

# Cognitive Dissonance: An Evidence of How Self-protective Distortions Undermine IPO Decision

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**Abstract** The purpose of this article is to identify the role of cognitive dissonance bias in managers' IPO indeterminacy. In order to achieve our purpose, 67 CEOs and CFOs were indepthly interviewed, within the framework of a constructivist phenomenological analysis. Data were analyzed by means of content analysis method combined with a Probit/Logit Model. The results disclose that managers' IPO indeterminacy is explained by cognitive dissonance. Demographic characteristics (such as gender, education level, field of study, firm size, age and experience) significantly moderate managers' exposure to cognitive dissonance. In line with the results by Özen and Ersoy [1] and Hoechle et al. [2], we also outline that financial literacy reduces cognitive dissonance, hence fosters IPO likelihood. This study consists of a prime assessment of IPO decision through behavioral economics and the earliest empirical investigation of IPO decision through cognitive dissonance. Our managerial implications highlight the requirement of behavior-wise measures within IPO incentives policies.

**Keywords:** cognitive dissonance, Initial Public Offering, CEO, behavioral finance, stock market

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## 1. Introduction

The classical finance theory is backed by two crucial principles: the efficient market hypothesis and full decisional rationality. According to authors defending this theoretical posture, the sole and main leitmotiv of decision-makers is the maximization of their expected utility. This idea is underpinned by their alleged inexorably efficient nature of the market, on which information flow smoothly, and where securities prices unwaveringly reflect companies' operational fundamentals. This theory had governed the economic thought for decades; until the birth of behavioral finance. Despite the fact that classical theory has been shown to be very precise and effective in the analysis and description of economic events, some anomalies have been occurring [3].

In facts, the succession of speculative bubbles and financial crises has increasingly affected financial markets around the world over the past thirty years. These factors made it very clear that the assumptions of investor rationality and market efficiency are not realistic. The behavior of individuals when dealing with risky situations and the way they actually assess the available information, formulate their forecasts, implement their investment decisions and their portfolio allocation are not always informed by reason; emotion and psychological biases appeared to play an undeniable role [4].

Faced with the inability of traditional postulates to

explain these anomalies, Kahneman and Tversky [4]'s behaviorist approach has proven effective in explaining economic phenomena that do not fall within the epistemic spectrum of classical theory. Since then, it has been propitious to adopt a behaviorist approach when assessing anomalies occurring on securities markets and other economic phenomena. Thus, we found it well-timed to examine the IPO indeterminacy phenomenon using an analysis grid in line with behavioral finance. IPO reluctance prevails in several countries around the world, yet theorists agree that access to finance is a major factor in business development [5]. According to studies conducted in Africa by the ADB<sup>1</sup> [6] and later the ILO<sup>2</sup> [7], access to finance has proven to be the main obstacle to business development. Since banks practice a very high credit rationing rate in that region [8], the only residual outcomes are self-financing and security market, according to Myers and Majluf [5]' pecking order theory.

Given that entrepreneurs do not have sufficient own resources, it seems clear that the security market appears to be the ultimate alternative. Conscious of these parameters, African public authorities deemed relevant to establish their financial markets many decades ago. However, managers have been highly reluctant to list on the stock market. One of the foremost and highly representative illustrations is Cameroon where 209 482

<sup>1</sup> African Development Bank

<sup>2</sup> International Labour Office

companies where officially operating in 2016 (NSI<sup>3</sup>, [9]), but only 03 companies are listed on the stock market. Given this paradoxical situation, it was appropriate to assess the causes of IPO reluctance. Then, research by Djeukui and Feudjio [10] and Brau et al. [11] assessed the phenomenon and highlighted information publication, ownership dispersion avoidance, the need to maintain control and market illiquidity, as factors of IPO reluctance.

By using the traditional finance perspective, previous studies outline the rational factors backing manager's IPO unwillingness. Unfortunately, till date all measures that have been implemented by public authorities failed to solve the concern in the developing world. Accordingly, the purpose of this research was to assess the problem from a behavioral perspective. More specifically, this study aimed at outlining the role of cognitive dissonance in CEO stock market aversion.

