eastern Europe from Module 2 of the Comparative Study of Electoral Systems (CSES, 2007), they show that voters generally punish governments if they perceive high levels of corruption. More recently, Benito et al., (2018) discuss the decisions made by politicians that can affect the level of municipal corruption. They use a sample made up of 358 Spanish municipalities with more than 20,000 inhabitants for the period 2004-2009. They find that when politicians want to be re-elected, corruption decreases.

Regarding emerging and developing countries, Callen and Long (2015) study the relationship between political networks, weak institutions, and electoral fraud during parliamentary elections in Afghanistan. They find that candidates linked to officials in charge of aggregation receive an average of 3.5 fraudulent votes per polling station.

Although previous studies have explored the effects of elections on corruption, most of them have been conducted in developed countries. In addition, studies dealing with the link between elections and corruption in countries in African countries do not control this relationship with the number of ministerial rotation. In developed countries, staff turnover in public administration has only recently been seen as an effective anti-corruption measure. Indeed, experimental studies (Abbink, 1999 and 2004; Fisar et al., 2019 and Bühren, 2020) carried out in Germany and China support the hypothesis that the instruments of rotation reduce the level of corruption. The absence of such a control variable in studies conducted in African countries is explained by the difficulties encountered in constituting a sufficient time series. Our analysis will help fill this void by addressing the influence of elections on corruption in Gabon, while also integrating rotations in government.

**Gabon, a country in Central Africa, is a favorable environment for at least two reasons:**

First, the 2019 ranking of the NGO Transparency International (TI) on the Corruption Perception Index (CPI) places Gabon 123rd out of 180 (with a score of 31 out of 100). In sub-Saharan Africa (continental and island), the country is in 20th place out of 49 countries assessed. Thus, Gabon comes first among the countries of continental Central Africa ahead of Angola (146th), Cameroon and CAR (both 153rd), Chad (162nd), Congo (165th), DRC (168th), and Equatorial Guinea (173rd). In the CEMAC zone, it is second only to Sao Tome and Principe (64th). According to the survey carried out in Gabon by the 10th Global Corruption Barometer Africa 2019 (co-publication carried out by TI and Afrobarometer), 75% of citizens questioned from September 2016 to September 2018 believe that members of government and police officers would be the most corrupt. While this perception is shared by 75% of citizens, 71% of them also perceive the President of the Republic, the Prime Minister and parliamentarians as key players in corruption. Moreover, 87% of citizens believe that the government is making no effort to fight corruption effectively. Survey results show that more than three-quarters of Gabonese citizens fear reprisals if they report acts of corruption;

Second, according to the NGO Transparency International (TI), “A cross-analysis incorporating data on democracy around the world shows that a link exists between corruption and democratic health. In the CPI, well-established democracies score on average 75 points; imperfect democracies an average score of 49; hybrid regimes - exhibiting elements of autocratic tendency - score 35; and autocratic regimes record the worst results, their average score barely reaching 30 points “.

This reflection therefore analyzes corruption, with an emphasis on elections and the number of ministerial rotations. In particular, we are investigating whether the approach of the electoral period provides sufficient incentives to curb the corrupt behavior of politicians in Central Africa, and particularly in Gabon. In view of the small size of the sample, which only covers the period 2000-2019, we estimate a static model using the robust least squares method, after checking the stationarity of the variables. We show that the presidential and legislative elections and the press increase corruption in the country. Moreover, even if the number of turnover of members of the ministerial office is not significant, its sign shows that there is a risk that it increases the level of corruption in Gabon. The rest of the document is structured as follows. The second section presents the literature review on the links between election and corruption. Section 3 is dedicated to the model for determining the effects of the election on corruption. Section 4 presents the empirical results and the discussion. Finally, section 5 concludes.

**LITERATURE REVIEW**

The literature on the links between election and corruption shows a double sense of causation. While some works look at the effects of corruption on elections, the more abundant ones deal with the effects of elections on corruption.
Effects of corruption on elections

The effects of corruption on elections are discussed by discussing the influence of corruption on electoral results, on the one hand, and turnout rates, on the other.

Regarding the effects of corruption on the electoral results of incumbents, they are often based on data at the macroeconomic level and address variations in corruption between countries (Ferraz and Finan, 2008; Krause and Mendez, 2009; Choi and Woo, 2010). At the microeconomic level, analyses are often linked to specific scandals and certain contexts (Peters and Welch, 1980; Welch and Hibbing, 1997; Vivyan et al., 2012; Basinger, 2013; Praino et al., 2013; Winters and Weitz-Shapiro, 2013; Wagner et al., 2014). Taking into account the agency relationships between politicians and voters (Barro, 1973; Ferejohn, 1986) allows us to postulate that corruption decreases the probability of being reelected (Alt and Lassen, 2003).

Regarding the effects on electoral results, recent research highlights the role of perceptions of corruption on political behavior, in particular its effect on electoral participation (Peters and Welch, 1980; Stockemer and Calca, 2013; Stockemer et al., 2013). To this end, McCann and Dominguez (1998), then Stockemer et al., (2013) show that high levels of corruption decreases turnout because high levels of perceived corruption lead to ratings of political authorities and the political system in general (Anderson and Tverdova, 2003). Yet others find a positive effect of corruption on participation (Stockemer and Calca, 2013). Kostadinova (2009), in turn, argues that both effects can occur: it is a direct and mobilizing effect of corruption on participation and an indirect and negative effect that affects participation through political effectiveness.

