

Implications of Including Non-Executives' Perception in the Executive Opinion Survey: A *Hierarchical Bias* Effect in the Global Competitive Index

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A key ingredient of the Global Competitiveness Report is the Executive Opinion Survey. This instrument relies exclusively in the opinion of top executives and ignores the perceptions of non-executive personnel. This research examines if a change in the type of survey respondents will make a difference in the Global Competitive Index. The results analysis showed significant differences between executive and employees with respect to their perception of the competitive level of the studied economy. In order to assess the existence of a Hierarchical Bias in the EOS, the researchers suggest further validation studies on other economies included in the GCR.

INTRODUCTION

The concept of competitiveness is perhaps one of the most studied by researchers, practitioners and international institutions since the times of Adam Smith. Notwithstanding, there is no worldwide common definition for this concept as of today. The proliferation of theories respond to a wide array of economic and non-economic factors examined from international, national and business firm perspectives (Garelli, 2006; Scott & Lodge, 1985). The World Economic Forum (WEF) is one of the many organizations devoted to the assessment of the static and dynamic constituents behind national competitiveness. The WEF has been examining the many factors of competitiveness since 1979 through its Global Competitiveness Report (GCR) and has been acknowledged as one of the leading reports in measuring the productive potential of nations worldwide. It has also helped policy makers, the business community and supporting organizations to understand the key factors that determine economic growth as well as the strategic mechanisms to articulate economic policies and institutional reforms (Sala-i-Martin Bilbao-Osorio, Blanke, Hanouz, Greiger and Ko, 2013).

Notwithstanding the recognition of the GCR within government and business organizations, its usefulness as a measure of the competitiveness of the countries and industries has been widely criticized. Opponents to reports on competitiveness argue that the competitive ratings published by organisms like the WEF, the IMD, the OECD and the World Bank do not reflect the reality of the participant countries (Berger & Bristow, 2009; Kauffmann & Kraay, 2008; Kaplan, 2003; Lall, 2001;). Critics also argue that the indicators used to assess competitiveness are not appropriate for all countries and/or economic sectors due to the great variations among them (Vaillancourt-Rosenau, 2003). According to Vartia & Nikinmaa

(2004) the lack of precision hinders the effectiveness of these reports as a marketing tool for the economies included in these reports. The lack of precision could also distort the economic reality of these countries jeopardizing their ability to attract foreign direct investment.

Some researchers criticize the methodology used by the WEF and the IMD arguing that the primary data obtained from a survey instrument is obtained from a specific sample of executive/entrepreneurs. In the case of WEF's competitiveness report, survey subjects per country range from 40 to 350 participants (Browne, Batista, Greiger and Gutknecht, 2014). Primary data is obtained from these participants through the Executive Opinion Survey (EOS). This instrument measures senior management and corporate business leaders' perception on the competitive level of the country in which they conduct business. According to Vaillancourt-Rosenau (2003) WEF's confidence in its EOS stem from its capacity to measure the intangibles that hard statistics are unable to capture.

However the use of business executives as opinion leaders has been criticized. Some opponents to the use of expert assessments claim their perceptions are biased toward the interest of the business community as their views might significantly differ from other type of respondents like NGOs, employees and supporting organizations (Kaufmann & Kraay, 2008). As a result, the assessment might not be statistically representative because the sample was not randomly selected from other national groups (Vaillancourt-Rosenau, 2003). In addition, the assessment could also be biased by the ideological orientation of respondents in favor or against the government (Kaufmann, Kraay, & Mastruzzi, 2004).

From an empirical perspective, the use of different data sources reduces the statistical bias and improves the lack of representativeness of using a single data source. From the authors' perspective, the fact that the EOS only considers the perception senior management and corporate business leaders as the key input in determining the competitiveness of whole economy constitutes a statistical bias that from here on will be termed as a "hierarchical bias". This study examines the differences, in the WEF's competitive index due to a change in the type of survey respondents. The aim is to validate if in fact the EOS lacks of statistical representativeness due to a "hierarchical bias".