Being the first research examining this phenomenon from a behavioral stance, we mobilized a constructivist phenomenological analysis and conducted 67 in-depth interviews (in average one hour) with CEOs and CFO of unlisted firms. We were then able to outline the instrumental role of cognitive dissonance in their IPO reluctance.

This research is original for at least three reasons: from a theoretical point of view, this constitutes the first behavioral assessment of the IPO reluctance phenomenon and, the first empirical evidence on cognitive dissonance in IPO decision; from a practical / managerial perspective, this study provides guidelines to be implemented by policy-makers in the IPO incentive policies. Hence, this study contributes to the enrichment of the theoretical field of behavioral finance, IPO decision and that of IPO incentives policies in developing countries. .

The paper is organized as follows: The next section presents a review of the literature. Section 3 describes our methodology and the data. The fourth section reports achieved empirical results and, the last section concludes the paper.

## 2. Literature Review

We owe the theory of cognitive dissonance to the American researcher Festinger [12]. He defines cognitive dissonance as a state of unpleasant tension due to the simultaneous presence of two cognitions (ideas, opinions, behaviors) that are psychologically inconsistent.

Although Festinger never explicitly posited whether the dissonance is affective, emotional or cognitive [13], its dimensions that unmistakably appear are the affective and cognitive ones [14]. According to Festinger, dissonance is "extremely painful" even "unbearable" for some people.

Brunel and Gallen [14] distinguish between two levels of cognitive dissonance in individuals' psychology: the arousal of dissonance and the state of dissonance.

More precisely, these authors posit that the starting point for cognitive dissonance is cognition, for instance the ratio between the number of consistent and inconsistent cognitions. Basing on the "extremely

painful" and "unendurable" characteristics of dissonance, researchers built an original conceptualization of cognitive dissonance which involves (1) a cognitive phase of arousal corresponding to the individual's awareness and analysis of inconsistent cognitions [15,16], (2) an affective phase, named the state [15,16]. This affective phase results from the perception of an inconsistency. The latter prompts the individual to (3) initiate a dissonance reduction process [12,17].

Cognitive dissonance can then be defined as the conflict caused by the simultaneous possession of contradictory cognitions. Since human beings tend to find it unpleasant to experience dissonance, they try to reduce it by changing their beliefs. Further research [17] shows that when people are faced with new information, they want to keep their current understanding of the world and reject or avoid the new information. They attempt to persuade themselves that there is no conflict at all. Cognitive dissonance is considered an explanation for the change in attitude, Festinger [12].

By transposition, it is the mental conflict that investors or any other economic agent experience when they realize having made a mistake. Investors do not want to change their decisions, so they are persuaded that they made a rational one [17].

Cognitive dissonance is therefore a mental conflict that arises when an individual is confronted with evidence that his beliefs are incorrect. Faced with this type of situation, individuals tend to make decisions that are not entirely rational since their goal is to reduce this dissonance. Shiller [18] suggests that an individual may choose to ignore the new available information, alternatively, develop new arguments that may allow him to keep and deal with previous beliefs.

One demonstration of this is the fact that investments in funds with recent positive performance are higher than disinvestments in funds with recent poor performance [18]. Seemingly, the reason why investors enter and exit these funds swiftly is the difficulty of coping with the fact that the wrong investment has been chosen and losses will be incurred. Acting so makes the decision-making process longer before arriving at a final irreversible decision to disinvest or not to abstain from investing, as it is the case in IPO reluctance.

This is also linked to remorse [18], a negative feeling that pushes investors to postpone decisions that may bring them negative feelings, even though these are very beneficial decisions. Two of the most popular experimental evidences of cognitive dissonance are Festinger's [12] and Cohen's [19] experiences.

As it is effortlessly noticeable above, extant literature on cognitive dissonance is relatively poor. Researchers have not paid enough attention to this phenomenon which seems to play a crucial role in decision-making. Moreover, dissonance research rarely (never) dealt with CEO decisions, even less IPO decision. Therefore, the need of a research on this phenomenon appeared to be irresistible and enticing.