Effects of elections on corruption.

Conceptually, this approach relates to the broad theoretical framework of performance voting models (Key, 1966; Kramer, 1971; Ferejohn, 1986). Performance voting is based on the simple idea that voters rate parties based on their achievements. This analysis assumes that government performance enters into a voter’s decision making in retrospect. Thus, performance voting is based on voters’ ratings of parties’ past performance, regardless of how they rate the parties’ potential performance. Until now, existing studies on performance voting have mainly focused on economic outcomes (Key, 1966; Kramer, 1971; Fiorina, 1981; Powell and Whitten, 1993; Whitten and Palmer, 1999; Lewis-Beck and Stegmaier, 2000; Van der Brug et al., 2007; Duch and Stevenson, 2008; Becher and Donnelly, 2013). The main reason is that voters generally agree on desired economic policy goals (economic growth and low unemployment and inflation) and the economic outcomes are easy to observe for the average voter. Economic voting allows voters to make rational decisions even if they are politically inattentive (Fiorina, 1981). However, recent literature shows that voters also condition their choice to vote on non-economic dimensions, such as corruption.

The objective of (re) election, a brake on corruption

The objective of (re) election constitutes a brake on corruption when there is a perfect alignment between the incumbent and the preferences of the voters, on the one hand, and an electoral system based on the majority system, on the other go.

The Perfect Alignment of Incumbents to Voter Preferences: The Importance of Electoral Repression.

The incumbent behavior model, developed by Ferejohn (1986), then Besley and Case (1995), Besley and Burgess (2002) and Besley (2005) predicts that the possibility of (re) election encourages politicians to align their preferences with those of citizens and refrain from any rent-seeking behavior. Indeed, incumbents who wish to be re-elected are therefore more likely to be less corrupt than those who are not eligible for re-election. It is often accepted that the possibility of competitive re-elections obliges democratic governments to take into account the preferences of citizens more than they would otherwise. Similarly, Persson and Tabellini (2000), as well as the model of Ferraz and Finan (2007), predict that when the races are close, the higher proportion of pivot voters prompts politicians to reduce the extraction of rents to guarantee re-election for a second term (Mesquita et al., 2003).

In a recent review, Kiansja et al., (2020) question whether voters sanction corrupt politicians. The authors incorporate rich experiences in choosing joint candidates in surveys in Argentina, Chile and Uruguay. Next, they test the importance of two contextual factors believed to lessen voter retribution against corrupt politicians: how widespread is corruption and whether it brings secondary benefits. Like other researchers, they find that corruption drastically decreases support for candidates.

Electoral systems and corruption

Rose-Ackerman (1999), Kunicova (2006) and Golden and Mahdavi (2015) show that electoral rules can have variable effects on corruption.

Persson et al., (2003), then Rudolph and Dübler (2016) show that majority electoral systems are associated with lower levels of corruption than proportional ones, because they promote alternation of government and political competition. Additionally, Carey and Shugart (1995), and later Kunicova and Rose-Ackerman (2005), argue that in proportional representation, systems using closed lists are associated with more corruption than those using open lists. Finally, the size of the district could also play an
important role, especially in proportional systems. Indeed, Chang and Golden (2007) show that in proportional open-list systems, corruption increases with the size of the district.

A fundamental assumption underpinning research on the effects of electoral rules on corruption is that voters punish corrupt politicians if given the opportunity. Yet the empirical evidence on electoral crackdown on corruption is mixed. Although there is ample evidence to suggest that corrupt activities do indeed cost incumbents a heavy electoral price (Fackler and Lin, 1995; Ferraz and Finan, 2008; Krause and Mendez, 2009; Winters and Weitz-Shapiro, 2013; Klasnja, 2016), several results challenge this hypothesis. The re-election of corrupt politicians, likely to increase corruption, is not just a trait of developing countries characterized by weak political and economic institutions, but also concerns established democracies like France, Italy, Japan and the United States (Rundquist et al., 1977; Reed 1996; Chang et al., 2010).

The organization of elections, a factor of corruption

Elections are a factor in corruption in terms of imperfect alignment between incumbents and voters' preferences, on the one hand, and tolerance for corruption, on the other.

Imperfect alignment of incumbents with voters' preferences

According to Zimmerman (1977), an agency problem exists between incumbents and voters. Indeed, the voters, the directors, elect a politician, an agent (Barro, 1973; Ferejohn, 1986). The interests of politicians and voters are not perfectly aligned, so incumbent politicians can use their power to pursue their own interests rather than those of citizens.

Peters and Welch (1980) assess the electoral impact of corruption charges on candidates in the United States House of Representatives contests in five elections from 1968 to 1978. Despite the existence of various writings on corruption in American elections (Benson, 1978; Gardiner, 1970; Berg et al., 1976; Peters and Welch, 1978; Rundquist et al., 1977) and numerous laws enacted to reduce corruption during election campaigns, the authors argue that there are still few studies to assess the loss of votes due to the corruption accusation. Specifically, they suggest assessing the degree to which specific corruption allegations decrease the electoral success of accused candidates. They find that most of the candidates accused of corruption are re-elected, overall, but they appear to suffer a loss of 6 to 11% from their expected vote.