This exploratory research first examines extant literature on the competitiveness issue and then discusses the WEF methodology used to develop its Global Competitive Index. Second, the results of the WEF's Executive Opinion Survey (EOS) obtained are compared to those obtained from the alternate survey sample (non-executives). Next, the results are examined using a T-test to determine if there are significant differences between the original results obtained from the EOS and the alternate sampled population (EOS_i). The paper concludes with a discussion of the implications of incorporating the perception of employees (alternate sample) as part of the Executive Opinion Survey for both, the countries participating in the GCR and the WEF itself.

THEORETICAL BACKGROUND

The globalization phenomena brought a paradigm shift in the strategic thinking of firms without regard of their size and type (Soto-Rodríguez, 2011). To succeed in today's competitive landscape, firms cannot be content with defensive strategies aimed at protecting their business turf. Instead, companies – whether international, multinational or global – are now more focused on crafting strategies that can be molded and adapted to changes in their competitive environment (Porter, 1990). This contrasts with the pre-globalization wisdom where the emphasis was on obtaining economic value through market segmentation, positioning, industry analysis and strategic planning (Bartlett & Goshal, 2002). The strategic imperative then urged companies to: (1) upgrade their strategies on a continuous basis, (2) adopt strategies with a global scope and (3) rethink and question current successful strategies before they become obsolete (Bartlett & Goshal, 2002). However, the fear of losing stability biased the company's strategic thinking from innovative and creative approaches towards more predictable and conventional plans (Porter, 1990).

The rise in global competition ignited the pursuit of different ways in which companies could create and sustain their competitive edge. For instance, the concept of learning organizations emerged during the 1990s in response to this trend and called for improvements in the forecasting capability of the

organization and a proactive attitude toward learning and continuous improvement (Lussier & Achua, 2001). Its proponents posited that in order to survive and keep its competitiveness, companies must be skilled at creating, acquiring, and transferring knowledge (Garvin, 1993). As such, a learning organization encourages creativity and innovation, fosters the free flow of ideas, open communication, and empowers employees to think, create, learn and solve organizational problems (Senge, 1990; Robbins & Judge, 2014).

In a similar fashion, the resource-based approach to organizational competitiveness proposed by Grant (1991) encompassed an examination of the company's tangible and intangible assets as they potentially constituted the core of a sustainable competitive advantage. By appraising the existence, rareness, imitability and value of its resources, firms were able to determine which ones could be used to create a competitive edge (Hamel & Prahalad, 1990). This presupposed that the company had the ability to: (a) make effective use of these resources, (b) integrate and coordinate them across the organization, and (c) exploit the potential of some of these capabilities (Grant, 1991).

Contemporary strategic thinking evolved from these concepts to view the organization as a whole set of interrelated and interdependent parts aimed at the creation of value by virtue of the synergetic integration of its internal capabilities and the external environment (Grant, 1991). The firm's strategic intent (Hamel & Prahalad, 1989) leverages and aligns the organizational capabilities with its external constituencies to form an ecosystem of collaborators, supporters, clients, and suppliers that not only impact the creation but also the delivery of a valuable product or service (Iansiti & Levien, 2004). The success of the resulting ecosystem rests on the interconnectivity of the actors and its synergy nurtures and encourages the firm towards the recognition of new entrepreneurial opportunities (Volker, 2012).

While the interest of firms, economies and nations on the competitiveness concept could be traced back to the contributions of Adam Smith and David Ricardo, this concept has evolved over the decades to reflect changes in approaches and perspectives. Garelli (2006) attributes the proliferation of viewpoints and definitions of competitiveness to the collection of economic and non-economic factors measured by this concept.

TABLE 1
THE MANY VIEWS OF COMPETITIVENESS

Organization	Definition
World Economic Forum (WEF)	The set of institutions, policies, and factors that determine the level of productivity of a country (Sala-i-Martin et al., 2013, p. 4).
Institute for Management Development (IMD)	The capacity of a firm to create value through sustainable long-term growth and profitability (IMD, 2014; p3).
Ireland's National Competitiveness Council (NCC)	A nation achieves competitiveness when it can provide its inhabitants with a better quality of life and a higher standard of living by supporting its companies to succeed in the international markets (Forfás, 2003. p.21).
Organization for Economic Cooperation and Development (OECD)	The ability of companies, industries, regions, nations or supra-national regions to generate, while being and remaining exposed to international competition, relatively high factor income and factor employment levels" (Wienert, 1997, p. 22).