This study thus aimed at outlining the role of cognitive dissonance on managers' IPO decision-making in developing countries. The following hypothesis is therefore formulated: *H. Cognitive dissonance explains senior executives' IPO reluctance*

<sup>3</sup> National Statistics Institute

After testing this knowledge assumption, we will attempt to check whether some demographic factors such as educational level, field of study, gender and experience have an influence on cognitive dissonance.

### 3. Data and Methodology

This section exhibits the data and the methodology that enabled us to generate a new explanation of IPO reluctance from a behavioral perspective. This research used 67 individual in-depth interviews of 67 senior executives and CFO of Cameroonian unlisted companies, in a design that borrows from phenomenological approach and the grounded theory.

Although quantitative methodology has been favored in the mainstream literature on IPO decision and behavioral finance research, we used the quali-quantitative approach in this research, in line with recent works that support qualitative methodology to better understand human behavior and decisions [20,21,22,23]. Qualitative research collects data from the senses of participants and helps explain phenomena relevant to social behaviors in new and emerging theories [23]. Our research uses an interpretative epistemology and inductive reasoning. As such, the qualitative methodology (combined with the quantitative) makes it possible to decode and interpret the meaning of the facts, as well as perceptions and collective representations of individuals under study [23,24].

We preferred phenomenological analysis to constructivist grounded theory. Although both approaches collect data likewise, the former focuses on the meaning individual give to their world and better describe behaviors. It enables researchers to wear other people's shoes and to understand their subjective experiences and social behavior [22].

#### 3.1. Data Collection Method and Sample Description

Data for this study were collected by means of unstructured and then, semi-structured in-depth interviews. These kinds of interview were preferred as they allow the interviewees to freely express their opinions without being influenced by researcher's preconceived opinions and beliefs [24]. Using the convenience sampling method, sixty-seven Cameroonian senior executives were interviewed for the study.

The National Statistics Institute's database was then used to select unlisted companies that meet the requirements for going public. As getting the consent of senior executives for around one-hour talk is somewhat difficult, we used personal contacts, formal correspondences and were assisted by the ministry of finance through the stock market authorities. Therefore, 67 CEOs and CFOs gave their consent and constitute our study sample as detailed in the sample description.

**Table 1. Sample presentation**

Characteristics of Senior executives	Male senior executives		Female senior executives		Total	
	Frequency	%	Frequency	%	F	%
Demographic characteristics of senior executives						
Gender	46	68.7%	21	31.3%	67	100%
Age	Mean age = 47 Min: 39 Max: 61 Standard deviation: 9.9%		Mean age = 42 Min: 38 Max: 55 Standard deviation: 5.6%			
Marital status						
Married	36	78%	17	81%	53	79%
Single & co	10	22%	04	19%	14	21%
Educational level						
High school	12	26%			12	17.9%
Bachelor	21	45.7%	11	52.4%	32	47.8%
Master & +	13	28.3%	10	47.6%	23	34.3%
Educational field						
Economics & management	14	30%	05	24%	19	28.4%
Other	32	70%	16	76%	48	71.6%
Ancientness in the position (years)						
[0; 5 ]	06	13%	13	62%	19	28.3%
] 5 ; 10 ]	25	54%	08	38%	33	49.3%
]10 ; +∞[	15	33%			15	22.4%
Firm size						
Small	03	4.48%	12	17.91%	15	22.39%
High	43	64.18%	09	13.43%	52	77.61%
Firm industry						
Agroindustry	08	11.94%	02	2.98%	10	14.9%
Real estate & BTP	11	16.42%	03	4.48%	14	20.9%
General trade	15	22.39%	09	13.43%	24	35.8%
Others	12	17.91%	07	10.45%	19	28.4%

Source: research data.

### 3.2. Data Analysis

The collected data were thus coded using axial coding [25], with regard to generated themes. This allowed us to select verbatim that were semantically synonymous. The data were analyzed using content analysis method first developed by the behavioral scientist Bernard Berelson ([26], p. 18), who offered an emblematic definition of content analysis: "a research technique for the objective, systematic and quantitative description of the manifest content of communication".