Alt and Lassen (2003) argue that corruption could increase when the politician remains in power or when the politician does not stand in the next election. On the one hand, if the incumbent is “too sure” to stay in power, corruption would be high. On the other hand, if the incumbent is almost certain that they do not have a next period, for example due to time limits, they may be more corrupt. In other words, a politician who faces the possibility of re-election can exploit information asymmetry to increase the chance of re-election by behaving honestly, refraining from corruption. Thus, politicians who are encouraged to run in the next election are likely to be less corrupt than politicians who do not. However, politicians running for re-election may use several illicit means, such as illegal campaigning practices, fraud or intimidation, to increase the likelihood of being re-elected and continuing their illegal activities (Nyblade & Reed, 2008). In other words, re-election can fuel corruption.

Chang (2005) shows that if politicians running for office are uncertain about their chances of winning elections, they will be more corrupt in order to fund campaigns to stay in power.

Likewise, Ferraz and Finan (2011) study how re-election incentives affect political corruption. Using a dataset of Brazilian municipalities, they find that politicians with re-election incentives are much less corrupt than politicians without re-election incentives.

In the same vein, Beylis et al., (2012) show that mayors facing re-election inducements are much less corrupt than mayors who cannot stand for re-election. Therefore, by increasing the horizon of the candidate, the incentive to engage in corruption decreases.

Callen and Long (2015) study the relationship between political networks, weak institutions, and electoral fraud during parliamentary elections in Afghanistan. Starting from the existence of the different ways of manipulating elections, including bullying voters, stuffing boxes and changing the vote totals after the vote, they are interested in whether candidates exploit the links (their connections) with election officials to add fraudulent votes during the aggregation process (aggregation fraud). To conduct this analysis, the authors combine data on political relationships between candidates and election officials, a nationally controlled assessment of new surveillance technology, and direct measures of aggregation fraud. They find considerable evidence of aggregation fraud in favor of logged in candidates. In fact, candidates linked to officials in charge of aggregation receive an average of 3.5 fraudulent votes per polling station (around 13.7% of the average for their polling station).

Ecker, Glinitzer and Meyer (2016) analyze whether and to what extent voters punish incumbents for high levels of corruption. Drawing on the literature on economic voting, they argue that corruption performance voting varies with factors at the individual level and institutional context. The authors' empirical
analysis is based on individual, macroeconomic data, clarity of responsibilities, and government economic performance. The data collected to estimate the model concerns 20 elections in Western and Central Eastern Europe from module 2 of the comparative study of electoral systems (CSES, 2007). The results show that voters generally punish governments if they perceive high levels of corruption.

For De Vries and Solaz (2017), democratic elections are supposed to play a crucial role in the fight against corruption among civil servants. Yet the empirical evidence to date is mixed and suggests that the electoral punishment for corruption is rather light. Hence, the purpose of their article is therefore to provide an overview of the conditions under which voters punish corruption. For De Vries and Solaz (2017), three key stages make it possible to understand the absence of electoral sanctions for corrupt candidates: (1) the acquisition of information, (2) the attribution of blame and (3) the behavioral response which underpin a retrospective vote based on corruption. A breakdown of one or more of these certain stages may lead to an absence of electoral sanction for corruption.

Benito, Guillamon, Rios and Bastida (2018) discuss the decisions made by politicians that can affect the level of municipal corruption. Specifically, they study whether local politicians' incentives for corruption are influenced by the salary they receive and / or their intention to run in the next election. The sample used includes 358 Spanish municipalities with more than 20,000 inhabitants for the period 2004-2009. The authors use two different estimation methods, ordinary least squares and logit models, to analyze the influence of politicians' salaries and / or intent to be re-elected on corruption. The corruption indicator used is the total number of urban corruption cases (reported in the press) in each municipality during this period. They find that, first, relatively higher salaries do not reduce politicians' incentives for corruption and, second, when politicians want to be re-elected, corruption decreases.

Voter tolerance for corruption

Two (2) work groups are identified: while the first group suggests an information asymmetry between honest citizens and corrupt candidates; the second group, on the other hand, is based on the assumption that citizens are as corrupt as candidates.

Regarding the first group of works, Rundquist et al., (1977) and Rundquist and Hansen (1976) examine the reasons which would lead voters to support corrupt politicians. A commonly accepted explanation is that voters are poorly informed or poorly informed about candidates. Thus, Bryce (1959) and Levin (1960), Ferraz and Finan (2008), Chang et al., (2010) emphasize information asymmetries in political agency relations. Indeed, a voter may be honestly unaware of the candidate's corrupt activities. The behavioral assumption in this first argument is that once citizens are made aware of corrupt behavior, they prefer uncorrupted politicians to corrupt ones. This hypothesis is found in the work of Persson and Tabellini (2000), Ferraz and Finan (2007), Kurer (2001), Chang (2005), Lederman et al., (2005). For them, the votes for corrupt politicians therefore come from the information asymmetries that affect voters and politicians.