Source: Soto-Rodriguez, 2011

Some of these theories measure competitiveness at the level of the business firm, others at the national level, and even others at the international level. As shown on Table 1, the definitions and views regarding this concept differ in terms of focus and scope. As the search for a common definition for competitiveness continues, researchers still keep debating the conflicting views around this concept (Soto-Rodriguez, 2011). This, however, has not stopped the rise of organizational initiatives such as the

ones mentioned above focused on measuring the competitive readiness of countries and firms. Some studies indicate that the competitiveness of any industry should be measured based on a set of objectives tailored to the particularities of the countries under analysis (Haque, Sultana & Momen, 2014). For instance, alternative proposals - other than WEF and the IMD - measure national competitiveness of countries based on cultural and geographical features (Chiang, Wu, Hsieh, Wang, Lin, and Cheng, 2008). In spite of the diversity of perspectives, no one debates that human and intellectual capital is a key driving force of the new strategic thinking towards competitiveness of nations and economies (Soto-Rodríguez, 2011).

Over the years the GCR's methodology has been subject to periodical revisions to cater for changes in global economy. The Global Competitive Index (GCI) has been the main output of the GCR report since 2005. It rests on the collection of primary and secondary data aimed at explaining the macro and microeconomic foundations of national competitiveness. While hard (secondary) data is obtained from national authorities and international agencies, an Executive Opinion Survey (EOS) is used to collect primary data from top executives from over 100 economies around the globe.

As shown in Table 2, the process of ongoing revisions has turned the EOS into a valuable tool in crafting economic development strategies and investment decisions for policy makers, the academia, and the private sector (Browne, Geiger & Gutknecht, 2013).

TABLE 2
THE EVOLUTION OF THE EXECUTIVE OPINION SURVEY

Period	Revision outcome	Key elements
2000 – 2004	Growth competitive index & Business competitive index	Included both the academic fundamentals of economic growth theory and the microeconomic drivers of prosperity.
2004-2012	Global competitive index	Included both macro and micro economic factors of competitiveness.
2012 to present	An expanded GCI	Addresses the impact of national culture on interviewee responses.

Source: Global Competitiveness Report, 2008 – 2014. Table developed by authors.

The current version of the survey assesses participants' perceptions and experiences on 14 broad areas that comprise the micro and macroeconomic issues affecting their work environment. The structure of the survey includes research questions that do not require a particular expertise on the subject matter or a hierarchical position in the firm to be answered.

Notwithstanding, the instrument relies exclusively on the opinion of top executives and completely disregards the skills and capabilities of employees, managerial and support personnel. In contrast, extant literature on learning organizations, resource-based models and competitiveness considers the organization's human resource as a whole, not capital or technology factors, as the leading contributor to the development of a sustainable competitive advantage of any organization (Ajitabh & Momaya, 2004, Fahy, 2002, & Barney, 2001).

The EOS exclusive reliance on the expert opinion of executives and top managers prompted the authors to propose the concept of a "hierarchical bias". To account for this bias the authors suggested to the WEF's local partner in Puerto Rico (Puerto Rico 2000, Inc. and the International Competitiveness Institute), to run the Executive Opinion Survey with a different population. The goal of the proposal was to examine the differences, if any, in the competitive index due to a change in the type of survey respondents. To that effect, this paper is built around the following hypothesis;

H₁: There is a significant difference in the Competitive Index of the Puerto Rican economy due to a change in the type of respondents in the Executive Opinion Survey.

The basic premise of this study is that capital and technology cannot do much for the company's value creation strategy if its human and intellectual resource at all levels does not have the capabilities and commitment to put them into good use toward this goal. The impact of the combined effect of these factors on the competitive level of the firm cannot be substituted or downgraded to the potentially biased perception of top executives. To test this hypothesis, researchers used the case of Puerto Rico, a developing economy included in the GCR from 2007 to 2015.