More precisely, we used the qualitative analysis software MaxQDA to analyze the speeches in order to highlight words and concepts occurrences. We performed the clustering using the matrix analysis grid suggested by Miles and Huberman [24]:

(i) The categories which represent the origins of IPO reluctance have two dimensions: economic origins and psycho-sociological origins.

(ii) The subcategories associated to each category. We grouped the factor denoting cognitive dissonance.

(iii) After the calculation completed by the MaxQDA software, the occurrence frequency of each factor was assigned;

(iv) Lastly, we implemented the common approaches for inductive analysis by combining vertical analysis (two groups of managers: male and female) and horizontal analysis (each dissonance factor). This allowed us to build the matrix of psychological reluctance factors of senior executives according to the gender.

## 4. Results

In order to highlight the existence of cognitive dissonance, we tried to capture the reaction they would have if the current problems hindering their IPO decision were solved (called Hypothetical Conjunction).

The dissonance arises when individuals face new information that goes against their beliefs [12]. In other words, this bias is observable when an individual receives new data supposed to make him change his opinion on a topic. Thus, three situations are possible:

- The individual incorporates the new data and changes his opinion;
- The individual develops new arguments that can allow him to maintain previous beliefs;
- The individual completely ignores the new information and keeps his opinion.

We categorized the CEOs in three sets, depending on their degree of dissonance. This was measured according to their reaction to the "Hypothetical Conjunction". Three degrees of cognitive dissonance were thus highlighted:

- 2nd degree dissonance: This set involves CEOs who postulated they would ignore the new data and would ipso facto keep their previous positions; they are the most dissonant CEOs in our sample. Below is an interview excerpt:

*Interview #11: "Any major change will perhaps draw our attention like all major events that are happening on the national scene. But drawing our attention does not mean we are going to change our minds. I strongly believe that things always remain what they were intrinsically, because most changes are superficial and deceptive; this is the reason why major modifications would rather consolidate my existing thoughts..."*

*Interviewee #45: "... We face no very serious difficulties mobilizing funds through our classical sources. Then I do not see why we should change anything in the way we operate. If others think they should go public, that's good for them. They would surely have studied the situation before deciding but this event can only influence managers who had previously thought about going public and later decided not to do so. As I told you before, the IPO doesn't even cross our minds; therefore this transformation won't have any effect on us..."*

- 1st degree dissonance: This involves CEOs that would develop new arguments allowing them to maintain their previous positions; doing so, they manage to solve the psychological discomfort, Festinger [12]. The following interview excerpts better summarize this dissonance level:

*Interviewee #25: "If the situation you are describing occurs, then I will have to take a close look...it might be the case of companies that were already envisaging going public even before the situation changed. Anyway our firm is performing well and has been doing so for a long time... in the business world, an unnecessary change is not worth it"*

This short dialog between one CEO and I was very insightful:

- *Interviewee #63: "...As you can see many managers are not interested in the stock market, the majority is often right and we belong to the majority"*

- *Interviewer: then, what if many firms including your competitors initiate IPO overnight?*

- *Interviewee#63: "...Everyone has his own problems and everyone knows what is best suited for him ... brands are not the same, we all have our specificities, so if you are managing a brand, you must act as the board decides... what is more, we do not have the same problems and even if two companies have the same problem, it is not sure that the same solution will apply for both..."*

Other reason alleged by CEOs fell within the scope of this dissonance level; namely the complexity of IPO process, the lack of mastery of stock market atmosphere.

- 0 degree dissonance or the non-dissonant: This last set involves CEOs who have exhibited no sign of cognitive dissonance. In other words, they are the ones who would radically change their minds and immediately consider listing their companies on the stock market, in the event that their decisional impediments are solved.