The second group of work starts from the observation that there are cases where voters support a candidate, knowing that he has been convicted of a crime. Lack of knowledge therefore cannot explain all the cases in which voters vote for a corrupt candidate.

For this reason, studies by Wilson (1966), Gosnell (1967), McCook (1892), then Banfield and Wilson (1963) suggest that voters can knowingly vote for a corrupt politician by exchanging their vote for a material advantage, by particularly economic rewards (Manzetti and Wilson, 2007; Fernandez-Vazquez et al., 2016). Therefore, the electoral coercion of corrupt politicians cannot be accomplished because of the “venality” of the voters, themselves capable of being corrupted. According to Manzetti and Wilson (2007), voters are affected by the provision of private goods by corrupt politicians.

There are two variations of this explanation. In the first case, voters' behavior stems from their subjective assessment of the benefits associated with these private goods. If these benefits outweigh the utility generated by the vote for these uncorrupted politicians, voters would support them. In the second variant, voters are trapped in a bad balance. In such a scenario, corrupt politicians are re-elected due to the uncertainty of future election results. This group would promote non-corruption to corruption; however, as they receive private property from an incumbent, they have no incentive to vote for their own candidate. Indeed, they fear that the worst-case scenario will happen (i.e. re-election of the corrupt politician without their support, in which case they would lose access to benefits; Kurer, 2001).

Berg et al., (1976), then Rogow and Lasswell (1966) argue that citizens vote for corrupt politicians because voters see corruption as "functional" to society. While some theorists see corruption as a "disease" or "pathology", others see it as a necessary evil. Citizens, in some political cultures, including some subcultures in the United States (Elazar, 1972), see corruption as a reality, a normal practice in the exercise of public service (and private enterprise). Corruption is thus perceived by voters as a "necessary evil" in the development of public policies (Wilson, 1966 and Ford, 1904).
Rundquist et al., (1977) suggest that the success of corrupt or allegedly corrupt candidates is that citizens weigh corruption charges in their voting decision along with other matters.

For Anduiza et al., (2013), then Solaz et al., (2017), it is not correct to assume that every voter uses corruption as the sole criterion for choosing a candidate, regardless of partisan ideas or other loyalties within the group. If the voter values the honesty of the government, then the belief that the candidate is corrupt may be enough to crystallize that voter’s decision to vote against that candidate. If, on the other hand, a voter prefers the candidate’s political party or sticks only to other relevant issues, the voter can discount any accusations of corruption against the candidate and vote for him in any case. This surrender is particularly easy to do when the corruption charges have not been proven. Furthermore, when voters are indifferent to accusations of corruption, they would ignore them when voting.

Finally, Persson and Tabellini (2003) focus on supply factors. For these authors, voters may find it costly to vote for their own candidate if they have strong preferences that differ from voters’ ideal points (ideological, religious, kinship preferences, etc.) in the other dimension of society relevant question.

Model for determining the effects of elections on corruption

We draw on the analysis of Benito, Guillamon, Rios and Bastida (2018) which aims to address the influence of re-election on corruption. The dependent variable of their model is the level of corruption, measured by the number of cases of corruption in each municipality during the period 2004–2009. The independent variables are broken down into variables of interest and control variables. The variables of interest retained by the authors are salary and re-election, while the control variables are: population, income inequalities, level of education, urban income, debt, unemployment and tourism. Presented as an ordered Logit model, the relationship is estimated by the ordinary least squares method.

Considering the absence of individual data, we set ourselves apart from Benito et al., (2018) by estimating the following macroeconomic model:

\[
\text{corr}_t = \alpha + \gamma_1 \text{elect}_t + \beta_1 X_{1t} + \varepsilon_t \tag{1}
\]

With:
- \(\text{corr}_t\), corruption ;
- \(\text{elect}_t\), the election ;
- \(X_{1t}\) is the vector of control variables;
- \(\alpha\) is the constant of the equation ;
- \(\gamma_1\) is the parameter of the variable of interest ;
- \(\beta_1\) are the parameters of the control variables ;
- \(\varepsilon_t\) is the error term.

The dependent variable retained is corruption. There are several definitions of corruption, but the most widely used is "the misuse of public office for personal gain, whether material or political." It is a symptom of the dysfunctional relationship between state and citizens which results in bribes, extortion and nepotism (Alatas, 1968). It is commonly conceptualized as "a bribe to a public official for a benefit which may or may not be earned" or "the sale by officials of government property for personal gain" (Nye, 1967; Rose- Ackerman, 1978; Shleifer and Vishny, 1993; Svensson, 2005). According to the World Bank, “corruption is the act of using one’s position as a manager of a public service for one’s personal benefit” and according to the Asian Development Bank: “Corruption is any behavior by which agents in the sector public and private obtain improper and illicit enrichment, whether it is personal or for the benefit of relations, or whether they provoke it by taking advantage of their position.” According to Transparency International, "Corruption is the abuse of delegated power for private gain." The Parliamentary Assembly of the Council of Europe defines corruption as "the use and abuse of power for private gain". The definition given by the Multidisciplinary Group on Corruption (GMC) of the Council of Europe is slightly different: “corruption is unlawful retribution or any other behavior towards persons with responsibility in the public sector or the public sector. private, which contravenes the duties which they have by virtue of their status as State agent, employee of the private sector, independent agent or other report of this nature and which aims to procure undue advantages of whatever nature, for themselves or for a third party.” These definitions show that the legal limits of the phenomenon are difficult to pinpoint with precision.