METHOD

After a discussion session to unveil the 2014 GCR results, the authors of this paper proposed to WEF's local partners (Puerto Rico 2000, Inc. and the International Competitiveness Institute) that the Executive Opinion Survey portion of the GCR run with a different population to account for possible perception differences in survey respondents. Instead of using top executives as research subjects, the authors proposed that the survey be answered by employees working at firms similar to those used in the original survey. The basic premise of the proposal stems from the fact that there might be differences in the way employees, managerial personnel and SME owners assess and perceive the sophistication of company operations and strategy, and the quality of the business environment in which they operate, thus affecting the competitive index of the economy in which it operates (hierarchical bias).

Procedures and Sampling

A letter of understanding (Content Sharing Agreement) was signed between the WEF and the local partners granting the researchers the authorization to use the Executive Opinion Survey with the alternate research population. The Spanish version of the survey was used to cater for understanding differences due to the language barrier. Survey participants were contacted through the Business Administration Graduate Program of the Pontifical Catholic University of Puerto Rico (PUCPR). This program, serves a professional population in the South, West and Northern region of the island that reunites the characteristics mentioned above. Also, its geographical dispersion contributed to the representativeness of survey sample.

At the moment of the study, the participants were enrolled as students of the DBA and MBA program of this Institution. In order to be eligible, they had to be working at a business firm –manufacturing, retail, service or SME- in a non-executive position (managerial or non-managerial). A total of 128 valid questionnaires were obtained through random visits to the three PUCPR campuses located in the municipalities of Ponce (South), Mayaguez (West) and Arecibo (North) representing more than double of the 60 questionnaires administered by WEF's local partner in the original study and 35% more than average sample size (between 87 and 93 participants per country) used by WEF's global study.

Instrumentation

As mentioned above, the data gathering instrument utilized was the Spanish version of the Executive Opinion Survey (EOS) supplied by the WEF's local partner. The EOS goal is to capture valuable information on the country's economic environment that it is difficult to obtain from other sources. According to Browne, Battista, Greiger and Gutknecht (2014):

“Most questions in the Survey ask respondents to evaluate, on a scale of 1 to 7, one particular aspect of their operating environment; at one end of the scale, 1 represents the worst possible situation; at the other end of the scale, 7 represent the best (p. 87)”.

The structure of the survey is divided into 14 categories each of which includes questions that measure the business environment of each country. The responses are edited for completeness, and tested for representativeness. Then they are grouped into several categories that will eventually comprise the 12 pillars of the Global Competitiveness Index.