Interviewee #28 who referred to signaling theory, rather emphasized the influence of contending companies' decision. He better summarizes the zero dissonance level; this was his statement:

*"...people always have an extroverted logic of the concept of globalization, and that's a big mistake. I am of those who think that before reaching an inter-country dimension, globalization takes place first internally on the local territory ... when something like what have been going on with the stock market happens, we are immediately aware of the information and I know from my profession that information is not a stock but a decision tool ... If it happens that other firms such as rivals go public, then the stock market would probably have become a good option (hh inn) in the business world, copying others is hardly a bad option when suitable accompanying measures are taken". (See Table 2)*

**Table 2. Dissonance factors**

Dissonance factors		Male senior executives		Female senior executives		Total
		Number	Frequency	Number	Frequency	
<b>2<sup>nd</sup> degree CD</b>	A change does not change anything	07/21	34%	14/21	66%	N=21
	First decision, best decision	08/13	62%	05/13	38%	N=13
	Accustomed to one's way to operate	14/23	61%	09/23	39%	N=23
	Full indifference	06/08	75%	02/08	25%	N=08
<b>1<sup>st</sup> degree CD</b>	Complexity of the IPO process	18/34	53%	16/34	47%	N=34
	Lack of mastery of the stock market environment	07/20	35%	13/20	65%	N=20
	Specificities of needs	05/08	63%	03/08	37%	N=08
	Accustomed to one's way to operate	½	50%	½	50%	N=2
<b>Degree 0 CD</b>	New information, decisional tool	18/21	86%	03/21	14%	N=21
	Change one's mind	4/14	29%	10/14	71%	N=14

N is the total occurrences of each dissonance factor.

## 4.1. Discussion of Research Results

A broad-spectrum analysis of our results helps figure out two major knowledges and implications in terms of IPO incentive policies:

- First, CEOs IPO decision-making is undermined by both economic and psychological factors. The psychological ones being more salient and influential.
- Second, cognitive dissonance appears to play a significant role in managers' IPO indeterminacy (as shown in Table 6).

### 4.1.1. Estimation of Regression, Probit and Logit Models

We study the factors influencing the likelihood of IPO decision (IPO probability) and the stock market reluctance (anticipated IPO reluctance).

Dependent variable: whether or not a company has a high probability to go public (0 or 1).

Independent variable: gender, age, education level, cognitive dissonance degree, experience, firm size, firm industry, field of study.

**Table 3. Variables definition**

Variables	Definition	Mean values
IPOPROB (IPO probability)	High probability = 1; low probability = 0 (see Table 4)	
GEN (gender)	1 = male; 0 = female	.687
AGE (age)	CEO's age (years)	44.5
EDU (education level)	High school = 0; bachelor degree = 1; Master &+ = 2	1.164
EXP (experience)	[0 ; 5] = 0 ; ]5 ; 10] = 1 ; ]10 ; +∞[ = 2 (years in the position)	.94
FSZ (firm size)	high = 1, low = 0	.776
FI (firm industry)	Agroindustry = 0; real estate & BTP = 1; general trade = 2; others = 3	1.776
FL (financial Literacy)	Yes = 1; otherwise = 0	.284
CDD (Cognitive dissonance degree)	Degree 0 = 0; 1 <sup>st</sup> degree = 1; 2 <sup>nd</sup> degree = 2	0.851

CEOs and CFOs were asked to assess the likelihood of their company going public in the future. They were then asked to give a probability ranging from 0 to 1, where 1 represents a 100% probability and 0 symbolizes a null one.

**Table 4. Estimating regression and logit/probit models**

IPO probability	Y code	Percent Frequency
High ( $p \geq 0.5$ )	1	24%
Low ( $p < 0.5$ )	0	76%

**Table 5. Binary outcome and model coefficients**

IPO probability	Regression coefficients	Logit Coefficients	Probit coefficients
Level of study	.0008*	.004*	.002*
Dissonance degree	.04*	.19*	.13*
Age	-.005	-.02	-.009
Experience	-.02*	-.11*	-.06*
Firm size	.16*	.81*	.43*
Firm industry	.00002	.001	.0007
Field of study	.04*	.18*	.10*
Gender	.0004*	.002*	.001*
Constant	.12	-1.71*	-1.009*
R2	.09	.08	.08

\* Significant at 5%.