Due to the illegal and clandestine nature of corruption, it is difficult to obtain "hard data" on these activities or to measure them empirically (Lancaster and Montinola, 2001; Levy, 2007). Despite these difficulties, quite some research institutions, international organizations and even private venture firms have attempted to create proxies to assess countries’ levels of corruption since the early 1980s (Blackburn, Bose and Haque, 2010). At the macroeconomic level, the most commonly used corruption indices are:

(1) The “Corruption Perception Index” (CPI) which is a widely cited measure created by Transparency International (TI) and covering data for different sample sizes since 1995. As a composite based measure From "poll polls," the CPI index ranks countries according to the average score each country is assigned by business executives, economists and financial journalists in various independent polls. This subjective estimator ranks more than 180 countries (since 1994) on a scale of 0 to 10, with 0 indicating the most corrupt nations, while 10 indicating the entirely clean ones;
(2) The "Guide International Country Risk" (ICRG) index is assembled by the Political Risk Services (PRS) Group monthly on the basis of expert opinions. It is a predictive tool for international investments, as it analyzes financial, economic and political risks. Specifically, it captures the likelihood that senior government officials will demand special payments and the extent to which illegal payments are expected across levels of government in each country (Svensson, 2005; Knack and Keefer, 1995). The ICRG measure ranks countries from 0 to 6, with lower scores indicating higher corruption. As the only index providing annual data for more than 100 countries from 1984 to 1997, the ICRG measure is one of the most widely used indices of corruption (Knack and Keefer, 1995; Alesina and Weder, 2002; Svensson, 2005);

(3) The World Bank's (WB) "corruption control" (CC) index reflects a perception. It indicates the extent to which public power is at the service of private interests and provides information on the phenomena of “capture” of the State by elites and private interests. Its performance score from 0 to 100. The highest score reflects the best situation; (4) The CGI Index is compiled by the World Economic Forum (WEF). This index covers 12 "pillars" that determine the quality of a country's institutions and economic productivity and provides a comprehensive picture of the competitiveness of 140 countries. It ranks the level of corruption with a scale of 1-7;

(5) The Institute for Management Development index (IMD index) is published in the World Competitiveness Yearbook and also aggregates data from surveys of global business leaders. This index ranks 61 countries according to their levels of corruption; In our analysis, we use the Corruption Perceptions Index (CPI) as a measure of the level of corruption, with regard to the availability of data. The key independent variable in our model is election. It is a binary variable taking the value 1 during an election period (presidential and legislative elections) and 0 outside. In order to isolate the effect of our variable of interest (election), it is necessary to control for the effects of other factors on corruption. Among the control variables retained, we have the population, level of education, debt and unemployment. Variables such as income inequalities, urban income and tourism were removed from the initial model due to the lack of statistical data in this area. In addition, we set ourselves apart from the existing literature on the relationship between election and corruption by integrating a new « ministerial staff rotation » control variable still used very little in recent work, namely, the number of « ministerial staff rotation ».

According to Billger and Goel (2009), population can have two opposing effects on corruption. Indeed, a greater concentration of the population increases the possibilities of interaction between potential corruptors and those who receive the bribes, which results in more corrupt deals. On the other hand, a concentrated population can also increase the number of supervisors and have a dissuasive effect. Therefore, we would expect a positive impact of the population on corruption if the first effect is predominant (Alt and Lassen, 2003; Meier and Holbrook, 1992). However, the opposite result would be expected if the second wins (Billger and Goel, 2009; Hill, 2003).

We also suggest that the state budget can influence the level of perception of corruption in the country. Indeed, public expenditure is structured in such a way as to facilitate the capture of rent. Thus, unlike current spending, presenting large-scale projects or increasing public capital spending are opportunities created by politicians and bureaucrats to increase their rents and benefits (Mc Chensey, 1987; Shleifer and Vishny, 1993; Goel and Nelson, 1998). In addition, various studies (Brollo et al., 2010; Brollo et al., 2013) have studied the influence of public revenues on political corruption. Using policy agency theories, they argue that an exogenous increase in tax revenue can increase the incidence of a general measure of corruption.

Based on the work of Freille et al., (2007), Jorgensen and Hunt (2012), Osaghae and Osaghae (2013), Signé and Korha (2015), then Hamada et al., (2019), we also integrate press freedom as an explanatory variable of corruption. Indeed, it is widely believed that a partially or completely free press is an important part of the process of detecting criminals and therefore has a deterrent effect on corruption (Ahrend, 2002; Stapenhurst, 2000). In addition, restrictions on the free press lead to higher corruption (Brunetti and Weder, 2003; Chowdhury, 2004; Freille et al., 2007). However, while most agree that the press plays a role in detecting corruption, there is some reason to suggest that its effectiveness may be overestimated (Graber, 1986; Pharr and Putman, 2000; Vaidya, 2005). The press can orchestrate and publish bogus campaigns and accusations against politicians if these stories are likely to gain the favor of the ruling party, public attention and increase sales. Or, just as important, journalists and the press can also be corrupt and choose not to report the evidence.