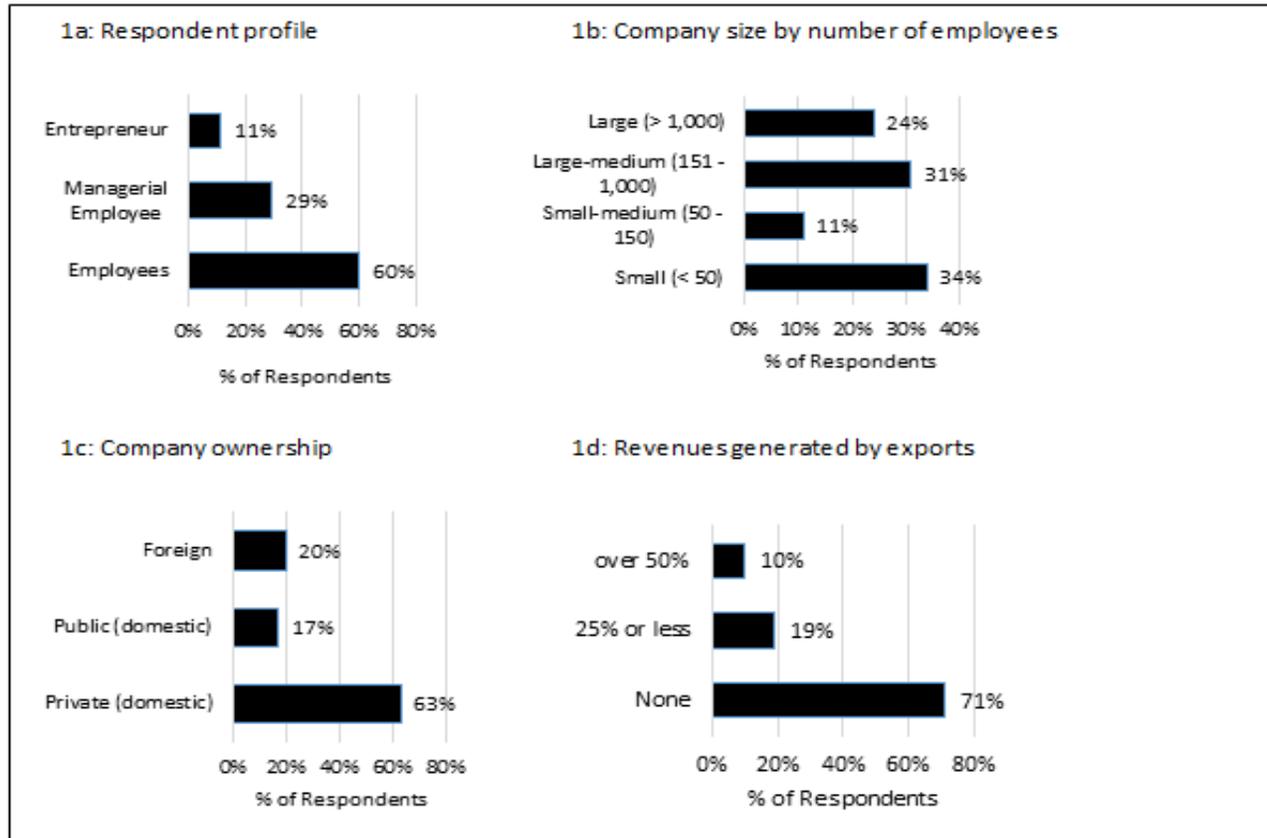
Measurement

The data collected from the Employee Opinion Survey (EOS) was then analyzed following the WEF’s methodology. First, an arithmetic mean is calculated for every individual question of the EOS. This measure (arithmetic mean) is interpreted as the country’s score for every indicator and is ranked along with the same measure between the others countries that were included in the GCR. Second, using the successive aggregations of scores that include hard data not derived from the EOS, a score is calculated for each pillar which in turn are grouped into three sub-indexes that are used to calculate the Global Competitive Index (GCI). Third, an alternate GCI index was calculated based on the results of the Employee Opinion Survey (EOS₁). For consistency and comparability purposes the authors used the hard data gathered and published in the 2014-2015 GCR. Finally, the original score for the twelve (12) pillars (as published in the GCI 2014-2015) and those calculated by the authors using the EOS₁ were then subjected to an independent sample T-test to assess if differences between the original and alternate GCI scores were significant due to the change in survey respondents.

FINDINGS AND DISCUSSION

The survey sample consisted of 128 participants, working in companies located in 25 municipalities of Puerto Rico, distributed along the four cardinal points of the island. This level of participation is within the parameters of sample size used by the WEF’s local partners to gather data for the GCI. Figure 1 presents other descriptive statistics of survey sample.

**FIGURE 1
EXECUTIVE OPINION SURVEY: RESPONDENT PROFILE**



Source: Data obtained from the EOS¹. Table adapted from GCR 2014-2015 by authors.

On the aggregate, respondent profile presented in Figure 1 is aligned with the results published in the GCR 2014-2015 in terms of the respondent's diversity and company's representativeness. In terms of their profile, almost 90% of survey respondents were working in non-executive positions (Figure 1a) with an average of 8 years of working experience. With regards to company size, 45 % of survey participants worked in a small or a medium sized enterprise, while the remaining 55% worked in a large or large/medium firm (Figure 1b). Figures 1c and 1d shows that the majority of the companies represented in this study were truly domestic in terms of ownership, type of operation (local or exporting) and revenue generation.

As mentioned before, the basic premise that motivated this exploratory research was to determine if a change in the type of survey respondents, from business's top executives to employees, will make a difference in the WEF's Global Competitive Index. Table 3 shows a comparison of the proposed change on the GCI computed for the Puerto Rican economy. The first two columns show Puerto Rico's GCI as published in the 2014-2015 GCR report while the columns to the right are GCI results using the Employee Opinion Survey (EOS₁). The first and third columns shows Puerto Rico's Rank among the 144 economies examined in this report, while the second and fourth columns present its competitiveness score, based on a 7 point Likert scale.