**Table 6. Binary outcome model marginal effects**

IPO probability	Regression marginal effects	Logit marginal effects at the mean	Logit average marginal effects	Probit marginal effects at the mean	Probit average marginal effects
Education years	.0008*	.0009*	.0009*	.0009*	.0009*
Age	-.005	-.006	-.006	-.006	-.005
Experience	-.02*	-.03*	-.03*	-.02*	-.02*
Cognitive Dissonance degree	.05*	.06*	.07*	.06*	.06*
Firm size	.16*	.16*	.16*	.16*	.16*
Firm industry	.00002	.00003	.00002	.00003	.00003
Education field	.04*	.04*	.04*	.04*	.04*
Gender	.0004*	.0005*	.0004*	.0005*	.0004*

\* Significant at 5% threshold.

## 4.2. Coefficients Interpretation

CEOs with higher diplomas, higher firm size are more likely to go public.

Older and more experienced CEOs are less likely to go public.

CEOs with an economic background are more likely to go public than others.

Female CEOs are less likely to go public than their male counterparts.

**Note:** The regression, Logit and Probit coefficient differ by a scale factor. Therefore we cannot interpret the magnitude of the coefficients.

### 4.3. Dissonance Degree

Table 7. Dissonance degree

Cognitive dissonance degree	Frequency	Percentage
2 <sup>nd</sup> degree	10/51	19.6% <sup>1</sup>
1 <sup>st</sup> degree	26/51	51% <sup>1</sup>
Degree 0	15/51	22.4% <sup>2</sup>

<sup>1</sup>indicates the percentage within the total number of herders.

<sup>2</sup>indicates the percentage within the whole sample.

We also posit that CEOs characterized by youth, lower experience, non-economic studies, and lower diplomas, are less dissonant than their respective counterparts. Reversely, male CEOs and those having bigger firms are respectively more likely to have high dissonance than counterparts.

Table 8. Test for moderating factors

		Coefficient	p value
Cognitive dissonance degree	Level of study	-.29**	.004
	Experience	-.17*	.042
	Firm size	.007*	.035
	Field of study	-.18**	.007
	Gender	.07*	.045
	Age	-.07*	.049
	Industry	-.000047	.522

\* 5% significance. \*\* 1% significance.

## 5. Policy and managerial implications

Our results highlight the need to implement specific measures in order to address the IPO reluctance concern. Indeed, explicit measures must be implemented to :

- increase the financial literacy of managers;
- increase the publicity of the stock market and its various functions through communication channels such as TV programmes, the local press, business clubs such as GICAM, etc.

Moreover, it would be a good idea, given the psychological basis of stock market reluctance, to combine the above measures of informative awareness with manipulative awareness measures.

## 6. Conclusion

The aim of this research was to figure out the role of cognitive dissonance on managers' IPO indeterminacy. We used in-depth interviews of CEOs with the framework of a constructivist phenomenological analysis. With no prior study on this topic, our methodology was found the most suitable for assessing the research question. The results point out the influence of cognitive dissonance in managers' IPO decision-making.

Demographic characteristics (such as gender, education level, field of study, firm size, age and experience) significantly moderate managers' exposure to cognitive dissonance. This is consistent with findings by Rieger et al. [27], Rydqvist and Høghölm [28], Dohmen et al. [29]. In line with the results by Özen and Ersoy [1] and Hoechle et al. [2], we also outline that financial literacy reduces exposure to cognitive dissonance, hence fosters IPO likelihood. Last but not least, we establish a hierarchical cognitive dissonance grid and highlight strong degree variations depending on financial literacy.

This study has three major originalities: first of all, it is the prime assessment of IPO decision through behavioral economics and secondly, the earliest empirical investigation of IPO decision via cognitive dissonance. Finally, our study has managerial implications in highlighting the imperious need to implement behavior-wise measures within the framework of IPO incentives policies. We then contribute to the enrichment of the theoretical fields of behavioral finance, IPO decision and IPO incentive policies.

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