Finally, we introduce the variable « ministerial staff rotation » in our model in order to take into account "top corruption" (particularly, that of the executive). According to Transparency International (2019), citizens' perception of corruption among senior public officials has increased in recent years. In addition, in Gabon, 2019 was particularly marked by scandals relayed by the media, leading to the arrest of the former director of the cabinet of the Presidency of the Republic and of the ministers close to him for embezzlement of public money and money laundering. In 2017, a former prime minister of economy, trade,
industry and tourism, and former minister of investment promotion, transport, public works, housing, tourism and planning was jailed for alleged corruption and embezzlement of public funds. While not caused by corruption scandals, this succession of cabinet shuffles gives some incumbents the possibility of embezzling public funds.

Unlike Benito et al. (2018), we estimate the following model:

\[ \text{ipc}_t = \alpha + \gamma_1 \text{elect}_t + \beta_1 \text{rem}_t + \beta_2 \text{pop}_t + \beta_3 \text{press}_t + \beta_4 \text{dcap}_t + \beta_5 \text{roi}_t + \epsilon_t \]  

With:
- \( \text{corr}_t \), corruption;
- \( \text{elect}_t \), the election;
- \( \text{rem}_t \), « ministerial staff rotation »;
- \( \text{pop}_t \), the population;
- \( \text{press}_t \), freedom of the press;
- \( \text{dcap}_t \), public capital expenditure;
- \( \text{roi}_t \), oil revenues;
- \( \alpha \) is the constant of the equation;
- \( \gamma_1 \), the parameter of the variable of interest;
- \( \beta_i \) are the parameters of the control variables;
- \( \epsilon_t \) is the error term.

**RESULTS AND DISCUSSION**

The data used to estimate the relationship between election and corruption come from the database of Transparency International (TI), the World Bank and the Official Gazette of the Gabonese Republic. The series cover the period 2000-2019. The first is the Corruption Perceptions Index (IPC) calculated by Transparency International (TI). Low values of the CPI correspond to a high level of corruption, while high values of the CPI correspond to low levels of corruption.

The World Bank (WB) database provides variables such as the rate of population growth (pop), oil revenues (roi), public capital expenditure (dcap) and the population index freedom of the press. The latter variable takes on a low value when the government exercises direct control over all news media, and a high value on which media are free. Regarding data relating to « ministerial staff rotation » (rem), they are taken directly from the Official Gazette of the Gabonese Republic.

The estimation of the regression [2] is done by Robust Ordinary Least Squares (OLS), after making the variables stationary. This formulation presents to correct the problems of heteroskedasticity of the residues.

| Table 1 | shows the results of the Augmented Dickey-Fuller (ADF) and Phillip Perron (PP) stationarity tests on the different series. |

<table>
<thead>
<tr>
<th>Variable</th>
<th>ADF Test</th>
<th>PP Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level</td>
<td>First Difference</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ipct</td>
<td>c</td>
<td>c &amp; t</td>
</tr>
<tr>
<td></td>
<td>-4.82*</td>
<td>-4.69*</td>
</tr>
<tr>
<td>electt</td>
<td>-4.66*</td>
<td></td>
</tr>
<tr>
<td>remot</td>
<td>3.90**</td>
<td></td>
</tr>
<tr>
<td>popt</td>
<td>-5.74*</td>
<td></td>
</tr>
<tr>
<td>pressr</td>
<td>-5.23*</td>
<td></td>
</tr>
<tr>
<td>dcapr</td>
<td>-2.43*</td>
<td></td>
</tr>
<tr>
<td>roi</td>
<td>-4.56*</td>
<td></td>
</tr>
</tbody>
</table>

Note: this table presents the results of the tests applied to the variables in level I (0) and in first difference I (1), using a model with constant (c), then with constant and trend (c & t). The numbers correspond to the different test statistics. The present first generation tests are based on a null hypothesis of non-stationarity and an alternative hypothesis of stationarity. When the number is preceded by (*) then the null hypothesis is rejected at the threshold of 1%; for (**) the null hypothesis is rejected at the 5% threshold; for (***) it is rejected at the 10% threshold. Source: author's calculations.
Table 1: Shows that the elections, the number of « ministerial staff rotation », the population growth rate and the freedom of the press are stationary at level. In addition, the corruption perception index, public capital spending and oil tax revenues are stationary in first difference. These last variables must therefore be differentiated to make them stationary. The estimation of the regression [2] by ordinary least squares, with the stationary variables, gives the results presented in appendix 2. However, the Breusch-Pagan-Godfrey test shows the presence of heteroskedasticity of the residuals (appendix 3). In order to correct this problem, we carry out a robust estimation (Appendix 4). The tests for normality (appendix 5), stationarity (appendix 6) and autocorrelation (appendix 7) show that the residuals generated are Gaussian white noise.