The impact of employee perception on Puerto Rico's GCI rank as well as in each of the 12 pillars of competitiveness is evident. If the EOS₁ were to be used, Puerto Rico's competitive index would drop from rank 32 to rank 78. The significance of this decline in competitiveness can be understood by using the WEF's framework that classifies countries in terms of their stages of development; factor-driven, efficiency-driven and innovation-driven economies.

TABLE 3
EXECUTIVES V. EMPLOYEES: TWO PERSPECTIVES OF PUERTO RICO'S GCI

	EXECUTIVE		EMPLOYEES	
	Puerto Rico 2014		Puerto Rico 2014	
	Rank	Score	Rank	Score
	(out of 144)	(1 - 7)	(out of 144)	(1 - 7)
GCI 204-2015	32	4.6	78	4.10
Basic requirements (20.0%)	68	4.6	96	4.13
Institutions	34	4.6	97	3.45
Infrastructure	58	4.3	77	3.95
Macroeconomic environment	99	4.2	96	4.34
Health and primary education	103	5.3	111	4.80
Efficiency enhancers (50.0%)	28	4.7	66	4.12
Higher education and training	27	5.3	75	4.22
Goods market efficiency	20	5.0	83	4.24
Labor market efficiency	46	4.4	97	3.96
Financial market development	21	4.8	79	3.83
Technological readiness	37	4.9	62	4.03
Market size	60	4.0	60	3.98
Innovation and sophistication factors (30.0%)	27	4.5	39	4.04
Business sophistication	18	5.1	54	4.25
Innovation	29	4.0	33	3.82

Source: GCI as reported in the 2014-2015 GCR and the GCI computed by the authors using the alternate EOS₁

As shown in Table 4, countries are allocated to a stage of development in terms of their GDP per capita and the main factors that hinges on their competitive level. According to the 2014-2015 GCR, Puerto Rico is an innovation-driven economy. However, the reassessment of Puerto Rico's competitive index using the EOS₁ would represent a competitive level drop of 46 positions locating the island right next to economies like Algeria (an economy in transition from a factor-driven to efficiency-driven stage), Guatemala (an efficiency-driven economy) and Croatia (an economy in transition from an efficiency-driven to innovation-driven stage). This decline could imply the existence of a perceptual difference between employees and executives in terms of Puerto Rico's ability to achieve a level of productivity that could foster high levels of economic growth and wealth creation.

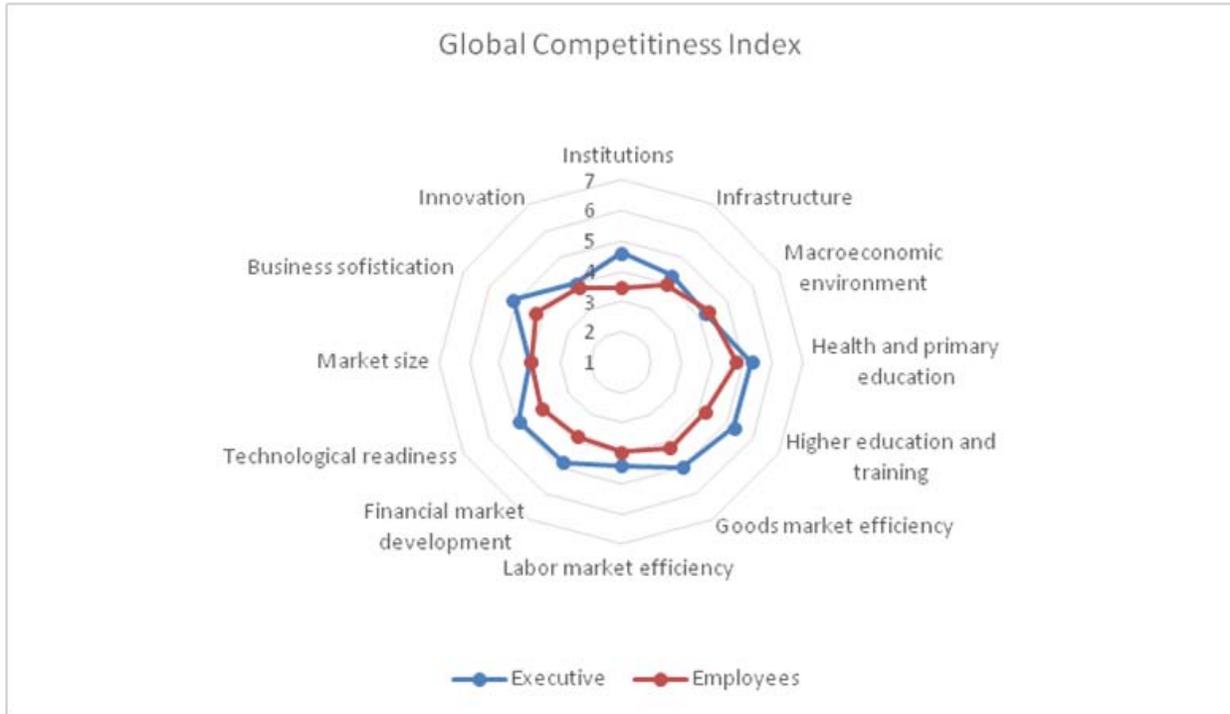
TABLE 4
WEF FRAMEWORK TO COUNTRY CLASSIFICATION ACCORDING TO
ITS STAGE OF DEVELOPMENT