The results of the robust estimation are presented in Table 2 below:

<table>
<thead>
<tr>
<th>Variables endogènes</th>
<th>Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Election (elect1)</td>
<td>-0.379862*</td>
</tr>
<tr>
<td>Ministerial staff rotation (rem1)</td>
<td>-0.008848</td>
</tr>
<tr>
<td>Population (pop1)</td>
<td>-0.003659</td>
</tr>
<tr>
<td>Freedom of the press (press1)</td>
<td>-0.021812**</td>
</tr>
<tr>
<td>Public capital expenditure (ddcap1)</td>
<td>0.000212</td>
</tr>
<tr>
<td>Oil revenues (droil1)</td>
<td>-0.004648</td>
</tr>
<tr>
<td>Constante (c)</td>
<td>0.788**</td>
</tr>
</tbody>
</table>

R-squared: 0.4593

Note: The long-term determinants of well-being are represented here. Student's tests on each coefficient are based on a null hypothesis of significance at zero and an alternative hypothesis of non-significance at zero. When the coefficient is preceded by (*) then the null hypothesis is rejected at the threshold of 1%; for (**) the null hypothesis is rejected at the 5% threshold; for (***) it is rejected at the 10% threshold.

The results of Table 2 reveal that the elections have a negative and significant influence (at the 1% threshold) on the corruption perception index, which amounts to saying that the electoral period favors the increase in corruption in Gabon. Such a result supports the idea defended by Rundquist et al., (1977) and Rundquist and Hansen (1976), who found that voters do not always sanction corrupt candidates. Indeed, the results obtained show that during an election period, the corruption perception index decreases, which corresponds to an increase in corruption of 0.3798%, all other things being equal. It therefore appears that in Gabon, the presidential and legislative elections allow the maintenance of corrupt or allegedly corrupt candidates who participate in maintaining a system of corruption in the country. There are several reasons for this result. The first is the information asymmetry that exists between voters and candidates. The results show that press freedom has a significant negative influence at the 5% threshold on the CPI, meaning that an increase in the press freedom index of 1% results in an increase in corruption of 0.02181 %, all other things being equal. Thus, the Gabonese press does not play a role in detecting corruption, as suggested by Graber (1986), Pharr and Putman (2000) and Vaidya (2005). She tends to orchestrate and publish accusations against politicians if the stories are likely to gain the favor of the ruling party and public attention to increase sales. Or, just as important, Gabonese journalists and press can also be corrupt and choose not to report the evidence. Aside from information asymmetries, Gabonese citizens are guided by partisan votes. They are led to vote for a corrupt or presumed corrupt candidate as long as he is in the political party.

In order to reduce corruption in the country, Gabon should promote a democratic system supported by a free press independent of electoral results and elections carried out in full transparency. In such a system, Gabonese citizens, fully informed about the actions of the candidates and the harmful consequences of corruption on confidence in institutions, well-being, equality and poverty, etc., will have the possibility of sanctioning or to vote for a corrupt or presumed corrupt candidate, according to their preferences.

In addition, the results presented in Table 2 show a negative but not significant relationship between the number of ministerial staff rotation and the corruption perception index. The same is true for the rate of population growth and revenues from the petroleum sector. These four variables deserve special attention because there is a risk that citizens mistakenly view them as contributing to the increase of corruption in the country. Regarding public capital expenditure, the positive and insignificant relationship with the corruption perception index. This means that when making public investments, there is a risk that citizens will mistakenly view these achievements as evidence of less corruption in the country.
by integrating a new control variable, often absent in the literature on African countries, namely: the number of ministerial staff rotation. After performing two stationarity tests on the variables, we estimated the direct influence of elections on corruption by the robust least squares method. More specifically, the results highlight a negative and significant relationship between the elections and the corruption perception index. Thus, the presidential and legislative elections promote corruption in the country. It also appears that the Gabonese press is an instrument manipulated by corrupt candidates to win the elections. Moreover, the number of ministerial staff rotation does not have a significant effect on corruption, but its negative sign shows that there is a risk that it will increase the level of perceived corruption in the country.

REFERENCES


examination of the relationship », Global Media and Communication, 1–19
from Brazil’s Audit Reports », Political Research Quarterly, 62 (4) (Dec., 2009), pp. 731-744


## Annexes

### Annex 1 : Statistique descriptive

<table>
<thead>
<tr>
<th>Variable (IPC) Mean</th>
<th>ELEC Median</th>
<th>REM Maximum</th>
<th>PRESS Minimum</th>
<th>POP Std. Dev.</th>
<th>DCAP Skewness</th>
<th>ROIL Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.211250</td>
<td>0.035000</td>
<td>1.250000</td>
<td>31.42963</td>
<td>2.971918</td>
<td>416.6915</td>
<td>26.03177</td>
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<td>3.187500</td>
<td>0.000000</td>
<td>1.000000</td>
<td>43.50000</td>
<td>3.788513</td>
<td>999.7000</td>
<td>41.83793</td>
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<td>2.800000</td>
<td>0.000000</td>
<td>0.000000</td>
<td>20.50000</td>
<td>2.380962</td>
<td>105.1000</td>
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<td>0.237375</td>
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<td>0.204678</td>
<td>0.628971</td>
<td>0.690834</td>
<td>0.180183</td>
<td>0.356447</td>
<td>0.921649</td>
<td>-0.162244</td>
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<tr>
<td>2.310509</td>
<td>1.395604</td>
<td>2.457999</td>
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<td>1.728759</td>
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<td>0.535809</td>
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<td>1.434456</td>
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<td>0.764981</td>
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<td>0.477793</td>
<td>0.763576</td>
<td>0.408750</td>
<td>0.230231</td>
<td>0.488103</td>
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</table>

### Annex 2 : Estimation par les MCO

Dependent Variable: DIPC
Method: Least Squares
Date: 07/30/20   Time: 20:05
Sample (adjusted): 2001 2019
Included observations: 19 after adjustments

<table>
<thead>
<tr>
<th>Variable (C) Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.433197</td>
<td>0.517981</td>
<td>0.836320</td>
</tr>
<tr>
<td>ELEC</td>
<td>-0.223343</td>
<td>0.121873</td>
<td>-1.832588</td>
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<tr>
<td>REM</td>
<td>0.000895</td>
<td>0.052496</td>
<td>0.017055</td>
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<tr>
<td>PRESS</td>
<td>-0.025549</td>
<td>0.013127</td>
<td>-1.946214</td>
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<tr>
<td>POP</td>
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<td>0.114959</td>
<td>1.312505</td>
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<tr>
<td>DCAP</td>
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<td>0.276884</td>
</tr>
<tr>
<td>DROIL</td>
<td>0.000309</td>
<td>0.007867</td>
<td>0.039238</td>
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</table>

R-squared 0.380516
Adjusted R-squared 0.070774
S.E. of regression 0.226392
Akaike info criterion 0.144214
Schwarz criterion 0.492166
Hannan-Quinn criter. 0.203102
Durbin-Watson stat 2.522436
Annexe 3 : Test d’hétéroscédasticité de Breusch-Pagan-Godfrey
Heteroskedasticity Test: Breusch-Pagan-Godfrey

<table>
<thead>
<tr>
<th></th>
<th>Coefficien...</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.094287</td>
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<td>-1.067011</td>
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</tr>
<tr>
<td>ELEC</td>
<td>0.047801</td>
<td>0.020791</td>
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</tr>
<tr>
<td>REM</td>
<td>-0.001712</td>
<td>0.008956</td>
<td>-0.191138</td>
<td>0.8516</td>
</tr>
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<td>PRESS</td>
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<td>0.4904</td>
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<tr>
<td>POP</td>
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<tr>
<td>DDCAP</td>
<td>-9.88E-05</td>
<td>7.31E-05</td>
<td>-1.352592</td>
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<td>DROIL</td>
<td>0.002223</td>
<td>0.001342</td>
<td>1.65610</td>
<td>0.1235</td>
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</table>

R-squared 0.577396 Mean dependent var 0.032371
Adjusted R-squared 0.369095 S.D. dependent var 0.048509
S.E. of regression 0.038622 Akaike info criterion -3.392698
S.E. of regression 0.038622 Schwarz criterion -3.044747
Log likelihood 39.23063 Hannan-Quinn criter. -3.33811
F-statistic 2.732568 Durbin-Watson stat 2.914258
Prob(F-statistic) 0.065312

Annexe 4 : Estimation par les Moindres carrés robustes
Dependent Variable: DIPC
Method: Robust Least Squares

<table>
<thead>
<tr>
<th></th>
<th>Coefficien...</th>
<th>Std. Error</th>
<th>z-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
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Robust Statistics

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<td>R-squared</td>
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<td>RW-squared</td>
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<td>Akaike info criterion</td>
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<td>Deviance</td>
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<tr>
<td>Rn-squared statistic</td>
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Non-robust Statistics

<table>
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<th>S.D. dependent var</th>
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<tr>
<td>Mean dependent var</td>
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<td>0.234856</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>0.265469</td>
<td>0.845683</td>
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</table>
Annexe 5 : Test de Normalité des résidus

<table>
<thead>
<tr>
<th>Series: Residuals</th>
<th>Sample 2001 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations 19</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>0.050832</td>
</tr>
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<tr>
<td>Maximum</td>
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<tr>
<td>Minimum</td>
<td>-0.144674</td>
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<tr>
<td>Std. Dev.</td>
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<td>Skewness</td>
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<tr>
<td>Kurtosis</td>
<td>7.110720</td>
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<tr>
<td>Jarque-Bera</td>
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<tr>
<td>Probability</td>
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</table>

Annexe 6 : Stationnarité des résidus

Annexe 7 : Autocorrélation des résidus

Date: 07/28/20   Time: 13:03
Sample: 2000 2019
Included observations: 19

<table>
<thead>
<tr>
<th>Autocorrelation</th>
<th>Partial Correlation</th>
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<th>PAC</th>
<th>Q-Stat</th>
<th>Prob...</th>
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<td></td>
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<tr>
<td>2</td>
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<tr>
<td>3</td>
<td>-0.00... -0.08...</td>
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<tr>
<td>4</td>
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<td></td>
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<tr>
<td>5</td>
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<td>6</td>
<td>0.259 0.214</td>
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<td>7</td>
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</tbody>
</table>

*Probabilities may not be valid for this equation specification.