Stage of development	Classification	GDP per capita	Competition drivers
Stage 1	Factor driven	< 2,000	Factor endowments such as unskilled labor and natural resources
Transition		2,000-3,000	
Stage 2	Efficiency driven	3,000-9,000	Efficient production processes, and product quality
Transition		9,000-17,000	
Stage 3	Innovation driven	> 17,000	Product diversification and process sophistication

Source: Global Competitiveness Report.

Following the GCR methodology, Figure 2 shows Puerto Rico's performance in the 12 pillars of the GCI as published in the 2014-2015 report (blue line). Instead of being measured against the average scores across all the economies, this figure shows what would be the island's performance if the EOS₁ were used to assess its performance in the 12 pillars (red line). The chart clearly depicts a less optimistic assessment of the island's competitive potential from the employee's perspective. It is worth mentioning that both GCIs were calculated using the same hard data. Therefore, the differences in GCI scores are only attributed to differences in EOS results.

FIGURE 2
PUERTO RICO IN THE 12 PILLARS OF THE GCI 2014-2015: EOS V. EOS₁



Source: Global Competitiveness Report 2014-2014. Figure adapted by the authors.

In spite of the evident differences in GCI scores due to the effect of EOS and EOS₁, it was necessary to assess if differences between the samples of executives and employees were significant. To that effect, the sub-indexes calculated for the 12 pillars were subject to an independent sample T-test to assess if differences between the original and alternate GCI scores were significant based on the change in survey respondents (Table 5). It is important to note that pillars 3 (Macroeconomic Environment), 4 (Health and Primary Education), and 10 (Market Size) were not included in this analysis because those pillars are comprised, for the most part, from hard data. In the same fashion, the T-test for the rest of the pillars excluded those indicators containing hard data.

Results for the T-test below show significant differences between the executive and employee samples. Specifically, the analysis revealed statistically significant differences in Pillars 1 and 2, (Basic Requirements Sub-index), 6 and 9 (Efficiency Enhancers sub-index), and 11 (Innovation and Sophistication Sub-index). For instance, pillars 1 and 2 dropped from rank 34 and 58 on the 2014-2015 report to rank 97 and 77 when recomputed using the EOS₁. Similar declines in ranking are observed for pillars 6 (Goods market efficiency), 9 (Technological readiness) and 11 (Business sophistication). T-test results confirm the less optimistic perception of employees with respect the competitive level of the island's economy and validate the overall decline in Puerto Rico's GCI presented on Table 3.

Another aspect that might explain the differences obtained from the T-test analysis in pillars 1, 2, 6, 9, and 11 is the pervasive intervention of the government in economic and business affairs. In this respect, these results are a reflection of the employees unenthusiastic stance on the capability of the institutional environment to tackle current economic times by (a) gathering and divulging accurate figures that reflect the economic reality of the island (b) assuring the effective functioning of the economy with sound strategies and policies, (c) fostering a well-developed infrastructure, (d) supporting a healthy market

competition, and (e) promoting a country with a high-quality business network that nurtures firms' operations and strategies.

TABLE 5
COMPARISON OF EXECUTIVE OPINION SURVEY (EOS) AND EMPLOYEE
OPINION SURVEY (EOS₁)

Pillar	M	SD	t	Df	P
Institutions (1 st Pillar)			4.057	38	.000*
Executive	4.56	1.21413			
Employees	3.22	.83619			
Infrastructure (2 nd Pillar)			6.673	6	.001*
Executive	5.15	.20817			
Employees	3.76	.35912			
Higher education & training (5 th Pillar)			1.727	10	.115
Executive	4.53	.76855			
Employees	3.92	.40281			
Goods market efficiency (6 th Pillar)			3.378	20	.003*
Executive	4.80	.80306			
Employees	3.68	.75753			
Labor market efficiency (7 th Pillar)			.101	14	0.82
Executive	4.17	1.08067			
Employees	3.29	.77520			
Financial market development (8 th Pillar)			1.972	12	.072
Executive	4.37	1.26980			
Employees	3.23	.83942			
Technological readiness (9 th Pillar)			3.034	4	.039*
Executive	5.63	.45092			
Employees	4.64	.34395			
Business sophistication (11 th Pillar)			3.824	16	.001*
Executive	5.07	.58902			
Employees	4.16	.40945			
Innovation (12 th Pillar)			.649	10	.531
Executive	4.28	.84951			
Employees	4.00	.59697			

* Significant at $p < .05$. Levene's test confirm the assumption that the variances of the two groups (EOS and EOS₁) are equal.

CONCLUSIONS

The objective of this exploratory research was to test the hypothesis with respect to the existence of what the authors termed a *hierarchical bias* in the Executive Opinion Survey used by the WEF to develop its Global Competitive Index. The authors posited that the bias stems from the sampling design of the EOS which considers only top executives as sampling subjects disregarding the opinion of non-executive personnel. This approach collides with extant literature, which has established the human capital as key to the competitive potential of any business firm.

Even though the results are not intended to be conclusive, this research demonstrates that there might be differences in the way executives and employees perceive the competitive potential of their companies and the environment in which they operate. When compared to the original study, the use of the Employee Opinion Survey (EOS₁) resulted in lower sub-indexes for the 12 individual pillars and the GCI for the Puerto Rican economy. Similarly, the T-test results showed differences between the executives' and non-executives' perceptions in terms of their assessment of areas that comprise the static and dynamic issues affecting the work environment and the sophistication of business operations and strategies.

The perceptual differences observed in this exploratory research could be reflect of employee's continuous exposure to current economic conditions in the island as well as the challenges of daily operations for they are the ones who feel more directly their effects. The executives, on the other hand, lose perspective of the most intricate elements that affect the organization, as they engage in other duties that deviates their attention.

Nevertheless, the results of this study suggest that the WEF begin to consider the possibility of examining the perception of employees in future reports. This includes more extensive studies to assess the existence and impact of this *hierarchical bias* in the GCR. The authors propose pilot studies in economies with similar stages of economic development and within the different regions – North America, Latin America, Europe, and Eurasia- to cater for potential economic and regional variabilities. As in the case of the sustainability issue included in the 2014-2015 edition of the GCR, the authors recommend that the WEF include in future editions of this report an adjusted GCI that considers the *Hierarchical Bias* while assessing its effect on the EOS. Once validated, the survey instrument could be re-evaluated to include non-executive personnel as part of the survey sample.

The authors believe that taking into consideration the *Hierarchical Bias* within the structure of the EOS will add robustness to the CGI because results will be more holistic. It will provide a measure of the productivity of the human capital and the synergetic impact of this resource in the competitiveness of the firm. As such, the new GCI will acknowledge the diversity, representativeness and contribution of the human capital to the company and the economy as a whole. From the public policy perspective, it would also help policy makers to craft better strategies to: (a) boost the country's productivity levels, increase FDI sources, and (c) sustain high levels of wealth creation and economic growth. Finally, the authors' hope that this exploratory research encourage further studies on the matter.

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